Introduction

With the publication in 1859 of Charles Darwin's *The Origin of Species*, thinking about humans was transformed. Although the theory expounded and defended in *The Origin of Species* was ostensibly about the origin of various physical forms of organisms, few failed to see the implications for theories about human origins and about the nature of mind and morality. Realizing that it would attract undue attention and controversy, Darwin was careful in *The Origin of Species* to avoid speculation about humans. His caution was later abandoned, and in *The Descent of Man and Selection in Relation to Sex,* he provides a detailed and thoughtful account of the origin and nature of humans, including mind and morality.

Although Darwin transformed the discussion of the evolution of humans and of its implications for ethics, speculation about the relation of evolution to ethics predates *The Origin of Species.* Indeed, through much of the nineteenth century the relation of evolution to morality was widely discussed. For example, evolution, as expounded by Jean-Baptiste de Lamarck, Erasmus Darwin (Charles Darwin's grandfather), and Robert Chambers, was clearly seen to be relevant to morality. Indeed, the negative implications of these evolutionary views for morality constituted strong grounds for rejection of such evolutionary thinking. For many in Britain (especially the clergy), evolution was a false and pernicious view that, if accepted, would undermine the moral fabric of civilized society.

The change that *The Origin of Species* brought about was the elevation of the status of evolutionary theorizing. Darwin achieved this by providing a wealth of evidence for his

theory of evolution. In addition, he presented his theory from a position of personal strength. He was a highly respected naturalist and geologist, and was well connected within the scientific community and within high society. As a result, evolution was taken seriously and became more widely accepted. Hence, by the time Darwin wrote on humans in *The Descent of Man*, the idea of evolution was more widely tolerated. This more open attitude toward evolution, however, in no way protected Darwin from severe criticism regarding his views on evolution and morality. Indeed, many supporters of his theory of evolution criticized his views on morality.

Understandably, the stronger is the case for evolution, the more pernicious become the views of evolutionists on morality. In this light, it is not surprising that the reaction to Darwin's theory and his writings on humans was at the time, and has continued to be, intense and often extreme: a great deal is perceived to be at stake. Given the widespread acceptance of evolution within the scientific (and wider academic) community during the past forty or so years, the preferred strategy of opponents of evolutionary ethics has been the marginalization of the importance of evolution for ethics. The most powerful tool in the arsenal of opponents has been the logical principle that moral statements cannot be derived from factual statements alone (commonly referred to as the *naturalistic fallacy*).

In 1975, the appearance of *Sociobiology: The New Synthesis* by Edward O. Wilson sparked renewed and heated debate about the relevance of evolutionary theory to human social behavior. Of special concern was the relevance of evolutionary theory to morality. Wilson quite clearly threw down the gauntlet by claiming:

> Camus said that the only serious philosophical question is suicide. That is wrong even in the strict sense intended. The biologist, who is concerned with questions of physiology and evolutionary history, realizes that self-knowledge is constrained and shaped by the emotional control centers in the hypothalamus and limbic system of the brain. These centers flood our consciousness with all the emotions—hate, love, guilt, fear, and others—that are consulted by ethical philosophers who wish to

> intuit the standards of good and evil. What, we are then compelled to ask, made the hypothalamus and limbic system? They evolved by natural selection. That simple biological statement must be pursued to explain ethics and ethical philosophers, if not epistemology and epistemologists, at all depths. Self-existence, or the suicide that terminates it, is not the central question of philosophy. (p. 3)

Most of the articles in this collection have been written against the background of Wilson's challenge and sociobiology as a field of investigation. Sociobiology is, in essence, the application of modern evolutionary theory to the investigation and explanation of, as well as the integration of knowledge about, the social behavior of animals including humans. Modern evolutionary theory is a descendent of Darwin's evolutionary theory. It brings together theories of selection, the sources of variation, and heredity. Darwin's major contribution was the development of the concept of selection. Since Darwin first introduced it, theoretical work on selection has advanced in significant ways but the underlying idea is still the one Darwin put forward.

In what follows, I provide in Part I a brief description of the life and views of Darwin, Spencer and Huxley and in Part II an introduction to four major issues in the contemporary debate over evolutionary ethics. The motivation for the latter is clear: these four permeate the articles in the collection. The motivation for the former is set out in the Preface. Briefly stated, I am attempting to offset the disadvantage of the cultural and temporal distance of these authors from present readers as well as the fact that the selections are excerpts from larger works.

Part I. Darwin, Spencer, and Huxley

1. Charles Darwin (1809–1882)

Charles Darwin was born on February 12, 1809, and received his early education at Dr. Butler's School in Shrewsbury (1818–1825). After this he went to Edinburgh University to study medicine as his father (Robert Darwin) and his

grandfather (Erasmus Darwin) before him had done. His performance at Dr. Butler's school was at best mediocre. It was a largely classical-based education, for which Darwin showed no talent or interest. Edinburgh was no better. He found the lectures dull (except for chemistry) and dissection revolting. He did not apply himself to his studies but did become involved in extracurricular activities in science. He left Edinburgh in 1827, having given up on a medical career. His father determined that if medicine was not for Charles, an Anglican clerical career was a good second choice. Darwin attended Cambridge University for three years (1828–1831) and received his bachelors degree in 1831. He did not find his studies at Cambridge any more exciting than those at Edinburgh, he again found his main interest in science: particularly geology, botany, and beetles (he was part of a collecting craze that swept England). His contact with John Henslow (professor of botany) and interest in science resulted in Henslow arranging for Darwin to travel on *H.M.S. Beagle* as a gentleman companion for the captain, Robert Fitzroy, and to engage in naturalist activities. Specifically, he was to carry out a geological survey and collect specimens of animals and plants for shipment to England.

H.M.S. Beagle, after a couple of false starts, set sail from Plymouth Harbour on December 27, 1831, and returned to England in October 1836, docking at Falmouth Harbour. Darwin had collected an enormous number of specimens and had recorded a wealth of geological information. During the voyage he had come to accept Charles Lyle's gradualist and actualist views as set out in Lyle's two-volume *Principles of Geology*. The *Beagle* voyage was a crucial element in the development of Darwin's evolutionary views. In addition, his naturalist activities during the voyage secured for him a strong reputation in natural science. As a result, his reputation was solid long before the publication of *The Origin of Species* and before his evolutionary speculations were widely known. His evolutionary speculations go back to the final period on the *Beagle* and are contained in a series of notebooks (the *Transmutation Notebooks* were begun in the summer of 1837).

In 1839 he married Emma Wedgewood and they had ten children. Darwin was independently wealthy as a result of his inheritance from his father and the Wedgewood dowry. He suffered from sporadic bouts of a mysterious illness. In spite of this, however, he produced a large corpus of writings on a wide array of different topics in natural science.

The work that most people associate with Darwin is *The Origin of Species* (hereafter *The Origin*). In it, he provides an argument for the mutability of species (one species can change over time into a different species) and for a causal mechanism that governs these changes. There is considerable controversy over what Darwin meant by *species* in *The Origin*, because he claims to be explaining their origin and yet appears to argue that there is no reality to the concept "species." Instead, it is portrayed as an artificial human construct. This artificial character of species explains clearly why species are mutable. If there is no such thing in reality as a *species,* then there can be no reason why what we call *species* cannot undergo changes that will result in an organism sufficiently different that trained authoritative naturalists are prepared to call it a new species. There are no real boundaries between species because there are no real species. Organisms blend into one another in an insensible grade of differences: just like the development of a tree from a seed or an animal from an embryo. There are no real breaks in the development and terms like *seedling, sapling, infant, toddler, teenager,* and so on, are artificial ways of breaking up the continuous development.

The causal mechanism that brings about change in the organic world is natural selection. In the organic world there is variation among organisms. Characteristics possessed by some organisms make them better able to survive to reproduce and better able to engage in the activity of reproduction. Under circumstance where not all organisms will survive, those with a characteristic that enhances their ability to survive and reproduce, on average, will leave more offspring than others. Hence, there will be proportionally more organisms with the genetic characteristic that enhances survival in the next generation than in the previous generation. Over

many generations organisms with that characteristic will become dominant. The situation is, of course, far more complex than this description conveys. Just as Newton's laws can be simply stated although how they work in nature is complex, so the actual working of the causal mechanism of natural selection in nature is exceptionally complex. For example, changes in the environment (climate, food sources and types, predators) will affect the characteristics that enhance survival and reproduction. Also, a matrix of characteristics will enhance survival and reproduction. Hence, it is a gross simplification to imagine that a particular characteristic is identifiable as enhancing survival in isolation from other characteristics and from a dynamic environment. Nonetheless, the causal mechanism itself is accurately captured in the above description.

In his autobiography Darwin credits his reading of Thomas Robert Malthus's *An Essay on the Principle of Population* with providing the key insight into the causal mechanism of evolution. The views of Malthus (1766–1834) on population was first published anonymously in 1798 and had a profound effect on the political and legal thinking of England. In 1803 Malthus wrote what in name was a second edition of *An Essay on the Principle of Population;* in actual fact it was a new work on the same topic (as Malthus acknowledges in the Preface to this work). In 1830 Malthus's *A Summary View of the Principle of Population* was published.

Darwin applied Malthus's conceptual framework of "a struggle," developed by Malthus as a framework for understanding human economic and social structures, to the organic world. In simple terms Malthus argued that population growth, when unchecked, was geometric (with a doubling occurring every twenty-five years), whereas resources to support a population grew arithmetically. Hence, a point would be reached, quite rapidly, at which the size of a population would outstrip the resources available to support it. At that point, without checks on population growth, there would be a struggle for existence within the population. For Darwin, "the struggle for existence," in a more general form, was the basis for natural selection.

After the publication of *The Origin* a storm of controversy broke out. Few failed to see the implications of its thesis for human origins even though Darwin avoided stating those implications. Others were less cautious and the controversy about the implications for human origins, morality and destiny took off. In 1871, Darwin's views on the implications of his evolutionary theory for human origins and morality were published in *The Descent of Man, and Selection in Relation to Sex* (a second edition was published in 1874). The selection in this collection is from the first edition of this work.

Darwin's moral theory is based on conscience, social instinct, intelligence, and group selection. The evolution of morality is the evolution of conscience. The evolution of conscience is underpinned by the evolution of social instinct, which causes organisms to behave in ways that benefit the social group to which they belong. Social instinct alone, however, is only the basis on which morals are built. True moral action requires intellect, which allows one to reason about the best ways to achieve the ends toward which social instinct impels one and also enables one to reflect on desires that compete with the social instinct. Social instinct and intellect are products of evolution. Hence, morality is a product of evolution.

One of the challenges for a theory of morality based on evolution is to explain how a propensity for behaviors that are detrimental to the individual performing them can be a product of evolution; for example, altruism. Darwin, like Spencer and contemporary sociobiologists, employed reciprocal altruism (discussed in Part II) as one model of explanation. Darwin also explained the evolution of social instincts that are detrimental to the survival of the individuals performing them in terms of group selection (also discussed in Part II). Some social instincts benefit the group to which the individual belongs and as a result, the more individuals with those instincts in a group the more likely the group is to survive relative to other groups. Darwin argues for group selection in these cases of social instinct by drawing on the social behavior of insects like honeybees. In this respect,

Darwin's explanation is very close to the contemporary sociobiological explanation. There are even hints that Darwin understood the need for members of a group to be closely related in order for the social instincts of individuals that are of benefit to the group to be passed to the next generation. These, however, are only hints and far from forming the basis for the modern explanation of altruism in terms of a concept known as inclusive fitness.

Darwin's moral theory was criticized by his contemporaries because they took it either to be a morality of self-interest or a form of utilitarian moral theory. Utilitarianism is the view that morally right actions are those that result in the greatest amount of happiness. Utilitarianism was in its formative stages during the nineteenth century and some versions seemed to be based on selfishness or self-interest. Hence, some critics of Darwin charge him with supporting a self-interested utilitarianism. Darwin was aware that, by the time *The Descent of Man* was published, utilitarians no longer cast their theory in terms of selfishness or self-interest.

Such criticisms of Darwin's moral theory miss the mark. Darwin is quite clear that he rejects self-interest as the motivation for moral action. Individuals do not act out of self-interest but from social instinct, which is sometimes directed toward the benefit of the group to which the individual belongs. In addition, contrary to the utilitarian view, individuals act morally because they have an evolved propensity to do so and not because they calculate the balance of pleasure (happiness) over pain.

2. Herbert Spencer (1820–1903)

Herbert Spencer was born on April 27, 1820, in Derby, England. His early education was unstructured and unfocused. From 1830 to 1833, he was educated by his uncle William Spencer. From 1833–1837, he was educated by another uncle, Thomas Spencer, who had received honors at Cambridge. At age 17, and after a brief stint as assistant schoolmaster at Derby, Spencer was offered a job as an engineer with the London and Birmingham Railway. He remained in this

position until 1841, at which time he left to work with his father on the development of an electric engine. After a year he abandoned the project (deeming it uneconomical) and went to live with his Uncle Thomas. Spencer spent this period reading widely, and writing a number of letters on "The Proper Sphere of Government." After a brief period in 1844 as subeditor of the newspaper *Pilot*, he returned to the London and Birmingham Railway as an engineer. In 1848 he became the managing editor of the newspaper *Economist*. It was in this year that he began his first major work, *Social Statics,* which was published three years later. In the following year (1849) he wrote a paper, "A Theory of Population," which embodies Lamarkian evolutionary thinking but also contains hints of natural selection. This was a watershed for Spencer. The essay received considerable attention (some positive, some negative) and became the vehicle that brought him into prominent circles in England, including the beginning of a deep friendship with Thomas Huxley.

Spencer was a prolific writer and advocate of an evolutionary conception of knowledge, society, and morality. For much of this century, however, he has been regarded with derision as the father of social Darwinism in its ugliest, meanest forms. As a result, he is often cited as an example of all that is wrong with many programs of evolutionary ethics. He is cast as a hardline advocate of the principle of the survival of the fittest within a laissez-faire social structure. (The expression *survival of the fittest* was coined by Spencer and used by Darwin in the fifth and sixth editions of *The Origin* as a cognate for Natural Selection.) This characterization, however, is extremely unfair to Spencer and is largely a result of isolating some of his claims from his overall view and also of removing him from the social context that his writings were addressing and which informed his thinking. Without doubt, his prose, especially in his later works, does nothing to create excitement about, and interest in, his views. And there is much in Spencer with which a late-twentieth century reader can disagree. This, however, is true of almost all historical figures, including Darwin. For some reason, however, Spencer is especially targeted for holding biological views

commonly held by his contemporaries. For example, Spencer is often brushed aside because of his commitment to the inheritance of acquired characteristics. With inconsistency, Darwin's acceptance of the inheritance of acquired characteristics and a "pangenesis" theory of inheritance does not result in the same dismissive attitude. Some take refuge in the fact that Darwin got the picture of evolution largely right whereas Spencer got almost nothing right. This will not do. Much in late-twentieth century thinking bears the marks of Spencer, and notwithstanding the existence of points of disagreement, his views are far richer and more complicated than the standard characterization conveys. Indeed, there is good reason to believe that he was one of the most important, influential, and creative thinkers of the second half of the nineteenth century.

A sense of his importance in the nineteenth and early twentieth century can be gained by considering the use made of his books. The *Principles of Biology* was used as a text at Oxford University; the *Principles of Psychology*, at Harvard University; and the *Study of Sociology*, at Yale University. His *Study of Sociology* was the text for the first course offered in the United States on sociology.

Spencer's opposition to the poor laws is a striking example of the misunderstanding of Spencer's views that arise from isolating a few of his claims from the body of his works and the social and intellectual context of his time. Like many of the professional upper-class in nineteenth century Britain, Spencer was vigorously opposed to the poor laws. The poor laws imposed a tax on parishes to generate funds for relief and welfare payments. Originating with legislation in 1572 that permitted each parish to tax its citizens when charitable donations were inadequate to meet the needs of the poor, these laws in different forms persisted until 1929 with the passing of the Local Government Act. In 1834, the Poor Law Amendment Act was passed with the intent of removing support from those who were deemed unwilling to work. Only those who demonstrably could not work were to receive support: those with a physical impediment, the elderly, and so on.

For Spencer poor laws of any kind were unacceptable. This opposition is often cited as evidence of Spencer's lack of compassion for those less fortunate than himself. According to this view of Spencer, his supposed lack of compassion is rooted in his principle of the survival of the fittest. This view of Spencer, however, is seriously in error. He was not opposed to individual charity—indeed he championed it—rather, he opposed state intervention as a means of resolving the problems of poverty. His views were anything but lacking in compassion when placed within the context of nineteenth century British society and within his own larger philosophical framework. Much was wrong with the administration of the poor laws in the nineteenth century. Parishes were permitted but not mandated to impose a certain level of tax, and the actual administration of the tax and its disbursement was governed by central government policy not local parish circumstances. The result was wide variation from parish to parish in the treatment of the poor. Frequently the support offered was inadequate and the policies for disbursement caused regressive behavior in the poor (e.g., women bearing numerous children to increase support payments). It is unlikely that anyone today who investigated the workings of the poor laws in Spencer's time would support this system. This alone was reason enough for compassionate people to oppose the poor laws, but Spencer has at least two other reasons, one connected to the effect of the poor laws, the other connected to his philosophical system.

In Spencer's mind, the poor laws repressed social progress by suppressing the desire of the working poor to rise up against the social conditions of the time. Certainly prior to the reforms of 1834 and to a significant extent afterwards, the poor law taxes were used to supplement the below-subsistence wages paid by wealthy landowners and manufacturers to the working poor. For Spencer, this had the effect of perpetuating a system that held a large portion of working people in poverty and allowed landowners and manufacturers to pay unreasonably low wages. The potential for the working poor to press for change (which in other parts of Europe had erupted in violent upheaval) was muted by

this state supplement through the poor laws, which made life just barely tolerable for the working poor.

These two reasons for his opposition were practical reasons. They exemplify considerable compassion and desire for change in the lot in life of the working poor. Indeed, it was through the work of social reformers who had the same concerns about the plight of the poor under the poor laws that they were abolished in the early twentieth century.

Spencer also had a more philosophical and theoretical reason for opposing the poor laws, which goes to the heart of his evolutionary ethics. He was vehemently opposed to government intervention in society save for the purpose of securing and maintaining the maximum freedom of all citizens. The sole function of government should be to protect the maximum possible freedom of each citizen from encroachment by the behaviors of others: limitations on individual freedom are acceptable only insofar as they are necessary to secure and maintain an equal freedom for all.

Spencer believed in social as well as organic evolution. Indeed, they were intimately interconnected. Social evolution would lead to a society of socially perfected individuals (those morally and physically adapted to social interaction) in which land would be held in common, the dignity of each person's labor would be respected and appropriately rewarded, the greatest happiness for the greatest number would be achieved, and the maximum freedom possible would be had by everyone. This was Spencer's social utopia. Government intervention not only diminishes individual freedom (and with it responsibility) but it impedes the evolution of society toward this utopia by creating artificial social environments that ultimately delay the social adaptations necessary to bring about the utopia. In other words, just as intervention in a stable ecosystem disrupts the system and can result in its demise, intervention by governments in the dynamics of society disrupts the society, which impedes its improvement and can result in its demise.

One may still harbor doubts about Spencer's views and, with a century of hindsight, might reject any notions of the perfectibility of humans or achievable utopias—even Spencer, in his later years, came to doubt these notions. How-

ever, placed in context, Spencer can be seen to be striving for the same goals that many strive to achieve today. His views may rest on some mistaken ideas about how to achieve the goals but his position is far from morally bankrupt or repugnant. And it is not at all clear that his general conception of the evolution of society and of the evolutionary basis of morality are entirely without credibility.

As indicated, Spencer believed in the perfectibility of humans and in an eventual utopian society. These ideals play a large role in his *Social Statics*, *First Principles*, and *The Principles of Ethics*. In his later years he came to doubt whether perfection or social utopia was achievable but retained his commitment to progress toward them. Even without these features, there is plenty of vitality to Spencer's evolutionary ethics of which I now shall provide a brief account.

Spencer's moral theory centered around the greatest happiness principle (the greatest happiness for the greatest number). Although this principle is also the foundation of utilitarianism, Spencer rejected utilitarianism. According to the utilitarianism espoused by Spencer's contemporaries (e.g., John Stuart Mill), the rightness or wrongness of one's actions is determined by whether they contribute to or detract from the realization of the greatest happiness for the greatest number. Spencer rejected the idea that anyone did, could, or should attempt to calculate the amount of happiness each behavior or class of behaviors would produce. To him, it was absurd that a decision about the rightness or wrongness of a behavior depended upon a calculation in terms of units of happiness. He accepted the goal of the greatest happiness for the greatest number but rejected the view that its assessment and achievement were to be found in a calculation for each behavior. Instead, he argued that social evolution is the means of achieving it.

The achievement of the greatest happiness for the greatest number is dependent upon the social environment within which individuals function and on inherited behavioral dispositions. The social environment that brings about the greatest happiness is one in which individuals have the maximum freedom consistent with equal freedom for all. This social environment will result from a social evolution

during which individuals will become more and more adapted to living in a society and, by so adapting, will come to have the requisite behavioral dispositions. In this way morality is linked to social evolution. In effect, the laws of social evolution and the principles of morality are the same because the goal of both morality and social evolution is the greatest happiness for the greatest number.

Two important refinements of this characterization are required to give Spencer's view more substance. First, even though Spencer himself speaks a great deal about happiness, happiness is not the most useful way to characterize the grounding of his position. For Spencer, happiness is equated with justice. And in the end, social evolution is best thought of as resulting in justice and the goal of morality is best construed as justice. This is important because happiness can be diminished by regarding it as an emotional state that seems inappropriate as a goal of morality. Justice is a richer concept that involves human social relationships and not just an emotional state-of-mind of individuals. Justice is a more appropriate description of what Spencer was striving to achieve.

Second, a key step in Spencer's argument is the move from maximal freedom to greatest happiness or justice. Because a great deal rests on the acceptance of this step, elaboration seems in order. A key element in this step is altruism which will result from the social struggle for survival. Maximal freedom is a requisite for the occurrence of a social struggle for survival and, hence, the exercise of altruism.

Spencer's arguments in support of his claim that altruism will result from the social struggle are strikingly similar to the explanations of the evolution of altruism proffered by sociobiologists today. Spencer in the *Principles of Ethics* distinguishes between altruism toward members of one's own family and altruism toward members of one's society. The former he explains by referring to the negative results of too much selfishness in parents. If parents do not behave altruistically toward their children, the survival of the children is compromised, and hence, these families will reproduce in lower numbers, if at all. In the end, such families will be-

come extinct and only families with the required altruism will remain. This explanation, of course, assumes that altruism is heritable.

Social altruism is explained in three ways. First, in the *Principles of Ethics*, Spencer employs a critical mass argument. If a society has too few altruists it will undergo decline as a society and all members will experience a decrease in the level of his or her personal satisfaction. These social structures will not survive due to the decreasing level of personal satisfaction. One assumes that, on some occasions, forces such as revolution, emigration, and so forth may play a role in weakening and destroying such societies. Second, in the *Principles of Psychology*, he employs a "reciprocal altruism" argument. He claims that reciprocally beneficial behavior would give rise to a disposition for altruistic behavior because such reciprocity would result in the immediate evolutionary reward of enhanced survival. Over time the struggle for survival would result in an increase in altruism because those who had acquired the habit would pass it on to their children and there would be ever new cases of the behavior yielding enhanced survival. This way of formulating the argument depends on an acceptance of the inheritance of acquired characteristics. With only slight modifications, however, Spencer's position could be recast to employ the current sociobiological conception of reciprocal altruism based on individual selection.

Third, in the *Principles of Ethics*, he seems to suggest that the very act of adapting to the conditions of the freedom-maximizing society will bring about altruism. The effect of the habitual adaptation to the society will produce a heritable disposition to behave altruistically.

Spencer defined *altruism* as truly nonselfish behavior. One behaved altruistically to benefit someone else, not to reap a benefit for oneself at the time or later. Of course, some benefit to oneself may occur but this is not the motivation for the behavior. This may seem at odds with the sociobiological concept of altruism according to which altruistic behavior persists only because it benefits the altruist by increasing the probability that his or her genes will be passed on to the next generation. Consequently, the basis

for altruism is ultimately selfish. This difference between Spencer and sociobiologists, however, is more apparent than real. Spencer's arguments for the evolution of altruism clearly rest on selection and the benefit to the individual or society of altruistic behavior. He accounts for the origin of the behavior differently (acquired habits that are inherited) but not its spread through the population (selection because of its benefit in enhancing survival). What Spencer was focusing on in his definition of altruism was the psychological motivation. Spencer did not accept that humans calculate outcomes for most of their moral actions. They behave in certain ways because they have a disposition to do so. The disposition for altruistic behavior is in large part a function of a disposition of compassion that has evolved because of its individual or group benefit in the struggle for survival. Hence, individuals behave altruistically without a conscious motive for benefit but the disposition to do so has evolved because of its benefit to the individual or group. This is similar to the sociobiologist's epigenetic rules that govern behavior and have a genetic basis. The rules evolved because behaving in accordance with them enhanced reproduction. The conscious motivation of the individual for the behavior, however, is not necessarily aimed at benefit for that individual. One acts in accordance with one's "conscience" in ways one would describe as nonselfish.

I have indicated that the first two of Spencer's arguments for the evolution of altruism have counterparts in current sociobiology and that his definition of *altruism* is not inconsistent with sociobiological conceptions of altruism. There are, however, two notable differences. Spencer relied heavily on the inheritance of acquired characteristics. Modern evolutionary biology rejects this view of inheritance and works within a Mendelian framework within which genes are altered by forces such as mutation. In the modern framework selection works on the pool of genes available in a given generation. Population genetics was not developed in a form that integrated it with natural selection until the work of Fisher, Haldane, and Wright in the late 1920s and early 1930s. Hence, this theory was not available to Spencer (or for that matter to Darwin, who also employed the inher-

itance of acquired characteristics in his theory, although Spencer clearly made it do much more work within his theory).

Spencer also employs a group selection argument for altruism. Sociobiology, by contrast, is grounded in a mechanism of individual selection and, largely, rejects group selection (see Part II of this Introduction).

Neither of these differences should be elevated in importance. As I have indicated Darwin also accepted these mechanisms at points in his work. When crediting Darwin with establishing the foundations of modern evolutionary theory we do not concern ourselves with the fact that a number of his arguments relied on views we now reject (in the case of heredity, his view—pangenesis—is now regarded as entirely false). We simply "update" his views using current theories. If the same generosity is accorded to Spencer, many elements of his theory of the evolution of morality are compatible with, if not identical to, those of sociobiology. And, it is significant that a frequent, and for many decisive, charge against both Spencer and sociobiology is that they both commit the naturalistic fallacy. Whether this is so and, if it is, whether it is a logical problem are something that the articles in this collection explore.

A concluding point on the overall plan and motivation for Spencer's theory of the evolution of morality will aid in making sense of his writings. Robert Richards has convincingly argued that Spencer's moral theory drove his evolutionary theory, "I have argued that Spencer constructed his evolutionary theory to meet the demands of his moral theory, and not the reverse" (Richards 1987, p. 309). This conception of Spencer's strategy and motivation makes sense of many of his evolutionary arguments that diverge from those of Darwin in the emphasis he placed on certain mechanisms. It also makes sense of his commitment to evolutionary progress: his moral theory required it.

An excellent exposition and re-evaluation of Spencer's evolutionary ethics (as well as his related evolutionary epistemology) can be found in *Darwin and the Emergence of Evolutionary Theories of Mind and Behavior* by Robert J. Richards (Chapters 6 and 7).

3. Thomas Henry Huxley (1825–1895)

Thomas Huxley possessed an outstanding intellect. He was self-educated in his younger years. In 1842 he entered Charing Cross Hospital for education as a physician. While at the hospital he had a distinguished record, winning awards in chemistry, anatomy, and physiology. In 1846–1850 he traveled on *H.M.S. Rattlesnake* as assistant surgeon. Upon his return in 1851 he was elected a Fellow of the Royal Society. He was a strong defender of state-sponsored education for the lower classes.

In his early years, he championed Darwin's theory of evolution. His success in rebutting the anatomical views of Richard Owen and his victory over Samuel Wilberforce, bishop of Oxford, in a debate in 1860 played an extremely important role in boosting the credibility and acceptability of evolution. According to his son Leonard Huxley in his *Life and Letters of Thomas H. Huxley* (vol. 1, p. 391), Thomas Huxley once said "I am Darwin's bull-dog." This description has been widely used to describe Huxley's vigorous defenses of Darwin and Darwinism. He also was a good friend of Herbert Spencer.

In his later years his convictions about the extension of Darwin's theory to morality changed. At the time that *The Descent of Man* was published (1871), he defended Darwin's views on morality and evolution. For example, in a paper in *The Contemporary Review* in 1871 titled "Mr. Darwin's Critics" he responded, in typical "Darwin's bull-dog" fashion, to an anonymous review in the *Quarterly Review* (written by St. George Mivart). In it he vigorously demolished Mivart's views and objections. Mivart responded to Huxley in 1872 in a paper entitled "Evolution and Its Consequences: A Reply to Professor Huxley."

Huxley's Romanes Lecture (reprinted in this collection) expresses his later views which break with those of Darwin and, most dramatically, with those of Herbert Spencer. His friendship with Spencer had a hiatus beginning in February 1888 and lasting until 1894, the year before his death in the summer of 1895.

A central element in the Romanes Lecture is the divide between the process of evolution in nature and human activity. He was no longer convinced that Darwin or Spencer had bridged the divide. He allowed that natural selection gives rise to moral sentiments (propensities) but provides no basis for morality because it provides no basis for following the moral sentiments. Indeed, nature and morality are in opposition; for example, nature is indifferent to human suffering and although the propensity to be altruistic and cooperative have evolved by natural selection, they function only within groups and not among groups. In the printed version of the lecture he added a prolegomena that softens his claim, made in the lecture, that the divide cannot be bridged.

Part II. Some Central Contemporary Issues

1. The Naturalistic Fallacy

Probably the major philosophical criticism of evolutionary ethics has focused on the perceived naturalistic framework of the various theories. Ethical naturalism is the view that moral claims state facts about the natural world. The opposing, nonnaturalist, view holds that there is a fundamental difference between factual claims and moral claims: factual claims are descriptive; moral claims are prescriptive and evaluative. Consequently, empirical science and moral philosophy are two very distinct enterprises. For example, evolutionary biology may accurately describe the properties and behaviors of a group of organisms and how that kind of organism came to have those properties and behaviors, but it is outside its scope to determine whether those properties or behaviors are "good." That is, evolutionary biology can describe the way organisms *in fact* behave, but cannot determine whether that is how they *ought* to behave.

In an ethical nonnaturalist view, "evolutionary ethics" seems to be a simple contradiction in terms. At best, evolutionary theory may explain how we came to be ethical

animals and why we have propensities to behave in certain ways. It, however, cannot morally justify such propensities. It is entirely reasonable to accept that as a result of our evolutionary development we have a propensity to behave in a particular way while maintaining that behaving in that way is immoral. That a behavior has a biological basis does not make it morally right.

In an ethical naturalist view, however, evolutionary ethics is not a contradiction in terms: moral claims state facts about the world and, therefore, are investigated and justified in the same way as other empirical claims about the nature and behavior of the world. One part of the investigation and justification might well be based on evolutionary theory. In this view, specific claims about the evolutionary basis of morality may be false but the enterprise is at least logically and conceptually coherent.

Ethical naturalism has faced two major challenges: Hume's challenge (Hume 1739, 1740, 1751) and Moore's challenge (Moore 1903). Hume's challenge can be summarized in the maxim that "ought" claims cannot be derived solely from "is" claims. Moore's challenge can be summarized in the maxim that "good" in the ethical sense is a nonnatural property. Although these challenges have much in common they are often discussed independently. Hence, I shall set out each challenge as though it were disconnected from the other. The label *naturalistic fallacy* has come to be used quite loosely to describe either Hume's or Moore's challenge. Its origin, however, is with Moore, and it is more appropriate to refer to Hume's position as *Hume's Law*. In the context of evolutionary ethics, it is Hume's Law that is most often cited as sounding the death knell.

Hume's claim is simple. Any argument employed to justify a moral claim must be such that a moral claim is used in the justification. In deductive logic, a *valid argument* is defined as one in which the conclusion necessarily is true if the premises are true (i.e., one cannot accept the premises as true and deny the truth of the conclusion). Arguments that purport to justify moral claims on the basis of factual claims alone are, according to Hume's Law, invalid. Such