

Evolution and its Implications for Ethics

by

Carla Turner

**A dissertation submitted in fulfilment of the requirements for the
degree MA Philosophy**

in the Department of Philosophy at the

UNIVERSITY OF PRETORIA

FACULTY OF HUMANITIES

SUPERVISOR: Prof. A. Antonites

CO-SUPERVISOR: Prof. B. Hofmeyr

June 1014

Abstract

In this dissertation I will consider the extent to which our ethical actions are determined by evolution, as well as the consequences of a view that holds that ethical behaviour arose from evolutionary processes. I will further investigate whether evolution can supply a complete account of ethics in the physical world, without sacrificing human freedom and rationality. To do this, I will start by considering the possible negative consequences of applying evolution to human behaviour, in the forms of Social Darwinism and eugenics. I will argue that while these systems of thought are ethically and scientifically unsound, there is strong evidence for the evolutionary origins of ethics, where ethics can be seen as an adaptation that offers a benefit to the individual exhibiting this behaviour. This view is supported by sociobiology, studies in primate behaviour and neuroscience. The implications of ethics as an evolutionary adaptation will be compared to Kantian morality, which is premised on freedom and autonomy, which I will argue are inconsistent with some scientific explanations. While an evolutionary account of ethics can lead to a deterministic view of our behaviour, new developments in neuroscience claim that freedom is an evolutionary adaptation. This naturally developed freedom, combined with self-consciousness, can supply us with an evolutionary account of ethics that does not need augmentation from transcendental principles.

Keywords: evolution, ethics, morality, Social Darwinism, neuroscience, primate behavioural studies, freedom, self-consciousness.

Table of Contents

Contents

Introduction	5
Contextualisation	6
Chapter Outline.....	8
Conclusion.....	14
Social Darwinism and Eugenics	16
Introduction	16
Social Darwinism	16
Eugenics	19
A Brief History of Eugenic Practices.....	23
Arguments for Social Darwinism and Eugenics.....	30
Criticism against Social Darwinism and Eugenics	34
Conclusion.....	42
Naturalist Ethics	44
Introduction	44
Non-natural ethics	45
Naturalist ethics	48
Sociobiology	48
Primate behaviour	56
Neuroscience	62
Implications.....	66
Conclusion.....	68
Implications of a Naturalist Ethics	70
Introduction	70
Biological Determinism	71
Evidence from evolution and neuroscience	72
Influence on ethics.....	76
Kantian Freedom.....	79
Freedom and the Phenomenal World	80

Freedom and the Noumenal World	81
Freedom and Morality	82
Universal Moral Laws	84
Naturalist Ethics and Freedom.....	86
Body Relatedness	86
Freedom as Adaptation.....	87
Implications for Kantian Freedom and Morality.....	89
Mind/World Connection	89
Role of Emotions	91
Naturalist Ethics	93
Consciousness	95
Self-consciousness as Adaptation	96
Ethics and Self-Consciousness	100
Self-consciousness, Freedom and Agency	100
Ethics	102
Conclusion.....	104
Conclusion.....	107
Literature References	114

Introduction

“In the distant future I see open fields for far more important researches. Psychology will be based on a new foundation, that of the necessary acquirement of each mental capacity by gradation. Light will be thrown on the origin of man and his history.”

(Darwin 1859:912)

Is there a relationship between the natural world and the world of rationality, judgement and values? If so, what does this relationship entail, and what are the implications of such a relationship for ethics? These are questions that have been asked by the philosopher Immanuel Kant as early as the 1700s. They have emerged again in a different light, since Charles Darwin published the *Origin of Species by means of Natural Selection, or The Preservation of Favoured Races in the Struggle for Life* in 1859, followed by *The Decent of Man* in 1871. These questions continue to develop in relation to recent advances in evolutionary science.

The question that I will engage with in this dissertation is to what extent our ethical actions are determined by evolution, and what the consequences of this view, of ethics as an evolutionary adaptation, would be. To be more specific, this study will attempt to rethink what ethics means based on recent developments in evolutionary science. I will be investigating if, or to what extent, the fields of sociobiology, neuroscience and primate studies are capable of providing a complete account of ethics. The implications of such a view, especially on human rationality and freedom, will be investigated. Furthermore, I will examine to what extent these fields are capable of providing an account of ethical behaviour, with or without a transcendental perspective.

Contextualisation

To place the question of the link between ethics and evolution in a historical context, as well as to allude to the importance of the question, I will briefly look at the influence of the theory of evolution on earlier commonly held worldviews. First, I will look at the view that humans and ethics are separate from the natural world, and then how these views were challenged and changed first by Newtonian and then by evolutionary science, and then I will consider what the consequences of these new views are for ethical considerations.

Previous worldviews on ethics were mostly provided by reference to some spiritual or religious force that placed humans outside of and above nature. “Man, even by his external qualities, stands at the head of this world” (Smellie 1791:465). For Kant, the ability to be ethical lies precisely in the independence from the physical relation to causality, and the ability to make a decision independent of events preceding it (Kant 1898: 65).

After Newton the laws of causality were established, which took away much of this freedom and independence from the physical world. Yet even the Newtonian worldview did not completely remove humans from their privileged position in the world. “The Newtonian paradigm took it for granted that the origin and foundation of the universe was something non-material, spiritual-God, mind, thought, reason and spirit” (Antonites 2010:342). For Newton humans have mind and matter, and he considered the body as intrinsically evil, whereas the mind was intrinsically good (ibid., p. 342). Newton’s views still presupposed that the mind was free from the influences of causality, which was again challenged by the theory of evolution.

The theory of evolution raised a number of important questions about human nature and our position in the world. In the *Origin* Darwin held that human beings are as much a part of nature and the process of evolution as every other living thing, and not fundamentally above nature as was previously assumed. Not only that, but our actions, our motives, and even our ethical drives are formed and informed through the process of evolution, and cannot be separated from it.

Evolutionary science gives us a very different view of human ethics and the causes and motives behind our actions, compared to say Kantian morality based solely on reason. Through the laws of causality, some naturalistic views imply that most of our social interaction and ethical views are determined through natural selection, a process we have little control over. If ethics were to be replaced with a purely evolutionary account, actions that previously seemed obviously ethical or unethical have to be looked at from a different perspective, which is whether or not they can be considered useful to the continuation of life. In this view things like racism and xenophobia can start to look less unethical, if all that is meant by ‘ethical’ is what is best for the survival of the individual and his or her direct descendants, not what is best for the community at large. Applying evolution and natural selection to human affairs has in the past and can possibly in the future lead to practices like Social Darwinism and eugenics, especially when there is a genetic basis on which to claim that we are in fact not all equal.

At the same time, however, evolutionary ethics arises out of the hopes of finding “something, not ourselves, that makes for righteousness” (Matthew Arnold in Flew 1970:27). This leads us into the field of metaethics. “Metaethics claims that ethics has a metaethical foundation. It goes beyond ethical norms, and finds something at the foundation that, as a basis justifies ethics” (Antonites 2010:330). Evolutionary ethics can perhaps set a common standard, because it is based on science rather than culture or religion, which can differ radically for different people. Ethics could potentially become a form of applied natural science, and in this way offer us an alternative to the many differing views on what constitutes ethical behaviour. Instead of the view that different individuals, societies and cultures have different views on what is considered right or wrong ethically, we could have one standard applicable to everyone, a universal agreement on what constitutes ethical behaviour. On this view, it would arguably be possible to define what constitutes ethical behaviour once and for all for everyone everywhere because ‘ethics’ is understood as a scientific category.

If evolution can then supply the basis for ethics, one has to ask “if ethics as a non-biological category (as we may traditionally assume) would become subsumed in the biological as a

biological discipline, would ethics then not become obsolete?” (ibid., p.328). It further leads to the problem of determinism, since some forms of sociobiology hold that much of human behaviour is genetically hardwired, for example our mechanical abilities, language capabilities, sexual activities and temperament. This can lead to a determinist view of humanity, and when taken in relation to ethics, it becomes problematic since it seems to remove the possibility of freedom and with it, the possibility of responsibility. These are some of the questions that I will address in the following chapters.

Lastly, irrespective of whether or not evolutionary ethics can or should be applied practically, it can offer us insight into the nature of humanity. Through the study of neuroscience especially, we see that ethical considerations rely to a degree on certain natural brain processes that we have little control over. Whether we are talking about individuals or society or our species as a whole, evolution may help us establish our place in the world and our origins, through knowledge of how our ethical qualities evolved through the process of natural selection. It can offer answers, as well as raise important questions, about what we understand by human ethical behaviour.

Chapter Outline

I have now briefly contextualised the relationship between evolution and ethics, and how this relationship has changed over time. In this section I will again look at the main research question, and outline how the chapters relate to it. In this section this study will firstly attempt to define what ethics means in the context of a philosophical anthropology based on recent developments in evolutionary science, sociobiology and neuroscience. Secondly, it will investigate to what extent these fields are capable of providing an account of ethics that does not need augmentation from perspectives which place ethics outside of and separate from the natural world, such as Kantian transcendentalism.

To do this, I will start by looking at past applications of evolutionary science to human behaviour, to determine the previous relation between evolution and ethics. Having then shown that applications like eugenics and Social Darwinism can be considered both unscientific and unethical, I will look at more recent evolutionary science and how it describes human behaviour. The fields of sociobiology, neuroscience and primate studies will be used to substantiate the view that evolutionary accounts of ethics need not lead to practices such as Social Darwinism. Finally, having established that there is a relationship between evolution and ethics which does not necessarily lead to unethical behaviour, I will look at the implications that this has for freedom as well as for Kantian transcendental accounts of morality. I choose Kantian morality as a contrast since it places ethics outside of the physical world, compared to evolutionary views which do not have this separation. I will argue that freedom and consciousness can arise as adaptations, thus providing an account of ethics that does not need augmentation from transcendental principles.

One can now start to look at how evolution has influenced ethics in the past. The **first chapter** will focus on Social Darwinism and eugenics, how it developed, how it was advocated and put into action. This chapter will provide a historical overview of the link between evolution and ethics in the past, as well as serve as a contrast to more recent views which show that evolutionary ethics do not have to lead to similar unethical practices. Social Darwinism holds that the fittest will survive in the process of natural selection, which is confirmed by evolutionary science, and further that this system is good in itself (which is an ethical rather than scientific statement). For Social Darwinists this process should not be disturbed by human influence. Because Social Darwinism and eugenics clearly show the potential danger of misapplying biology to ethics, the history of its practice and implementation is crucial to consider within the context of the main argument being pursued here. Apart from a global phenomenon, it is also a very relevant factor in the South African context, because it was used to supply a justification for racism based on scientific ‘proof’ of white superiority (Dubow 1989:6).

This chapter will look at the arguments given for eugenics, especially those of the German anthropologist Otto Ammon. I will argue that his arguments are often problematic or even contradictory. It will also take into consideration the arguments levelled against eugenic practices, which raise philosophical, scientific and ethical concerns. Teleological problems are also raised, because Social Darwinism and eugenics had the goal of creating a better human race, whereas the process of evolution is non-teleological, which I will argue leads to internal contradictions within Social Darwinism.

Once we have seen the implications of Social Darwinism and eugenics, as well as the flaws in their argumentation, **chapter two** on naturalist ethics will look both at justifications for the contention that human beings are essentially unethical, on the one hand, and the case for humans as essentially ethical beings on the other. For the former I will look at the views held by Social Darwinism and thinkers such as Huxley, who claim that people are naturally inclined towards self-regarding action that does not take others into consideration. As for the opposite view, I will use sociobiology, primate studies and neuroscience to argue that humans are by nature ethical, social and concerned with others. The evidence for and against both views will then be weighed up and the implications for ethics of both these views will be explored.

To ascertain what constitutes ethical behaviour in the context of evolution, it is also necessary to discuss a basic outline of sociobiology. Sociobiology studies the biological basis of social behaviour, and thus also the ethical conduct of people, with reference to natural selection as part of its explanation. I will examine the ethical behaviour of individuals in society, and the causes or motivations behind this behaviour. From a sociobiological view, ethical behaviour arises from natural processes.

This thesis will further take into account that naturalist ethics are supported by studies in primate behaviour, especially the work of Frans de Waal, a Dutch primatologist and ethnologist. He breaks ethics down into three levels, from the most basic building blocks, such as empathy,

reciprocity, retribution, conflict resolution and a sense of fairness, to societal concern, which requires community concern, and conformity to judgement (De Waal 2009:167-174). By utilising primate behavioural studies, I will argue that ethical behaviour has developed naturally and cannot be kept separate from its origins in nature, since ethical qualities that are present in humans are also present in our genetically closest relatives.

Finally, in this chapter neuroscience is also discussed in relation to ethics, especially the role of emotions in ethical decisions. A case example is made of the classic trolley experiment and its variations to showcase the role of emotions in ethical considerations. Mirror neurons, especially their role in empathy, are also discussed. Neuroscience further bolsters the argument for ethics as natural by claiming that ethical decisions are based to some extent by emotional responses. Neuroscience also leads to an undermining of the Kantian idea of ethical judgement based on rational criteria, since ethical decisions strongly correlate with the emotional centres of the brain (Lanteri *et al* 2008:793).

In the **third** and final chapter the implications of a naturalist view of ethics supplied by sociobiology, primate behaviour and neuroscience are then discussed. I will consider the fact that an evolutionary account of human life also has the potential to lead to a type of biological determinism, which can take away our freedom since we cannot be said to be in control of the interaction between genes and the environment that lead to our own actions, and in turn our ethical actions. The role of freedom and responsibility, and their relation to ethics, will then be discussed in terms of Kantian morality, which contrasts well with evolutionary accounts because it locates ethical behaviour outside of the natural world. Before continuing, it will be necessary to define the key concepts relevant to this particular chapter, especially what is meant by ethics compared to morality, which is the focus of Kant's work. Furthermore a brief explanation of Kant's transcendentalism will be necessary.

For the purposes of this chapter the distinction between ethics and morality will be based on Hegel's distinction between *Moralität* and *Sittlichkeit*.

“The ethical ... refers to the values and ideals that inhere in one or another specific way of life-and these will, of course, be multiple and sometimes mutually incompatible... (M)orality denotes something that is both more severe and more abstract; and it is seen as applying anywhere and everywhere... This narrow sense of morality is the focus of Kant's philosophy, for Kant a moral principle indicating what is right or wrong is one that moral agents could will as a universal law” (Lukes 2008:120-121).

Under this definition then morality refers to a set of universal rules of conduct, whereas ethics can be said to be person or place specific, and takes the situation into consideration. Whereas the term morality applies at a general level and is considered universal, ethics refers to a specific action or set of events. Further, ethics will refer both to concepts of autonomy, justice and rights, as well as to care, interrelatedness and empathy (ibid., p. 4 41). These definitions of ethics and morality will be used throughout this study. In some cases ethics will be used to refer not only to humans but to other animals as well, especially when looking at primate behaviour in the chapter on naturalist ethics.

Immanuel Kant's transcendentalism, as formulated in the *Critique of Pure Reason* (1781) and the *Critique of Practical Reason* (1788), also deserves a brief explanation. It serves as the greatest contrast to naturalist views of ethics and will be used extensively in this dissertation. Kant does not see people only as phenomenal beings, i.e. as physical entities in the world bound to the same laws that govern nature. He also sees human beings as noumenal beings that are capable of being moral agents, and in this aspect they are not governed by the laws of nature. Evolutionary ethics do not make this distinction between phenomenon and noumenon, thus they can be used to contrast each other nicely. Kant argues that transcendentalism can give us the justifications for

moral behaviour, outside of a naturalistic view that, for Kant, struggles to account for the freedom necessary for moral behaviour.

Ethical theories such as the one proposed by Kant work outside of the natural, phenomenal world and are therefore not under the same constraints as a naturalistic theory of ethics. Rather it can provide justifications in the transcendentalist realm of reason separated from nature.

Transcendental knowledge is that knowledge that is independent of experience and observation but is rather *a priori*, before and independent of experience. He claims reason and ethical considerations are transcendental, outside of the natural, phenomenal world, and therefore also not determined by evolution. Through reason we can transcend and overcome nature, and make rational decisions free from the constraints of natural laws.

For Kant freedom is inseparable from morality, since without freedom there cannot be any responsibility, and actions cannot then be considered moral if there was no intention. Freedom will first be considered from a Kantian perspective, and then from a naturalistic, evolutionary perspective that takes into account body-relatedness and freedom as a possible natural adaptation.

The implications of a naturalist ethics on Kant's morality will then be examined.

Transcendentalism seems to overcome some of the problems that an ethics of evolution is faced with, such as physical determinism, yet at the same time faces difficulties when taking evolution into account. I will argue that evolutionary science undermines the mind/world separation that Kant postulates, and one can claim that reason itself is not the only grounds for ethical behaviour, rather emotions and human nature also have a role to play. Especially with new knowledge about the brain offered by neuroscience, it seems unrealistic that we can separate ethics from the physical world. It is difficult to establish a universal, unconditional morality or truth in the sense that Kant tries to, separated from its origins in the realm of nature.

Finally, the role of consciousness will also be taken into account, since it links strongly with intention and the feeling of volitional freedom. From a Kantian perspective, whether an action is moral or not is judged by the intention. A person who has committed any action unconsciously is seen in a different light to one who took the same action with intent, and will be judged with this taken into consideration. This is because humans have the ability of foresight, and can predict the outcomes of their actions, thereby implicitly taking responsibility for their conscious actions. Evolution already gives us the brain flexibility necessary for a degree of freedom (Antonites 2010:374). Consciousness, especially self-consciousness as a natural phenomenon, further allows for freedom that does not rely on transcendental principles.

Thus, in the final chapter, we will come to the conclusion that determinism poses a serious problem for ethics. Kant tries to solve this problem by putting freedom and morality outside of the natural world, but Kantian idealism cannot be upheld in the light of developments in modern science. Rather, there is a strong argument that we are by nature free and autonomous, and that this freedom, combined with self-consciousness, supplies us with the potential for ethical behaviour.

Conclusion

In short, this study will argue that ethical behaviour arose from, and is dependent on the process of evolution. To reach this conclusion, I will begin by looking at the way in which evolutionary science has been applied to humanity in the past in the form of Social Darwinism and eugenics. Its application across various countries will be looked at, as well as the arguments posed for and against this type of application, and the ethical implications of such an application.

The rest of the study will be based to a large extent on recent developments in sociobiology, neuroscience and primate behavioural studies, and their consequences for ethics. Finally, I will examine to what extent these fields are capable of providing an account of ethical behaviour,

freedom and intentionality, with or without a transcendental perspective. In this way I will argue that the ethical aspects of human behaviour are inseparable from the process of evolution.

Social Darwinism and Eugenics

Introduction

Now that a brief overview of the study as a whole has been given, it is apparent that to give a complete account of evolution and its implications on ethics, it is first necessary to see how these ideas developed historically, and how they influenced the field of ethics. Social Darwinism and eugenics were influenced early on by evolution, and these fields will serve as an overview of the history of evolutionary thought and its influence on humanity. It is further important to look at theories such as these because they exemplify the possible negative consequences that become apparent when evolutionary principles are used to determine what counts for ethical behaviour and what does not.

After I have dealt with Social Darwinism I will argue that eugenics was encouraged by thinkers such as Galton and Spencer as well as through politics and economics. By looking at the influence of evolution on ethics in the past, especially in the form of eugenics, we can discover what arguments these theories were based on. I will show that there are various objections, including philosophical, scientific and ethical objections, to such an application of evolution to ethics. Finally, I will also briefly discuss Kant's objection to using the natural world as a foundation for ethics. In the following chapter, Social Darwinism and eugenics will then be contrasted with more current naturalist views on evolution and its relation to ethics, such as those held by sociobiology, primate behaviour and neuroscience.

Social Darwinism

Social Darwinism can be considered as one of the most important aspects to look at when considering the relationship between evolution and ethics. Not only is it an example of how science and politics can influence each other, but it also shows the potential negative

consequences of applying science to humanity in an uninformed way. Though Social Darwinism has been discredited as a scientific model, (as I will show later) it serves as an illustration of how certain ideological frameworks based on evolutionary explanations of ethics can be problematic.

When Charles Darwin first published the theory of evolution and how it worked through natural selection in 1859, it changed the way people thought about the world, its age, and also much of what was known in biology. Not only did the theory of evolution change scientific views, but it also “raised a number of fundamental moral questions, so fundamental, in fact, that it has served as the basis for several systems of ethics” (Zirkle 1959:149). For the Social Darwinists, evolution cast doubt on the authenticity of any absolute ethical code, and suggested that all standards of conduct were only valid relative to certain circumstances, and only provisionally useful. Simply put, from the Social Darwinist’s perspective on evolution, what is considered right and wrong, good and bad, is determined only by what is better or worse for survival in a particular environment. As a result, universal moral principles were exchanged for what could be considered useful action to the continuation of life.

If one looks at the history of philosophical thought, one realises that these ideas are not new, and have been present in philosophical thought long before Darwin’s time. Social Darwinism is not an idea that developed completely independently, but was influenced by earlier political theory that gained scientific validity after Darwin’s publication of *The Origin of Species*. An example of one such thinker is Thomas Hobbes, an English political philosopher who thought in similar ways as the Social Darwinists. He claimed that human beings are not by nature political animals, and that there is no one specific goal that we all aim towards. Just as in natural selection, there is no ultimate end to aim towards. Rather, each individual has his/her own particular goals and will achieve them in the way they see fit, often through violence. To establish a political state we have to give up this right of nature. He claimed that in a state of nature the ideas of good or bad, as well as virtues and values have no meaning (although he does go on to explain how the rule of law and morality are to be understood). These types of ideas created room for Social Darwinism

and eugenics by undermining the Kantian conviction that there are universal absolute moral codes.

Social Darwinism became popular in the late 19th and early 20th century, and was discredited soon after. Its main spokespeople were Francis Galton and Herbert Spencer, and we shall see their arguments and influence in the section about eugenics. Social Darwinism was based on the premises that humans are also animals and thus under the same constraints as the world of nature. Similarly, society as a whole is also an organism that is subject to the same constraints (Andrews 2003:46).

Social Darwinism can be described as the view that humans are not governed by ethical thinking, but rather ‘survival of the fittest’ is the basis for all behaviour. On this view, the weak are seen as unfit, and therefore should not be helped in their struggle for survival. Social Darwinism holds that the fittest will survive in the process of natural selection, and that this system is good in itself, and should not be disturbed or altered by human influence. The processes of natural selection and competition will ensure that the best possible society emerges. It is important to note, however, that Social Darwinism and the theories that followed from it, such as the practice of eugenics, have little connection with the physical and even biological sciences. Mary Midgley concluded that Social Darwinism and eugenics had their origin in economics, and were encouraged by political theory (1994:6).

Social Darwinism had links with the economy, especially free market development and the rise of capitalism. Here the emphasis is placed on competition, regardless of the consequences for others. Within the context of business, any means to increase profit was seen as a just means to do so. From economics and competition in business flowed the idea that this is how human life also functions, those that are better or stronger come out on top, without governmental or ethical intervention. This can be seen as reasonable for business and is how it has always operated, according to Zirkle (1959:164). From this type of view many possible problems arise. In this

study specifically, a problem emerges when these economic processes are applied to human lives as scientific fact. Similarly, evolution is a scientific theory, it lies within the realm of science, and Immanuel Kant argues that any moral considerations lie outside of this realm, as will be addressed later.

For the Social Darwinists, if biology was the cause of discordances in a group or population, then it was also the tool to remove them. Notable is the practice of eugenics which followed from this, and was practised in varying countries for different lengths of time. There were several justifications for eugenics, yet I will indicate that they were not sound justifications. Even when the practice of eugenics did come to an end after World War II, it was a political rather than a scientific choice. Eugenics was tied to the fall of Germany and fascism when it started to fall into disrepute. There are philosophical, scientific and ethical objections to eugenics, which will be examined after eugenics and its influence throughout history have been discussed.

Eugenics

The word ‘eugenics’ is derived from two words, the Greek ‘eu’ - meaning good, and ‘gen’ - genesis, or creation. It can be seen as the “science of improving the inherited stock, not only by judicious matings, but by all other influences” (Galton 1998:263). Francis Galton, a cousin of Darwin, coined the term eugenics and described it as “the science of being well born” (Zirkle 1959:141). Galton was an advocate of human breeding restrictions, not only for the good of the individual but also for the good of society. After some trips to various countries in Africa, he placed Africans two grades lower than their European counterparts, and he based this grading mostly upon perceived intellect.

For Galton “eugenics is a virile creed, full of hopefulness, and appealing to many of the noblest feelings of our nature” (1905:25). The practice of eugenics involved not only letting nature take its course, but further evolution is consciously driven and restricted, with humans themselves

deciding what are better or worse qualities for society to have. Eugenics has the goal of producing a gifted elite group of people by encouraging eugenic marriages between people of good health and high intelligence. It soon took on a more extreme form, which advocated discouraging reproduction among those deemed to have lesser genetic fitness. Galton puts this as follows: “one practical and effective way in which individuals of feeble constitution can show mercy to their kind is by celibacy, lest they should bring beings into existence whose race is predoomed to destruction by the laws of nature. It may come to be avowed as a paramount duty... to breed out feeble constitutions, and petty and ignoble instincts, and to breed in those which are vigorous and noble” (ibid., p. 120). In the most extreme cases, eugenics promoted the forcible sterilisation of ‘imbeciles’, the disabled, the insane and others considered to be genetically unfit (Henderson 2008:58).

So, on the one hand, there was ‘positive eugenics’, which aimed at manipulating heredity or breeding, or both, to produce fitter, or more superior people. On the other hand, there was ‘negative eugenics’, which went about improving the quality of the human race by either removing or excluding those people judged as biologically inferior from the population (Kevles 1999:436). It aims at increasing and improving a particular society, not only by encouraging those deemed fitter to procreate, but also to prohibit those with less desirable qualities from doing so, either forcibly or by refusing to help these individuals.

Herbert Spencer’s work is necessary for further discussion on eugenics. Spencer and Galton were familiar with each other and their works, and Galton believed intervention was necessary to create a eugenic society. Spencer, however, thought that it was exactly this intervention that led to the degeneration of society. Spencer was a biologist and philosopher, who coined the term ‘survival of the fittest’. He explains that evolution always progresses from a simple homogeneity to a complex heterogeneity, and society progresses in the same way. This process however, can also start to decay or to reverse. For Spencer it is a natural necessity to pass through these various evolutionary stages, and that trying to intervene in this process is not only futile, but also harmful. He says, “we see that, ethically considered, this law (survival of the fittest) implies that

each individual ought to receive the benefits and the evils of his own nature and consequent conduct” (Spencer 1900:17). He meant that any one person should never be prevented from gaining the good that their actions would normally bring them, by being forced to give it up for someone who did not earn it. Nor should anyone be allowed to burden other persons with the negative consequences that follow from their own actions, and rob them of what they fairly gained by their own actions. In other words, charity and help offered to those that needed it was seen as an unfair process that robbed those who did well for themselves and rewarded those who did less well. The survival of the fittest was not only the best way naturally, but also ethically correct.

Spencer also gives us explanations as to why there might be seemingly altruistic behaviour in human beings, and as we will later see, many of these reasons overlap with current views in sociobiology that attempt to explain the same phenomenon. These reasons are the fear of retaliation, the fear of being expelled from the group, the fear of legal punishment, and lastly, the fear of divine vengeance (ibid., p. 30-31). Though he knows that altruism, as behaviour that appears to put the well-being of others ahead of that of one’s own, exists, he also sees possible problems with such behaviour. Forcing people to supply to those that cannot do so on their own infringes on justice. This is because it interferes with the relation between conduct and consequence. Those who do well for themselves are not rewarded for their behaviour, and those that do not supply for themselves are taken care of, even though they performed no action that would have led to that consequence. For Spencer this leads to an average deterioration or even to communism if all are treated equally. For Spencer every person should be free to do what they wish, as long as this does not take away the same freedom from any other person (ibid., p. 46). In the case of charity, those who cannot care for themselves infringe on the rights of those who can and force them to part with what they have fairly gained.

It can be argued that those who pursue their own enrichment are precisely the ones that lead to others becoming impoverished. From a Social Darwinist point of view, however, those that become impoverished do so because they are not ‘fit’ enough compared to those that manage to

enrich themselves. From this reasoning, however, it is not clear if or why the rights of those that enrich themselves must be protected from those who do not, or if those that are impoverished should be protected from those who are not. Those who do well may impinge on those who do not to the same or even a greater extent than the other way around.

For Spencer, however, it is unjust to tax one class for the benefit of the others. He claims we need restraints on undeserved payments. He uses the example of a woman giving change to bad musicians playing in the streets for money. By supporting them she is encouraging them to continue doing something they are bad at, instead of rewarding them for something they are fit for. She may even be preventing them from going in search of something at which they will excel (ibid., p. 299). For Spencer, then, charity is harmful for the individual as well as society as a whole. He holds similar views about those that are sick and can no longer take care of themselves. He says that the treatment of the sick or dying should be done in such a way that those who are healthy do not suffer as a consequence of making the life of the diseased person more tolerable (ibid., p. 357). For Spencer, being sick does not give you the right to insist that others must suffer for your own benefit.

It is important to note that Social Darwinism and eugenics originated before the discovery of Mendelism. Gregor Mendel, a Moravian monk, discovered the basic mechanisms of inheritance and variation through his studies on pea-plants. He was the first to discover that bits of genetic information (which we now know as genes) pass unchanged from the parent to the offspring (Whitfield 1998:60). Because of this lack of knowledge of how genetic material is passed from parent to offspring in that time, as well as of the workings of dominant and recessive genes, eugenics may have appeared reasonable as a scientific theory. This was reinforced especially with the improvement of domestic animals and crops through artificial selection in the late 19th century (Zirkle 1959:457).

We have now surveyed the claims of both positive eugenics, which encouraged breeding between genetically fit people, as well as negative eugenics, which would prevent certain people from procreating. Some eugenicists, such as Galton, argued that intervention was necessary, and others, such as Spencer, claimed it was precisely this intervention which prevented the best society from emerging. In the next section, we are going to pay attention to practices of eugenics throughout history, to discover how it was applied as well as its influence in different societies.

A Brief History of Eugenic Practices

To sketch the history of eugenic practices, I will draw upon descriptive research drawn from examples of the practice in the United States, Nazi Germany, France, Brazil and Russia. Also relevant is the implicit eugenic reasoning in Apartheid South Africa. Once I have taken note of its history and the claims made by eugenics, I will then look at the arguments both for and against such an application.

Throughout history the practice of eugenics was widespread. The United States had the American Breeders Association (ABA), which was the first national membership-based organisation promoting genetic and eugenic research in the US. It was founded in 1903 by agricultural scientists in support of scientific agriculture (Kimmelman 1983:163). This developed in 1906 to the Committee on Eugenics. They were tasked with studying heredity, in particular the value of superior blood and the menace of inferior blood in humans. Then again in 1913 the Race Betterment Foundation was formed. In 1928 75% of the universities in the United States offered courses in eugenics. Between the years of 1920 and 1930, twenty four different American states, as well as Sweden and Canada, passed eugenic sterilisation laws. This was because they believed poverty and criminality were not due to problems with the social structure, but rather due to bad genes (Kevles 1999:435). In the United States, many states passed eugenic marriage laws that banned those that were deemed unfit by the state from marrying. Not only that, but six thousand four hundred people were forcibly sterilised before the law was finally banned in the 1970's (Henderson 2008:59).

The most famous example of eugenics is found in Nazi Germany, where it was used as a tool for racial hygiene. In Nazi Germany, as is well known, many race crimes were committed. Eugenics was considered scientific, and four hundred thousand forced sterilisations were done in the name of ‘racial hygiene’ (ibid., p. 59). American and German eugenics were interlinked to a degree. This German-American relationship was grounded in the emerging international communication of scientists looking for race improvement, as at the meeting of the International Society of Racial Hygiene, which was held in 1911 in Dresden (Kuhl 1994:13). The racial hygienists were integrated into the Nazi Government, and again we can see the link between eugenics and politics. Rather than spend large amounts on welfare, especially at that time when all of Germany’s limited financial resources were needed in the war, politicians wondered if it would not be “more expedient to prevent invalidism and heredity inferiority by means of an energetic race hygiene” (Weiss 1986:33). This was claimed to be necessary to create increased economic productivity as well as a cultural hegemony.

These practices were not only common in the United States and Germany, however. There was the Scottish anatomist Robert Knox, who came to the view that humans are a genus, and unlike Darwin, he regarded different races as different species. Not only that, he also considered these different species more or less sophisticated that could be scientifically classified in order of superiority (Henderson 2008:57). He put white Anglo-Saxons at the very top of this chain as the most sophisticated, everyone else being considered physically and mentally less developed. Other thinkers were Cesare Lombroso and Paul Broca, who claimed that criminals, the mentally ill and stupid people are physiologically different (ibid., p. 57). They had no real evidence to support this belief, which was premised upon the pseudosciences of phrenology and craniology. These pseudosciences claimed different characteristics and mental capacities could be studied by looking at the shape of the head.

Eugenic thought was also prevalent in France, Brazil and Russia, even though it was not as actively enforced as in the US and Germany. At the end of the 19th century, a declining birth rate in France led to concerns about how to ensure the preservation of the human species (Schneider

1990:70). In 1912 the French eugenics society was founded by over a hundred members, including doctors, scientists, and statisticians. The goals of the French Eugenics Society included the reproduction, preservation and the improvement of the species as a whole. It also paid particular attention to heredity and selection and their application to the human species, and questioned the influence of factors such as the environment, economic status, legislations and customs on the quality of the nation. This included their physical, intellectual, and ethical abilities (ibid., p. 74-75).

In 1926, the French Eugenics Society started a campaign for premarital examination law, which eventually became a law. By June 1939 a health card was made mandatory by a Ministry of Public Health decree (ibid., p. 79-85). Especially after World War I, in France social hygiene was seen as the most appropriate way to combat the ‘social plagues’ of tuberculosis, alcoholism, and venereal disease. This information was given to the public through lectures, and even though a lack of organisation prevented large scale practical implementation, it was still very influential in the minds of the public (ibid., p. 76-79).

Eugenics movements were also prevalent in Latin America between 1900 and 1940, at a time when there was a lot of European immigration. The worry was that different races intermingling might lead to a degeneration of the people as a whole, through the process of miscegenation (which consists of the interbreeding of people of different racial types). The 1st eugenics society was founded in 1918 in Sao Paulo, Brazil (Stephan 1900:111-112). Soon after, the first Brazilian Congress of Eugenics was held, where the themes were education, marriage, intoxicants and eugenics. Further it involved a call for a national immigration policy, where only those who are proven ‘eugenically’ fit through a medical exam were allowed to enter the country (ibid., p. 119). There were also popular brochures handed out on how to choose eugenically fit husbands and wives, and eugenicists even organised popular contests for ‘eugenic’ families. Here monetary prizes were awarded for those families considered the most eugenically beautiful and hereditarily fit (ibid., p. 123-124).

Russia was also influenced by eugenic thought, especially in the 1920's and 30's when Soviet Russia became the world leader in population genetics. Russia was also the first country which would ban eugenics (Adams 1900:145), most likely because of the political views that were not aligned with the views of eugenics. In the 1920's the Bureau of Eugenics was established, which went on to form the Russian Eugenics Society in Moscow. Russian eugenics researched the genealogy of talented individuals or families, as well as the contribution of heredity in schizophrenia, manic depression, epilepsy, stuttering, alcoholism, criminality and syphilis (ibid., p. 163-168).

In 1935 in the Soviet Union the scientist and communist Hermann Muller (also famed for discovering that X-rays cause mutation) tried to adopt a socialist approach to eugenics. His goal was to create a new generation of people that would be naturally inclined to follow the ideas set out by Marx and Lenin. In the end, he failed to put his ideas into practice, but not because of insufficient scientific backing. It was disregarded because Trofim Lysenko and Joseph Stalin declared Darwinian and Mendelian science as too bourgeois (Henderson 2008:21) and hence incompatible with Marxism.

Eugenic thinking is also very relevant to South Africa, and even though it was never made very explicit, many eugenic ideas formed the foundations of Apartheid. Explicit or implicit, the ideas of Social Darwinism and eugenics formed an "ideological repertoire by which white supremacy legitimated itself to itself" (Dubow 1989:1). Scientific racism was an implicit part of politics, and Social Darwinism led to the questioning of the relative intelligence between different races, a fear of miscegenation, as well as fears of racial degeneration (Beinhart & Dubow 1995: 155). This in turn lent support to the Apartheid regime and seemed to give it some sort of legitimacy to its supporters.

In the first half of the 20th century, racist ideology was already present in South Africa, and most of these ideas came from earlier studies done about Southern Africa in Europe and North

America (Dubow 1989:2). Social Darwinists and those studying race sourced their studies mostly from information gathered by travellers and missionaries from Southern Africa. By 1933 the Oxford dictionary already contained the word “Hottentot”, which is described as “a person of inferior intellect or culture; one degraded in the scale of civilisation, or ignorant of the usages of civilised society” (ibid., p. 8). International views thus had a large influence on how native South Africans were viewed.

The sequence of occupation of South Africa also helped to reinforce the idea of white supremacy. The occupation of South Africa mirrored the supposed racial hierarchy, which was composed respectively of Bushmen, Hottentots, Bantu and whites (ibid., p. 6). In terms of survival of the fittest then, the fact that each race was overthrown by the next seemed to prove that each consequent race was somehow better, stronger, more intelligent or fitter than the previous ones. This reinforced the idea that white supremacy was the natural outcome of the evolutionary process, since they had occupied the land successively after the previous races and so proved themselves superior (ibid., p. 6). All this served as evidence for white supremacy, and gained approval from many South African intellectuals.

One of the most influential eugenicists in South Africa was H.B. Fantham, a Professor of Zoology at the University of Witwatersrand in the early 1900s. Fantham believed that both the mental and ethical differences between the different races occupying South Africa were almost entirely due to heredity’s influence. He further spoke of the need for a ‘eugenic conscience’ in South Africa. He was also a member of the Pretoria Eugenic Study Circle, which proposed that even school children be taught a basic eugenic understanding (ibid., p. 13-14).

Fantham believed that democracy was fundamentally flawed because it does not recognise natural variations within humankind. Following his reasoning, whites were superior and he had a very negative view on other African races. Democracy would aim to give everyone equal rights given the fact, according to him, that they were not equal at all. “Energy, perhaps the most valuable

of human attributes, is inherited, and, in the germinal make-up of the negroid peoples, this factor appears to be either very feebly developed or lacking” (Fantham 1925:408). Further he believed that the sexual impulses in black people were much stronger than their inhibitions, and coupled this with a lack of foresight, persistence and initiative.

Fantham’s views went further in that he also claimed that racial intermarriage would lead to degeneration of the population as a whole. In his view,

“considered racially, the white man loses and the negro gains in such miscegenation. But in neither case can the union of white and black be considered really advantageous to the community at large. The coloured race has not the energy nor the persistence of the white, neither is it controlled by the tribal conventions of the native. Educationally, the coloured peoples lag behind the white, and the general tendency is towards mediocrity. As a body, the coloured are often despised by black and white alike” (ibid., p. 409).

This idea of miscegenation led to fears of contamination, of the loss of racial pride and purity, and of the ‘black peril’ (Dubow 1989:15).

Further the theory of ‘arrested development’ was already well established in SA by 20th century. This was the idea that intellectual development of black and coloured people somehow lagged behind that of white people. This was not visible initially, but only came into view after pubescence (ibid., p. 16), when they started to fall behind and stop progressing at the same pace of the whites, or stopped developing completely. Further the idea that morality or character was inherited led to speculation about the links between race and crime (ibid., p. 17). It was further argued that ‘feeble-mindedness’, which was also supposedly inherited, included a weak will that led men to crime and made women prone to seduction (Morice 1920: 1).

This application of eugenic thought in South Africa serves as a stark reminder of the discrimination that can occur when evolutionary accounts of humanity are misapplied to society,

whether it is done explicitly or implicitly. Once again we see that applying evolution in the form of Social Darwinism to society can lead to unethical behaviour (from both a Kantian perspective as well as an ethics based on care, interrelatedness and empathy), based on race or class discrimination, especially when accompanied by political motives.

From the above-mentioned, it follows that eugenics was widespread in its practice and that it had many followers. To gain such support there were of course many justifications given for the practice of eugenics. We will later see that these justifications can at best be seen as weak arguments and bad science, and at worst as weak cover-ups for political agendas, such as the example of Nazi Germany as well as Apartheid South Africa. These justifications took many forms. Some argued, for example, that while our intentions might be noble, efforts to help the poor and the sickly would ultimately subvert natural selection and as a result weaken the human race (Henderson 2008:57). Claims were also made that the laws of nature may be infringed upon for a while, but eventually “they will assert themselves with a vengeance” (Stark 1961:52). It seems that it would be more ‘noble’ to strengthen the human race than to help those that are considered weaker.

For Otto Ammon, a German anthropologist who first noted that there was a higher proportion of Germanic ancestry in the European nobility, the social processes of selection were already naturally in place in society. These were food, school and the legal system. With the first, there are always many to feed, but at the same time limited food. The schools were there to identify delinquents from an early age, and the law was put in place to remove the genetically criminal from society (ibid., p. 50). Through measuring people he came to the conclusion that the upper classes were taller and more ‘longheaded’ (ibid., p. 51). He was also very anti-egalitarian, and believed that any move towards equality is unnatural. Following his reasoning, children should be educated in the manner best suited to them, dependent on how intelligent they are perceived to be. In this way no money needs to be wasted trying to educate those that are genetically not suited to benefit from it. Food should also be dealt out differently for different classes. The upper class needs prime cuts of meat and good food, necessary to sustain the brain power needed for

upper class work, whereas the lower classes do not need the best food, and can eat cheaper meats to sustain them in their menial jobs (ibid., p. 51).

Other justifications and explanations were also given, but as we will see, they do not supply any real arguments for their cause. The following section will critically consider the various justifications given for the practice of eugenics, from the works of Otto Ammon. Ammon claimed that factors such as war, religion, politics, law, economics, occupation, and town life as compared to city life, prevented the strongest society from emerging.

Arguments for Social Darwinism and Eugenics

Having seen that eugenics was practised in various countries in differing ways, in this section we investigate what arguments these practices rested on. Philosophers such as Otto Ammon claimed that the systems of natural selection were already in place in society, and that society already naturally identified and removed those that were unfit by means of natural selection, without human intervention. Against this, one can argue that if natural selection does eventually lead to the best possible society, then no interventions, such as those proposed by eugenics, should be necessary. Supporters of eugenics then again claim that it is exactly because of unnatural institutions incorporated into society that the unfit are allowed to proliferate, as we shall see later. Other justifications held that perhaps some of our behaviour and thought patterns might be unchangeable, regardless of how or what we are taught (Lewens 2007:238). Perhaps some things are so fixed in our nature that they cannot be changed through education or through social reform, and perhaps “some inequalities (such as gender inequalities) owe themselves directly to deep facts about human nature, which no amount of social reform can alter” (ibid., p. 215). This argument lacks solid evidence for its claims, since evolutionary science cannot confirm such accounts. Even if evolution could account for this, it would still not be able to supply us with prescriptions of what to do if this is the case. As I will argue later it violates the distinction between facts and values.

One of the problems the Social Darwinist felt they had to deal with is that despite the fact that a stronger, more intelligent society should naturally emerge, it is the weak and uneducated that proliferate more than anyone else. Generally the richer and more educated people are, the fewer children they are likely to have, while the poorer and less educated have many children and have a much higher rate of population growth. In this case, those that are generally deemed as weaker are, according to the theory of evolution, actually fitter. It seems difficult for Social Darwinists to account for this fact, but there are a couple of seemingly reasonable arguments given. Ammon (Stark 1961:53-55) cites the most important factors: war, religion, politics, law, economics, occupation, and town life as compared to city life. It will be useful to briefly explain how these different factors can influence different classes of people, as they reveal more inconsistencies in the overall argumentation for eugenics.

First, Ammon takes war into account. The ‘fitter’, warrior types of people will stand up and fight, whereas the cowards and weaker ones will not. This is not only because of fear but perhaps also because of the lack of strength and mental abilities. For Ammon the death of soldiers leaves more bad, and fewer good men. Politics will have the same effect, as those with leadership positions will try to exterminate each other, to gain even greater power while at the same time removing stronger men from the population.

Religion, such as Christianity, also limits how many fitter people can be brought into a population. This can be seen in the ideal that only people who are married are allowed to procreate, and this limits the amount of offspring a genetically ‘fitter’ person can have. Catholicism encourages celibacy amongst its priests, and those who become preachers usually have no offspring (ibid., p. 53). Similarly, when we look at the religion of Islam, virginity is seen as a Muslim woman’s greatest asset and losing one’s virginity before marriage is considered the most despicable sin a woman can commit. Often women are married at a very young age, exactly to prevent premarital sex (Mernissi 1975: xxiv). Further, one can look at cases where religion allows for polygamy, where only a few elite men can procreate with many women. This remains a prevalent factor for childbirth in many modern-day cultures around the world and is still

relevant in the practices of many religions. In the case of polygamy, a form of eugenics is still occurring when only specific men can have many children from different women. This ensures that his genes are being passed on, while preventing others from doing so, as is the case with eugenics.

Ammon further claims that ethical conduct, along with its relation to religion, also has a role in preventing the best society from emerging. Ethical convictions that lead to altruistic behaviour can lead to compassion and charity for those that are worse off. This can be either in physical abilities where they cannot care for themselves, or where they do not have the abilities necessary to earn enough money to make a living. For Social Darwinists, this sort of behaviour goes against nature. It not only allows the unfit to be preserved, but also to breed and proliferate (Stark 1961:54). Similarly, it can also be argued that the law works against the best, as criminals are not criminal in the eyes of nature, but only seen as such because of our societal laws which could be seen as unnatural from a Social Darwinist point of view, such as civil law or monogamy. These individuals obviously have less chance to pass on their genes while incarcerated.

Economic processes were also considered by Ammon as a factor preventing the proliferation of the fittest. Salesmen make money through scheming and manipulation enabling them to support large families. On the other hand, honest men remain poor. When people choose to marry and have children, the choice is made for wealth, instead of looks and health. Occupation also plays a role, as it is common that the more skilled one is in one's occupation, the fewer children one has. And at the opposite end, unskilled labourers have more children than their skilled counterparts. Sociobiology would explain this fact as a survival mechanism to ensure a better chance of some offspring surviving and more people to secure resources, but for the Social Darwinists it means that "society is dying off at the top and proliferating at the lower branches" (ibid., p. 54). Lastly, town life is compared to life in the country. Those individuals that are the most active and energetic head to the cities, as there is a grouping of more of the same types of people. There are

also more opportunities for work. But urban life is arguably more dangerous or life-threatening, and people live longer in safer environments such as the country.

All these different processes, such as war, religion, ethical conduct and economics take place side by side and eventually have a cumulative effect. “There can only be one final result –the complete degeneration and annihilation of the human race” (ibid., p. 55). As already mentioned, some of these processes do seem irrelevant and even contradictory. For example, one could argue that the law serves to remove those that are by nature the fittest, strongest and able to procure what they need for survival better than others. Yet one can also argue that the law removes delinquents from society and prevents them from procreating and passing on their defective genes (ibid., p. 55).

The economy can also be looked at from both perspectives. In one instance those with better jobs tend to have fewer children, but, on the other hand, unskilled jobs can be very dangerous. Even if these individuals have more children, their survival rate is much lower, because unskilled jobs do not lead to more money or skills. Here we already see some inconsistencies and problems with the justifications given for Social Darwinism and eugenics. This is perhaps also why Galton and Spencer disagree on whether intervention is necessary or not, since arguments can be made for both cases. Take the example of the law: on the one hand, it could be argued that intervention is necessary to remove delinquents from society; on the other hand, legal intervention might be deemed unnecessary because it removes the fittest from society. Similarly, eugenics holds that the poor are ‘weaker’ and should not be helped, but it is precisely the poor who have more offspring and can therefore be considered ‘fitter’. In this way, the justifications given for eugenics contradict each other, or at the very least place very different emphasis on what factors can be deemed important and which not.

From the above-mentioned it follows that Social Darwinists were already struggling to completely justify the actions taken against certain individuals or segments of the population

deemed unfit or weak. The only way out of this problem was to insist upon the dawning of an eventual ‘golden age’ that will follow once all forms of the objectionable behaviour have been eradicated – a justification in terms of the ends justify the means (Midgley 1994:119). Yet, this still takes no responsibility for the individuals who will suffer in the present as result of such a decision.

Eugenics eventually lost ground because of science, but also in large part because of its association with Hitler’s regime, which led to many ethical objections (Kevles 1999:437). Now that we have seen the arguments and justifications given for Social Darwinism and eugenics, one can look at the criticisms levelled against it. There are philosophical, scientific and ethical objections, along with many others, and these will be discussed in the following section.

Criticism against Social Darwinism and Eugenics

As shown in the previous section, there were many justifications given for Social Darwinism and the practice of eugenics. I argue that none of them was wholly convincing or unproblematic. An important problem was to explain why intervention is necessary if the natural outcome of evolution would lead to the best state. War, religion, ethics, economic processes, occupation and the dangers of city life were given as factors which curbed the natural process, but these arguments are weak and contradictory.

There are also philosophical, scientific and ethical objections raised against Social Darwinism and eugenics. A significant teleological problem has also been raised, as evolutionary science is not teleological but Social Darwinism and eugenics are. Further difficulties arise when regarding society as an organism subject to the same natural constraints as the individual. I will also consider who would be the appropriate authorities to decide between desirable and undesirable qualities, what these choices would be based on, and whether this could lead to ethical

relativism. Finally, I will look at the objections to Social Darwinism and eugenics from a Kantian perspective.

According to Kaye (1997:2), Social Darwinism should be discredited on three counts: firstly, on philosophical grounds because it violates the logical distinction between facts and values. Secondly, on scientific grounds, because of the near-impossibility of removing recessive genes, and inadequate knowledge of their function. Lastly, it can be shown to be ethically objectionable, because of all the cruelties committed in its name. In the following paragraphs, I will address these three objections in more detail, as well as other possible arguments against Social Darwinism and the practice of eugenics.

First, one can look at the philosophical objections. Most attempts at Social Darwinism commit the naturalistic fallacy, which is based on fact/value dualism. This states that factual statements are of a different kind than evaluative/value statements. The latter type cannot be inferred from the former, and evaluative statements are logically independent of factual statements. Even if the theory of evolution states that the fittest will survive and the unfit will not, from this we cannot derive any ethical obligation or infer any evaluative statements from it. Just because natural selection eliminates the genetically weakest members of a group, does not mean we should apply this to society.

Additional arguments against Social Darwinism and eugenics come from the field of science. There are many scientific objections, the most important ones in the context of the argument being the impossibility of completely removing recessive genes from the gene pool, and the lack of knowledge about which genes are harmful and to what degree. It is near impossible to remove recessive genes from the gene pool. Dominant genes, that show themselves in the phenotype, can be removed as soon as they are discovered in people by not allowing them to procreate. In this manner, they will eventually be eliminated from society. Yet many dangerous and debilitating diseases, both physical and mental, are caused by recessive genes.

Any animal that reproduces sexually inherits two sets of genes, one from the male and one from the female parent. Because of this, recessive genes in a population remain stable. For instance, the gene that codes for blue eyes is recessive and the gene for brown eyes dominant. If both parents have brown eyes and the recessive gene for blue eyes, the four different combinations that can emerge are brown/blue=brown eyes, blue/brown=brown eyes, brown/brown=brown eyes, and blue/blue=blue eyes. So theoretically three out of four children would carry the recessive gene and pass it on to the next generation, and the recessive gene would remain stable in a population (Walpole 1986:114). If we substitute an illness or unwanted trait for eye colour in this example, and can only make judgements on the traits that happen to show themselves (as one had to before there was adequate knowledge of genetics and recessive genes), then unwanted recessive traits would never entirely be removed from a population. With in-vitro fertilisation, however, it becomes possible to select against the possibility of certain recessive genes. As technology improves and knowledge of recessive genes and their impact increases, this may become more likely to happen in practice and eugenic as well as ethical concerns may become very important.

Currently, with genetic screening, as well as embryo screening, it might in fact be possible to remove recessive genes from the gene pool, although this will prove incredibly difficult. Firstly, embryo screening is only possible with in vitro pregnancies, and only a few diseases can be traced back to a single gene, whereas many other diseases require a number of different genes. The environment also has an important role to play in when and how genetic diseases are expressed, and many can be improved or worsened depending on the environment.

Even where chances to remove recessive genes from the gene pool are greater, it does not give us an ethical answer about whether we should do so or not. Especially with in vitro fertilisation and the possibility of embryo selection this becomes a very relevant question, given that one can already see genetic abnormalities and even such traits such as eye colour and sex in a fertilised egg. It then becomes possible to select for certain desirable qualities. This raises problems similar to those faced by eugenics, especially the problem of what authority will decide on these

factors, as we shall see in the following paragraphs. There are also scientific reasons for not interfering with recessive genes.

From a scientific point of view it is not certain whether dangerous recessive genes should be removed from the gene pool. Some seemingly harmful genes even seem to offer some advantage, such as those that cause sickle cell anaemia. Sickle cell anaemia is usually fatal, but offers resistance against malaria. The gene that causes sickle cell anaemia is found in high frequencies (20% or more) in people living in tropical Africa. “Importantly, the distribution of the (gene) almost exactly matches the distribution of... malaria” (Harris & Malyango 2005:3). Because of the high mortality and infant death rates from malaria, it would be better for survival to have sickle cell anaemia and at least live until child-bearing age. The same can be said of the genes that cause Tay Sachs disease, a deadly hereditary disease of the nervous system. These genes are found in those descended from Ashkenazi Jews, and they offer some protection against tuberculosis (ibid., p. 4). Further, many genes provide a benefit in early life to ensure reproduction, but these may cause adverse effects later on in life. In the context of Social Darwinism, traits that may be seen as useless or dangerous may in fact turn out to have some benefit to survival, as in the sickle cell anaemia/malaria example. If we look at other qualities, such as those that were supposed to be removed through eugenics, these may also have similar benefits that we are unaware of.

Having addressed both the philosophical and scientific objections, I will now discuss the ethical problem with Social Darwinism. Darwin, Wallace and Huxley (the three leading spokesmen for evolution) all support the theory that nature provides no ultimate guidelines for ethics or social policy, although it might have some influence. Darwin believes that even if the support we give to the ill and sick has negative consequences for the human species, it does not mean that these consequences justify withdrawal of that support. He argues that it is the “noblest part of our nature” that prompts our sympathy with the helpless, and if we did not feel sympathy for their suffering it would lead to the deterioration of that noble nature (Lewens 2007:219). Darwin elaborates that once traits such as sympathy and intelligence have been put in place through

natural selection, strengthened by habit, there should be no reason to suppose that the selective struggle will keep on being the most effective means to ensure that society will progress and improve (ibid., p. 220). “For the moral qualities are advanced... much more through the effects of habit, the reasoning powers, instruction, religion, etc, than through natural selection; though to this latter agency the social instincts, which afforded the basis for the development for the moral sense, may be safely attributed” (Darwin 1971:449). For Darwin progress now relies much more on good education when people are still young and the brain is impressionable, and on keeping high standards in the laws, customs and traditions of the given society. Darwin’s view holds that even if some people are considered genetically ‘unfit’, how they are raised and educated will have a stronger influence than genetics on their ethical behaviour. How genes influence ethical behaviour will be dealt with in the following chapters.

There are those who argue that the process of evolution must be kept separate from our ethical conduct, such as those ideas proposed by Thomas Hendry Huxley. He believed that natural selection would never lead to ethical behaviour, and our natural tendencies have to be overcome in order to become ethical. Yet even if we follow an evolutionary account it does not necessarily mean that ethics need to be kept separate from nature or are opposed to it, and applying evolution to humanity does not have to lead to Social Darwinist or eugenic outcomes. Rather, there is the possibility that the process of natural selection can lead to traits such as altruism and sympathy that develop naturally and have survival value, and that an unselfish person can evolve from a basically selfish natural process. This will be dealt with in much greater detail in the next chapter.

Having addressed the philosophical, scientific and ethical problems with Social Darwinism, I will now look at some other problems with Social Darwinism and eugenics. First, Social Darwinism is teleological whereas the process of evolution is not. Secondly, the view of society as an organism can be criticised. Social Darwinism can also lead to ethical relativism, and finally it can be contrasted to a Kantian view of ethics, which places ethics outside of the natural world.

Social Darwinism raises a teleological problem. Teleology requires that something is aiming towards a specific goal. Eugenics is teleological, since it aims towards the greater good of society, whereas the process of natural selection is not directed or aimed towards any particular purpose. Progress in evolution can be seen in the tendency for life to expand, specialisation, as well as complexification. While there is limited progress and development in evolution, evolution itself has no final goal or design (Antonites 2010:84). Although there is progress in evolution, there is no specific, determinable point that can be seen as the ultimate end that it is heading towards. Social Darwinism and eugenics have a specific goal in mind and try to achieve this goal, but it is not one that would have naturally been reached, rather it is something imposed upon nature by humans. The problem then arises that Social Darwinism tries to reach a teleological goal through a process that is by nature non-teleological. It claims that suffering now will be justified by a future 'golden age', but this is incompatible with the theory of evolution.

I will argue that Social Darwinism's view of society as an organism, which is therefore subject to natural selection, is problematic. For Galton humans are a part of nature, and therefore also subject to the same rules of nature. This holds true in evolutionary science, but his premise that society as a whole is an organism subject to the same rules, does not. If evolution has the goal of making the individual more suited to its environment, it does not necessarily mean it will do the same for a whole society. Evolution always works on the individual, not the group. One can take this even further, as Richard Dawkins does in the *Selfish Gene*, by arguing that natural selection works on individual genes. While group selection was once considered true by most biologists, it no longer has much support (Dawkins 2006:8). Group selection also commits the fallacy of composition, which relies on the invalid principle that whatever is true for the part is also true for the whole. Social Darwinism states that the individual is affected by the processes of evolution, and society as a whole is similarly affected. Therefore Galton's premise that society is an organism does not hold up to evolutionary science.

Next there is the problem of who decides what is better and worse, or who is fit or unfit. In the process of evolution, this is 'decided' by the unconscious means of natural selection. With Social

Darwinism and eugenics, it is a person in an authoritative position that makes this decision, whether based on science, pseudoscience or on political agendas. These decisions are usually made by people with the means to enforce their views on the population, especially when one looks at the enforcement of eugenics, for example in Nazi Germany.

It is also unclear if there are some universal qualities that can be aimed for, that can be agreed on by different races or cultures, as most, though not all eugenic theories adopted principles of racial superiority which were different depending on who developed the theory. Some cultures may value things that others would not, and something considered a weakness by a certain group of people might in fact be considered as a quality of strength by others. This can lead to ethical relativism, where what is considered right or wrong changes from culture to culture, or even from person to person. In this case, there are no universal ethical standards of good or bad. If one takes ethical relativism to be true, then eugenics, racism, slavery, and so forth may be considered ethical for a particular person or society, in a particular situation or a particular time. This view contrasts with Kant's universal morality, which claims that by following the categorical imperative, all rational beings will come to the same conclusion about what can be considered moral conduct and what not. Kantian universal morality, especially in its relation to freedom, will be discussed in detail in the final chapter. There is further a "substantial and growing body of evidence that individuals universally comply with norms and exhibit moral capacities from a very early age...Humans share moral capacities but disagree over which actions are morally permissible, obligatory, and forbidden..." (Lukes 2008: 51), though the sharing of these qualities does not necessarily give us an indication of what constitutes ethical action. For Galton there were some reasonable universal qualities to aim at, and "all creatures would agree that it was better to be healthy than sick, vigorous than weak, well-fitted than ill-fitted for their part in life; in short, that it was better to be good rather than bad specimens of their kind, whatever that kind may be. So with men" (Galton 1904: 1).

The philosopher Immanuel Kant may once again be used to critique Social Darwinism and eugenics, based on his view of ethics given in his *Critique of Pure Reason*. Kant does not see a

human being only as a phenomenal being as studied by science and as a physical entity in the world, bound to the same laws that govern nature. He also sees people as noumenal beings and moral agents. He claims reason and ethical considerations are transcendental; transcendental knowledge being knowledge that is independent of experience and observation. Rather it is *a priori*, before and independent of experience. In this way he seems to be able to give us the justifications for ethical behaviour, outside of the particular naturalistic view held by the Social Darwinists.

I am going to use Kantian transcendentalism since it locates ethics in a different realm than Social Darwinism and eugenics. For Kant, what determines whether or not an action is moral lies outside of the natural, phenomenal world and therefore not under the same constraints as nature, and therefore also not determined by evolution. Ethics are to be found in the transcendentalist realm of reason, which is separate from nature. Through reason we can transcend and overcome nature, and make rational decisions free from the constraints of natural laws. Therefore, we do not need to be constrained by ideas such as Social Darwinism, which claim to work in the natural progression of the human race. Rather we can make our own decisions about what is right and wrong, what is virtue and what is vice.

Kant knew that Enlightenment philosophy created a serious problem for ethics and religion. “Above all, a purely mechanistic view of the world as a concatenation of material causes and effects seemed to undermine notions of freedom and responsibility” (West 1996:24). Freedom is strongly tied to the possibility of ethical behaviour. Determinism, and in this context especially biological determinism, poses a threat to freedom and ethical action. If we are only a product of our genes and environment, any Kantian view of ethics, which requires freedom and responsibility, cannot hold. The Kantian concept of freedom is important here as it offers us a view of the world, and especially of ethics, exempt from the constraints entailed by certain scientific empirical views.

Kant's transcendentalism has the potential to overcome the problems that an ethics of evolution is based on, as it holds that we are not completely constrained by evolution. We need not have to apply it to human life, especially not in the way proposed by Social Darwinism. Yet, at the same time, transcendentalism raises its own difficulties. Claiming pure *a priori* rationalism, as knowledge that is not derived from experience or the world of nature, might not be sufficient for a theory of ethics. It can be argued that reason itself is not the only grounds for ethical behaviour, as the evidence from neuroscience in the following chapter will show. Emotions and human nature, our genes and our environment may also have a role to play. It seems unrealistic, especially with new knowledge about the mind and how it deliberates, offered by neuroscience, that we can separate ethics from the physical world, as we will see in the next chapter. It is difficult to establish a universal, unconditional ethic or truth in the sense that Kant tries to, separated from its origins in the realm of nature. This will be discussed in much greater depth, especially in its relation to freedom and responsibility, in the final chapter.

It is now evident that the criticism levelled against Social Darwinism and eugenics came from many varying fields, be they philosophical, scientific or ethical. These criticisms pose a strong counterargument to the practice of eugenics. This is so especially since the arguments for Social Darwinism are in themselves often contradictory and problematic. Yet, while eugenics cannot be justified, it does not necessarily mean that the application of evolution to ethics is impossible or will lead to unethical results. While transcendentalism gives us an option for ethics outside of nature, it does not follow that this is the only option available. Just because Social Darwinism's use of evolution was not valid, does not mean that other applications of evolution to ethics will necessarily also not be valid.

Conclusion

To conclude, both Social Darwinism and eugenics accepted that individuals and society as a whole were subject to the same natural forces as everything else, including natural selection. It was this process of natural selection that Social Darwinists and eugenicists tried to guide to

ensure that the best possible society would emerge, while at the same time preventing those that were deemed unfit to procreate. This was put into practice in many countries, and also served as the backdrop for discrimination in contexts such as Apartheid South Africa. The arguments for Social Darwinism and eugenics struggled to justify its application, and attempts to account for the problems raised were often weak and contradictory. The objections to Social Darwinism and eugenics came from many different fields, and it appeared that these theories are neither philosophically, scientifically or ethically justifiable. Further problems arise when one takes into account the use of a non-teleological process to justify a teleological process, the potential of ethical relativism, as well as views such as Kant's which place ethics outside of the natural world.

With this knowledge of how evolution was applied to human life in the past, and the various issues that were raised, one can now look at how things have changed with more information having been made available from various scientific fields. I will then consider whether or not evolutionary accounts of ethics can be justified. Sociobiology rests on similar principles as Social Darwinism, that humans are a part of nature, and the struggle for existence and survival of the fittest plays a role in our lives. They differ, however, in that sociobiology looks at the past and what led to current results, and does not lead to forward-looking views and interventions such as those advocated by eugenics and Social Darwinism. I will consider whether any of the same objections can be applied to it, or whether it offers a more sound approach to applying evolution to ethics. In addition, evidence from primate behaviour and neuroscience will be considered, to establish whether ethics has a natural origin, or is rather opposed to the natural process, as thinkers such as Thomas Hendry Huxley would maintain.

Naturalist Ethics

Introduction

As we have seen, previous attempts at applying evolutionary science to society, such as Social Darwinism and eugenics, had very negative consequences. Social Darwinism attempted to create a better society by using natural selection, either by letting it run its course naturally by not helping those in need, or by governmental intervention. The practice of eugenics became widespread throughout different countries in differing levels of explicitness. It was eventually abandoned because of a lack of scientific backing, weak and contradictory arguments, and also because of its links with Hitler's regime. There was further opposition to it coming from various fields of science, philosophy and ethics. Having considered some of the negative consequences of applying evolutionary principles to society, through the means of social Darwinism and eugenics, we can now turn to more recent studies on evolution and its purported links with ethics.

There are three possible options when looking at the links between ethics and evolutionary science (Antonites 2010:448). On the one hand, there is the view that ethics must be kept completely separate from evolutionary biology. The second view holds that ethical behaviour is determined by natural processes. Finally, there is the middle position, which is what Darwin himself suggested. It maintains that the evolutionary development of our mental traits should be taken into consideration, but that ethics cannot be reduced to biology.

This chapter will engage with the first two possibilities, that of non-natural as well as natural ethics. The non-natural view claims that ethics fall outside of the natural world. One can also make the different claim, as Huxley argues, that the evolutionary process is at complete odds with the ethical process. Contrary to both claims that ethics falls outside of the natural world and that the ethical process is at odds with the natural process, the second view maintains that ethical

behaviour is completely natural and determined by natural selection. Here ethics should be considered a biological discipline, or as a form of applied biology. There are various fields which claim to have evidence in support of naturalistic ethics, such as Social Darwinism and evolutionary psychology, but I will focus on the fields of sociobiology, primate behaviour and neuroscience as they lend strong support to this naturalist view. First, sociobiology attempts to explain aggression as well as altruism as natural adaptations. Secondly, the study of primate behaviour demonstrates the natural origins of ethical behaviour in our genetically closest relatives. Finally, neuroscience gives us an account of the role of emotions in ethical reasoning. Once I have situated ethics in the natural world, I will briefly look at the implications of such a view, especially on the role of rationality. The next chapter will discuss whether this natural view leaves open the possibility of freedom and responsibility, or whether it is necessary to locate freedom and responsibility outside of the natural world, as Kant suggests.

Non-natural ethics

The first view this chapter will look at is that of non-natural ethics, which claims that ethical considerations are and should be kept separate from evolutionary biology. Non-natural ethics refer to the idea that an ethics is not reducible to biology or physical nature, and is to a degree independent of physical or natural determinants, though these might be relevant to what we are capable of doing. Huxley's ethics is a particular variety of a non-natural ethics. Thomas Hendry Huxley, one of the leading proponents of this view, deals with this issue in his book *Evolution and Ethics*, published in 1893. Huxley was a very prominent and influential comparative biologist, the president of the Royal Society, the Geographical Society and others. For Huxley, people's only natural concern is for themselves and what benefits they can gain through the natural process. This view holds that humans are by nature aggressive and selfish, and that ethical behaviour is something that has to be enforced to overcome our natural tendencies. One would have expected that as a strong empiricist thinker, Huxley would have argued for a connection between the development of ethics and biological evolution and not against it. This might be due to "a remnant of Christian ethics in Huxley, even though now explicitly an atheist" (ibid., p. 336).

Thomas Hendry Huxley was a strong supporter of Darwin, so much so that he is referred to as ‘Darwin’s bulldog’. He believed that the ethical was completely at odds with the natural process. He agreed with Darwin and insisted that humans, in both their physical and intellectual capacities, are a part of nature and a product of the cosmic process. Yet, at the same time, he realised that evolution and the survival of the fittest are concerned only with what is useful and profitable to the individual (Schurman 1887:117). If this is the case, evolution cannot account for an ethics based on altruistic acts.

Huxley believed that through evolution, and our long series of ancestors, we had inherited an innate tendency for self-assertion. This was a necessary condition for victory in the struggle for existence. This, for him, was the reality at the bottom of the doctrine of original sin. To be able to act ethically then, “what we call goodness or virtue, involves a course of conduct which, in all respects, is opposed to that which leads to success in the cosmic struggle for existence” (Huxley 1893: 33). Here one can note that Huxley believes that humans are not determined by their biology. Rather, being able to act in opposition to our natural tendencies suggests that we have a choice in our own decisions and actions. As I will argue in detail in the next chapter, this freedom is necessary for a full account of ethics.

In *Evolution and Ethics* Huxley contrasts the state of nature to an ethical state by an analogy of a garden. In the state of nature, the characteristic feature is an intense and unceasing competition for survival, where there is no place for ethical behaviour. In the garden, however, the characteristic “is the elimination of that struggle, by the removal of the conditions that give rise to it” (ibid., p. 82). For Huxley, ethics do not arise through natural processes, but rather through the removal of these natural processes. To continue the gardening metaphor, ethical behaviour requires a constant ‘weeding out’ of our natural impulses, because these cannot lead to ethical behaviour. Ethical behaviour is necessarily hostile towards the natural processes of evolution. It is “in opposition to the principle of the cosmic process, and tends to the suppression of the qualities best fitted for success in that struggle... (Humans must therefore be) perpetually on

guard against the cosmic forces, whose ends are not his ends...Laws and moral precepts are directed to the end of curbing the cosmic process” (ibid., p. 82).

In place of ruthless self-assertion then, we need self-restraint to be able to act ethically; instead of a constant battle between competitors, ethics require each individual to respect as well as to help others. “Its influence is directed, not so much at the survival of the fittest, as to the fitting of as many as possible to survive”(ibid., p. 33). For Huxley, then, what we are faced with is a constant struggle to maintain and improve ourselves. We have the freedom of not acting in accordance with our nature, but instead in direct opposition to it.

These problems mentioned by Huxley raise an important point. It poses the question of whether humans are by nature aggressive and violent, and if this is how a naturalistic view of ethics would encourage us to act. There is some evidence that people are by nature aggressive. One can take the examples of the ongoing practice of war and the persistent pervasiveness of crime and violent acts throughout human history. Some claim that killing has proved to be an effective solution to “an array of adaptive problems in the ruthless evolutionary games of survival and reproductive competition” (Brockman 2011:7). This includes factors such as defending oneself against others or protecting one’s children, as well as protecting the resources necessary for survival and reproduction.

Recent natural views of ethics, such as those posed by sociobiology, argue that this type of behaviour is not typical of the population as a whole, but is restricted to the minority and therefore unnatural, and I will argue that this is the exception rather than the norm. Non-natural views of ethics, such as those proposed by Huxley, claim ethical behaviour is in direct opposition to natural behaviour. Naturalistic views on ethical behaviour claim that ethics arose as an adaptation. Views such as those posed by sociobiology, primate behaviour and neuroscience, provide a scientific view of both violent as well as ethical behaviour.

Naturalist ethics

There are many challenges facing a non-naturalistic view of ethics, and there are also strong arguments that natural motives give us the raw material for ethics. We cannot ignore our genetic inheritance and evolutionary nature. “As humans we are part of the evolutionary chain of cause and effect. We cannot distance ourselves from evolution just because we regard it as undignified or detrimental to our self-worth...” (Antonites 2010: 332). We cannot ignore the empirical evidence, and must take the theory of evolution into consideration for a full account of ethics, especially an account of ethics that does not only rely on reason, but on care, interrelatedness and empathy as well.

De Waal (2009: 22) mentions three different sciences that supply us with empirical evidence for the evolution of ethical behaviour. The evidence comes firstly from psychology, and under this category sociobiology will be discussed. Secondly, it is also important to look at primate behaviour and see how our genetically closest relatives show many of the tendencies incorporated into human ethics. This, in my view, will supply a strong argument that ethics are naturally developed through evolution, and not something specific to and reserved only for human beings. Lastly, there is also growing evidence for naturalistic ethics from the field of neuroscience: thinking about ethical issues activates emotionally involved brain areas, and even ancient parts of the brain. This alludes to the idea that ethics is not dependent only on reason and rationality as Kant would argue, but that automatic emotional responses also have a role to play. To begin, then, I will look at the evidence for naturalist ethics from sociobiology.

Sociobiology

The study of ethics is generally not related to what we consider scientific. Sociobiology, however, tries to explain human ethical behaviour in terms of evolutionary adaptations. In doing so, sociobiology views ethics as a scientific issue. Recent sociobiological views (amongst others) hold that humans are not generally naturally inclined towards aggression and selfishness. Rather,

the majority of humans are by nature social animals, as I will argue in this section. I will use sociobiology to look at both the cause of ethical action, as well as the nature of ethics, what constitutes an ethical or unethical action. This scientific view is supported by evolutionary science, primate behaviour as well as neuroscience. Sociobiology attempts to explain altruism, sex, child-nurture and, as we will see, aggression or the lack thereof in terms of evolved adaptations (Gribbin 1993:217).

Sociobiology is the study of forms of social behaviour in all animals and humans and how these came about through natural selection. It studies the biological basis of social and ethical behaviour of people. Natural selection is the process where qualities that can be selected for offer an advantage in a specific environment are more likely to be passed on to the next generation. In the same way, qualities that tend to hamper survival are less likely to get passed on to subsequent generations. Hence the phrase ‘survival of the fittest’ – those who have qualities likely to increase their chances of survival (fittest) are more likely to produce offspring (survive). It includes the genetic basis of behaviour, but does not neglect the influence of the environment. It claims that both genes and culture determine human behaviour. For example, all humans have a genetic inclination and ability to acquire language, but it is our culture that will determine which language we will learn. Sociobiology provides explanations as to why people would not by nature become aggressive or selfish. It also explains how altruism could arise as an adaptation, not only in family but between non-related individuals as well.

Sociobiology concludes that the human animal is not by nature an aggressive being, in contrast to the views proposed by thinkers such as Huxley, through the work of John Maynard Smith, a prominent biologist, geneticist and fellow of the Royal Society. Smith developed the concept of an evolutionary stable strategy. In my view, the following argument is convincing; that aggression does not necessarily follow from evolutionary principles, especially when taking the following evolutionary stable strategies into consideration.

The term evolutionary stable strategy (ESS), first coined by John Maynard Smith, gives us a mathematical basis for understanding the individual's strategies for survival. The example that Smith uses is that of hawks and doves (Dawkins 2006:70). These are not real birds, but concepts which suggest more and less aggressive members of the same species, who cannot be distinguished and look similar. When a hawk finds food, it will fight for it should another member approach. Doves, on the other hand, will rather run away than fight. If we allocate points for such behaviours, we can for example say that eating gives the individual 50 points, for running away it gets 0, and if it does fight and gets hurt in the process, it loses 100 points. The most successful individuals are of course the ones that eat and avoid getting hurt, and continue to have offspring.

An all-dove population appears to be a good solution, but if a hawk is to appear, it will do well in comparison with the doves. The hawks will have access to the most food since there are no competitors, and so hawks will tend to increase. A problem arises when there are too many hawks in the population. In a fight for food between two hawks, one will eat and gain 50 points, while the other loses the fight and thereby a 100 points. This argument assumes that the amount of food remains constant, and would not work if there were more than enough food, however, this is almost never the case in nature. After this fight then, this leaves the average score, halfway between 50 and -100, at -25. If one dove then appears in the hawk community, it will run when approached and will lose no points. In doing so, they will do relatively better in the group, as it loses no points in fighting and gains for every source of food found without a competitor. As a result, the doves will tend to increase. When the population consists of only doves, all of them average 15 points each, compared to the average -25 of an all-hawk population. From this it is clear that it is generally more advantageous for the whole population (although not necessarily for the individual) to be doves, rather than to be all hawks or a combination of hawks and doves. While this model is simplistic and difficult to apply to human populations, it serves as an argument that less aggressive behaviour is more likely to have been naturally selected for than aggressive behaviour.

This example demonstrates that while aggressive behaviour does hold advantages for the individual, if it starts to spread in the group it becomes a disadvantage when compared to less aggressive behaviour. A society that consists mostly of hawks is unlikely to survive, whereas an all-dove society would. There are some benefits to aggressive behaviour, but always only if it is in the minority. Therefore, it seems unlikely that aggressive behaviour could proliferate naturally; instead the natural tendency would be to be less aggressive. Further, against Huxley's view, there is evidence from sociobiology that unethical behaviour such as cheating would not flourish through evolutionary processes.

In *The Selfish Gene*, Richard Dawkins shows us how cheating cannot possibly be considered an ESS. He again uses an example of birds, which are capable of removing all their ticks themselves except those on their foreheads. These they cannot reach and have to be removed by others. These ticks often carry diseases and are dangerous to the birds if not removed. In this example there are suckers, cheats and grudgers. The suckers will remove ticks from any other bird, whereas the cheats will let ticks be removed from them but will not reciprocate (ibid., p. 185). In a population of only suckers and cheats, the genes of the cheats will spread in the species until they are the only ones left. Yet when there are no suckers left, the cheats will go extinct as there will be no-one left to remove their ticks.

The situation changes as soon as grudgers are introduced into the population. These birds can recognise others and will help those that have helped them, but not the cheats. If there are enough grudgers in the population, few cheats will survive (ibid., p. 185). Similarly in humans this behaviour can arise, especially since humans have a long life and a memory for individuals, and can treat them differently based on previous interactions (Gribbin 1993:243). . These two examples, of aggression and cheating, can be applied to human populations. They demonstrate that behaviour which we would consider unethical does not develop naturally. While individuals benefit from aggressive behaviour or cheating, as soon as this behaviour becomes too commonplace the advantage goes to those individuals that do not act in this way. In this way, social behaviour becomes the best strategy to adopt.

Social behaviour, combined with higher intelligence, also leads to better food production and safety, and again has high survival value. Helpful action towards others encourages this sociability and is useful as an adaptation. This type of behaviour in a group is an evolutionary stable strategy, as there emerges an interdependence of society and the individual – one cannot exist without the other, as humans are not self-sufficient. It is our ability to be social and to trust people that gives us the possibility for compromises and bargaining, which proves to be necessary for survival. Here altruistic qualities, qualities that show benevolent concern for the interests and welfare of other persons, can arise as adaptations and form part of an ethic that is concerned with caring and interrelatedness. I will argue that this plays a large role in our behaviour and it seems to be the driving force behind our ethical behaviour in particular.

When we first look at animal behaviour we find that what can be perceived as altruistic qualities are not only a human phenomenon, but are also present in many different animal species. Under the term ethics as relating to care, interrelatedness and empathy, we can claim that animals behave ethically. Next I will demonstrate how altruistic qualities can arise as adaptations, after which I will move on to altruistic behaviour in humans. In the animal world there are many examples of what researchers and scientists like De Waal regard as altruistic. The common plover will fake having a broken wing to lure predators away from its nest. If a different type of threat is detected, such as a herd of cattle, the plover will instead stand up very straight and try to be as conspicuous as possible, so the animals will not trample its nest where it stands (*ibid.*, p. 215). This type of altruistic behaviour at first seems to threaten the bird's own life, but when directed towards immediate family and offspring, this can be interpreted as an adaptation that favours the survival and proliferation of the bird's genes.

In other birds we find similar seemingly altruistic behaviour. Birds resemble humans in that they have a high level of parental investment, from both the mother and the father. Some mature birds have been seen to help older pairs rear their young by bringing food to the nest, a phenomenon that has been recorded in more than 140 species (*ibid.*, p. 243). This strongly suggests purely altruistic behaviour, until one realises that these helpers are usually related to the mating pair or

they may be the pair's previous offspring. They are in fact helping their own siblings. When looked at from an evolutionary perspective, helping three or four siblings to survive might well be better for your genes than reproducing yourself, as we will see later with the selfish gene theory. Eventually this type of behaviour spreads to half siblings, grandparents or even unrelated birds. In this way, genetically selfish actions lead to what can be described as altruistic actions. The helpers also gain advantage from this behaviour, in that when the helpers finally do nest themselves, they are more successful having already had training. Also the helper sometimes inherits the nest from the older pair, giving it another advantage over those that have not acted as helpers.

Given that altruism is not exclusively a human phenomenon since it can be found in animals such as birds, we see that altruism can develop as an adaptation. Having shown that altruistic behaviour can be considered useful to the continuation of life, we can move on to altruistic behaviour in humans. Altruistic qualities are qualities that show benevolent concern for the interests and welfare of beings other than yourself. Sociobiology suggests that this type of behaviour can arise as an adaptation. Sociobiologists like Richard Alexander and Robert Trivers maintain that the seemingly altruistic individual almost always benefits from his/her other-regarding behaviour. We will first look at altruism towards our relatives as the starting point of ethics, and especially at how Dawkins's selfish gene theory explains this behaviour. We will then go further to see how altruism might have spread to include other non-relatives, this time in the form of reciprocal altruism.

I will start by looking at the general family structure, which usually involves a relationship between two adults, who come together and have offspring. Being faithful to each other leads to a doubling of parental care. This care continues through infancy up until parents become grandparents, through actions such as leaving an inheritance to their grandchildren. It also demonstrates why maternal affection is usually stronger than the paternal equivalent, due to the fact that the mother has certainty of her genes being shared by her child (Dawkins 2006:106). Parents share genes with their children, and obviously genes that encourage parental investment

will be favoured and increase. And because humans have such a long infancy, it requires “loyal, self-denying, co-operative elders” (Midgley 1994:119).

We can also look at the opposite side where children are adopted, or live with only one of their biological parents and one non-biological one. Child abuse is more likely to appear when the child is not related to the parent. In fact, a child is over one hundred percent times more likely to be killed by a non-biological parent than by a biological one (Antonites 2010: 363). This might be caused by evolutionary factors or be a bonding issue. I do not claim that this serves as justification for such behaviour, rather only as an explanation as to why this might occur.

Here we start to see how the selfish gene hypothesis, as postulated by Richard Dawkins, comes into play. The theory states that any gene that encourages more of the same genes, whether in its own body or those of others, will survive and tend to become more numerous. Selfishness here is used metaphorically; genes are ‘selfish’ only in that they want to make more copies of themselves, but as we will see, this can lead to various types of unselfish and altruistic behaviour in many animals as well as humans. When we help our family to survive and to reproduce, we can see this selfish gene theory at work. Genes for familial altruism will encourage more of the same genes being replicated, as we have seen in the behaviour of helper birds. This is because of the Relatedness Index. Children have half of their genes in common with each parent, and similarly siblings also have half of their genes in common with each other. Therefore any gene that leads to altruistic behaviour towards children or siblings will become more abundant, considering there is a very good chance that that gene is present in the other family members as well. Similarly we share a quarter of our genes with our grandparents, uncles and aunts, and an eighth of our genes with our cousins (Dawkins 2006:91). In this way, genes that cause altruistic behaviour towards kin will lead to the proliferation or continuation of that gene in future generations.

Altruism does not only occur between related individuals, but also between non-related individuals, either in the form of altruism or reciprocal altruism. Reciprocal altruism is advantageous to us, especially as it evolved in small societies where reciprocal altruism has a small cost to the actor and a large benefit to the receiver (Gribbin 1993: 243). Reciprocal altruism is common in humans, and society as well as the economy is based on the ability to trust and to keep promises (ibid., p. 243). Altruistic individuals can be recognised by others and treated differently because of this fact. Likewise, selfish individuals are easily identifiable and we tend to be less inclined to help them.

Having seen the claims made by sociobiology, one can note that there are similarities between sociobiology and Social Darwinism. Both take into account that humans and their behaviour are a part of nature. Both also reject the idea of a *tabula rasa* (Andrews 2003:65), the view that when one is born the mind is an empty slate that is developed and changed by experiences impressed upon it. Rather both sociobiology and Social Darwinism hold that the mind is influenced by genetic inheritance. Both also recognise the importance of competition and cooperation (ibid., p. 56), but sociobiology focuses much more on cooperation than Social Darwinism did. Social Darwinism also had very explicit views on race and eugenics, while these subjects are mostly avoided by sociobiologists. Sociobiology further does not raise the same scientific and teleological problems that Social Darwinism does, as seen in the previous chapter. Finally, the conclusions arrived at by sociobiology claim that much of our ethical behaviour is good for survival, as opposed to Social Darwinism's view that ethical, altruistic behaviour would lead to the degeneration of society.

There are also some objections to the views posed by sociobiology. Mortensen (1987:203) mentions four of these, the first being a political argument. This argument rejects both the methods and results of sociobiology because of the potential negative consequences. This is especially relevant when it comes to taking responsibility for factors that are beyond our control, such as our genetic inheritance. In the next chapter this question of freedom and responsibility will be dealt with in greater detail. Already one can note, however, that this objection is based on

potential consequences, and says nothing about the validity of sociobiology. Another objection involves the influence of culture, which some would claim cannot be explained by genes alone (ibid., p. 203). Yet sociobiology seems to be able to account for this, since it takes into consideration both genes and the role of the environment, be it natural, social or cultural. The third objection is to the theory that genes have a strong influence on behaviour, and some claim that this could also be due to some other factors. Yet, there is strong evidence from evolutionary science that genes do lead to behaviour, especially if we take into account the similar behaviour of humans and primates, who have very similar genetics.

Primate behaviour

There is a strong argument for a naturalistic ethics from the study of primate behaviour. As we have seen, there are many examples of familial and reciprocal altruism in a variety of animals, for example birds helping others before having their own offspring. “If we accept the Darwinian theories that the human species descended from an ancestor shared by apes and other primates, it follows that we may find precursors of human characteristics in the animal kingdom” (Gruter 1982:315). For Darwin there is no fundamental difference between humans and the higher animals in our mental capacities, rather there are fine gradations. The emotional brain of mammals closely resembles the human emotional brain, and they can feel happiness, terror, or anxiety (Darwin 1871:18-21). As we will see in the section on neuroscience, emotions play a crucial part in ethical decision-making, especially when factoring in empathy as an ethical quality. Primates share these emotional centres and similar ethical behaviour can arise.

Primate behaviour can give us a strong argument for the evolution of ethics because these animals are so closely related to us genetically. From the Human Genome Project and Chimpanzee Genome Project, we know that chimpanzees are genetically 98.7% the same as humans (Antonites 2010:216). Primate behaviour provides us with an account of complex kinship networks and friendships that can develop between different individuals (Cheney & Seyfarth 1990:58). Like humans, primates are social animals, and this brings about the need for

them to be able to coordinate their actions and movements and respond collectively to danger. There is also a need to be able to communicate about food and water, and they need to be able to assist one another when the situation calls for it (De Waal 2009:25).

Another important aspect of ethics to look at is the role of these social instincts. Darwin states that “any animal whatsoever, endowed with well-marked social instincts, would inevitably acquire a moral sense or consciousness, as soon as its intellectual powers had become as well developed, or nearly as well developed, as in man” (Darwin 1871:53). Primates, then, with their high degree of intelligence, make for good subjects to critically investigate this claim. For Darwin, the development of ethical qualities is also constituted by the social instincts, which we share with primates. In primate studies, the influence of social instincts can be observed and it can be determined to what extent it resembles or diverges from human ethical behaviour.

According to De Waal, there are three levels of morality with which one can contrast primate and human ethical behaviour. The first level, according to De Waal, constitutes the basic building blocks of morality, such as empathy, reciprocity, retribution, conflict resolution and a sense of fairness. As we will see, these qualities are also present in apes. The second level lies in social pressure, and requires community concern and conformity. This level is also present in apes, yet in humans this is much more systematic and more concerned with societal goals. The topmost level for De Waal is judgement and reasoning. This involves being able to evaluate intentions and to have a desire for an internally consistent moral framework (De Waal 2009:167-174). This level of morality is only present in humans, according to De Waal, although I will argue that primates also have judgement and reasoning.

For the first foundational level of morality, primates need to be able to recognise themselves, as well as others, as individuals with different needs and intentions. It has been shown by researchers that primates have self-awareness. This self-awareness can be observed in many primate species, in particular in chimpanzees. This is demonstrated in the example where a

chimpanzee is anaesthetised and marked with paint on its ear or part of its body which the animal cannot see without the help of a mirror. It was found that upon spotting the paint marking with the help of a mirror, the animals then proceed to try to remove the paint (Box 1984:186). They therefore not only know that the image in the mirror is not another animal, but they are also aware of themselves *as* themselves in the mirror.

To be able to act ethically, not only do we need self-awareness, we also need to understand that others also have self-awareness. This allows us to recognise others as others, with their own thoughts and emotions. This makes us more likely to act ethically towards them. In order to act ethically we need to understand the state of mind of other people. There is a key moment in the development of children, when they begin to grasp that other people have different desires, intentions or beliefs than themselves, usually at about four years of age. We can see this in the behaviour of primates as well. Chimpanzees often console others that have been in a fight by putting an arm around them, even when they were not involved in the fight themselves (De Waal 2009: 34). They therefore have the capacity for recognising when another one has just been hurt or lost a fight, and recognise that others have different thoughts or feelings than them, and chimpanzee minds are understood as being similar to the human mind.

Similarly, rhesus monkeys actively avoid hurting others and they acknowledge that others have different feelings and experiences. They will act in this way even when it is to their own detriment. An experiment was set up where rhesus monkeys could pull a lever to receive food, but pulling the lever also produced the effect of shocking another rhesus monkey in a different cage. Most of the rhesus monkeys will rather starve than shock their fellows, and one monkey refused to eat for twelve days (*ibid.*, p. 29).

Primates also exhibit the behaviour of fairness, a building block required for ethical behaviour. Capuchin monkeys can easily assign value to tokens, and this makes them good candidates for study. In an attempt to discover if capuchins have a concept of fairness, De Waal refers to the

following experiment: two capuchins were put into cages next to each other, and given tokens that they could exchange for food. When two capuchins performed the same task of exchanging the tokens, but one got the better reward, in this case a grape as compared to a cucumber slice, the other reacted. It would do this either passively by ignoring the reward or actively by throwing the token or the reward out of the cage. There was also a control test to make certain that they were not just responding to the food but to the fact that only the other had received the reward (ibid., p. 45-48). This experiment demonstrates that capuchins have a sense of fairness and can recognise when they are not being treated equally. This is not a full-blown sense of fairness, since none were observed to share or give away the better reward, yet it clearly demonstrated that capuchins can tell if they are being treated unfairly. In this particular case their idea of fairness concerns only themselves as individuals. Still, this serves as a starting point for a more complete concept of fairness.

We have now seen evidence of the first level of morality in primates. The second level of morality that De Waal mentions involves social pressure and community concern. This can be seen in apes after two males have had a fight. One of the females may bring together the males after a fight, and in this way broker a reconciliation without any of the males having to make the first move (ibid., p. 54). Here we can see community concern as this keeps the peace between individuals as well as in the group as a whole. Chimpanzees also show helpful behaviour towards each other, whether they are directly related or not. Chimpanzees in captivity are often kept on an island surrounded by a moat, since they cannot swim. Despite this fact, adults often try to save infants who have fallen into the moat (Goodall 1990:213) and in doing so look after their particular community.

Apes make use of reciprocal altruism as well. They will share food more with those who have groomed them earlier. This indicates that they remember previous interactions, and keep track of who has cooperated with them in the past and adjust their future behaviour accordingly. Prior grooming leads to sharing of food as well as support if disputes arise. This reciprocal altruism is observed even in individuals who are not related to each other (Cheney & Seyfarth 1990:68).

Further being ostracised “is one of the severest punishments in many social groups, because of the devastating effect on the individual deprived of his ‘place’ in the social order” (Gruter 1982:320). Reciprocal altruism, therefore, is encouraged among communal animals.

The third level of morality, judgement and reasoning, is almost purely a human quality, according to De Waal. Primates can and do internalise others’ needs and goals to a degree. One can take the example of an adult female chimpanzee that was beaten up by a group of males. It took five days for the female to die, and in this time her daughter stayed with her and kept flies away from her wounds (Box 1984:104). This indicates that she was aware that the insects were causing her mother irritation or distress, and tried to remedy the situation. At the same time, however, this indicates that our primate relatives exhibit aggressive and anti-social behaviour as well, as seen by the behaviour of the males. This behaviour is not considered acceptable by the group, and is judged accordingly, as will be shown in the following paragraphs. Another example showcasing the ability to internalise others’ needs is when a female langur monkey died, the other females kept her daughter away from the body. They also embraced her, and later the juveniles and infants also tried to hold the orphan (*ibid.*, p. 141). Not only did the other langur monkeys recognise the relationship between mother and daughter, by embracing her they indicated that they have an idea of what the orphan is feeling. Hence, they can recognise bonds between others and compare relationships.

De Waal limits primate morality to the building blocks of self-awareness and community concern. I will further argue that primate behaviour, such as in the previous examples, suggests that they also have the abilities of judgement and reasoning. In terms of judgement, through sign language, “they (the great apes) were capable of answering questions in a rational way, interpreting statements and using language in a literal, as well as pejorative way. They also clearly indicated a sense of humour, and an awareness of past, present and future” (Antonites 2010:474). Further, chimpanzees can forgo instant gratification if this will lead to better results in the future. It has also been observed that chimpanzees carefully select only ripe fruit, and leave unripe fruit for later after carefully touching and testing them (Gruter 1982:322). In this

way they can use foresight and planning to achieve a goal, and can also postpone gratification for reciprocity. There is also evidence of thinking, reasoning and logic in chimpanzees, who can create and improve tools (Antonites 2010:184).

Another example of judgement comes from Jane Goodall's observations. She observed two female chimpanzees that were killing infants and eating them. The mother of one of the threatened infants turned to the males for protection against the potential killers. "These males threatened the wrong-doers and chased them away" (Gruter 1982:319). While the males' actions show community concern, I further interpret the male's actions as a sense of judgement, of actions that are unacceptable to the group and should be prevented.

These examples of caring for one another and feeling empathy in non-human animals do not only serve to illustrate that ethical behaviour can arise as an adaptation, but also what our ethical attitudes towards these animals should be and how we should treat them. For Immanuel Kant, animals cannot be moral agents. Though he is against cruelty towards animals, this is not because they deserve to be treated this way, but because it is better for the human to abstain from performing such acts. "If a man shoots a dog because the animal is no longer capable of service, he does not fail in his duty to the dog, for the dog cannot judge, but his act... damages in himself that humanity which it is his duty to show towards mankind" (Kant 1998: 240).

Against this, I will briefly argue that having seen the ethical qualities present in primates, a case can be made for moral individualism. Moral individualism claims that how an individual should be treated should rely not on its membership to a certain group (ex human), but rather on its own particular characteristics. Accordingly, it is not good enough to say certain animals, chimpanzees for example, do not fall into the preferred group and therefore need not be treated similarly. Rather, if humans and animals share a certain ethical characteristic, such as empathy, we should treat them in the same way (Rachels 1990:173-175), while Kant would argue the only characteristic that should be considered is reason. While not central to this thesis, this raises the

important point that when talking about ethics, we cannot exclude non-human animals in the debate.

On closer inspection, then, primate behaviour is very similar to human behaviour in many respects. They possess the basic building blocks for ethics, such as empathy and fairness, and also show a level of community concern. They can also internalise what others are thinking or feeling and act in response to this, and use judgement and reasoning to make decisions. While ethical treatment of animals falls beyond of the scope of this dissertation, we can note that “increasing self-awareness among animals indicates more responsibilities and duties towards them...autonomy (freedom), self-consciousness, transcendence and rationality go together. The existence of similar neurological structures in animals and humans constitutes as evidence that they can have the same mental states as humans” (Antonites and Odendaal 2004:544-545). This should give us an indication of how we should treat these animals ethically. For the purposes of this study, however, this serves as evidence that ethics does not fall outside of evolution. Behaviour that may constitute ethical behaviour is present not only in humans, but in our genetically closest relatives as well. Further evidence for naturalist ethics, that takes the role of emotions into account, comes from the field of neuroscience.

Neuroscience

There is a strong argument for a naturalistic ethics made by neuroscience. Neuroscience reveals that ethics do not need to be kept separate from nature, and possibly cannot be separated from the natural processes in evolution. Neuroscience reveals that thinking about ethical dilemmas activates emotionally involved brain areas, even in primitive parts of the brain. When people are asked ethical questions while undergoing *fmri* (functional magnetic resonance imaging), the emotional centres of their brains are activated (Lanteri *et al* 2008:793). The main neuroscientific argument states that we are naturally and automatically inclined to have empathy and understanding for others.

Neuroscience supports the argument that emotions play a large role in determining our behaviour, and especially our ethical behaviour, when factoring in qualities like empathy. It is, therefore, likely that rationality is not the only, or even the main cause of ethical decisions. Many of our emotions are instant, as is evident in the fact that one cannot choose to feel love or hate (Bennet & Hacker 2003:199). Similarly, we cannot choose to feel pity, empathy, sympathy and compassion, which are some of the most fundamental emotions involved in caring. Compassion towards those suffering physical pain is clearly present even in several non-human species (Damasio 2012:129). These emotions arise spontaneously, involuntarily and without any rational choice, although a subsequent rational weighing of possible courses of actions may be decisive for how we finally act upon these emotions. Nevertheless, these emotions evidently play a role in which actions we end up choosing. “Emotions occupy a central role; it is well known that, rather than being the antithesis of rationality, emotions aid human reasoning” (De Waal 2009:18).

The classical trolley experiment demonstrates the emotional underpinnings of ethics. This thought experiment was first suggested by the moral philosopher Philippa Foot, and involves the case of an empty train trolley running down a trail where it will hit and kill five people. There is a lever which will cause the trolley to switch onto another track, where it will only kill one person. In an experiment conducted in 2006 with 62 undergraduate students from the University of Eastern Piedmont, 84% thought that it would be ethically acceptable to pull the lever, and save five people by letting one die. 24% of the students even thought that we have an ethical obligation to pull the lever (Lanteri *et al* 2008:789-795). This shows that the majority would claim it is ethically acceptable to let one person die to save five others.

When the trolley problem becomes altered slightly, it can be used to demonstrate how big of an influence emotions can have on what is considered ethical. In this example an empty trolley is also rolling towards five people, but the only way to stop it is by pushing something heavy into the way of the trolley. The only heavy object available is an overweight person, and again the question is whether it is considered ethical to push the person in front of the trolley. In this case the student’s responses differed largely from those in the previous example. 95% of students said

that there is no ethical obligation to push the person in front of the trolley, and 53% thought this option was ethically unacceptable (ibid., p. 795).

Through these results we can see that some of our decisions on what we consider right or wrong rely heavily on emotions. Even though both variations of the trolley problem come down to one person dying and five surviving, the responses to these two variations are completely different. Even though rationality tells us that both will have the same results and lead to five people being saved, pulling a switch is more emotionally removed from the situation than pushing a person into the way. Ethical behaviour is driven “largely by social-emotional dispositions built on those we inherited from our primate ancestors” (Green & Haidt 2002:571). Based on the above examples, it may be argued that ethical behaviour relies as much or even more on emotions than on rationality. The idea that emotions form the foundations of ethical behaviour contrasts greatly with the Kantian ideal of morality based purely on rationality, as will be discussed in the next chapter.

While these findings are problematic for Kantian morality, which rejects emotions as a basis for moral actions, it is interesting to note that for virtue ethicists, this does not pose the same problems. Darwin himself was also positively inclined to Aristotle’s virtue ethics. Interestingly, just as sociobiology suggests, Aristotle claims that people are by nature political/social beings, which is why it is natural for humans to form societies and act ethically towards each other. In relation to neuroscience and the role of emotions in ethical decisions, Aristotle claims that virtues are concerned with actions as well as emotion, and that we are by nature equipped with the ability to receive moral virtues, which are then improved by habit (Aristotle 1962: 33-37). “For pleasure is not only common to man and the animals, but also accompanies all objects of choice: in fact, the noble and the beneficial seem pleasant to us” (ibid., p. 38). For Aristotle then, as opposed to Kant, emotions have a central role to play when making ethical decisions.

To continue with neuroscience, however, we return to mirror neurons, which play a large role in empathy and understanding of others. These neurons were found to be linked to the frontal lobe areas, those that are concerned with intentions and emotions. These mirror neurons are active both when we act and when we watch someone else act, and form the basis of mimicry and empathy (Carter 2010:232). Mirror neurons were first discovered in 1995 by accident. Giacomo Rizzolatti at the University of Parma was observing which parts of the brain were activated when monkeys performed certain movements. The researchers noticed that when a monkey with electrodes attached to its brain watched an experimenter eating, the same neurons that fired in the monkey when it was eating also fired when the monkey observed the experimenter eating. Rather than attributing it to an error with the equipment, the researchers tested this phenomenon and it has now been confirmed in humans as well (ibid., p. 232). This experiment has now been taken further to show that when our brain registers pattern associated with sadness, such as a sad face, we experience that emotion to some degree, similarly with anger and fear. “In other words, the architecture of our brain predisposes us to interpret other people by feeling what they do, by putting ourselves in their shoes” (Winston 2003:413).

These mirror neurons play a large role in the possibility of ethical behaviour because they allow for empathy and understanding of others. Closeness and an understanding of the feelings and needs of others is a central need for any animal that requires cooperation for survival (ibid., p. 232). When we observe emotions in others, we have immediate and non-deliberate access to what others are thinking and feeling. Mirror neurons not only help us understand what others are feeling, since we feel the same to an extent by watching them, and can also give us knowledge about others’ intentions. In studies where subjects were made to look at two similar pictures, one in which a hand reached for full cup (for drinking), and the other in which the hand reached for an empty cup (for clearing up), different mirror neurons fired, giving the subject a different experience of intention (ibid., p. 233). Even though these pictures are very similar, mirror neurons help us to pick up on differing intentions in others. Hence, when we observe someone, not only do we have instant (albeit partial) access to what they are feeling and to a degree experience that emotion ourselves, we also non-deliberately have some knowledge of their intentions as well.

From this we can see that our emotions play a definite role in our ethical decisions, and are often the initial cause of ethical actions based on empathy. Rationality plays a role as well, but as demonstrated in the trolley problem, it has less of an effect than our emotions. Our mind is also a product of evolution, as are mirror neurons. These neurons give us instant partial access to what others are thinking and feeling, and this is essential for an ethics that involves empathy.

From what we have discussed so far, it follows that the fields of sociobiology, primate behaviour and neuroscience see ethics as something developed from natural evolutionary processes. Sociobiology claims that altruistic acts and ethical behaviour have evolutionary advantages for the individual possessing them. Primate behaviour shows that ethical behaviour is not only limited to humans but is a natural phenomenon. Neuroscience then shows that ethical behaviour is strongly tied to ancient evolved parts of the brain. Already we can note that while these fields offer us a naturalist view of ethics, they do not address the question of freedom and determinism. Ethical behaviour may have natural underpinnings, but such a view necessarily diminishes the role of rationality which forms the foundation of Kantian morality. Further, similarly to Social Darwinism, it can also lead to ethical relativism if ethics are based only on what can be considered useful.

Implications

Considering the insights and evidence from various fields, I conclude that we can no longer keep ethics separate from nature as Huxley tries to do. Rather the fields of sociobiology, primate studies and neuroscience tell us that ethics are to a large extent based on natural underpinnings. The instrument which has allowed us to be successful in the struggle for life and has driven our headlong success in our particular environments is the human brain. Our minds also develop through the process of natural selection and are subject to the same forces. If we view ethics as a creation of the human brain, it can also be considered subject to, though not necessarily considered a product of, natural selection. The concept of human rationality is no longer sacrosanct as it was presumed to be earlier.

If this is the case, (though I will later argue it is not) the most ethical way of acting is not the most rational way, but rather the way that is the most likely to have survival value in our particular environment. It is this undermining of the value of human thought and rationality that leads us to see ethics from a different perspective. All our ideas concerning ethics can be seen from the perspective of how they offer us survival value. The human brain develops and changes in accordance with the environment according to the same principles as any other living organism.

While this is not the view of naturalist ethics that I will be supporting, if this view of ethics is accepted, it could be possible that there is no need to ask if anything is really ethical or unethical, since from an evolutionary point of view the only valuable ethic is one which is useful to us and improves our chances of survival. All our “ethical” behaviour then is only pragmatic, but it is not working towards any particular final goal such as Aristotelian *eudemonia*, or a Kantian universal view of right and wrong. Ethical behaviour is only what is useful at a particular time in a particular environment. If we apply the theory of evolution in this way it seems to explain ethics “in terms of mindless mechanisms working through biochemistry in a web of cause and effect” (Trigg 2002:76). In this case ethics in reality has an “unthinking brute physical-materialist base” (Antonites 2010:332). This implies that there is no real sense of duty, but rather that humans function better when they think there is an objective morality, or a transcendental “ought” (ibid., p. 376). If this is the case, the problem of determinism arises, where we cannot be held responsible for our own actions which cannot be said to be ethical or unethical, as will be discussed in the next chapter.

Another problem with some naturalistic views of ethics is that evolution cannot supply us with an idea of good or bad distinct from what is better or worse for the welfare of the individual. As with Social Darwinism, this also raises the problem of ethical relativism. What is ethical will then differ depending not only on the species (on what is better and worse for that particular species to do to survive), but also on different environments, be they physical, social or cultural. Within evolutionary theory it might be adequate to explain why ethical behaviour is useful for

the continuation of life, but it is uncertain whether the continuation of life itself can supply an ‘ought’, the obligation of Kantian morality.

There is, of course, a very big overlap between what promotes individual welfare and what can be considered as ethically good, for example, helping relatives can be seen as an ethically good action, but it also contributes to the continuation of our genes. As another example, we have seen in sociobiology that cheating is not an ESS, and it is also deemed unethical by say Kantian morality. Still this does not supply any ‘ought’ like Kantian ethics can, of obligation based on reason alone. This problem will be discussed in the next chapter, as well as considering possible alternatives to this view, both from metaphysical and natural arguments.

Conclusion

To conclude, there seems to be ample evidence from the fields of sociobiology, primate behaviour and neuroscience that ethics is not something that can be kept separate from its origins in nature. Nor are humans innately aggressive and selfish, as argued by thinkers such as Huxley. Sociobiology claims that ethical behaviour arises as an adaptation. Primate studies further put ethics in the natural world, as a quality that is not something uniquely human. Finally, neuroscience places the emphasis on the role of emotions, rather than rationality, in making ethical decisions. Rather than being an overlay on a generally unethical nature, sociobiology, primate behaviour and neuroscience supply us with evidence that the origins of ethics come from naturally evolved processes.

When looked at from a strictly sociobiological point of view, which claims that ethical behaviour is an evolutionary adaptation, naturalistic views seem to take away much of our freedom, and also our responsibility, which is necessary for a full account of ethics. This view is not supported by many contemporary evolutionary biologists, neither is it the view I will be supporting, but it remains important in the context of this dissertation. We cannot be said to be truly free if we are

genetically inclined to act a certain way. Responsibility is a concept that cannot truly work without freedom, since we cannot be held responsible for things we have no control over, such as our genes or our environment. Theories of morality such as the one proposed by Kant, contrast greatly to this view because they are based on exactly these two concepts, responsibility and freedom.

Taking into account the new knowledge about the mind offered by neuroscience, we cannot separate ethical behaviour from the physical world as Huxley tries to do. If we take the evidence from sociobiology, primate studies and neuroscience into consideration, it is clear that we cannot establish an ethics separated from its origins in the realm of nature. There might be no cosmic morality that can be discovered, no universal transcendentalist morality as proposed by Kant. In the next chapter, we will see if a naturalist approach to ethics is reductionist or even determinist, and if so what its implications would be. Furthermore, I will look at whether Kantian transcendentalism can offer a solution to this problem of determinism by placing ethics outside of the natural and rather in the noumenal world of reason. This view will then be contrasted with a naturalist view of freedom and responsibility, to discover whether it is possible to give a full account of ethics that does not rely on transcendental principles.

Implications of a Naturalist Ethics

Introduction

Having seen the effects of applying evolution to society through Social Darwinism and eugenics, one can see why Huxley would disagree with a naturalist view, and rather place ethics outside of and in opposition to nature. However, a naturalist view need not lead to unethical behaviour, as we have seen through sociobiology, the ethical behaviour of primates, as well as human neuroscience. These all supply us with evidence that ethical behaviour has a close linkage with evolution, and that humans are by nature inclined towards ethical behaviour. Still, the implications of a naturalist view of ethics lead to an undermining of human rationality, as if our behaviour is guided by a combination of our genes and the environment we are raised in, rather than by our own free will.

To deal with these implications it is necessary to focus on the role of responsibility and freedom and how it links to ethics. For us to be able to act ethically, we need to be able to claim our actions as our own, that is, be able to take responsibility for them. Without freedom, however, determinism holds sway and humans cannot be held accountable for their actions. If we cannot be held accountable for our actions, there can be no distinction between what is considered ethical and what not, since truly ethical behaviour relies on the freedom of being able judge what constitutes right and wrong, and on being able to act on this distinction.

Determinism, especially biological determinism, will be investigated, because if we were to take the view that we are only a product of our genes and environment, many views of ethics, especially Kant's moral philosophy which requires freedom to account for responsibility, will be discredited. Indeterminism will also be looked at, to see if it can provide a plausible alternative to determinism and its consequences for freedom and responsibility.

Immanuel Kant will then be utilised to show how the concepts of reason and freedom leaves open the possibility for a non-deterministic ethics. He situates ethics outside of the natural world of cause and effect, and so overcomes the problem of biological determinism. I find Kantian ethics is highly problematic since it relies on a concept of will and reason wholly exempt from any worldly influences. Most accounts of ethical action today recognise the fact that context and socialization cannot be disregarded and have a profound impact on ethical decision making and action. Next, a more biological, scientific account of freedom will be given, which is strongly tied to the body and developed through evolution as an adaptation. This naturalist view of freedom will then be utilised to critique the Kantian view of freedom. Finally, consciousness, as an evolutionary adaptation will be looked at from a neuroscientific point of view, to determine the role it plays in freedom and responsibility, and therefore also its role in ethical behaviour.

Biological Determinism

Biological determinism rejects freedom, and claims that all choices are caused by previous events that we have no control over. . Freedom can be defined as “the ability of a person to produce (their) own conceptions, to generate alternative and conflicting conceptions, to think and value in terms of multiple perspectives, and to define one’s identity and (their) relation to others on the basis of these self-generating conceptions of the world” (Delgado 1983:358). For Descartes, you are free only if, in the exact same identical circumstance, you could have acted differently (Koch 2012:147), whereas Frankfurt distinguishes between freedom of action and freedom of the will, and claims that we can be free in terms of the will even if we are not free to have acted differently (Norris 2010:200).

I will further limit this definition to that of ethical freedom, which consists of having the capacity to distinguish between and to pursue the good and avoid the bad. To be ethically free requires all these different conceptions of freedom. This is where it becomes important to look at determinism, and in the context of this investigation especially biological determinism, which

holds that our actions are not freely chosen but rather determined by factors outside of our control.

Biological determinism has “come to be a code word for forms of behaviour that unfold along a fixed path and cannot be significantly altered” (Goldsmith 1991:72). Biological determinism is basically the idea that we are forced to do what our genes and our environments dictate. This sees biology as a type of destiny that we have little or no control over. The following section will consider the evidence from evolutionary science, as well as from neuroscience, that substantiates such a view. Once the evidence has been taken into consideration, one can discover what this would mean for an ethics that requires freedom and responsibility.

Evidence from evolution and neuroscience

The human genome project began in 1988, with the goals of sequencing, mapping, as well as diagnosing the role of genes (Peters 1997:3). The human genome project has since then been completed, and has given us much new information of the role of genes and their expression in people. Research has been done that have found correlations between genes and o schizophrenia, alcoholism, depression, sexual orientation as well as to what level people can progress in education (Buchen 2012:2). This does not provide a solid case for biological determinism, but can be regarded as evidence in favour of it.

DNA sequencing rates are growing exponentially and scientists will soon have complete genetic codes, which could lead to new discoveries concerning the extent to which genes influence our behaviour, on the one hand, and the environment, on the other. The combined effects of genes and environment are already being used in cancer research (Brockman 2011:16-17), and can possibly lead to the discovery of the influence of these factors in other areas such as psychiatry. Needless to say, if both genes and the environment can be taken account of, it could lead to behaviour becoming more predictable and so determinable, though this would depend on a

variety of factors. It is already confirmed that genes have an influence on us. Biological determinism states that if we could take into account all possible causes and their effects, we should be able to predict behaviour. Even though this would be very unlikely, or perhaps impossible to prove, just because it is not verifiable does not make it false. If accurate and verifiable predictions can in fact be made, this strengthens the argument for biological determinism.

There is a large amount of evidence from neuroscience that provides support for this deterministic view. Humans are, in the biological sense, physical beings, and so are our brain states. Goldsmith tells us that all behaviour is dependent on the nervous system. “More precisely, behaviour is determined by the microarchitecture of the nervous system- by an enormous number of specific functional connections between nerve cells that have different shapes and that communicate with one another using different chemical messengers” (1991:75). These nerve cells are subject to the same causes and effects as the rest of the universe. Even if we cannot predict outcomes, it does not mean that these physical brain processes are not subjected to the principle of causality. Especially with new technology made available to us, such as new imaging techniques to see the brain as it functions, we gain more and more new information about how our brains work. This has enabled us not only to find and observe the mechanics of rage, violence and misperception, but even allows us to see certain types of brain functioning present in even more complex qualities like kindness, heartlessness, and altruism (Carter 1198: 1).

The most important neuroscientific discovery in regards to this study, and especially in relation to determinism, relates to the study of volition. This involves decisions of whether to act, what action to perform, and when to perform this action. “Neuroscientific accounts of voluntary action may inform debates about the nature of individual responsibility” (Haggard 2008:934), and they therefore also relate to the nature of freedom and the possibility of ethical behaviour.

Voluntary actions, according to a neuroscientific account, are preceded by a wave of activity called the Readiness Potential, originally confirmed by H.H. Kornhuber in 1964 (Deecke *et al* 1969:158). Benjamin Libet, a neuropsychologist at University of California confirmed this in an experiment done in the early 1980s: “(t)he brain acts before the mind decides. Electrical signals in the brain precede the conscious decision to move by at least half a second, and often by much longer” (Koch 2012:27). This fact has led to the suggestion that what is called the subjective experience of freedom is an illusion and nothing more. Our actions have been decided by unconscious mental processes before we are even conscious of the intention to act in a certain way (Soon *et al* 2008: 543).

With regards to the Readiness Potential, experiments have been done to rule out any type of unspecific preparatory activation (*ibid.*, p. 543). If this were the case, it would not work as an argument for biological determinism, since unspecific preparatory activation could imply that choices are not decided beforehand by unconscious mental processes. By studying two particular brain regions, researchers could accurately predict whether the test subject was about to choose the left or right hand response to a certain task, before the subject was aware of deciding so consciously. This prediction could be made up to 10 seconds before the subjects were conscious of their decision (*ibid.*, p. 544). This supports a strong thesis of determinism.

However, there are arguments posed against the Readiness Potential and its implied determinism. Hertzberg, a Philosophy Professor at Abo Akademi University, claims that Libet’s argument rests on faulty assumptions. Firstly, the assumption that an action can be fully voluntary even when it is performed without reason or motive; and secondly, that there are grounds for singling out a neurological occurrence as the cause of our voluntary actions (Hertzberg 2005:10). I will look at both of these assumptions, as well as the arguments against them.

In the Libet experiment, the test subject has no particular reason to choose one action over another, like choosing to use their left or right hands to perform a simple task. There “is no

motivating force in operation, driving the agent to do one thing rather than another” (ibid., p. 10). I will argue that an action that is performed without reason or motive, while free in a sense, is not concerned with the type of freedom necessary for ethical deliberation, and therefore cannot claim to lead to a deterministic account of ethical deliberations.

To do this, I will distinguish between two types of freedom, the freedom of indifference and what we can call ‘free will proper’. Freedom of indifference is described as the “freedom to choose amongst options that are indistinguishable” (Schlosser 2014:8). This type of freedom is the type inspected by the Libet experiments, where the choices are made between moving the left and right hand, and there is neither reason nor consequence for choosing one over the other. We can compare this with free will proper: the “freedom to choose and act on the basis of reasons” (ibid., p. 9). In this definition, a fully voluntary act does not imply that it is performed without reason or motive. Rather “...only intentional actions can be properly free...intentional action is best explained in terms of acting for reasons” (ibid., p. 8). If we follow this reasoning, ethical decisions fall under free will proper. In ethics, there is a motive, or reason behind decisions, which can broadly be defined as aiming to promote good and avoid bad actions, or to act based on feelings of empathy or interrelatedness.

The second problem with the Libet experiments is that there is no ground for singling out some neurological occurrence as constituting the initiation of our voluntary actions (Hertzberg 2005:15) “The only reason for singling out this particular charge (process leading up to movement, readiness potential) as interesting, it seems, is that it immediately precedes the agent’s reported decision to act” (ibid., p. 13). “We argue that what looks like a pre-conscious process may not in fact reflect a decision at all. It only looks that way because of the nature of spontaneous brain activity” (Ananthaswamy 2012:10). In other words, Hertzberg relies on the argument that two sequential incidents in time do not necessarily imply a causal relation between them.

Influence on ethics

Having seen that there is as yet no conclusive evidence for biological determinism from the Readiness Potential findings from neuroscience, we can still investigate what this view would imply for ethics. To determine this influence, Richards (2000:131) sets out the following argument: if research shows that men are genetically inclined to polygamy, we should not blame them for philandering. In this argument there is also the implied premise that people should not be blamed for what they are genetically inclined to do. One can question why one should believe the implied premise. A person cannot be held responsible for their genes, just as a person cannot be held accountable for what they cannot control. Yet, at the same time, there are men who fight this inclination, which indicates that men are influenced by their genes but not determined by them. This type of argument, therefore, is not valid to justify genetic determinism.

One alternative posed to genetic determinism is the blank slate theory of human nature. While this view is refuted by evolutionary science, since it claims experience is the only basis for knowledge, it is useful to look at to discover whether it can account for ethical behaviour, and also because of its contrast to Kantian categories of mind, as discussed later. Blank slate theory is the view originally proposed by the empiricism of the ancient Stoics, such as Zeno. This idea was updated by modern empiricists such as John Locke, who used the expression ‘white paper’ (*tabula rasa*). This idea holds that when one is born the mind is an empty slate that is developed and changed by experiences impressed upon it. These experiences are obtained from our specific situations and are largely influenced by the environment (cultural or otherwise) we are exposed to.

The blank slate view seems to solve one of the problems of genetic determinism, since choices can be made independently of biological factors that we have no control over. However, the blank slate view has been discredited, since it goes against much of what has been proven in science, especially that our genes can and do influence our behaviour. For example, in 1993 scientists in the Netherlands found a genetic marker for violence in humans (Peters 1997:19).

Even if we do accept the blank slate view, we are not in control of our cultural conditioning, or the experiences that leave an impact on us. This is similar to the biological determinist case, which also takes the environment (cultural or otherwise) into consideration, but neglects the genetic aspects of human behaviour. With both biological determinism and blank slate theory we have no control over the circumstances that influence us.

If one looks at the previous argument that men are by nature inclined to polygamy, and one accepts that one cannot be blamed for what one has no control over, the blank slate view raises the same issue in terms of responsibility. If someone has grown up in an environment that encourages polygamy, over which they had no control, they cannot be held responsible or be blamed for this action. However, just as the case with genetic determinism, many people can and do overcome environmental factors. For the purposes of this section, however, the focus of this example is to demonstrate that the blank slate view of the human mind cannot offer us an alternative account of freedom from that proposed by genetic determinism. Both are simplified arguments that claim behaviour relies only on genes or environment, and I will take more factors into consideration later, when I argue that there are alternative accounts of freedom, which have biological components, but do not lead to determinism.

We conclude then that the blank slate view does not solve the problem of determinism, as it involves factors that we have no control over, just as in the case of biological determinism. Either way, whether culture or genes influence our behaviour, this does not solve the problem of determinism. It seems that biological determinism in itself is not the real problem, but rather determinism simply based on causality, where an action is caused by previous determining factors, whether genetically, environmentally or culturally effected (Richards 2000:131).

Since determinism does not leave open the possibility for ethical behaviour, perhaps its opposite, indeterminism can. Indeterminism is the idea that decisions are not dependant on previous causes and are uninfluenced by previous experience. Indeterminism holds, unlike determinism, that

future events are in principle unpredictable, there is no cause and effect to be predicted since causality does not apply to our decisions. Yet indeterminism does not solve the problem that determinism places upon freedom, because it does not allow for choice and responsibility (ibid., p. 139), and our actions happen to us accidentally. As with determinism, indeterminism cannot account for ethical freedom, since this requires the ability to choose between what constitutes good and bad based on *reasons*. Since indeterminism claims there are no reasons, or causes, behind our actions it cannot supply an account of ethical freedom. To deny that human actions are initiated by causes means that we cannot be said to cause our actions and therefore take responsibility for them, a necessary requisite for ethical behaviour.

Indeterminism, then, just like determinism, cannot account for human freedom. There are philosophical arguments against biological determinism, but I will focus on the arguments generated from within biology itself. One can argue that there is not one specific gene for character traits; rather most phenotypic qualities rely on the interaction of many different genes and the role of environmental factors.

While genes do not necessarily tie us down in a deterministic way, experiments such as those done on the Readiness Potential seem to imply that our volition is not our own. If we cannot make our own conscious decisions we cannot be said to be free, which is a necessary condition for ethics. The Readiness Potential tests done so far, however, have been made with regards to small, inconsequential decisions that do not need a lot of deliberation, such as moving the left or right hand. This is practical in an experimental setting because there are relatively fewer brain regions involved in simple tasks, and the experiment is therefore easier to monitor and behaviour easier to predict. Ethical decisions, however, involve reasons for and against certain actions, based on considerations of what the motivations as well as the consequences would be. While choosing between which hand to use will have no notable consequences, ethical considerations can have consequences for both the individual and others.

We have now investigated two forms of determinism. The first is the view of biological determinism, which sees human action as the product of genetic influences, over which we have no control. The second view, exemplified by the blank slate theory, sees humans shaped by their environment and social influences that they have little control over, which also cannot account for freedom and therefore responsibility. Indeterminism does not solve the problem of freedom either. Both biological determinism and the blank slate view rely on uncontrollable external factors to explain behaviour and seem to leave no room for free will. As we have seen, however, there is no conclusive evidence for these forms of determinism, and I will propose alternatives to such views.

One such alternative is Kantian transcendentalism, because it relegates external factors to a realm separate and apart from that to which freedom belongs. It aims to overcome the limits of a materialist view of humanity, and therefore does not have the same consequences for freedom that a deterministic view has. Furthermore, it allows one to look at freedom as a naturally evolved adaptation, which does not necessarily imply determinism, even though it takes into account that we have evolved through natural causal processes.

Kantian Freedom

The work of Immanuel Kant served to synthesise modern rationalism and empiricism, and in this way he brought about a new “Copernican Revolution” by claiming that our thoughts do not conform to objects, rather objects conform to our thoughts. Kant also had a strong influence on German idealism, and is still a significant figure in modern day ethics. Kant distinguishes the phenomenal world of nature and causality from the noumenal world of freedom and reason, in that way overcoming a deterministic view of human nature. As with Huxley, Kant believes ethical principles are located outside of the natural world. In the *Critique of Pure Reason*, first published in 1781, which deals with Kant’s metaphysics and epistemology, he explains this distinction. It is necessary to look at the first critique, since his ethical principles in the *Critique of Practical Reason*, published in 1788, which deal with morality, are based on this distinction

between the phenomenal and the noumenal. We can already note here that Kant speaks of morality rather than ethics, implying that moral laws are universal.

The relevance of Kant's work within the context of the argument pursued here derives both from the fact that it represents a non-naturalistic view of morality, and it demonstrates the importance of freedom and responsibility in relation to morality. He supplies us with a transcendental view of morality, rationality and intentionality. For Kant, transcendentalism offered a 'cure' for the problem of responsibility and determinism. First, we will discuss Kant's view of freedom, both in the phenomenal and noumenal realms. Subsequently, we will consider the link between freedom and morality, and finally, we will look at how this leads to the establishment of a universal moral 'ought' that lies outside of the phenomenal world.

Freedom and the Phenomenal World

Kant distinguishes between the phenomenal and noumenal world. First, we can examine the phenomenal side. People, as biological entities, are "a phenomenon of the sensuous world, and at the same time, therefore, a natural cause, the causality of which must be regulated by natural laws. As such, (humans) must possess an empirical character, like all other natural phenomena" (Kant 1934:323). When this statement is looked at in relation to determinism, we see that Kant agrees that, as a phenomenon, humans are subject to the same causes and empirical laws that govern the rest of nature. As phenomenal beings then, humans are also subject to deterministic processes such as cause and effect.

In the phenomenal world there is no room for freedom. The universe is governed by cause and effect, and under these circumstances there can be no such thing as freedom. Without freedom morality would cease to have any meaning, since it will no longer be possible to hold individuals accountable for their actions. If we view freedom as *only* a phenomenon, then "freedom must be rejected as a vain and impossible conception" (Kant 1898:189). Kant creates room for freedom

and morality however, by his distinction between the noumenal and phenomenal worlds. For Kant, to overcome the problem of determinism is to remove freedom from the phenomenal world. While our bodies are a part of the world and are subject to the same forces that function in nature, our ability to reason transcends the physical, natural world. As a part of nature, people are subjected to determinism. It is thus the noumenal world that can provide the freedom that is necessary for morality.

Freedom and the Noumenal World

For Kant, humans are not only phenomenal beings, subject to the same conditions of the world of nature, but also noumenal beings, to a certain extent exempt from these same forces. A person,

“to whom nature reveals herself only through sense, cognises himself not only by his senses, but also through pure apperception; and this in actions and internal determinations, which he cannot regard as sensuous impressions. He is thus to himself, on the one hand, a phenomenon, but on the other hand, in respect of certain faculties, a purely intelligible object- intelligible, because its action cannot be ascribed to sensuous receptivity” (1934: 323).

The noumenal realm is not constrained by the same laws that govern the phenomenal world, and this is because these laws are not really ‘out there’ governing the world, but rather categories of the mind, which organize the way in which we perceive the world, according to Kant. For him, the categories are necessary transcendental elements of all possible knowledge. The phenomenal world is structured by the *a priori* categories of quantity, quality, relation and modality. These are not independent aspects of the phenomenal world, but rather categories of how we are able to understand the world. Things in the sensuous world are mere phenomena. Freedom, on the other hand, is noumenal, and not subject to space and time. The concept of causality, which seems to imply determinism, is only applicable to phenomena. Thus, although freedom seems impossible within the phenomenal realm because phenomena are subject to causality, causality does not have any bearing on the noumenal realm.

Kant's solution to the problem of determinism thus lies in the will. The will can be defined as the ability to bring about objects in accordance with ideas, using reasoning to bring about new states of affairs (Andersen 1987:101-102). Therefore, freedom cannot be discovered through experience, but rather is located in the noumenal world, independent of physical conditions. For Kant freedom of the will is precisely the independence from the world of causation, and the ability to make a decision independent of causality (Kant 1898: 65).

For Kant then, freedom “in the *practical sense*, is the independence of the will of *coercion* by sensuous impulses. A will is *sensuous*, in so far as it is *pathologically affected* (by sensuous impulses)... (yet) sensuousness does not necessitate action, a faculty existing in (a person) of self-determination, independently of all sensuous coercion” (1934:317). While our inclinations, wishes, instincts and other sensuous impulses do have an influence on us, the will gives us the freedom of choosing whether or not to act on these impulses.

Freedom and Morality

Now that we have seen how Kant accounts for the possibility of freedom through the will, in the noumenal realm of reason separated from the natural world, we realise that he leaves open the possibility for purely moral action that is not based on causality. For Kant, praise and blame cannot be directed at automata. Thus there is the assumption that others are also free to choose (Smith 1991:42). “Consequently as practical reason or as the will of a rational being it (the subject) must regard itself as free, that is to say, the will of such a being cannot be a will of its own except under the idea of freedom. This idea must therefore in a practical point of view be ascribed to every rational being” (Kant 1898:67). The will, through which we can be regarded as free, is nothing but practical reason (ibid., p. 29). Freedom is found in the ability to reason. It is also this ability to reason that allows us to act morally. With regards to morality, then, it is important to understand the Kantian view of reason and the will. “The will is in every action a law to itself...free will and a will subject to moral laws are one and the same” (ibid., p. 66).

Only if the will is free can we have moral action, that is, morality and freedom cannot be independent of each other. While an act of free will has an empirical cause in appearance, as if caused by some preceding cause, it is never only because of this, which would still fall under a deterministic view of humanity, under the constraints of cause and effect. Rather, there is always an intelligible cause, the acting agent's obedience to the purely rational, transcendental moral law. For Kant, then, reason does not depend on cause and effect, though it may sometimes seem so. Reason is not related to the sensuous, phenomenal world (Kant 1934:327), rather the moral law leads to the concept of freedom.

He elaborates on morality as a science of pure reason, separate from the phenomenal world. "Whatever number of motives nature may present to my will...the moral ought is beyond their power to produce" (ibid., p. 324). The mere fact that people are confronted with an ethical demand is, according to Kant, an indication of the freedom of the human will. In other words, the will must be able to cause actions without itself being caused by physical factors like inclinations (Anderson 1987:103). "Therefore, the basis of obligation must not be sought in the nature of man, or in the circumstances in the world in which he is placed, but *a priori* simply in the conceptions of pure reason" (Kant 1898:4). The will, which provides us with freedom, creates this obligation as a transcendental feature of humanity.

Duty is a pure conception, and is not part of the phenomenal world. Even when we believe a particular action to have been determined by external circumstances, "we do not the less blame the offender" (Kant 1934:327). We can again take the example of men philandering. Whether they are genetically inclined to such behaviour, or have come to act in this way because of tempting circumstances, they are still held responsible for their actions. Here we can clearly see that Kantian ethics is inconsistent with determinism. A deterministic view takes away responsibility for actions because it argues that we have no choice in the matter. Kant, however, does not ignore these influences, but reasons that even under external influences we still have freedom of will and can decide to act in accordance with or against these impulses. This freedom is what allows us to be moral.

Universal Moral Laws

For Kant, morality “is totally necessary, that is, I must act in obedience to the moral law in all points,” (ibid., p. 469) and in “the general principles of morals there can be nothing uncertain, for the propositions are either utterly without meaning, or must originate solely in our rational conceptions”(ibid., p. 290). Here he states that morality can only come from reason, which is located in the noumenal world. Morality that tries to base itself in the phenomenal world cannot give us any meaningful principles. This is because, for Kant, morality that comes from the phenomenal world cannot account for freedom, and with it, reason. I will later argue against this claim in the section on naturalist ethics, and argue instead that the phenomenal world can form the basis of ethics while still accounting for freedom.

Kant’s morality is thus based on the ability to reason free from external influences, and can be universalised through the categorical imperative. Category, as referred to in the categorical imperative, is not the same as the categories of transcendental elements of all knowledge, those of quantity, quality, relation and modality. Rather, obligation comes from a command of reason, the “ought” is what makes it imperative. If the imperative is the good in itself, then it becomes categorical (Kant 1898: 30-31). This can be contrasted to a hypothetical imperative, which is an imperative that is good for a specific purpose such as happiness. All hypothetical imperatives serve as means towards a certain end, whereas the categorical imperative is always an end in itself.

The categorical imperative is as follows:

“Cans’t thou also will that thy maxim should be a universal law? If not, then it must be rejected, and that not because of a disadvantage accruing from it to myself or even to others, but because it cannot enter as a principle into possible legislation, and reason extorts from me immediate respect for such legislation” (ibid., p. 20).

It also holds that we should always treat others as an end in themselves, not just a means to something else, which would be a hypothetical imperative.

To illustrate this universal moral law, in an example given by Kant that is particularly relevant to evolutionary ethics, we can consider the example of a wealthy person who sees poverty, yet does not want to assist the poor in any way (ibid., p. 41). According to the categorical imperative, we could never make this a universal maxim, it can never become a universal law that no one need ever help someone else who is in dire need. While we could ignore wretchedness, we could not will our inaction to be a universal law. This particular type of moral thinking is precisely the opposite of Social Darwinist views. Eugenics would prescribe not helping others who are suffering, since it is considered ethical to let the best possible society emerge, and those who cannot support themselves will prevent a stronger society from emerging. Yet, if we take a Kantian view on the subject, we can see it would not do as a universal rule, since it treats people only as a means and not as ends in themselves. Therefore, a practice such as social Darwinism cannot be considered moral. From a Kantian perspective, the practice of eugenics, in the form of withholding aid from those who need it, would be incompatible with the categorical imperative.

To conclude, we can see here that Kant's solution to the problem of freedom rests on they claim that humans are a part of nature in the world of phenomena, yet at the same time moral concerns derive from the realm of transcendental reason, above and independent of the natural world. Because of this distinction, freedom and responsibility become possible in the realm of reason separated from nature, and morality can exist. This morality is universal, as any rational being would come to the same moral laws by following the categorical imperative and treating others as ends in themselves, not only as a means towards achieving something else. Reason as a transcendental principle can give us morality independent of the physical world.

In opposition to this view, however, scientific research shows that reason is not independent of the phenomenal world, and I will argue that it can provide us with an alternative view of freedom

through evolutionary processes. This naturalist freedom does not rely on a transcendental principle, but rather acknowledges the influence of naturally evolved freedom. Since we have seen, through the work of Kant, that freedom is a necessity for ethics, a naturalist view must also be able to account for this without slipping into determinism.

Naturalist Ethics and Freedom

Now that we have discussed freedom and its links with responsibility from a Kantian point of view, which holds that reason, and therefore freedom and responsibility, lie outside of the natural, phenomenal world, we can now investigate whether naturalist views can also supply us with the freedom necessary for ethics. A naturalist view of freedom gives us a different conception of freedom from a Kantian one. It sees freedom as tied to the body, as a part of the natural world, and inseparable from it. Instead of being a transcendental feature of humanity, freedom is dependent on the regular functioning of the body and brain. Freedom can arise as an adaptation, created through the process of evolution and connected to the sensuous world. The recent advances in psychophysiology have modified the traditional concepts of personal freedom, as well as responsibility (Delgado 1983:356), and strongly contrast with Kantian ideas of freedom.

Body Relatedness

According to the naturalist view of freedom, human beings are not born free. They do, however, have the potential for freedom (ibid., p. 362). The basic argument holds that we need sensory input from the outside world to acquire freedom and that freedom is related to the normality of consciousness, and therefore to normal brain functions, which develop over time.

In this view, freedom is tied to mental activities, and to have the possibility of freedom we require the correct functioning of the physical attributes that are necessary for these activities.

These include the ability to receive information about the situations we find ourselves in, the ability to process the information we have received, and to put the manifestations of this process, such as emotional and behavioural responses, into practice in the environment (ibid., p. 364). If all this, the reception, processing and application of information are necessary for freedom, then it is inescapably related to the brain being able to function properly. We need to be able to receive information from the outside world in order to make decisions pertaining to context and action. If we cannot process this received information, again we cannot be said to be free to make a decision about it. Lastly, even if we can receive information and process it, but we cannot act on our decisions, we can also not be considered free. “The organ of freedom...is the brain, and normality of its functions is an essential requirement for the existence of a free mind” (ibid., p. 364). To be free then, depends greatly on inborn, evolutionarily developed mechanisms such as regular brain functioning, as will be argued in the next section.

Freedom as Adaptation

The brain and its proper functioning are then, according to the naturalist scientific view, necessary for freedom. To be free we need the ability to receive, process and respond to external stimuli, which is impossible without the correct functioning of the physical attributes that are necessary for these activities. Even though freedom located in the physical body has the potential to become over-determined, this does not have to be the case.

“The developmental process does not tie down every conceivable synapse in a rigid and unalterable form, but leaves considerable scope for ongoing readjustment in the adult. At the same time it seems equally true that certain kinds of competence - perceptual, linguistic, social - do need to develop on schedule, or the deleterious consequences are reversed with difficulty, if at all. This is because the capacity for learning, like the development of body form, is subject to some genetic constraints” (Goldsmith 1991:85).

It seems that free will is made possible (though not guaranteed) by the degree of flexibility or plasticity of the brain, which is in turn genetically determined. While we have to learn who

people are in relation to us and how this requires us to treat them, those very learning responses are themselves evolved processes (Alexander 1982:391).

Even through this flexibility is determined by genetics, it does not lead to genetic determinism. It is exactly this flexibility that allows for learning new ways of doing things. Our genes give us free choice as an adaptation (Antonites 2010:374), and as we will argue later, it is precisely this genetic complexity that allows for ethical behaviour.

According to this line of argumentation, freedom would be directly tied to the body instead of being exempt from those forces holding sway over other earthly bodies. One can also argue that the ability for free action has use-value in evolutionary terms. “Freedom is a *general purpose*, cerebral *mechanism* which may be applied in many different ways. It is a *technology* to deal with brain inputs, throughputs and outputs, increasing the number and flexibility of options” (Delgado 1983:371). This presents us with a very different view of freedom than Kant’s. It gives us the potential for voluntary action, which is explorative behaviour. This has clear survival value, as success can be determined by a balance of regular successful behaviour (which could be determinable) and original ways of exploring new resources, which can result in faster or better ways of achieving particular actions or goals, and in that way be very helpful as an adaptation (Haggard 2008: 940).

Finally, we can see that modern neuroscience is shifting towards a view of freedom that is based on specific brain processes, rather than being a transcendental feature of human nature, as Kant suggests (*ibid.*, p. 944). Freedom, from a naturalist scientific perspective, can evolve through natural processes, as will be argued later. It is tied to the body and dependant on the normal functioning of the brain, and evolved as it offers several benefits to the species possessing it. In the naturalist view of freedom we are free to follow our own preferences. Society and the justice system follow this pragmatic view that we can be more or less free depending on our

circumstances (Koch 2012:24). This view will now be contrasted with the Kantian conception of freedom and morality.

Implications for Kantian Freedom and Morality

Both Kant and a naturalist view of ethics, based on freedom as an adaptation, try to discover the foundations of moral conduct. Having looked at both Kantian and naturalist freedom, we can now reflect on the implications of a naturalistic view of freedom for Kantian freedom and morality. A naturalist view of freedom questions Kant's basic premise that the world is structured by our minds, compared to the evolutionary view that the mind is structured by the world. We can further note the dependence of freedom on the physical body. In Chapter 3 we discovered, in addition, that emotions have a large role to play in ethical behaviour. This stands opposed to Kant's belief that reason alone should supply the foundation of morality.

Evolutionary accounts of ethical behaviour, such as those proposed by sociobiology, also contrast with Kant's view of the categorical imperative. From a naturalist point of view, all imperatives are only hypothetical. Finally, naturalist ethics are closely tied to the physical phenomenal world, and reject the Kantian noumenal world as something above and beyond the natural.

Mind/World Connection

One of the basic principles underlying Kantian freedom and morality is that our minds are the source of all *a priori* principles, and contain the categories of quantity, quality, relation, and modality (Kant 1934:79). We can have no knowledge of the external world except through these categories, and objects in the world conform to these categories, and not the other way around. This is the basis of Kant's critical idealism. The main argument against this is that the brain is created through evolution, and that our physical state determines how we can view the world.

Our concepts of space and time, it is further argued, are part of our biology (Smith 1991: 39), and not a transcendental feature. Biology can account for how we are able to see the world (which Kant explains in terms of categories of quantity, quality, relation and modality) and for the fact that self-conscious agents are free (ibid., p. 45). Our sensory categories and forms of intuition are the outcome of organic evolution. Furthermore, the basic scientific argument holds that we need sensory input from the outside world to acquire freedom, and for this we need the proper brain functioning to receive and analyse this input. For Kant, free will is independent of empirical conditions, yet the naturalist argument claims that free will cannot exist without empirical conditions.

We find parallels here with the idealist Plato and realist Aristotle. For Plato, the Ideas were outside or transcendent (and in a sense also transcendental) to the real empirical world. Aristotle then brought the ideal, or Ideas, back to Earth and placed it within the physical biological world. For Plato, knowledge is only possible if there are absolute and changeless objects of knowledge, which he called Forms. These Forms included virtues and moral values. Only by knowing the Forms can one know what is just and what not, and these Forms are prior to experience and the senses, as are Kant's categories. For Plato "we assert that the former (opinion) address themselves to the eye, and not to the pure reason; whereas the forms address themselves to the reason, and not to the eye" (Plato 1912:228).

Aristotle, on the other hand, claims that there are no invisible and unknowable entities, such as Plato's Forms. Rather substances are the ultimate subjects for all properties, and ultimate realities/primary substances are concrete things. Properties need to belong to things, otherwise they cannot exist. Substances are not distinct from sensible objects, but rather are knowable objects (Spellman 1995:2-3). This opposition between Plato and Aristotle is analogous to the difference between Kantian freedom and reason, on the one side, and the world of biological evolution, on the other. Evolutionary and neurobiological sciences have drawn the Kantian transcendental into the concrete biological world, just as Aristotle draws Plato's Forms into the world of substances.

Kant then puts freedom first and the world second, whereas evolution puts nature first and freedom second. Kant starts from the inside, and uses subjectivity to form the world around it through *a priori* categories. Evolution, on the other hand, starts from the outside, from the natural world, which then gives us the inside world of subjectivity. In Kant's case, freedom is primary and gives us the possibility of an outside world, whereas evolution tells us freedom is secondary, having developed from the natural world. The core of Kantian philosophy is overtaken by evolutionary biology, since "our perceptions and our thought process are determined by the world of nature" (ibid., p. 40), not through *a priori* categories.

Yet, at the same, time Kantian critical idealism still holds some truth. Even though the external world shaped the mind through evolution, at the same time we see the world subjectively, and our view and understanding of the world is to a large extent dependant on how we are able to see it. We can still only observe the world through subjectivity, and in this sense the world still conforms to how we are able to see it. Not only does our mind conform to the world through evolution, the world also conforms to our evolutionarily adapted minds. In understanding our world, we must work from individual consciousness, we cannot "jump out of our skins" (ibid., p. 47) and experience the world from outside of our own consciousness. In this sense, *a priori* principles still exist, but not independently of empirical conditions.

Role of Emotions

As we have seen in the previous chapter, emotions also have a part to play in ethical considerations, not only reason as Kant suggests. For Kant, truly moral decisions can only be based on reason. Emotions such as pity, empathy, sympathy and compassion arise spontaneously, involuntarily and without any rational choice. For Kant, emotions are always short-lived and fleeting, and therefore cannot supply us with a universal morality. Morality comes only from duty and not from emotions, "since every feeling is sensible, and the motive of moral intention must be free from all sensible conditions" (Kant 1898:168).

However, today neuroscience supports the opposite argument that emotions play a large role in determining our ethical behaviour. Neuroscience reveals that when people are asked ethical questions, the emotional centres of their brains are activated (Lanteri *et al* 2008:793). A Kantian would dispute this by arguing that, even if an emotional experience is attached to a moral choice, this does not mean that it is relevant to the moral character of the choice made. However, recent work in cognitive and neurobiological sciences provide overwhelming evidence for a link between emotions and ethics (Prinz 2006:30), especially if we take mirror neurons into consideration, and supports the view that we are naturally and automatically inclined to have empathy and understanding for others, and that this is the natural basis for ethical behaviour.

Reason may in many cases be used in making ethical decisions, but emotions evidently play a role in which actions we end up choosing. Similarly, disgust for unethical behaviour may rely as much on simple emotional processes as on complex thoughts, and on some primitive instincts (Antonites 2010:367). We also know that “ethics, beliefs, morality, the qualities that make us human, and all the values we cherish, are strongly influenced by the (brain) regions that already existed in the reptile brain millions of years ago” (Gruter 1982:316).

Neuroscience studies mirror neurons, which play a large role in empathy and understanding of others, to provide a natural explanation of ethical behaviour. Mirror neurons are the basis of not only mimicry, but more importantly, empathy (Carter 2010:232). Closeness and an understanding of the feelings and needs of others is a central need for any animal that needs cooperation for survival. When we observe emotions in others, we have immediate and automatic (albeit partial) access to what others are thinking and feeling. From this we can see that our emotions play a definite role in our ethical decisions, and are often the initial cause of ethical actions.

From these results it follows that ethical decisions rely heavily on emotions. Many of our ethical decisions are made intuitively and the explanation for them only comes afterwards. Ethical behaviour is “driven largely by social-emotional dispositions built on those we inherited from

our primate ancestors” (Green & Haidt 2002:571). Based on the aforementioned support from neuroscience, it may be argued that ethical behaviour relies as much, or even more on emotions than on rationality. Especially if we take mirror neurons into account, it further strengthens the argument that ethics are also reliant on the proper functioning of the brain.

Naturalist Ethics

Kantian morality also differs in many aspects from a naturalistic view of ethics, as something developed through evolutionary processes. Evolutionary accounts of ethics pose the argument that ethical behaviour arose as an adaptation because it offers some benefit to the species possessing it, as shown in the previous chapter. Sociobiology, in particular, claims that people are naturally inclined towards ethical behaviour, though mostly towards our own kin and close community. For Kant, however, morality has neither to do with the natural world, nor with behaviour that can be considered useful to the continuation of life. The biggest distinction here is that naturalist ethics would always be seen as hypothetical imperatives, rather than categorical imperatives. Further, for Kant, the empirical cannot supply us with the moral, which is precisely what a naturalist view of ethics tries to confirm.

For Kant moral decisions rest on the categorical imperative, i.e. doing only what you would will that it becomes a universal law. He acknowledges though that unfaithfulness to this maxim can be very beneficial and useful. For example, we would not be able to make the act of lying a universal law, yet lying in certain situations can be very useful. Yet, for him morality is not about usefulness (Kant 1898:19). Sociobiology, however, claims that ethical behaviour arose because it is useful to the continuation of life, and is based on care, interrelatedness and empathy. One could claim that a naturalist view of ethics is always based on a hypothetical imperative, since the focus is on the means towards some ends, and not the ends in themselves as with the categorical imperative. Naturalist ethical decisions can be seen as always conditional, and reliant on something other than the will or universal law. Ethical behaviour is a means; in this case, a

means to success in the struggle for life, compared to the Kantian ideal of treating people as an end in themselves only.

Kant furthermore insists that the ethical cannot be derived from the empirical. Morality comes from duty, not natural causes or inclinations. The universal law gives the will its principle, free from any other outside influences (*ibid.*, p. 18). This is precisely the opposite of what a naturalist view of ethics, supported by sociobiology, primate studies, and neuroscience claims. As mentioned in the previous chapter, sociobiology shows us how the natural process of evolution can lead to ethical behaviour, especially towards relatives, for example, genes for familial altruism will encourage more of the same genes being replicated, as we saw with Dawkins' selfish gene hypothesis (Dawkins 2006:91). Ethical behaviour in primates, in the form of caring, empathy and interrelatedness further shows us that ethics have evolved through physical processes and is not a transcendental feature of humanity. Rather neuroscience reveals that the brain, especially the effects of mirror neurons, gives us a natural tendency to sympathy and compassion, which can lead to ethical behaviour.

From the above I conclude that Kantian accounts of freedom and responsibility cannot hold when compared to evolutionary science, since Kant argues that morality is separate from emotions and the phenomenal world, but there are strong arguments against Kant's view posed by sociobiology, primate studies and neuroscience. These arguments hold that ethical behaviour developed from natural processes, and are not only dependant only on reason, but emotions as well. Finally, Kantian morality is also challenged in that ethical decisions, in the natural world, are mostly hypothetical, rather than categorical imperatives, and are strongly tied to the empirical world.

This, however, does not mean freedom and ethics are impossible in the phenomenal world. By looking at a naturalist view of ethics we have already seen that freedom could have evolved through natural processes because of its survival value, and that the brain is flexible enough to

allow for choice. By looking at the role of consciousness, as a natural phenomenon, we can further strengthen the argument for naturalist freedom, and consider whether this ability for conscious thought also gives us the ability to act ethically.

Consciousness

We have seen that a Kantian view of freedom is not the only one that can give a full account of freedom, reason and ethics. Rather it appears from our discussion that the natural world can also explain many ethical questions and what these involve. We can now consider whether self-consciousness, as an evolutionarily developed adaptation, provides us with the possibility for ethics. Self-consciousness is a difficult phenomenon to explain scientifically, yet we cannot ignore its potential role simply because it cannot be defined in objective materialistic terms. There seems to be scientific reasons why self-consciousness would be more beneficial to the survival of the individual than automatic unconscious responses, as shown especially in the work of Antonio Damasio (2010), which I will look at shortly.

To discuss consciousness and self-consciousness, it is first necessary to distinguish between the two. Consciousness can be described as awareness of one's own body and environment, whereas self-consciousness is the recognition of that consciousness. Consciousness is to think; self-consciousness is to realise that one is a thinking being (Ferris 2012:28). Thomas Nagel describes this somewhat differently, and makes the distinction between phenomenal and creature consciousness. For Nagel, creature-consciousness is the property which animals have when they are awake, or when they are aware of properties of their environments or body. Phenomenal consciousness, on the other hand, is a "property which mental states have when it is *like something* to undergo them" (Nagel in Carruthers 2001:61). For example, with creature-consciousness I could experience hunger, and with phenomenal consciousness there is a subjective dimension where I experience what it is *like* to be a being that experiences hunger.

Within the context of the argument being pursued here, I will make the distinction between consciousness and self-consciousness. Consciousness relates to Nagel's idea of creature consciousness, to be aware of oneself and the environment, a property which humans share with many animals. Self-consciousness, however, is more related to Nagel's phenomenal consciousness, and entails being aware of the fact that we are conscious, and aware of the fact that one is a thinking being.

When looking at freedom as a useful adaptation, one can already see the links with self-consciousness. To be free requires that one is aware of oneself and aware of the possibility of choosing between different options. Consciousness and self-consciousness are difficult concepts to explain as an adaptation, but through the work of Antonio Damasio, a prominent neuroscientist, psychologist and neurologist, we can see how self-consciousness can arise as an adaptation. After having shown how self-consciousness has evolved and the benefits it offers to survival, I will then consider to what extent it creates the possibility for ethical action in the next section.

Self-consciousness as Adaptation

Evolution theory offers strong evidence for the development of consciousness and self-consciousness, especially since it is not only found in humans. *The Cambridge Declaration of Consciousness in Non-Human Animals*, created by a prominent international group of cognitive neuroscientists, neuropharmacologists, neurophysiologists, neuroanatomists and computational neuroscientists, states:

“We declare the following: “The absence of a neocortex does not appear to preclude an organism from experiencing affective states. Convergent evidence indicates that non-human animals have the neuroanatomical, neurochemical, and neurophysiological substrates of conscious states along with the capacity to exhibit intentional behaviours. Consequently, the weight of evidence indicates that humans are not unique in possessing the neurological substrates that generate consciousness. Non-human animals, including

all mammals and birds, and many other creatures, including octopuses, also possess these neurological substrates” (Low 2012:1)

Furthermore, many animals do not only have consciousness, but self-consciousness as well. “Serious scientific tests have concluded that elephants, dolphins, whales, chimpanzees, gorillas, orang-utans and probably dogs have a sense of self and most definitely of life and death” (Antonites 2010:184). Consciousnesses as well as self-consciousness thus seem to offer some benefit as an adaptation, although it has also been proposed that self-consciousness arose as a side-effect of other developments, as we shall see shortly.

There are several hypotheses of why self-consciousness would have arisen as an adaptation. “It has been argued that people experience consciousness because they are aware of their own causal actions” (Wolpert 2006: 83), and Richard Dawkins suggests that “perhaps consciousness arises when the brain’s simulation of the world becomes so complete that it must include a model of itself” (2006:59). These views conceive of consciousness as a by-product of other processes and not as something useful to the continuation of life. They also leave no room for an ethics that requires both freedom and reason to be complete, such as Kantian morality.

One of the most important hypotheses in regards to freedom is that the human mind assumes a causal path from conscious intention to action, in order to explain the correlation between them. It is argued that this correlation happens because conscious intention, as well as action, is driven by the same cause: the brain’s preparation for action. An even stronger view holds that conscious intention is not a genuine mental state at all, but rather an inference that is inserted into the stream of consciousness retrospectively, as the hypothetical cause of our thoughts or actions (Haggard 2008:941). This hypothesis basically holds that actions are performed without any conscious knowledge of it. The feeling of intention only comes after the act, which gives us the feeling of having control over our choices, even if we do not.

This can lead to the idea that self-conscious experience is a product, rather than a cause of brain activity (Carter 1998:314). If this is the case, self-consciousness might give us the feeling of autonomy and freedom after an act or decision, but this freedom does not exist in reality. Rather, it is only after we have acted in a deterministic way that we become aware of this action and attribute it to ourselves. This argument is supported by studies of the Readiness Potential, which claim that our decisions are made long before we are conscious of them. Yet, as mentioned earlier, the Readiness Potential experiments only study very simple decisions that do not have any consequences one way or the other, and is not relevant for more complex ethical decisions.

Competing views on self-consciousness claim that it is not just a side-effect of being aware of our own causal action. Although some qualities do arise as by-products of other evolutionary processes, self-consciousness is beneficial enough to the continuation of life that it most likely arose as an adaptation, and there is strong evidence from evolutionary science supporting this view. This is the argument I will be pursuing. I will argue that being self-conscious and aware of oneself offers various benefits to the individual equipped with it. It has even been suggested that self-consciousness is not only an adaptation, “but a wonderfully complex store of adaptability” (Banton 1961: xvi).

One argument for consciousness as a useful adaptation is that as the environment becomes more complex, our minds need to become more complex too. A complex environment, along with the need to be able to read signs (where something is representative of something else) would favour presence of mind (Shapiro 2001: 93). The benefit of being aware of oneself is an enhanced capacity for learning. When one has a memory of consequences, this can lead to decisions of what to do *next* (Carter 1998: 315). If this is the case we are not naturally determined, but also change through our experiences and learn new responses. According to Gribbin, however, this capacity for adaptive change can be attributed to natural flexibility (Gribbin 1993: 208). In other words, even though we have freedom in changing our responses, this does not happen independently from natural evolutionary processes.

Antonio Damasio, in his recent book *Self Comes to Mind: Constructing the Conscious Brain*, provides a strong case for how self-consciousness would offer a benefit to the individual that possesses it. Damasio argues that self-consciousness prevailed because it “contributed significantly to the survival of the species so equipped” (2010:267). It leads to the optimisation of responses to environmental conditions. Furthermore, it serves to orientate us towards the environment as well as supplying a motivation for the concern for oneself. If one adds memory, reasoning and language, this can lead to planning and deliberation.

There is, of course, the argument that as long as a performed action is valuable, there is no need to consciously decide upon a course of action, or even be consciously aware of these actions. Damasio takes the example of the nematode *C. Elegans*. It feeds alone when it is safe, and in groups when a threat is detected. While this may seem like intelligent conscious action, as well as inter-individual cooperation and altruism, the nematode has a very simple brain and no self-awareness (ibid., p. 57). The action, however, is very valuable to survival, and it does not need to be self-conscious to act in this way.

Self-conscious animals, on the other hand, live in much more complex environments and cannot only rely on such simple deterministic actions. For Damasio, self-consciousness becomes valuable because all animals are trying to maintain an optimal state. A simple example is that of hunger. As soon as we are aware of it we know we should eat, and that is the “fundamental advantage of consciousness.... (it) derives from improving life regulation in ever more complex environments” (ibid., p. 57). “Brains evolved as devices that could improve the business of *sensing, deciding* and *moving* and run it in more and more effective and differentiated manner” (ibid., p. 50). It is exactly the ability to be aware of ourselves that make us able to sense, decide and move more effectively, and gives us the freedom to do this in different and better ways.

Having self-consciousness and being aware of ourselves experiencing certain states

“has improved adaptability and allowed the beneficiaries to create novel solutions to the problems of life and survival, in virtually any conceivable environment, anywhere on earth, up in the air and in outer space, under the water, in deserts and on mountains. We have evolved to *adapt* to a large number of niches and are able to *learn* to adapt to an even greater number” (ibid., p. 58).

Self-consciousness can then arise through natural processes, either as a side-effect of other processes, or more likely as an adaptation. As Damasio argues, this is because it is useful to the continuation of life, especially since it improves life regulation. This feature is what allows humans to adapt to increasingly different environments. In the following section, it will be argued that self-consciousness may potentially form the foundation of ethical behaviour, because it allows for agency and responsibility.

Ethics and Self-Consciousness

Self-consciousness can supply us with the possibility of ethics, since firstly it can be argued that self-consciousness is tied to freedom, and that it can supply us with the agency and autonomy that ethics requires. It can also offer an alternative to determinism which is located in the natural world and not reliant upon transcendental postulations. This leaves open the possibility for ethical behaviour, especially because it can account for the intentionality involved in ethical actions.

Self-consciousness, Freedom and Agency

Self-consciousness seems to be necessary for ethics, especially if we look at the ethical behaviour of primates in the previous chapter. Primates that act ethically and have concern for others have also been shown to have self-consciousness through serious scientific studies (Anonites 2010:184) such as those presented in *The Cambridge Declaration of Consciousness in*

Non-Human Animals. Further they are also aware of others having thoughts or feelings. This is confirmed in experiments such as the one mentioned in the previous chapter, where rhesus monkeys could pull a lever to receive food, which also resulted in shocking another rhesus monkey in a different cage. It concluded that most rhesus monkeys will rather starve than shock their fellows, indicating an understanding that others also have thoughts and feelings.

I will argue that if ethical behaviour requires freedom, it is precisely self-consciousness, in primates as well as humans, which allows for such freedom. “The biological argument shows that a ‘feeling’ of volitional ‘freedom’ and self-consciousness are necessarily bound together” (Smith 1991:41). If we do not have awareness of what we are thinking or doing, we also do not have the possibility to decide between alternatives (Delgado 1983:363). Without self-awareness there can be no freedom, since behaviour will be driven by factors we have not chosen in any way.

MacKay, a physicist and founder of the Department of Communication and Neuroscience at the University of Keele looks at what would happen if we were physically determined by our brain states, and were able to make accurate predictions of what our future brain states would look like: “if an individual has access to an outside prediction of his or her future choice that choice will ipso facto be affected” (Smith 1991:43). This argument states that if we knew our exact brain state at the present time we could predict our brain state at a future time. Yet, at the same time, if the individual knows his/her future brain state his/her current brain state will change, which will in turn change the future outcome. One can try to account for this fact that the knowledge of a future state will lead to a different present, and thus future state. But again, knowing this changes the present state which will again lead to a different future state. This leads to an infinite regress, which means the individual can never calculate their future brain state and therefore predict their future behaviour. While the claim that one can predict one’s actions based on knowledge of one’s brain state can be considered a contentious claim, which philosophers like Kant would deny, it serves to illustrate that even if this were the case, it would not imply determinism.

Although we cannot know what our future brain states will be without changing them with the knowledge of present brain states, this does not apply to other persons. In other words, by knowing someone *else's* brain states, one could predict *their* future brain states. Still, this argument can be used against determinist accounts, since it proves logically that it would be impossible for an individual to predict his / her own future brain states. Even if we are physically determined by our brain states, knowing this cannot lead to future determinable actions.

The aforementioned line of argumentation can thus be used to address the problem of determinism without recourse to transcendental presuppositions, since it makes prediction of future action impossible. The naturalist view can also provide us with freedom, provided that we have self-consciousness and hence are aware of our present brain states, which would furnish us with the possibility to alter them. Self-consciousness by itself might not be a sufficient condition for changing brain states, and other factors might be involved, but it is definitely a necessary condition for freedom. It seems then that the transcendental realm is not necessary to account for freedom. This leaves us with a modified view of Kantian ethics, where we can still speak of *a priori* principles, but not separated from the natural world as Kant suggests. *A priori* principles in this case would be the ways in which the naturally evolved brain allows us to experience the world through our senses, but these categories of knowledge are located in the phenomenal, not the noumenal world.

Ethics

Self-consciousness further allows for the fact that every action carries with it an intention, and that judgement relies on, or follows from, this intention. Intention in this case can refer to either directedness towards, or to aiming or planning. In the case of natural selection, the good (for survival) is promoted and the bad (for survival) is punished irrespective of the intention. With regards to judgement in terms of what constitutes ethical behaviour, however, judgement of a good or a bad action usually includes questions about intention in the sense of planning, and the person who has committed any action without intention is seen in a different light than one who

took the same action with intent, and will be rewarded or punished with this taken into consideration. This is because humans have the ability of foresight, and can predict the outcomes of their actions, thereby implicitly taking responsibility for their self-conscious actions. Evolutionary accounts of ethics do not need to exclude intentionality, and can account for it when self-consciousness is seen as an adaptation and not merely a by-product of other processes.

If we take self-consciousness into account, as an evolutionary adaptation, it gives us the ability to expect future results, to delay or inhibit our natural responses, as well as the possibility of delayed gratification (Damasio 2010:268). Further, it accounts for intentionality, in the sense of being directed towards the world. Self-consciousness directs us towards the world through intention and can account for it, along with a sense of responsibility for our actions.

Committing an ethical or unethical act requires both the physical possibility for action as well as conscious awareness of performing or omitting to perform the action (Haggard 2008:944). We know that action without intent to achieve a certain aim is usually not adequate for responsibility under the law - for example, someone who commits a crime while sleepwalking, or where negative consequences were unintentional will not be legally liable. Most normal humans have a natural feeling of being more or less in control of their own actions. Without both types of intention (directedness towards something as well as planning), however, they cannot be said to be in control, to have intentionally acted in a certain manner. Equally though, intention to perform an action without actually performing the action is sometimes sufficient for responsibility, although not in all cases. Sometimes action-relevant preparation can be sufficient for responsibility, even when the action is prevented, for example in the recent terrorist trials (ibid., p. 944). We see that in order to be able to judge actions as ethical or not, we need to have a concept of intentionality.

This freedom and sense of self, combined with intentionality, open up the possibility for ethical behaviour.

“Armed with conscious reflection, organisms whose evolutionary design was centred around life regulation and the tendency toward homeostatic balance invented forms of consolation for those in suffering, rewards for those who helped the sufferers, injunctions for those who caused harm, norms of behaviour aimed at preventing harm and promoting good, and a mixture of punishments and preventions, of penalties and praise” (Damasio 2010:293).

If we look back at the previous chapter, we can see examples of this in the behaviour of chimpanzees. They will console others who have been in a fight, show helpful behaviour towards some members of the group while ostracising others who behave in harmful ways towards the group, similar to human behaviour.

I have argued that ethical behaviour is made possible by self-consciousness, which arose as an adaptation. This self-consciousness makes room for freedom and makes us agents of our own actions. It may account not only for the outcome of an action that would have benefits, but also for intentionality, which gives a fuller account of how we judge actions, not only by their actual results but also by the intended results.

Conclusion

To conclude, we have seen that there is a case for biological determinism proposed by some evolutionary and neuroscientific views. From a genetic point of view, some genes strongly relate to or influence our behaviour, but need not tie us down completely. Neuroscience goes even further than this and gives us reason to believe that our choices are made before we have any conscious awareness of them. Still, this evidence is inconclusive with regard to more complex decisions, such as those involved in ethical dilemmas. A blank slate theory does not solve the problem as it is still deterministic, and indeterminism also does not solve the problem, because it cannot account for freedom.

A Kantian perspective seems to solve the problem of determinism, by acknowledging that the body is subject to the same forces as nature and therefore also determined by them, but reason is not similarly affected. Rather, the will is free and therefore the responsibility necessary for a full account of ethics becomes a possibility. Against this Kantian view, a naturalist view of freedom shows that freedom is strongly tied to the body, especially the correct functioning of the brain. This freedom is acquired over time and not a given, and has arisen as an adaptation because it provides an advantage to the individual possessing it.

Naturalist views of freedom are inconsistent with a pure Kantian view, as they disprove the idea of freedom unrelated to and independent of the body and the physical world. Rather, freedom is dependent on the correct functioning of the body and brain. Furthermore, evidence from evolution shows that the mind does not create the world as we see it, through the categories of time and causality. Rather, our minds and the way we perceive the world are shaped by nature. In this way, the core of Kantian philosophy, that *a priori* categories shape objectivity, is contested by evolutionary biology. However, this leaves intact the Kantian principle that we can only observe the world through subjectivity, and in this sense the world still conforms to how we are able to see it. Not only does our mind conform to the world through evolution, the world also conforms to our evolutionarily adapted minds. In this sense, *a priori* categories still exist, but not independently of empirical conditions.

Furthermore, for Kant, moral decisions are based solely on rationality, but neuroscience argues that emotions are also central when considering ethical actions. Kant's morality also contrasts greatly with naturalist views of ethics such as sociobiology, especially in that evolutionary ethics take into account that ethical behaviour is useful, which Kant argues cannot form the basis of moral thinking.

Even though most transcendental ideas of freedom are disregarded by science, this does not necessarily mean that there is no such thing as freedom, or that determinism, which leaves no

room for ethics, is the only solution. Naturalist freedom, as an adaptation, already gives us the brain flexibility necessary for a degree of freedom. Consciousness, especially self-consciousness, further allows for freedom. It is precisely through self-consciousness that we gain a sense of autonomy and agency. Self-consciousness allows us to be aware of our actions as our own, as belonging to and willed by us, which then carries with it responsibility and opens up the ability for ethical behaviour. Also, because of self-consciousness, even if our behaviour is determined, the knowledge of our current brain states can change that behaviour, and in this way self-consciousness offers us an alternative to determinism, that does not rely on transcendental principles.

Thus we see that determinism can pose a serious problem for ethics. Kant tries to solve this problem by putting freedom and morality outside of the natural world, but Kantian idealism does not hold in light of developments in modern science. Rather, there is a strong argument that we are by nature free and autonomous, and that this freedom, combined with self-consciousness, supplies us with the potential for ethical behaviour.

Conclusion

Throughout this dissertation, I have tried to show that Darwin's statement, with which I began this dissertation, has been proven correct. Through evolutionary science light has indeed been thrown "on the origin of man and his history" (Darwin 1859:912), especially with regards to our ethical behaviour. I have looked at the extent to which our ethical actions are determined by evolution, as well as the consequences it has for ethics. Furthermore, I investigated whether evolution could supply a complete account of ethics in the phenomenal world, without sacrificing human freedom and rationality.

I started by looking at previous evolutionary accounts of ethics, in the form of Social Darwinism and eugenics, to provide a historical overview of the link between evolution and ethics in the past. This chapter further sketched contrast to more recent views from sociobiology, primate studies and neuroscience, which show that evolutionary ethics do not have to lead to similar unethical practices which were current in eugenics and to an extent in Social Darwinist thinking. Social Darwinism holds that the fittest will survive in the process of natural selection, which is confirmed by evolutionary science. Further Social Darwinism holds that natural selection is good in itself, but this is an ethical statement, which cannot be confirmed in the same way. For Social Darwinists, this process should not be influenced by human interference, and I concluded that this view is problematic.

Both Social Darwinism and eugenics accepted that individuals and society as a whole are just as subject to natural selection as the rest of the world, and by utilising natural selection Social Darwinists and eugenicists tried to create the best possible society, by either encouraging or preventing certain people from procreating. This was put into practice in many countries, most famously in Nazi Germany. It also served as a 'scientific' basis for Apartheid in South Africa. The arguments posed in favour of Social Darwinism and eugenics, such as those by the German anthropologist, Otto Ammon, are difficult to justify in light of objections posed from the field of philosophy in the form of fact/value dualism. It also appeared to be discredited scientifically as it

is neither likely nor beneficial to remove recessive genes from the gene pool. Further, a non-teleological process (like evolution) cannot form the basis of a teleological process (like Social Darwinism). Ethically, Social Darwinism and eugenics also encountered problems, especially if we should follow Huxley and Kant in claiming that the basis of ethical action lies outside of the natural world (which I later argued need not be the case). While Social Darwinism and eugenics served as a starting point for later reflection on evolution and ethics, I concluded that neither provided an acceptable solution to the evolution-ethics issue.

With this knowledge of how evolution was applied to human life in the past, and the various issues that were raised, I went on to look at how these views have been altered by developments made in evolutionary science. I considered the arguments that humans beings are by nature unethical, such as those proposed by Thomas Hendry Huxley. He believed that the ethical process was completely at odds with the natural process, and claimed that people are naturally inclined to consider only their own well-being. For him, ethical behaviour is something that needs to be enforced to overcome our natural tendencies. Then I juxtaposed this with arguments from the opposite position, namely that humans are naturally ethical and concerned with others, comes from the field of sociobiology, the study of primate behaviour as well as neuroscience.

I found that sociobiology rests on similar principles as Social Darwinism, namely that humans are a part of nature, and the struggle for existence and survival of the fittest plays a role in our lives. They differ, however in that sociobiology looks at the past and at how certain qualities arose as adaptations, and does not propose interventions such as those advocated by eugenics and Social Darwinism. Rather, it leads to the claim that there is a strong natural basis for ethical behaviour, as suggested by John Maynard Smith's idea of evolutionary stable strategies and Richard Dawkins' selfish gene theory. In this way, the view that ethical behaviour arises as an adaptation was defended.

I then considered naturalistic ethics as supported by studies in primate behaviour by looking at the work of Frans de Waal. He demonstrates how chimpanzees, our closest genetic relatives, have the building blocks that form part of ethical behaviour, such as empathy, reciprocity, retribution, conflict resolution and a sense of fairness, as well as societal concern, which requires community concern, conformity and judgement. Finally, it has also been demonstrated that primates have the capacity for judgement and reason. By utilising primate behavioural studies, I argued that ethical behaviour has developed naturally and cannot be kept separate from its origins in nature.

Neuroscience was then discussed in relation to ethics, especially the role of emotions in ethical decisions. A case example is made of the classic trolley experiment and its variations to showcase the role of emotions in ethical considerations. Mirror neurons, which allow us to understand (to some extent) what others are thinking and feeling, create the basis for empathy. Neuroscience further strengthens the argument for ethics as natural by locating ethical decisions in the evolved brain. However, it appeared that neuroscience can lead to an undermining of the Kantian idea of ethics as rational, since ethical decisions strongly correlate with the emotional centres of the brain.

I then went on to explore whether any of the objections made to Social Darwinism and eugenics can also be applied to the above natural explanations, or whether it is a more sound approach in applying evolution to ethics. I concluded that there is ample evidence from the fields of sociobiology, primate behaviour and neuroscience that ethics is not something that can be kept separate from its origins in nature. Nor are humans innately aggressive and selfish, as argued by thinkers such as Huxley. Sociobiology claims that ethical behaviour arises as an adaptation. Primate studies further put ethics in the natural world, as an evolved quality that is not something unique to humans. Finally, neuroscience places the emphasis on the role of emotions rather than reason in making ethical decisions. Rather than being an overlay on a generally unethical nature, sociobiology, primate behaviour and neuroscience supply us with evidence that the origins of ethics come from naturally evolved processes.

Taking into account the new knowledge about the mind offered by neuroscience, I have argued that we cannot separate ethical behaviour from the physical world as Huxley tries to do. If we further take the evidence from sociobiology and primate studies into consideration, it is clear that we cannot establish an ethics severed from its origins in the realm of nature. This might lead to the idea that there might be no cosmic morality that can be discovered, or no Kantian universal transcendentalist morality.

I considered the possibility that the evidence for ethical behaviour as an evolutionary adaptation can seem to lead to an undermining of human freedom, as well as the possibility for responsibility that it creates, which is necessary for a full account of ethics. We cannot be said to be truly free if we are genetically inclined to act a certain way. Likewise we cannot be held fully accountable for our actions if we have no control over them, such as actions determined by our genes or our environment. Some findings in neuroscience go even further than this and give us reason to believe that our choices are made before we have any conscious awareness of them, by relying on the Readiness Potential. Still, I found this evidence inconclusive with regard the complex decisions that form the basis of ethical considerations and the judgement that these require. In opposition to biological determinism, I looked at blank slate theory, which does not answer the question of freedom and responsibility either, since we are determined by environmental factors. I found that indeterminism did not fare much better, since it cannot account for freedom since in this view there are no motives or reasons behind our actions, reasons being a necessary condition for free choices.

Moral theories such as the one proposed by Kant, contrast greatly to deterministic natural views because they rely heavily on responsibility and freedom. I explored whether Kantian transcendentalism can offer a solution to determinism by placing ethics outside of the natural world and rather in the noumenal world of reason. For Kant, reason and ethical considerations are transcendental, i.e. outside of the natural, phenomenal world, and therefore also not determined by evolution. He claims that we can transcend and overcome nature though the use of reason, and make rational decisions free from the constraints of natural laws. A Kantian

perspective seems to solve the problem of determinism by acknowledging that the body is subject to the same forces as nature and therefore also determined by them, but reason is not similarly affected. Rather, the will is free and can supply us with the responsibility necessary for an undetermined account of ethics.

Next, I examined the implications of a naturalist ethics on Kant's morality. Transcendentalism seems to overcome some of the problems that an ethics of evolution is faced with, such as physical determinism, yet at the same time evolutionary science undermines the mind/world separation that Kant postulates. I argued that reason itself is not the only grounds for ethical behaviour, as Kant argues, but rather emotions and human nature also come into play, which is supported evidence supplied by the field of neuroscience. I indicated that Kant's morality also contrasts greatly with naturalist views of ethics such as sociobiology, especially in that evolutionary ethics take into account that ethical behaviour is useful, which Kant argues cannot form the basis of moral thinking. Whereas Kant requires morality to be based on the categorical imperative, one can argue that ethical behaviour, from a naturalist perspective, is based only on hypothetical imperatives. Locating ethics in the noumenal realm seems unrealistic, especially with new knowledge about the mind offered by neuroscience, which suggests that we cannot separate ethics from the physical world. It therefore seems impossible to establish a universal, unconditional ethic or truth, in the sense that Kant tries to, separated from its origins in the realm of nature.

Even though most transcendental ideas of freedom are disregarded by science, this does not necessarily mean that there is no such thing as freedom, or that determinism, which leaves no room for ethics, is the only solution. I contrasted Kant's morality to an evolutionary view of freedom and responsibility, to discover whether it is possible to give a full account of ethics that does not rely on transcendental principles.

Naturalist freedom, as an adaptation, already gives us the brain flexibility necessary for a degree of freedom. From a genetic point of view, some genes strongly relate to or influence our behaviour, but need not tie us down completely. A naturalist view of freedom shows that freedom is strongly tied to the body, especially the correct functioning of the brain. This freedom is acquired over time and not a given, and has arisen as an adaptation because it provides an advantage to the individual possessing it.

I argued that the role of consciousness must also be taken into account, since it links strongly with intention and the feeling of volitional freedom. When assigning responsibility, an action is judged by the intention. Consciousness, especially self-consciousness as a natural phenomenon, further allows for freedom that does not rely on transcendental principles. I based this argument on the work of Antonio Damasio, who proposes a strong argument for self-consciousness as an adaptation, since it is beneficial for the individual who possesses it. He claims that it is precisely through self-consciousness that we gain a sense of autonomy and agency. Self-consciousness allows us to be aware of our actions as our own, as belonging to and willed by us, which then carries with it responsibility and opens up the ability for ethical behaviour. Also, because of self-consciousness, MacKay argues that even if our behaviour is determined by physical brain processes, the knowledge of these processes in turn alter current and again in turn future brain states, and in this way self-consciousness offers us an alternative to determinism that does not rely on transcendental principles.

These naturalist views of freedom are inconsistent with a pure Kantian view, as they disprove the idea of freedom unrelated to and independent of the body and the physical world. Furthermore, evidence from evolution shows that the mind does not create the world as we see it, through the *a priori* categories of time and causality. Instead, the way we perceive ourselves, the world and others is shaped by natural evolutionary processes. The core of Kantian philosophy, which holds that the categories (of quantity, quality, etc) shape objectivity, is contested by evolutionary biology. However, this does not completely disprove the Kantian principle that we can only observe the world through subjectivity, and in this sense the world still conforms to how we are

able to see it. Not only does our mind conform to the world through evolution, the world also conforms to our evolutionarily adapted minds. In this sense, *a priori* principles still exist, but not as noumena independently of empirical conditions as Kant would suggest. I argued that this can be compared to Aristotle, bringing the Platonic substances into the real empirical world.

The final chapter demonstrates that biological determinism can pose a serious challenge for ethics, and that neither the blank slate theory nor indeterminism offered a solution. Kant tries to solve this problem by putting freedom and morality outside of the natural world, but Kantian idealism is difficult to maintain in light of developments in modern science. Rather, there is a strong argument that we are naturally evolved to be both free and autonomous, and that this freedom, combined with self-consciousness that also arose as an adaptation, can supply us with the necessary qualities required for ethical behaviour.

To conclude then: throughout this dissertation, I did not ignore the possible negative consequences of applying evolution to human behaviour in the forms of Social Darwinism and eugenics. While these systems of thought were ethically and scientifically unsound, there is strong evidence for the evolutionary origins of ethics, where ethics can be seen as an adaptation that offers a benefit to the individual exhibiting this behaviour. This view is supported by sociobiology, studies in primate behaviour and neuroscience. This view of ethics as biological does raise some problems, especially when compared to Kantian morality, which is premised on freedom and autonomy. An evolutionary account of ethics can lead to a deterministic view of our behaviour, which would seem to make ethical action impossible. However, new developments in neuroscience claim that freedom could have emerged as an adaptation through evolutionary processes, and combined with self-consciousness, evolution can supply us with an account of ethics that does not need augmentation from transcendental principles.

Literature References

- Adams, M. (ed.). *The Wellborn Science: Eugenics in Germany, France, Brazil, and Russia*. 1990: Oxford: Oxford University Press.
- Adams, M. 1990. 'Eugenics in Russia' in Adams, M. (ed.). *The Wellborn Science: Eugenics in Germany, France, Brazil, and Russia*. 1990: Oxford: Oxford University Press.
- Alexander, R. 1982. 'Biology and the Moral Paradoxes' in *Journal of Social and Biological Structures*. 5: 389-395.
- Ananthaswamy, A. 2012. 'Brain might not stand in the way of free will' in *New Scientist*. 215(2877):10.
- Andersen, S. 1987. 'Determinism or Meaninglessness: The Philosophical Challenge of Science in Kant and Løgstrup' in Mortensen, V. & Sorensen, R. (eds.). *Free Will and Determinism*. Denmark: Aarhus University Press.
- Andrews, L. 2003. 'Social Darwinism: The Development of an Intellectual Mood' in *The Occidental Quarterly*. 3(1): 45-60.
- Antonites, A. 2010. *Evolution: Fact or Theory?* South Africa: Alex Antonites.
- Antonites, A & Odendaal, J. 2004. 'Ethics in Human-animal Relationships' in *Acta Vet*. 75: 539-584.
- Bannister, R. 1976. *Social Darwinism: Science and Myth in Anglo-American Social Thought*. Philadelphia: Temple University Press.
- Banton, M. (ed.). 1961. *Darwinism and the Study of Society*. Great Britain: Tavistock Publications.
- Barash, D. 1980. *Sociobiology: The Whisperings Within*. London: Souvenir Press.
- Barkow, J., Cosmides, L. & Tooby, J. (eds.) 1992. *The Adapted Mind: Evolutionary Psychology and the Generation of Culture*. New York: Oxford University Press.

- Barret, L., Dunbar, R. & Lycett, J. 2002. *Human Evolutionary Psychology*. US: Princeton University Press.
- Bashford, A. & Levine, P. (eds.). 2010. *The Oxford Handbook of the History of Eugenics*. Oxford: Oxford University Press.
- Beckstrom, J. 1993. *Darwinism Applied: Evolutionary Paths to Social Goals*. Westport: Praeger Publishers.
- Beinhart, W. & Dubow, S. 1995. *Segregation and Apartheid in Twentieth Century South Africa*. Routledge: Routledge University Press.
- Bennet, M. & Hacker, P. 2003. *Philosophical Foundations of Neuroscience*. Oxford: Blackwell Publishing.
- Bennet, W. 1908. *The Ethical Aspects of Evolution*. Oxford: Clarendon Press.
- Boutler, M. 2008. *Darwin's Garden: Down House and The Origin of Species*. UK: Constable & Robinson Ltd.
- Box, H. 1984. *Primate Behaviour and Social Ecology*. Great Britain: J.W. Arrowsmith Ltd.
- Brockman, J. (ed.). 2006. *What is your Dangerous Idea?* UK: Simon & Shuster Ltd.
- Brockman, M. 2011. *Future Science*. Oxford: Oxford University Press.
- Buchen, L. 2012. 'Biology and Ideology: The Anatomy of Politics' in *Nature*. 490: 466-468.
- Butler, D. 1999. 'DeFreuding Evolutionary Psychology: Adaptation and Human Motivation' in Hardcastle, V. (ed.). *Where Biology meets Psychology: Philosophical Essays*. Cambridge: MIT Press.
- Carruthers, P. 2001. 'Consciousness: Explaining the Phenomena' in Walsh, D. (ed.). *Naturalism, Evolution and Mind*. Cambridge: Cambridge University Press.
- Carter, R. 1998. *Mapping the Mind*. London: Phoenix.

- Chan, S. & Coggon, J. 2013. 'Beyond the Is/Ought Divide: Studying the Nature of the Bioethical Enterprise' in *Health Care Anal.* 21: 1-5.
- Cheney, D. & Seyfarth, R. 1990. *How Monkeys see the World: Inside the Mind of Another Species*. Chicago: University of Chicago Press.
- Cohen, R. 1987. 'Altruism: Human, Cultural, or What?' in Wispé, L. (ed.). *Altruism, Sympathy and Helping: Psychological and Sociological Principles*. New York: Academic Press.
- Corning, P. 1996. 'Evolution and Ethics: An Idea Whose Time Has Come?' in *Journal of Social and Evolutionary Systems*. 19(3): 277-285.
- Damasio, A. 2010. *Self Comes to Mind: Constructing the Conscious Brain*. London: Vintage.
- Darwin, C. 1871. *The Decent of Man*. London: John Murray Publishers.
- Darwin, C. 1859. *The Origin of Species*. London: Random House.
- Davies, P. 1999. 'The Conflict of Evolutionary Psychology' in Hardcastle, V. (ed.). *Where Biology meets Psychology: Philosophical Essays*. Cambridge: The MIT Press.
- Dawkins, R. 2008. *The Extended Phenotype*. Oxford: Oxford University Press.
- Dawkins, R. 2006. *The Selfish Gene*. Oxford: Oxford University Press.
- De Ataujo, E. & Sommer, L. 2002. *A Summary History of Eugenic Theories and Practices in the United States*. New York: Autonomedia.
- Deecke, L., Scheid, P. & Kornhuber, H. 1969. 'Distribution of the Readiness Potential, Pre-motion Positivity, and Motor Potential of the Human Cerebral Cortex Preceding Voluntary Finger Movements' in *Exp. Brain*. 7: 159-168.
- Delgado, J. 1983. 'The Psychopathology of Freedom' in *Political Psychology*. 4(2): 355-374.
- De Vries, R. & Gordijn, B. 2009. 'Empirical Ethics and its Alleged Meta-Ethical Fallacies' in *Bioethics*. (23)4: 193-201.

De Waal, F. 2009. *Primates and Philosophy: How Morality Evolved*. New Jersey: Princeton University Press.

De Waal, F. 1996. *Good Natured: The Origins of Right and Wrong in Humans and Other Animals*. Cambridge: Harvard University Press.

Dubow, P. 1989. 'The Idea of Race in Early 20th Century South Africa: Some Preliminary Thoughts'. Paper presented at African Studies Seminar, University of Witwatersrand. April.

Dworkin, G. 1970. *Determinism, Free Will and Moral Responsibility*. Englewood Cliffs: Prentice Hall.

Ehrenreich, B. 1997. *Blood Rites: Origins and History of the Passions of War*. Canada: Fitzhenry & Whiteside Ltd.

Fantham, H. 1925. 'Some Factors in Eugenics, Together with Notes on Some South African Cases' in *SAJS*. 22: 408.

Ferris, J. 2012. 'Self-awareness with a Simple Brain' in *Scientific American Mind*. 23(5): 28-29.

Flanagan, O. 1984. *The Science of the Mind*. London: MIT Press.

Flew, A. 1970. *Evolutionary Ethics*. London: Macmillan & Basingstoke.

Fodor, J. 1986. 'Why Paramecia Don't Have Mental Representations' in *Midwest Studies in Philosophy*. 10:3-23.

Gald, J. 2006. *Future Human Evolution: Eugenics in the Twenty-First Century*. Schuylkill Haven: Hermitage Publishers.

Galton, D. 1998. 'Greek theories on eugenics' in *Journal of Medical Ethics*. 24: 263-267.

Galton, F. 1905. 'Studies in Eugenics' in *American Journal of Sociology*. 11(1), 11-25.

Galton, F. 1904. 'Eugenics: It's Definition, Scope, and Aims' in *The American Journal of Sociology*. 10(1): 1-25.

Galton, F. 1875. 'A Theory of Heredity' in *Contemporary Review*. 27: 329-348.

- Galton, F. 1873. 'Hereditary Improvement' in *Fraser's Magazine*. 7:116-30.
- Godfrey-Smith, P. 1996. *Complexity and the Function of Mind in Nature*. New York: Cambridge University Press.
- Goertzel, B. 1993. *The Evolving Mind*. Amsterdam: Gordon & Breach Science Publishers.
- Goldsmith, T. 1991. *The Biological Roots of Human Nature: Forging Links between Evolution and Behaviour*. Oxford: Oxford University Press.
- Goodall, J. 1990. *Through a Window: My Thirty Years with the Chimpanzees of Gombe*. Boston: Houghton Mifflin.
- Grantham, T. & Nichols, S. 1999. 'Evolutionary Psychology', in Hardcastle, V. (ed.). *Where Biology meets Psychology: Philosophical Essays*. Cambridge: The MIT Press.
- Green, J. and Haidt, J. 2002. 'How (and Where) does Moral Judgement Work?' in *Trends in Cognitive Sciences*. 6: 517-523.
- Gregersen, N. 1987. 'Freedom and Evolution: Systems Theoretical and Theological Perspectives' in Mortensen, V. & Sorensen, R. (eds.). *Free Will and Determinism*. Denmark: Aarhus University Press.
- Gregory, R. 1981. *Mind in Science*. Great Britain: Weidenfeld & Nicolson.
- Gribbin, M. & Gribbin, J. 1993. *Being Human: Putting People in an Evolutionary Perspective*. Great Britain: Guernsey Press.
- Gruter, M. 1982. 'Biologically based Behavioural Research and the Facts of Law' in *Journal of Social and Biological Structures*. 5: 315-323.
- Haggard, P. 2008. 'Human Volition: Towards a Neuroscience of Will' in *Nature Reviews Neuroscience*. 9(12): 934-946.
- Harlow, H. 1959. 'Basic Social Capacity of Primates' in Spuhler, J. *The Evolution of Man's Capacity for Culture*. Detroit: Wayne State University Press.

- Hefner, P. 1987. 'Freedom in Evolutionary Perspective' in Mortensen, V & Sorensen, R. (eds.). *Free Will and Determinism*. Denmark: Aarhus University Press.
- Henderson, M. 2008. *50 Genetics Ideas You Really Need to Know*. London: Quercus Publishing.
- Hertzberg, B. 2005. 'The Psychology of Volition: "Problem and Method Pass one Another By"'. Paper presented at the Mind Society Conference, Cambridge. September 2.
- Hoffmeyer, J. 1987. 'The Constraints of Nature on Free Will' in Mortensen, V. & Sorensen, R. (eds.). *Free Will and Determinism*. Denmark: Aarhus University Press.
- Huxley, T. 1893. *Evolution and Ethics*. London: Macmillan & Co.
- Kant, I. 1934. *Critique of Pure Reason*. London: J.M. Dent & Sons Ltd.
- Kant, I. 1898. *Critique of Practical Reason and Other Works on the Theory of Ethics*. Translated by T Abbott, 5th ed. London: Longmans, Green and Co.
- Kant, I. 1998. *The Groundwork for the Metaphysics of Morals*. Transl. Gregor, M. Cambridge: Cambridge University Press.
- Katz, S. 1987. 'Free Will: Does it have a Bio-Cultural Evolutionary Basis?' in Mortensen, V. & Sorensen, R. (eds.). *Free Will and Determinism*. Denmark: Aarhus University Press.
- Kaye, H. 1997. *The Social Meaning of Modern Biology: From Social Darwinism to Sociobiology*. New Jersey: Transaction Publishers.
- Kemp, J. 1970. *Ethical Naturalism: Hobbes and Hume*. London: Macmillan.
- Kevles, D. 1999. 'Eugenics and human rights' in *BMJ*. 319: 435-438.
- Kimmelman, B. '1983. The American Breeders Association: Genetics and Eugenics in an Agricultural Context' in *Social Studies of Science*. 13(2): 163-204.
- Koch, C. 2012. 'Finding Free Will' in *Scientific American Mind*. 23(2): 22-27
- Krebs, J. & Davies, N. 1987. *An Introduction to Behavioural Ecology*. Oxford: Blackwell Scientific Publications.

- Kühl, S. 1994. *The Nazi Connection: Eugenics, American Racism and German National Socialism*. Oxford: Oxford University Press.
- Lanteri, A., Chelini, C. & Rizzelo, S. 2008. 'An Experimental Investigation of Emotions and Reasoning in the Trolley Problem' in *Journal of Business Ethics*. 83: 789-804.
- Lau, H., Rodgers, R. & Passingham, R. 2007. 'Manipulating the Experienced Onset of Intention after Action Execution' in *Journal of Cognitive Neuroscience*. 19:1.
- Leakey, R. 1994. *The Origin of Humankind*. Great Britain: Guernsey Press.
- Lewens, T. 2007. *Darwin*. Oxon: Routledge.
- Low, P. 2012. *The Cambridge Declaration of Consciousness in Non-Human Animals*. Churchill College: University of Cambridge.
- Lukes, S. 2008. *Moral Relativism*. London: Profile Books Ltd.
- Maher, B. 2012. 'The Human Encyclopaedia' in *Nature*. 489: 46-48.
- Malik, K. 2002. *Man, Beast and Zombie: What Science Can and Cannot Tell Us About Human Nature*. London: Reitgers University Press.
- Masters, R. 1987. 'Of Marmots and Men: Animal Behaviour and Human Altruism' in Wispé, L. (ed.). *Altruism, Sympathy and Helping: Psychological and Sociological Principles*. New York: Academic Press.
- Mernissi, F. 1975. *Beyond the Veil: Male-Female Dynamics in Modern Muslim Society*. Indiana: Indiana University Press.
- Midgley, M. 1994. *The Ethical Primate: Humans, Freedom and Morality*. London: Routledge.
- Morice, G. 1920. 'Crime and Feeble-mindedness' in *SAJS*.27:1920-1921.
- Morris, D. 1994. *The Human Animal*. London: BBC Books.
- Mortensen, V. 1987. 'Free Will, Determinism and Responsibility' in Mortensen, V. & Sorensen, R. (eds.). *Free Will and Determinism*. Denmark: Aarhus University Press.

- Murphy, J. 1982. *Evolution, Morality, and the Meaning of Life*. Totowa: Rowan & Littlefield.
- Nitecki, M. & Nitecki, D. (eds.). 1993. *Evolutionary Ethics*. New York: University of New York Press.
- Norris, C. 2010. 'Frankfurt on the Second-Order Desires and the Concept of a Person' in *Prolegomena*. 9(2): 199-242.
- O'Hear, A. (ed.). 2005. *Philosophy, Biology and Life*. UK: Cambridge University Press.
- Peters, T. 1997. *Playing God?: Genetic Determinism and Human Freedom*. Great Britain: Routledge.
- Petrinovich, L. & O'Neil, P. 1996. 'Influence of Wording and Framing Effects on Moral Intuitions' in *Ethnology and Sociobiology*. 17: 145-171.
- Prinz, J. 2006. 'The Emotional Basis of Moral Judgements' in *Philosophical Explorations*. 9(1): 29-43.
- Quammen, D. 2009. 'Darwin's First Clues' in *National Geographic*. February: 42-55.
- Quillian, W. 1945. *The Moral Theory of Evolutionary Naturalism*. New Haven: Yale University Press.
- Rachels, J. 1990. *Created from Animals: The Moral Implications of Darwinism*. Oxford: Oxford University Press.
- Reid, T. 1970. 'Some Arguments for Free Will' in Dworkin, G. *Determinism, Free Will and Moral Responsibility*. Englewood Cliffs: Prentice Hall.
- Richards, J. 2000. *Human Nature After Darwin*. London: Routledge.
- Ridley, M. 2000. *Mendel's Demon: Gene Justice and the Complexity of Life*. Great Britain: Weidenfeld & Nicolson.
- Ridley, M. 1996. *The Origins of Virtue*. London: Viking.

- Rifkin, J. 1998. *The Biotech Century: Harnessing the Gene and Remaking the World*. New York: JP Tarcher.
- Rosenberg, A. 1990. 'The Biological Justification of Ethics: A Best-case Scenario' in *Social Philosophy and Policy*. 8: 86-101.
- Ruse, M. 1987. 'Sociobiology and Determinism' in Mortensen, V. & Sorensen, R. (eds.). *Free Will and Determinism*. Denmark: Aarhus University Press.
- Sahlins, M. 1959. 'The Social Life of Monkeys, Apes and Primitive Man' in Spuhler, J. *The Evolution of Man's Capacity for Culture*. Detroit: Wayne State University Press.
- Schlosser, M. 2014. 'The Neuroscientific Study of Free Will: A Diagnosis of the Controversy' in *Synthese*. 191(2): 245-262.
- Schneider, H. 1990. 'The Eugenic Movement in France' in Adams, M. (ed.). *The Wellborn Science: Eugenics in Germany, France, Brazil, and Russia*. Oxford: Oxford University Press.
- Schurman, J. 1887. *The Ethical Import of Darwinism*. New York: Charles Scribner's Sons.
- Shapiro, L. 2001. 'Mind the Adaptation' in Walsh, D. (ed.). *Naturalism, Evolution and Mind*. Cambridge: Cambridge University Press.
- Simpson, G. 1967. *The Meaning of Evolution: A Study of the History of Life and of Its Significance for Man*. New York: Bantam Books.
- Singer, P. 1982. *The Expanding Circle: Ethics and Sociobiology*. New York: Meridian Books.
- Smellie, W. 1791. *The Philosophy of Natural History*. Philadelphia: Robert Campbell.
- Smith, C. 1991. 'Kant and Darwin' in *Journal of Social and Biological Structures*. 14(1): 35-50.
- Soon, C., Brass, M., Heinze, H. & Haynes, J. 2008. 'Unconscious Determinants of Free Decisions in the Human Brain' in *Nature Neuroscience*. 11(5): 543-545.
- Sorley, W. 1904. *Ethics of Naturalism*. London: William Blackwood & Sons.
- Spencer, H. 1900. *The Principles of Ethics*. London: Williams & Northgate.

- Spencer, H. 1857. *Progress: Its Law and Cause*. New York: J. Fitzgerald & co.
- Stangroom, J. (ed.). 2005. *What Scientists Think*. Oxon: Routledge.
- Stark, W. 1961. 'Natural and Social Selection' in Banton, M. (ed.). *Darwinism and the Study of Society*. Britain: Tavistock Publications.
- Stephan, N. 1990. 'Eugenics in Brazil' in Adams, M. (ed.). *The Wellborn Science: Eugenics in Germany, France, Brazil, and Russia*. Oxford: Oxford University Press.
- Strench, D. 2008. 'Evidence-Based Ethics-What it should be and what it shouldn't' in *BMC Medical Ethics*. 9:16.
- Symons, D. 1992. 'On the Use and Misuse of Darwinism in the Study of Human Behaviour' in Barkow, J. *et al.* (eds.). *The Adapted Mind*. New York: Oxford University Press.
- Symons, D. 1987. 'If We're All Darwinians, What's the Fuss About?' in Crawford, C. *et al.* (eds.). *Sociobiology and Psychology: Issues, Ideas, and Applications*. Hillsdale: Lawrence Erlbaum Associates.
- Tallis, R. 1991. *The Explicit Animal: A Defence of Human Consciousness*. London: Macmillan Press.
- Waddington, C. 1961. 'The Human Evolutionary System' in Banton, M. (ed.). *Darwinism and the Study of Society*. Britain: Tavistock Publications.
- Waddington, C. 1960. *The Ethical Animal*. London: Allen & Unwin.
- Walpole, B. 1986. *Human Body*. London: Grisewood & Dempsey.
- Warneken, F. 2011. 'Children's Helping Hands' in Brockman, M. (ed.). *Future Science*. Oxford: Oxford University Press.
- Wenegrat, B., Abrahams, L., Castillo-Yee, E. & Romine, I. 1996. 'Social Norm Compliance as a Signalling System. I. Studies of Fitness-related attributions consequent on Everyday Norm Violation' in *Ethnology and Sociobiology*. 17(I6): 403-416.

- Weiss, S. 1986. 'Wilhelm Schallmayer and the Logic of German Eugenics' in *Isis*. 77(286): 33-46.
- Whitfield, P. 1998. *Evolution: The Greatest Story Ever Told*. London: Marshall Publishing Ltd.
- Winner, F. 1983. *Genetic Basis of Society*. Florida: Shakespeare Publishing Company.
- Winston, R. 2003. *The Human Mind*. Great Britain: Bantam Press.
- Winston, R. 2002. *Human Instinct*. Great Britain: Bantam Press.
- Wolpert, L. 2006. *Six Impossible Things Before Breakfast: The Evolutionary Origins of Belief*. England: Faber & Faber.
- Wright, R. 1994. *The Moral Animal: Evolutionary Psychology and Everyday Life*. New York: Pantheon.
- Yeager, B. 2001. *Ethics as Social Science*. UK: Edward Elgar Publishing Ltd.
- Zirkle, C. 1959. *Evolution, Marxian Biology, and the Social Scene*. Philadelphia: University of Pennsylvania Press.