



*Book review*

## **What Can History Tell Us About Founding Ethics on Biology?**

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Over the past forty years or so philosophers of science have become convinced that the history of science holds lessons for understanding the practices of science and for drawing metaphysical and epistemological conclusions about the substance and methods of the sciences. Perhaps, then, scientifically and naturalistically inclined moral philosophers, especially those who take the findings of the biological sciences to be significantly relevant to their work, should find it important that they inform themselves about the work of their predecessors. Jane Maienschein and Michael Ruse think so and have put together a volume of especially commissioned historical studies to assist biologists, philosophers of biology and moral philosophers interested in the biological foundations of ethics in learning about the history of their endeavors. The results of their efforts are informative and, in the main, succeed in supporting their claim that “we can gain much by close scholarly attention to historical efforts to link biology and ethics” (p. 3). The essays should also help to fulfill the editors’ hope “that moral theorists will begin to take the biological contributions more seriously and that biologists can begin to make their arguments more persuasive philosophically” (p. 9).

### **Founding ethics on biology**

What lessons about founding ethics on biology might history hold for proponents or opponents of a scientifically naturalized ethics? In answering this question, we can start by taking 'biology' to refer to the major relevant biological disciplines, such as molecular biology, genetics, developmental biology, evolutionary theory, ecology and so forth. Using a traditional Anglo-American understanding of the discipline of ethics, we can divide it into (1) metaethics, which concerns itself with the nature and function of morality, (2) normative, ethics, which deals with moral principles and norms, and (3) applied ethics, which focuses on the application of moral principles and norms to the resolution of moral issues in particular areas of moral concern, for instance, biomedical ethics. The relationships between biology and ethics could, of course, go in both directions, from ethics to biology and from biology to ethics. Thus, areas of applied ethics and professional scientific ethics have something to say about scientific practice and applications of the biological sciences. We might also hypothesize a similarly directed input from normative ethics or metaethics to biology. But a usual assumption is that, except for the application of ethics in professional scientific ethics, if there is a legitimate influence at all, it should go from biology to ethics.<sup>1</sup>

Looking at things from that direction, we can discern a whole set of possible relationships (Rottschaefter 1998). From the foundational perspective taken in this volume, we might be interested in questions about the relationships of biology to metaethics and the principles of normative ethics. Metaethical issues can themselves be divided into questions about the nature and function of moral agency, moral epistemology, and moral ontology. Thus, we can postulate the following sorts of substantive contributions of biological knowledge to metaethics, specifically to questions about moral agency: (1) biological knowledge may provide relevant information for making informed ethical decisions, an informational connection; (2) biological knowledge may serve as a source for understanding what moral agency is, a descriptive connection. Biology may also provide explanatory connections by (3) helping to explain the origin, maintenance, and preservation of moral agency both phylogenetically and ontogenetically, and (4) helping to account for how moral agency is put to work. Moving on to include the issues of moral epistemology, (5) biological knowledge may serve not only descriptive and explanatory purposes but also justificatory ones, providing justified moral beliefs, properly moral motivations, and reliable moral actions, justificatory connections. It may also serve (6) as a source of ethical norms, a normative connection. Thus, it can, in addition, (7) be a basis for ethical critique, a critical connection. Further, biology might furnish (8) an understanding of the ontological status of moral values. Finally, biology might, in part at least, (9)

create a sense that life is meaningful, meaningfulness connection. Of course, there may also be methodological connections between the disciplines of ethics and biology, but I shall set these aside.

Separatists argue that little, if any, of these possible connections are in fact realized, holding that biology is not connected with ethics in any of these ways, save, perhaps, on some occasions, informationally. Antagonistic interactionists, on the other hand, claim that some of these connections between biology and ethics are to be found, but maintain that they have affected ethics mostly in a negative fashion, for instance Social Darwinism. Limited scientific naturalists postulate that only the less controversial sorts of connections hold, for instance, those of the descriptive or explanatory sort. Full-fledged scientific naturalists hold that the founding relation contains the full array of potential connections.

Hypotheses about connections or the lack there of are well and good, but what sorts of connections have been shown to be plausible or implausible? What can students of the foundational relationships between biology and philosophy, whether philosophers or biologists, gain from studying the work of their predecessors? Trivially, we might claim that they can learn from past mistakes, failures, advances and successes. But is there anything in the history of the relationships between biology and metaethics that is similar to, for instance, the lessons to be found in the development of physics and astronomy in the 16th, 17th and 18th centuries, in the emergence of the neo-Darwinian synthesis in the 1930s from evolutionary theory and Mendelianism or in the development of molecular biology in the 1940s and 1950s? More basically, what counts as a successful founding of ethics on biology or what are the significant failures? How do we know that attempts to forge the above sorts of connections have been properly or improperly made? For those of the optimistic frame of mind, supporters of a scientific naturalistic ethics, can they expect to find in the past practices of their predecessors examples of appropriate questions, helpful heuristic models, appropriate methods of justification and explanation, all forging the relevant foundational connections between biology and ethics? With these questions in mind we can turn to the twelve essays that comprise the volume under review.

### **What does history actually tell us?**

Using the editors' central question as a guideline, we can divide the essays in this volume into three categories. First, there are three essays which not only present relevant historical material dealing with attempts to found ethics on biology but which also explicitly address the question of what lessons we can learn about the founding of ethics on biology from the history of attempts to

do so. Second we find a group of six papers which present historical cases relevant to answering the editors' central question, but do not explicitly or reflectively address it. Finally, in the third category are three essays that do neither. After briefly summarizing the essays in this last category, I will focus on the nine that are relevant to the editors' project.

In "Scientific Responsibility and Political Context: The Case of Genetics under the Swastika," Diane Paul and Raphael Falk raise the question of how to assess ethically the activities of a large group of German biologists who did not engage in overtly criminal activities during the Nazi regime, but who, nevertheless, practiced their science with the support of that regime. In doing so they describe both the practice of biology during that period and the reintegration of these scientists into the post-war scientific community. In particular they look at the career of geneticist Hans Nachtsheim (1890–1979). Paul and Falk conclude that "the traditional commitment of scientists to the principle that they were accountable only for the quality of their 'pure research' guaranteed that they would serve the political interests of whatever party was in power, and in the case of Germany that would be the National Socialist State" (p. 272). In his paper, "The Case against Evolutionary Ethics Today," Paul Woolcock critiques and finds inadequate three current proposals for a biological foundation for ethics, whether of the non-justificatory sort urged by Michael Ruse (1986) or the justificatory kind supported by Robert Richards (1986) and William Rottschaefer and David Martinsen (1990). In contrast, Robert and Daniel McShea support a biologically based ethics presenting a feeling motivated and biologically-based foundation for ethics in "Biology and Value Theory". These essays, while interesting in their own right, and, in the case of the latter two, relevant to current discussions about founding biology on ethics, do not help the reader in pursuit of answers to the editors' focal historical question.

On the other hand, the next set of six essays are historical studies of attempts to link ethics and biology in some foundational way, conceived broadly along the lines of the nine connections outlined above. While the authors of these essays do not pose the editors' question in a reflective fashion and then attempt to answer it, they provide substantive materials for reflection by the reader interested in that question.

James Lennox's "Aristotle on the Biological Roots of Virtues: The Natural History of Natural Virtues" examines issues that are central to moral agency and to what I have described as descriptive and explanatory connections: what makes for human moral agency and how is it acquired, maintained and practiced. Lennox takes us through central texts of Aristotle's *Historia Animalium* in an attempt to answer these questions. In the process he details Aristotle's answer to the question of how it is that though, as Aristotle

claimed, non human animals possess both natural virtue and practical intelligence, they nevertheless lack virtue in the unqualified sense that can be attributed to well-functioning human moral agents. To answer this question, Lennox masterfully examines the *Historia Animalium* and convincingly argues that it is action guided by practical intelligence under the guidance of moral education that allows for the development of the natural virtue and cleverness of intelligence shared by human adults, children and animals into moral virtue and intelligence. Lennox opines that while readers of Aristotle's *Nicomachean Ethics* may take this conclusion merely to reflect generally accepted opinion, a study of the *Historia Animalium* makes clear that Aristotle furnishes a theoretical basis for his cognitive moral ethology. In addition, Lennox suggests that Aristotle's account is consonant with Darwin's concerning the nature and acquisition of the moral sense.

The second essay in the collection is Michael Bradie's discussion of the question of moral considerability in eighteenth century British philosophy, "The Moral Status of Animals in Eighteenth Century British Philosophy." Bradie traces the shifts in views concerning the moral considerability of non-human animals. At the beginning of the century he finds philosophical and revelation-based arguments that deny moral considerability to brutes because they are without souls and, consequently, lack the rational and reflective capacities necessary for conscience and moral agency. Over the course of the century, culminating in Bentham, British moral philosophers came to the view that brutes, because they were able to suffer, were morally considerable, even though they perhaps lacked, at least in degree, the kinds of capacities required for moral agency.

Phillip Sloan moves the reader across the channel to eighteenth and early nineteenth century France and to the transition from late scholastic natural law ethical theory to ethical thought based in natural history and evolutionary theory. He traces this development, beginning with the work of Georges-Louis Leclerc, comte de Buffon (1707–1788) and Jacques-Henri Bernardin de Saint Pierre (1737–1814) and culminating in the views of Jean Baptiste Lamarck (1744–1826). In both the natural law tradition and Lamarck's view one finds an appeal to an objective foundation for ethical principles in biological nature. Lamarck, unlike Rousseau and Saint Pierre, and like the natural law tradition, argued that the adequate development of moral agency requires not only a natural ethical sensibility but also thought, reflection, moral education, and a sustaining social environment. In addition, though Lamarck was a materialist, his was a non-reductionist one, maintaining that life, animality and human moral agency were all emergent features of material reality. Thus, his "dualism" was, according to Sloan, closer to that of the Aristotelian matter-form type than the Cartesian substance dualism. Finally, Lamarck

found a basis for the objectivity of nature's values, as did the natural law tradition, in the purposes of a divine being, but of the deistic, rather than theistic, sort. But Sloan notes that this sort of extrinsic support for the objectivity of nature's values was later challenged by a Darwinian alternative that found no need for such an appeal.

The fourth in the set of essays that addresses the editor's question without reflecting explicitly on it is Myles Jackson's "The State and Nature of Unity and Freedom: German Romantic Biology and Ethics". Jackson examines the thought of *naturphilosophen* Lorenz Oken (1779–1851) and Johann Wolfgang Goethe (1749–1832). He points out that both thinkers maintained similar biological views about development and both maintained the philosophical position that nature holds moral, political and social lessons for humankind. Despite these agreements they differed fundamentally on the nature of these lessons; Oken found a politically revolutionary one, while Goethe uncovered a conservative reformist lesson.

In Frederick Nietzsche we meet a philosopher who, perhaps unsurprisingly, thought it necessary to buck the trend toward evolutionary thinking. Jean Gayon, in his very careful, detailed and illuminating analysis, "Darwin and Nietzsche", outlines along four dimensions Nietzsche's concerns with Darwin and Darwinians, including under the latter Spencerians and Utilitarians. First, Nietzsche explicitly critiques the principle of the "struggle for existence" arguing that Darwin erred in contending that evolution favored the "strong". Nietzsche thought that in fact it favored the herd and thus the mediocre. Second, Nietzsche discussed the concept of selection in connection with evolution, arguing for the importance of human selection through eugenics. Third, his reflections on the cultural evolution of humankind and the origin of morals led Nietzsche to oppose Darwin, Spencer and the English Utilitarians because, in Nietzsche's view, they reduced the question of the origin of morality to the origin of altruism and understood human moral and cultural progress merely as an ascent to universal altruism. Finally, Nietzsche's contentions about the centrality of usefulness to the assessment of all beliefs and knowledge, as well as his doctrine of perspectivism, are also relevant to assessing his relationship to Darwinism. Perspectivism is a view that denied any absolute values and that requires that all knowledge and beliefs be assessed with respect to their survival value. Gayon notes the fact that, unbeknownst to Nietzsche, these views demonstrate a convergence of Nietzsche's thought with Darwin's.

The last of the essays in this category bring us to the twentieth century. Marga Vicedo explores the metaethical thought of four influential early twentieth century American geneticists, Charles B. Davenport (1866–1944), Edward Murray East (1879–1938), Herbert Spencer Jennings (1868–1947),

and Edwin Grant Conklin (1863–1952). Though not representative of all American geneticists of the time, these men were deeply interested in the project of finding a biologically naturalistic foundation for ethics and took it on as a major part of their professional work. Influenced by both Darwin and Spencer, as well as by the great American pragmatist philosophers, Pierce, James and Dewey, these thinkers sought to find a basis for moral values and ethical principles in our biological natures and to come to grips with the implications of determinism for moral agency.

I now turn to the three essays that explicitly address the question what lessons the historical cases can teach about whether and how biology can serve as a foundation for ethics. In his “Darwin’s Romantic Biology: The Foundations of His Evolutionary Ethics” Robert Richards argues for a foundationalist view using as his historical case Charles Darwin’s (1809–1882) evolutionary ethics. Richards develops themes that he has elaborated earlier (1987) arguing that far from mechanizing biology and stripping nature of any values, Darwin’s theory of evolution by natural selection provides a non-mechanistic account of the origin of species, one that discovers values in nature. In this essay he places Darwin’s work within the context of the Naturphilosophen who were romantic biologists. The latter maintained that science had both moral and aesthetic elements to it. As Richards puts it, “[r]omantic biologists . . . understood nature to be the repository not only of lawful regularities and aesthetic delights but also of moral structures” (p. 119). Richards focuses on the role that the work of Alexander von Humboldt (1769–1859) played in Darwin’s thought. He contends that from his earliest notebooks to his late works Darwin, saw nature through Humboldtian eyes as an organic whole. The products of nature in general are both intelligent and moral. Making use of his previous work (1987) Richards reviews the centrality of questions about human morality and altruism for Darwin as he developed his theory of evolution by natural selection. Richards concludes by arguing, as he has done in other places, that Darwin’s biologically based ethical theory does not reflect a utilitarian selfishness and that a naturalistic ethics built on Darwinian evolutionary theory can meet the objection that it commits the naturalistic fallacy.

Michael Ruse in his “Evolutionary Ethics in the Twentieth Century: Julian Sorell Huxley and George Gaylord Simpson” illustrates two historical versions of a biologically based ethics, one finding objective moral values in nature, that of Julian Huxley (1887–1975), and another, that of George Simpson (1902–1984), tracing moral values to evolutionarily based moral sentiments. Thus Ruse places Huxley within the tradition of Spencer who found that the process and progress of evolution revealed moral values intrinsic to nature itself, values that provide the bases for the justification

of moral claims. Simpson, on the other hand, owes allegiance to a differing naturalistic metaethical tradition in evolutionary thought, one represented by Julian Huxley's grandfather, Thomas Henry Huxley (1825–1895). Ruse himself opts for the latter tradition, having argued in a number of places (for instance, 1986) for its preferability.

Paul Farber's "French Evolutionary Ethics during the Third Republic: Jean de Lanessan" rounds out this final trio of essays. Farber (1994) has argued the history of Anglo-American evolutionary ethics teaches us that the project, though tempting, especially given what he sees to be the generally desperate state of metaethics, ought to be resisted. Here Farber continues this line of thought arguing that the efforts of a representative French evolutionary thinker Jean-Marie-Antoine de Lanessan (1843–1919) reinforce the lesson of the Anglo-American efforts. The lesson is particularly instructive, argues Farber, because although Lanessan employs a different theory of evolution, a neo-Lamarckian one, and arrives at a different set of moral values than his Anglo-American counterparts, he, like them, reads his values into nature rather than providing an evolutionary account of their origin and an evolutionary justification of their moral worth.

#### **A scientific naturalistic story about some of the lessons from history**

Although I have indicated that I believe that nine of the twelve studies in this volume are rich with historical material concerning biology and the foundations of ethics, the lessons we can learn from them are not, I believe, clear or uncontroversial. I suspect that Separatists, oppositional interactionists, and both limited and full-fledged scientific naturalists all could weave a story to support their view from the materials presented to the reader. In the remainder of this essay I will take the perspective of the full-fledged scientific naturalist. I shall not here be able, if it is feasible at all, to show how all the significant historical detail fits neatly into a scientific naturalistic story about its emerging and increasingly successful research tradition on the biological foundations of ethics. But I will try to say enough to show why that tradition is worthy of continued pursuit and how the worries of Separatists and others do not require full-scale reconsideration of the project.

To focus and put some limits on our discussion, I shall neglect some of the potential connections between biology and ethics, specifically the normative, critical and meaningfulness connections. In addition, we need not concern ourselves with the informational connection since even hard core Separatists agree that this sort of connection can easily be established. Moreover, open-minded Separatists, antagonistic Interactionists and limited scientific naturalists usually agree that the sciences, including biology, have a contribution to

make to understanding moral agency and moral considerability. But even if one grants such a contribution, questions arise, for instance, concerning how much biology can further such an understanding and the extent to which other sciences such as psychology, anthropology, sociology, economics, political science are also necessary for a proper description and explanation of moral agency. Full-fledged scientific naturalists should admit that the biological sciences provide only a limited account of moral agency and that the other natural and social sciences are required to fill in major portions of that account (Rottschaefer 1991, 1998). Thus, the general picture of the development of an adequate understanding of moral agency and moral considerability, one that reveals descriptive and explanatory connections between the sciences, including biology, and ethics is, I believe, relatively uncontroversial. As far as I can discern, all the authors in our volume, including the explicit critics of the scientific naturalistic project, such as Farber and Woolcock would not stand in opposition to this broad characterization of the history. Moreover, granting the epistemically progressive character of the emerging scientific discipline of biology – from Aristotle’s cognitive ethology to current human sociobiology, the full-fledged scientific naturalist can find materials in the group of essays not addressing the editors’ focal question reflectively that can be used to construct a story about an increasing understanding of the nature of moral agency and, to a much more limited extent, moral considerability. That leaves us with the justificatory and ontological connections. I will focus on constructing a plausible full-fledged scientific naturalistic story from the historical cases presented in the volume, one that portrays an increasing understanding of how biology can be used in the justification of claims about moral values and the ontological status of moral values in nature. I shall turn first to some cases that might be interpreted as raising problems for the full-fledged scientific naturalist position concerning the existence of justificatory and ontological connections between biology and ethics. Then I shall move on to my positive story.

Farber argues that the lessons of the Anglo-American failures to justify ethics by means of biology are found again in his case study of Jean de Lanessan’s evolutionary ethics.<sup>2</sup> He claims that “as polemic evolutionary ethics has worked; however, as philosophy it has not been satisfactory” (p. 96). Unfortunately, Farber does not tell us what would count as satisfactory philosophy. However, he gives us some hints about what he finds philosophically problematic.

Farber claims that evolutionary ethics involves a vicious interpretive circle. Thus, he argues that

Comparison of Lanessan to Anglo-American writers is instructive because it underscores the confusion that has surrounded discussions

of evolutionary ethics as an adequate basis for morality. Given a set of values and a picture of nature, a clever and imaginative writer can always construct a consistent match. For Anglo-American writers, evolutionary ethics provided a secular foundation on which to graft a set of Christian values. Lanessan attempted to use his *morale naturelle* polemically to legitimate the values of the Third Republic and to undercut some of his political opponents who favored a return to monarchy and a society following the dictates of the church. (pp. 95–96)

According to Farber, proponents of evolutionary ethics have preconceived sets of moral values. They read these values into nature by means of their interpretations of the evolutionary theories they have adopted. Then they read these values back out of nature. *Viola* evolutionary ethics! The full-fledged scientific naturalist can concede that vicious interpretive circularity renders attempts at evolutionary justification problematic without granting that it necessarily infests every attempt to use evolutionary theory to justify claims about moral values. Indeed, Farber seems to urge only an inductive lesson about past failures: “Contemporary authors who look to evolution for knowledge applicable to ethics need to be mindful of past attempts to use evolution as a foundation for ethical systems, and thereby they may avoid duplicating the mistakes of the past” (p. 96). Moreover, the justification process often starts with value judgments and commitments. These may serve as heuristic guides to their foundations without the tarnish of justificatory circularity.<sup>3</sup>

Perhaps, a full-fledged scientific naturalist should draw a cautionary message from Myles Jackson’s reflections on Oken and Goethe. Goethe and Oken worked from the same sort of developmental tradition in biology and both maintained that nature had things to say about moral values. Nevertheless, they drew radically different sorts of moral conclusions from their biological reflections. But the full-fledged scientific naturalist need not conclude that the case demonstrates any intrinsic ban against her justificatory project. At most, it merely demonstrates an instance of the underdetermination of claims concerning social and political values *vis-a-vis* biology, something all full-fledged scientific naturalists should find unsurprising.

I turn now to constructing a positive story from the historical cases. In reflecting on their respective historical studies, Richards and Ruse take explicit, though differing full-fledged scientific naturalistic stances on justificatory and ontological issues, Richards using Darwin and Ruse J. Huxley and Simpson. Richards reasserts the claim that he has argued for elsewhere in detail that biology can be used to justify claims about moral values. In doing so, Richards maintains that he is showing how the Darwinian project can meet contemporary philosophical requirements about the nature of justification. As is well known, Ruse is less sanguine about the prospects for ultimate

justification of biologically based moral values. In his essay in this volume, he finds Julian Huxley's claim to be able to discern in the process of evolution a set of moral values problematic, and he sides with Simpson's account of the limited sort of justification that can be found for ethical claims through an appeal to moral sentiments. Accordingly, Ruse places himself within the naturalistic tradition of T. H. Huxley and Simpson which explicitly denies the existence of objective, biologically based moral values. Using his interpretation of Darwin, Richards makes a case for the existence of objective moral values in nature. Although I am not completely clear about this, Richards ontological claims do not seem to rest as explicitly on the appeals to the directionality and progressiveness of the evolutionary process as do those of Spencer and Julian Huxley. Rather, Richards finds in Darwin an appeal to something like the Spinoza's *natura naturans* as an ontological source for values, thus differentiating Darwin from the theism of scholastic natural law theories and Lamarckian deism, as well as the idealism of some of the naturphilosophen. The differences between Ruse's subjectivist and Richards' objectivist accounts of the biological bases for the justification of claims about moral values, as well as the corresponding differences in their accounts of the ontological connection, represent an on going controversy within the camp of the full-fledged scientific naturalist position.<sup>4</sup>

The essays of Bradie, Sloan, Richards, Jackson, and Ruse taken together tell the story of the gradual shifting of the ontological bases for moral values from supernaturalistic to naturalistic foundations. We move from accounts that involve a theistic foundation in the natural law theory of the Aristotelian-Thomistic tradition to the Deism of Lamarck and the pantheistic and idealist tendencies of the Romantic biologists in the tradition of naturphilosophen. With Richards' account of Darwin we end up with nature itself producing moral values, Spinoza's *natura naturans*. Some full-fledged scientific naturalists may find that Richards' formulation unnecessarily reifies the evolutionary forces of natural selection.<sup>5</sup> Reifying the process of natural selection can lead to finding the ontological source for moral values in the progressiveness of the process of natural selection. I am not sure that this is Richards' intended reading of Darwin. But if it is, it would put Richards' Darwin in opposition to Ruse's (1986) and revive in another fashion the disagreements within the full-fledged scientific naturalists tradition between the followers of Spencer and T. H. Huxley. Although, strictly speaking, I am now moving beyond the issue of how to understand Darwin and the historical strands of evolutionary ethics, I have argued elsewhere (1997c) that the explanatory structure of adaptational ascriptions display both a teleological and evaluative character. Consequently, full-fledged scientific naturalists can argue for the existence of

values in nature without appeal to extrinsic teleological agents, evolutionary nature as a whole or to the progressiveness of the evolutionary process.

### **Conclusion**

In conclusion I want to broach a larger set of issues that this collection of essays raises. As we have seen, the editors have as their central unifying question what, if any, are the ways in which biology can provide a foundation for ethics. Earlier I described the discipline of biology in contemporary terms. I have also taken ethics to be something approximating its current academic disciplinary form, focusing on an Anglo-American understanding of its components. Clearly, the content of these essays does not fit neatly into these descriptions of biology and ethics. The authors have understood biology and ethics in very inclusive senses. For example, biology includes Aristotle's study and theorizing about comparative animal behavior, the observations of field naturalists, early evolutionary speculations, German romantic biology, Lamarckian and neo-Lamarckian theories of evolution and its causes, Darwinian and neo-Darwinian theories and more. Moreover, on the "science-side" of the issue, the essays address historical cases that involve what, at least from a contemporary point of view, we would classify as scientific speculation, empirically unsupported theories, incorrect theories, mistaken empirical claims, partially supported theories, etc. On the "ethics-side" we have a host of ethical metaethical theories and normative claims. As regards the "foundation-relation", the editors seem to leave that issue relatively open, and as we have seen the essays vary in terms of whether and how they address the relation(s) between biology and ethics. I have attempted to structure an understanding of that notion using an analytic strategy that is highly dependent on philosophical assumptions about moral agency, moral epistemology and ontology. Of course, no discussion is without major assumptions. Nor am I clear how much precision is needed or desirable in the exploration of the focal question posed by the editors. I am inclined to think that the editors inclusive approach is the one to be preferred, especially given the current stage of the exploration of the question. There is a need for a lot of good historical case studies. This volume helps fill that need.

On the other hand, there is also a need for some integrative reflection.<sup>6</sup> We might expect the authors to reflect on the central question from the perspective of their historical material and the editors to provide some integrative reflection on the collection of historical studies. We have some of both. However, I would have found more of both helpful. Yet, I agree with the editors that "[w]ith the diversity of views presented in these essays, and with the recognition that there are many different ways to approach the relationships between

biology and ethics, we have made real progress toward posing our questions more cogently” (p. 8). I am less confident, however, about their claim that “[a]nd as Farber clearly shows, we also see ways in which we can learn from history and from the failures of past arguments” (p. 8). I am not sure that we have enough historical study nor enough clear instances of success or failure to make that claim. Nevertheless, this volume makes an important contribution to answering the question what can history tell us about founding ethics on biology.

## Notes

<sup>1</sup> Feminist philosophers and others, however, have urged that consideration be given to the values to science direction. For a recent persuasive presentation of this view, one in which it is argued that the objectivity of science is in no way compromised, see Richmond Campbell (1999).

<sup>2</sup> I have argued elsewhere (1997b) that Farber has not made his case with respect to either the justificatory or ontological connections.

<sup>3</sup> In his earlier work on Anglo-American evolutionary ethics, Farber (1994) argues that a major failure of evolutionary ethics is that it commits the naturalistic fallacy. I have attempted to refute this charge (Rottschaefter 1997b).

<sup>4</sup> I have argued elsewhere (Rottschaefter 1990, 1998) that Ruse’s subjectivist version of moral justification is unsatisfactory in so far as it does not account for the ontological bases of the moral sentiments which Ruse takes as the ultimate grounds for the justification of moral claims. I contend that the selecting factors in the environment in which humans evolved and the adaptations that resulted provide the ontological bases in terms of which the evaluations of the moral sentiments themselves can be assessed.

<sup>5</sup> I have argued elsewhere (1991) that Richards account of the evolutionary justification of moral values is insufficiently founded on evolutionary theory and natural selection. Richards neglects the teleological character of natural selection explanations leaving the scientific status of his evolutionary account of moral values and the role of evolutionary theory in the justification of moral claims unnecessarily vague. I have maintained that adaptational explanations in terms of natural selection are teleological and show how adaptations can be natural values (Rottschaefter 1997a, c, 1998).

<sup>6</sup> Some of the contributors to this volume, for instance Ruse (1986), Richards (1987) and Farber (1994) have made such contributions.

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