

## MYTHIC RELIGIOUS NATURALISM

by William A. Rottschaefter

*Abstract.* In his book *Religion Is Not About God*, Loyal Rue presents an evolutionarily based explanation of religion as a means to further the personal and social fulfillment of human beings. Rue argues that religions in the form of myths, adaptive falsities, provide an account of the connection between what is (facts) and what matters (values). Myths are false because they attribute subjectively based values to valueless facts, but adaptive because they motivate personally and socially beneficial actions. He maintains that the current crises of humankind, evidenced by both social conflict and environmental degradation, indicate that the major religious traditions—all of which project values onto some transcendent reality—are failing to serve humanity. To overcome these crises, Rue maintains that we need a new, scientifically based naturalized religion, one that attributes subjectively based values to Nature instead of a transcendent reality. I accept Rue's naturalism about values but reject his subjectivist account of them. Contrary to Rue, I show that the naturalistic fallacy sets no barrier to the existence of objective moral values. Modeling my view on the selection theories used in biology and psychology, I offer a scientifically based explanation of the origin and existence of objective values and support it with empirical findings from developmental psychology. Whether this account can count as religious, I do not address.

*Keywords:* adaptive falsity; evolution of religion; fact and value; maladaptive truth; myth; naturalistic accounts of religion; naturalistic fallacy; Nihilism; Loyal Rue; selection theories

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In his provocative book *Religion Is Not About God: How Spiritual Traditions Nurture Our Biological Nature and What to Expect when They Fail* (2005) Loyal Rue presents an evolutionarily based explanation of religion as a means to further the personal and social fulfillment of human beings.

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Rue argues that religions provide an account of what is and what matters, and how they link with each other. They thereby supply a myth that energizes the emotional motivational capacities of humans. When they function as they ought, religions enable human social functioning and survival. When they fail, they are modified or abandoned for better myths. Rue maintains that contemporary major religious traditions are failing to serve humanity. This is evidenced by the challenges to their credibility brought on by the advances of science and the realization of religious pluralism. It also is shown by their failure to address the current crises of humankind such as social conflict, overpopulation, environmental degradation, and resource depletion. To meet these challenges, we need, in Rue's view, a new, scientifically based naturalized religion. Such a religion will provide a new myth about what is and what matters that will enable us better to attain personal and social fulfillment. Rue is skeptical about whether humans will in the near future make the changes necessary to avoid the catastrophes that the current crises seem likely to produce. However, he is more optimistic that the survivors of these perilous times will do so. They will have learned their lessons and discerned the bases for both the failures of the old religions that maintain myths about divine beings and the advantages of a naturalized myth about Nature as the source of the constitution of what is and what matters. Thus the long-term future of humanity is brighter than its short term.

In this essay I accept for the sake of argument Rue's naturalistic account of religion. But I argue that he has misconstrued the scientific bases for his account of what is and what matters. He advances the philosophical views (1) that the way things are is devoid of meaning and value and (2) that the values and meanings that we find in things are the result of our projection of meaning on a meaningless reality. I contend that the findings and best theories of the biological and psychological sciences support rather the philosophical view that fact and value are ontologically connected. Thus, I argue that Rue's naturalized religion is inadequately based scientifically. A scientifically based naturalistic account of religion requires no myth to connect fact and value. Whether a more adequately based scientifically naturalized religion can solve the crises faced by humanity is a problem that I do not address here.

I proceed as follows. First, I present Rue's proposal for a scientifically based religious naturalism. Next, I examine the nature of Rue's naturalistic proposal. I then place his naturalized account within the framework of current research about religion in cognitive and evolutionary psychology. I present his view that facts and values are distinct and that the latter are projected onto the former. I then address his claim that failure to acknowledge this distinction between fact and value is to commit the naturalistic fallacy. I show that scientifically based philosophical claims that maintain that there are objective values in nature, in particular those based

on evolutionary theory, do not run afoul of the three prominent versions of that fallacy. I then proceed to present a positive case for the existence of such values, using as a basis a type of theory prominent in biological and psychological explanations: selection theory. In addition I argue that Rue's scientifically based naturalistic theory of religion subverts the naturalized religion that he proposes as an alternative to the received supernaturalistic religions. It does so by maintaining that all religions, whether transcendently or naturalistically based, have the same mythic structure, one that merely projects what is valuable upon a valueless reality. This internal subversion renders his naturalized religion motivationally inert. My alternative is not subject to mythic subversion because it shows how what is and what matters are genuinely connected in reality. I conclude with a few remarks about the limitations of my critique and my positive alternative.

#### RUE'S SCIENTIFIC NATURALIZED ACCOUNT OF RELIGION

Arguing against the proponents of particularistic understandings of religion, Rue seeks a general theory of religion. Such a theory ought to be naturalistic; that is, it ought to account for religion in terms of only natural phenomena. A naturalistic general theory of religion ought to be scientifically based; that is, it should make use of all the relevant scientific disciplines. A scientifically based naturalistic general theory of religion ought to be consilient; that is, it should provide a scientifically integrated account of religion.

Rue maintains that mature religion, as a social and individual phenomenon, is a cultural adaptation in the sense that religion is the result of a pancultural evolution that can support the ends of biological survival and reproduction. This adaptation has as its fundamental constituents a complex of capacities that are cognitive, motivational, and behavioral. Rue calls them mental operators. The primary mental operators are genetically based, and the secondary operators are the results of non-genetically based variants acquired in individual and social/cultural learning. Specifically cognitive systems are adaptations that enable more or less successful knowledge of what is the case, matters of fact. Valence operators are adaptations that bring it about that information about what is meaningful and valuable to an organism are associated with a value-free world of facts. Executive operators assess the value-laden results of the valence operators in determining how the agent should act. Secondary operators add to the adaptive potential of each operator.<sup>1</sup> A central product of these operators is myth. Myths appeal to our emotional motivational centers, and to the extent that these appeals are successful, myths promote behaviors that enable the achievement of personal satisfaction and societal integration. They accomplish this function because they constitute stories that integrate matters of fact with things that matter, facts with values. However, myths are *adaptive untruths* (falsities) because matters of fact are essentially without

meaning and value. Nevertheless, to the extent that they are adaptive, myths serve the goals of personal satisfaction and societal integration. They thereby enable successful survival and reproduction.

Rue maintains that Nihilism is the correct view about the relation between facts and values. Nihilism asserts that there are no objective values. However, Nihilism is not an adaptive view; if one accepts Nihilism, one cannot successfully motivate oneself to act. Realism about values is an incorrect view about the relation between facts and values because it asserts that there are objective values, but it can be an adaptive view of things. Traditional religions have a realist view about values and consequently maintain that there are objective values embedded in reality. According to traditional accounts, the ultimate source of objective values and their embodiment in reality is a transcendent reality, the theistic God of the Semitic traditions or, in the Indian traditions, a nontheistic God or an ultimate transcendent principle. However, Rue maintains that traditional religions are all failing to meet the crises facing contemporary human persons and societies—in particular, environmental crises. They have come to be maladaptive. As such they represent maladaptive falsities.

Religious naturalism, a view that unites fact and value in Nature, is becoming and will be an adaptive falsity and should therefore be urged and embraced. Rue conjectures that naturalistic religions will not develop soon enough to prevent a collapse in the near future but that the remnant after the collapse will recognize the failure of the received supernaturalistic religious traditions and the source of that failure in myths that incorporate a transcendent source for the integration of fact and value. This remnant will develop a naturalistic religious tradition that will be up to the challenge of motivating behavior that is more adequate in achieving the ends of human personal fulfillment and social harmony given the constraints imposed upon them by post-collapse social and natural environments. It will thereby better achieve the ends of religion, the enabling of biological reproduction and survival by means of the promotion of personal fulfillment and social harmony.

I understand a naturalized account of religion to have both substantive and methodological commitments. Substantively, it maintains that an adequate account of religious reality does not require reference to any transcendent realities, whether these are the theistic God of the Semitic traditions or the pantheistic God or ultimate nonsubstantial reality of the Indian religious traditions. Methodologically, it does not justify its claims on the basis of religious doctrines, religious faith, or religious experience. Scientifically based naturalistic accounts of religion make further substantive and methodological commitments. On the substantive side, these accounts argue that religious phenomena can be understood in terms of the realities that are the referents of well-based scientific theories. On the methodological side, claims about religious realities are founded on scientifically

established findings and well-based scientific theories. Alleged a priori sources of justification have been found to fail or to be indirectly and ultimately dependent upon empirical sources of knowledge.

Rue maintains that a scientifically naturalized account of religion is superior to any transcendently based account (2005, 11–14, 145–46). However, he does not mount an argument in its behalf. He contends that the best strategy for a naturalist is to produce a naturalistic account of religion that has superior explanatory power relative to nonnaturalistic accounts. Thus, appeals to transcendent realities are superfluous. Although this sort of argument needs to be spelled out in detail and needs application to various *explananda*, I am in fundamental agreement with the view concerning the superior explanatory power of scientifically based naturalistic accounts of religion and do not examine it or expand on it here.

However, it is worthwhile to address briefly the obvious philosophical objection to any purely naturalistic account of religion: that it commits the genetic fallacy. That is, a scientifically naturalized account of religion, indeed any attempt to explain religion, even if it is explanatorily complete, cannot, under pain of committing the genetic fallacy, maintain that it shows that accounts of religion involving essential reference to a transcendent are unjustified or false. It cannot do so because it illegitimately confuses causes with reasons. It confuses the possible or actual natural sources of religious ideas with the reasons that might be used to justify or refute claims concerning these ideas. In philosophy of science, the failure to maintain this distinction is embodied in the classical distinction between the contexts of discovery and justification. A classic example of this fallacy comes from the history of chemistry (Hempel 1966). The nineteenth-century German chemist Kekule established that the structure of the benzene ring was helical. It is reported that this idea came to him when, waking up abruptly from dozing in front of the fireplace, he thought that he saw in the fire a snake coiled in a helical fashion. Despite this story's charm, it is clear that his fellow scientists should reject any attempt on Kekule's part to invoke dreaming as a proper justificatory process for establishing that the benzene ring is helical. Closer to home, Sigmund Freud in his *The Future of an Illusion* (1975) argued that religion finds its source in the individual and collective neuroses of humankind. Even if Freud had been entirely correct, any inference from such origins of religious ideas to the conclusion that claims about God are unjustified or false is an instance of the genetic fallacy—something, indeed, that Freud was careful to avoid.

Nevertheless, naturalistic philosophers in general have rejected the distinction between causes and reasons. In doing so, they have substituted for it—in the case of questions about the origin and justification of claims—a distinction between reliable and unreliable causal processes for true belief formation (Goldman 1986; Kornblith 1994; 2002; Kitcher 1992). Thus, for instance, perceptual processes are clearly productive of perceptual claims,

and the reliable ones can also be justificatory. The same distinction can be applied to methodologies. Consequently, scientifically inclined naturalists, whether religious or not, will argue that, for instance, inference to the best explanation is a reliable justificatory process in assessing the epistemic merits of an explanatory theory (Lipton 2004). I assume that Rue has this sort of justificatory process, among others, in mind when he invokes his implicit argument for the superiority of naturalistic to religious understandings of religious phenomena. On this basis, we can argue that Rue has not committed the genetic fallacy.

However, one may object that Rue fails to characterize religious phenomena correctly. Witness his provocative title: "Religion is not about God." It seems abundantly clear that many if not most religions are about God or gods, taken in the broad sense to include nontheistic gods. Some little analysis can clarify Rue's intent. First, we should distinguish two uses of the term *about*, an intentional and a veridical use. Many religions are about God in the sense that God is the intentional object of the cognitive, motivational, and emotive attitudes of many religious adherents. Rue does not deny this. Indeed, these intentional phenomena are central in the mythic unification of what is and what matters. Rue denies that religions are in fact about God or the transcendent because there is no such reality. The veridical object of religious intentional attitudes and behaviors lies not in some supernatural entity but elsewhere: in the achievement—to the degree that it is indeed attained—of personal and social fulfillment. Second, we need to distinguish two senses of *is*. Yes, it really does depend upon what you mean by *is*! We can distinguish the descriptive and normative sense, and Rue intends his title in the normative sense. Religion ought not to be about God; regrettably, it is! Thus we can render Rue's title more perspicuously, though less provocatively, as follows: The intentional object of the activities of religious people continues to be transcendent realities. It ought rather to be natural realities.

Moreover, Rue's claims need to be temporally indexed. Because he claims that religion is a cultural evolutionary phenomenon, it is essentially relativized to selecting environments. Thus, though there never was, is, or will be any transcendent beings, the natural and social environment has until recently been such that religions were successful in accomplishing their ultimate goal of personal and social fulfillment by formulating myths that made use of various conceptions of the transcendent. These cognitive, motivational, and emotional means served their purposes. When they did not they were replaced with other such conceptions. But, Rue argues, our social and natural environments have changed radically. Religions that make use of conceptions of transcendent realities and use them to motivate are failing. A radical change in religious conceptions is in order—to one that adheres to the best scientific knowledge that we have.

Rue is not alone in advocating a turn to a scientifically informed religious naturalism. A group of scholars connected with the Institute for

Religion in the Age of Science (IRAS) has adopted a similar position.<sup>2</sup> I do not attempt here to place Rue's view within a taxonomy of the various versions of a scientifically based naturalized religion, but I do briefly compare the evolutionary bases Rue employs in fashioning his account with other such current efforts in evolutionary and cognitive psychology.

#### SITUATING RUE'S EVOLUTIONARY ACCOUNT OF RELIGION WITHIN OTHER ACCOUNTS

Rue places his own general account of religion within the set of options laid out by Daniel Pals (1996).<sup>3</sup> He rejects the view that the study of religion must be entirely about particular religions and that general theories are essentially distorting. I think that Rue is correct in rejecting the particularistic approach. Among those accounts that discern commonalities as well as differences across diverse religions and that provide insights into how to account for both, Rue contends that evolutionary theory holds great promise for explaining religion.

A brief examination of recent efforts in cognitive and evolutionary psychology to develop a naturalistic account of religion will help us to understand Rue's own project. We can distinguish two broadly evolutionary accounts of the origin and maintenance of religion, one that focuses on cultural evolution and the other on biological evolution. Both types concern themselves with both variants, whether genetic or nongenetic, and selecting environments, whether natural or cultural, that give rise to religious phenotypes. They also focus, and rightly so, on giving an adequate account of the proximate cognitive, motivational, and emotional capacities that enable religious behavior and consequently reproduction and survival. Biological evolutionary accounts of religion take two major forms (Bulbulia 2004). One of these accounts makes religious capacities themselves adaptive traits.<sup>4</sup> The other maintains that religious capacities are nonadaptive traits that arose as consequences of other adaptive traits. They are, in the famous characterization of Stephen Jay Gould and Richard Lewontin (1979), spandrels. These spandrels survive if they are not too evolutionarily costly and if the adaptive traits upon which they are built are evolutionarily beneficial enough.<sup>5</sup>

Rue's account makes mature religion a product of culture but rooted in biology. In contrast with the biological accounts Rue postulates that religion and religious capacities are cultural adaptations rather than biological adaptations. However, cultural adaptations can provide strong support for more basic evolutionary adaptations. Rue speculates that mature religious capacities originated at a stage of human development when humans were moving beyond hunter-gatherer forms of social organization. He maintains that this change in the way humans organized their collective living required new ways of relating successfully. Religion provided these new ways

by fashioning myths suited to living in these novel collectives. By uniting the facts of the new sociality with its value it enabled the pursuit of personal wholeness and social harmony within these collectives. The type of social harmony enabled by religion extends beyond small groups that form on the basis of biologically based capacities for kin altruism and reciprocal altruism. Religion is a cultural adaptation that enables the formation and maintenance of larger collectives.

Rue speculates that religion springs from the combining of what he calls ad hoc science and intuitive morality, a combination that transforms intuitive morality into ad hoc morality. The intuitive mentality that governs both intuitive science and morality is a function of our genetic inheritance that builds the primary mental operators through biological evolution. The ad hoc mentality that constitutes ad hoc science and morality is a function of our nongenetic inheritance that builds the secondary mental operators through cultural evolution. Ad hoc science itself originates from intuitive science. We share intuitive science with our primate relatives and our common evolutionary ancestor. Ad hoc science is something that is peculiarly human and is marked in particular by the type of explanatory pattern that it employs. It is what we might call anthropomorphic science. It explains the events of nature in personal terms, making use of what psychologists and philosophers have come to call a theory of mind. Explanations that make use of a theory of mind appeal to psychological factors to understand social and natural phenomena. Thus, on occasion, they appeal to unseen personal agents. These are the gods of nature. Before the advent of the type of myth that is constitutive of religion early humans had beliefs about gods, but these beliefs were part of ad hoc science, not religion.

Humans share intuitive morality with primates and our common evolutionary ancestor. Intuitive morality is founded on kin and reciprocal altruism among closely related individuals. It operates on genetically in-built emotional motivators and does not require extragenetic rules. Ad hoc morality is the result of changes in the social environment of hunter-gatherer groups as they come into more frequent contact with each other and eventually form larger groups. These larger collectives, Rue argues, demand that individuals who are not closely related find ways to cooperate. They gradually do so by developing rules of interaction, a morality that extends beyond kin groups. The formation of these rules depends upon the operation of non-genetically based secondary mental operators. These operators generate religion. Humans acquire religion when they unite ad hoc science with intuitive morality. Rue holds that this morality finds both its explanation and justification by an appeal to the same gods that explain the natural environment. Intuitive morality becomes ad hoc morality by adopting the same explanatory device used in ad hoc science. Rue puts it in terms of the crisis that post-intuitive sociality left to the humans who had brought it about.



My suggestion is that the early thinkers who took on these difficult issues [about human and social identity and welfare] mimicked the ancient biological trick of putting old adaptations to new uses. That is, they borrowed the language of ad hoc cosmology, already well developed to explain the phenomena of nature, and expanded it to include the nature and nurture of self and society. The cosmic order and the moral order were thus unified by the anthropomorphic vocabulary of gods and spirits. The powers that send the rain and command the wind and replenish the earth were now understood to be the very same powers that created people, brought them together, and commanded them to obey a particular set of rules. (2005, 159)

This step forward in human mythopoesis provides the key link that fashions religions and enables them to play the central role in the forming of groups larger than kin groups. It enables the cooperation of unrelated individuals in such a way that both individual and social welfare are promoted.

Rue's conception of religion as providing the moral basis for living in collectivities larger than kin groups pushes its origin to a very late date when humans were moving beyond kin-based collectives. On Rue's view, hunter-gatherer groups do not require religion to maintain themselves. They get by on an intuitive morality that is based on the biologically fashioned capacities for kin and reciprocal altruism. However, collectives larger than kin-based ones require something more than kin and reciprocal altruism. They require rules of sociality that are extragenetic. These rules are enabled by the secondary mental operators and find their bases in the gods. The creative innovation of hunter-gatherer groups is to use the explanatory apparatus of ad hoc science to explain and justify the morality required for the new non-kin-based sociality. On this account religion is neither a biological evolutionary adaptation nor a spandrel. Religion, like biological adaptations, is highly coordinated with evolutionary ends. Yet it is not a biological adaptation, because it makes use of cognitive, motivational, and emotional capacities that are non-genetically based and require cultural development. Spandrels, by contrast, are constituted by genetically based traits that have not been selected for but are retained as long as they are not too biologically costly. On Rue's account, then, mature religion would be like the wheel, a cultural development resulting from cognitive, motivational, and behavioral capacities that themselves have been built on biologically selected-for mental capacities.

Rue has given us an intriguing speculation about the origin of those human capacities that constitute our religious abilities. It is, as the critics of biological evolutionary accounts of various human adaptations call them, a "just so story": It lays out a possible scenario for the origin of an important human development. Rue seems to be entirely aware that he is merely offering a speculation. Much work would need to be done to bring his account from a story to a set of testable models. This is a claim with which I think Rue would agree.

Clearly there is a level of religious differentiation and variety that demands a cultural evolutionary account of their origin and maintenance. The current major religious traditions surely are cultural products. However, on Rue's account religion appears to be a solely cultural phenomenon. On his view, hunter-gatherer groups do not have religion. This contrasts sharply with other accounts of religion (Rappaport 1999). Rue also assumes that biologically based kin and reciprocal altruism are sufficient to hold hunter-gatherer groups together. He speculates that religion is required only for the transition from kin groups that operate on the basis of genetically fashioned capacities for kin and reciprocal altruism. The gods postulated by ad hoc science play no role in the moral matters of such groups. There are gods but no religion.

One might argue, however, that the gods play a role even in kin groups that require reciprocal altruism. On such an account religion may well be an evolutionary adaptation. Moreover, some of the culturally based capacities that Rue attributes to ad hoc science, in particular the explanatory capacities associated with a theory of mind, arguably are genetically based (Heyes and Huber 2000). If that is the case, the explanatory move that enables the innovation of ad hoc morality may itself have a genetic basis. Moreover, the current evidence from developmental psychology suggests that conceptions of God and a teleological account of nature occur at a very early age, even cross-culturally and irrespective of the parents' religious commitments or lack thereof (Bulbulia 2004). These findings suggest that religious cognition has a genetic basis.

I now move on to examine the larger picture of Rue's scientific naturalized account of religion, assuming that some evolutionary story, cultural or evolutionary, is plausible and that the cultural evolutionary story posed by Rue is also. In particular I discuss Rue's central philosophical thesis concerning the relationships between fact and value that is built into his account of both the primary and secondary mental operators and is central to his account of the mythic origin, maintenance, and nature of religion. This is his claim that what is the case and what matters are entirely distinct. What matters, values, is in Rue's view projected upon what is the case, valueless facts.

I offer two major critiques of this view. If Rue's thesis is correct and we accept his cultural and biologically based evolutionary account of religious capacities, his naturalistically based religion, unlike its supernaturalistic competitors, is open to a self-generated motivational undermining. Consequently, other things being equal, his proposed naturalistic religion, like its supernaturalistic competitors, is also unable to meet the problems that threaten imminent collapse and will be in no better position than these competitors to pick up the pieces in a post-collapse world. For, while its supernaturalistic competitors are, *ex hypothesi*, proposing inadequate solutions, Rue's naturalistic alternative, though perhaps promoting more adequate solutions to our current crises, cannot motivate their implementation.

However, Rue's philosophical account of the relationships between fact and value is scientifically implausible. In its stead I propose an account that is more scientifically plausible. On this account what matters is a feature of what is the case. Alternatively, values are part of the factual world accessible to the sciences. I leave open whether the account that I propose provides support for another sort of naturalized religion or for a different sort of enterprise altogether. I also do not address the issue of whether either could help avoid or alleviate the imminent crises that confront humanity and other living things.

RUE'S THESES OF THE RELATIONSHIPS BETWEEN FACT  
AND VALUE, AND A CRITIQUE

Rue has formulated his account of the relationships between facts and values in various ways. In his first book, *Amythia: Crisis in the Natural History of Western Culture* (1989), he maintains that there is a fact/value dichotomy between evolution and the value of human life that cannot be bridged. All that the metaphor of evolution, as he calls it, can do is to demonstrate that it is a fact that humans are biased toward valuing their own survival.<sup>6</sup> Nevertheless, he argues, all that is required for action is that human survival be *perceived* to be valuable, not that it actually be so. In *By the Grace of Guile: The Role of Deception in Natural History and Human Affairs* (1994) he argues that Nihilism, the view that there are no objective values, is true but a maladaptive truth. Objectivity about moral values, the view that objective facts are morally valuable, is false but potentially an adaptive truth. Moral objectivity founded in transcendent realities, whether of the theistic or nontheistic sort, has functioned as an adaptive falsity. However, it is showing itself these days to be maladaptive falsity. Religious naturalism, the view that Nature is objectively valuable, though false, is becoming an adaptive truth. In *Everybody's Story: Wising Up to the Epic of Evolution* (2000) he argues that if anything is valuable it is life.<sup>7</sup> Given the value of life, other things then become instrumentally valuable. However, Rue does not attempt to argue for the value of life.

In *Religion Is Not About God*, Rue does not argue for a fact/value dichotomy. He accepts it and explains its consequences for organic motivational systems, including those of humans.<sup>8</sup> Although what things are and why they matter are distinct, we impose values upon facts with impunity.

This doctrine [the discrepancy between facts and values] says that facts in themselves are value-neutral, which means that however many facts you line up, you can never get them to imply anything about the value of something. One does not detect values as a salient feature of any object, event, property, or relation for the simple reason that there are no values out there to be detected. This does not mean, however, that values may not be assigned to facts, which is something we do all the time, and without hesitation. Thus we automatically experience snakes as dangerous, and thunderstorms as fearsome. Our tendency to do so is not a function of reality operators, but rather a function of innate valence operators

interacting with reality operators in the construction of mental objects. Valence operators are the rules and mechanisms that evaluate the significance of external facts relative to the biological teloi of our species. (2005, 56)

Natural selection has fashioned the valence operators so that they make the kinds of projections of value that they do. These projections constitute an intuitive morality.

The point here is that humans come into the world equipped with a biological values system, or what in broad terms might be called a species-wide intuitive morality. In fact, every species may be said to possess an intuitive morality, by which I simply mean that each species may be described as having various goods and evils relative to its own biological teloi. The values of human intuitive morality are embedded in the goal-directed workings of our basic drives and emotional systems. These valence operators have been biased by natural selection to evaluate certain patterns of incoming information as positive (those conducive to biological goals), and others as negative (those detrimental to biological goals). (p. 56)

Besides the biologically based primary valence operators there are also learned social cultural valence operators that move beyond and sometimes contradict the biases of the former.

Primary valence operators are, to repeat, the very rules and mechanisms that govern our physiological drives and emotional systems. They represent the deep biological goals and values of the species. We may say that these homeostatic mechanisms are components in a comprehensive system of self-maintenance. That is, together they monitor internal states and register what the organism needs in order to maintain itself. They evaluate the potentials in any situation relative to biological goals and motivate the organism to respond adaptively. This is the gist of what I have called a universal intuitive morality. But a moment's reflection reveals that humans pursue many and diverse goals that often transcend and even contradict the teloi of our intuitive morality. Such pursuits reveal the work of secondary valence operators—that is, extra-genetic rules that regulate an emergent value system imposed upon the biological self-maintenance system. Basically, the idea is that an increase in working memory capacity will result in an enhanced sense of selfhood and a new process of self-monitoring, which in turn will dramatically modulate the operations of our emotional systems. This new process creates the conditions for values to proliferate and diversify. (p. 63)

It is in the projection of values onto factual matters that the naturalistic fallacy occurs.

The interaction between reality operators and valence operators occurs in the neural pathways looping back and forth between the cortex and the limbic area. In these interactions information about the value-neutral world is integrated with value-laden information about internal body states. In this process the naturalistic fallacy is transgressed with a vengeance, as facts become overlaid with values. Interactions between reality operators and valence operators are mutual and continuous, which means that our affective states can bias our perceptions of reality, and our perceptions of reality can modulate our affective states. Indeed, it is this on-going process of interaction that results in our experiencing a world infused with meaning. (pp. 56–57)<sup>9</sup>

There are a number of problems with Rue's attempt to unite fact and value by means of a mythic story that becomes the central feature of a religious tradition. In particular, Rue's theory exhibits some crucial ambiguities that portend inconsistencies. Second, in its form as a myth designed for a naturalistic religion it opens up a critical gap between theory and practice. Third, its central claims that fact and value are distinct and unbridgeable and that values are projected upon a valueless and meaningless reality are not supported by the biological sciences that constitute the heart of his proposed naturalistic religion. Fourth, the science does not support his account of the primary sources of motivation, emotions.

1. CRUCIAL AMBIGUITIES. Rue claims that (a) there are biological goals that are valuable for individuals and groups but no objective values. Does this imply that the internal and external states that are the fulfillment of these biological goals are not objective? If so, how is that claim consistent with the biological sciences?<sup>10</sup> If not, why are there no objective values? Specifically, why is the fulfillment of these biological goals not objectively valuable? Rue also claims that (b) survival and reproduction are the ultimate goals of the instrumental values constituted by the fulfillment of the biological goals. Survival and reproduction are objective phenomena and therefore objective ultimate goals of life. But, if there are no objective ultimate values, survival and reproduction are objective ultimate goals of life but not objectively valuable. What is the difference between fulfilling activities that are the objective ultimate goals of life and fulfilling activities that are objectively valuable? Rue does not tell us. It is not clear that there is any difference. From the perspective of evolutionary theory, there is no reason to assert any difference.

2. A CRITICAL GAP BETWEEN THEORY AND PRACTICE. Rue claims that myths create links between facts and values. As such they are literally false since there are no such links. Nevertheless, because they provide necessary motivation, they can be adaptive. Thus at a crucial point in human cultural evolution myths about transcendent realities successfully linked fact and value so that humans could move beyond kin-based groupings to larger groupings, thereby providing an adaptive advantage to the latter. As a result individual flourishing and social harmony was advanced in those groups relative to kin groups.

On Rue's understanding, what distinguishes naturalistic myths and so naturalistic religion from supernaturalistic myths and religions is that the former places the source of values in nature, now understood in a scientific fashion. This scientific understanding of nature extends to both the natural and social environments in which humans live and to humans themselves. Moreover, naturalistic religion is philosophically informed in a way that traditional religions are not. On Rue's account, naturalistic religions

accept the philosophical thesis that the natural world is empty of fact and meaning. They accept the fact/value dichotomy. Thus, while both naturalistic and traditional religious myths are adaptive falsities, the forming is knowingly so.

As a result the practitioners of naturalistic religion, unlike their traditional counterparts, are in radically different epistemic and practical positions.<sup>11</sup> Their traditional counterparts are self-deceived because they act on the basis of an erroneously held belief concerning the objectivity of moral values. Also, practitioners of a naturalistic religion must knowingly adopt a false belief in order to be motivated to pursue the goals that a naturalistic religion requires of them so as to meet the current and forthcoming crises facing humanity. The practitioners of supernaturalistic religions are deceived; those of naturalistic religion must deceive themselves.

Rue does not explicitly address these crucial differences in the practical situation of naturalists and supernaturalists. *Prima facie*, they pose a gap between theory and practice in the case of the naturalist but not in the case of the supernaturalist. The naturalist must intentionally ignore her philosophical thesis that facts are utterly distinct from values and make herself believe that values are to be found in the facts, as she understands them from her scientific sources. It follows that Rue leaves religionists faced with a practical aporia. Supernaturalists are less and less motivated to practice a failing myth—failing both because belief in a transcendent source of values is becoming less and less plausible as scientific knowledge increases and because the traditional myth is becoming less successful in solving the crises facing humanity. Naturalists have to motivate themselves to act on a myth that they recognize to be false, just as all myths are false. It is doubtful that either will be able to bring herself to act with the requisite resolve and vigor.

I do not contend that Rue is without resources in addressing this problem. He might well argue that humans are accustomed to acting on the basis of false beliefs and nevertheless finding that they achieve their ends. Thus, the metacognitive problem facing a reflectively aware naturalist need not be paralyzing. Moreover, the nonreflective proponent of religious naturalism may not be faced with this problem. She may be in the position of the supernaturalist insofar as she, like the supernaturalist, actually believes (erroneously, of course) that there are objective moral values in nature. In addition, the reflectively aware can support and urge the ancient strategy proposed by Plato to invoke the noble lie in the building and operation of the Republic.<sup>12</sup>

Thus I leave open the question about the seriousness of the practical problem and move on to what I consider to be a much more challenging problem for Rue's proposal: his pivotal philosophical claim that facts and values are distinct, that the latter are only subjective and erroneously projected upon the world of fact. I address the claim that what he calls Nihil-

ism—and what I think is better understood as moral antirealism—is the correct understanding of the ontological character of values. I argue that the naturalistic fallacy provides no basis for Rue's view and that, in fact, the more plausible scientifically informed philosophical position on the relationships of fact and values is that there are objective moral values.

3. A CRITIQUE OF THE FACT/VALUE DICHOTOMY. The requirement of avoiding the naturalistic fallacy, the fallacy of failing to mark the radical distinction between facts and values, is the central philosophical motivation that persuades Rue to abandon the view that values are objective. Of course, this requirement has moved many philosophers to abandon this view. However, the naturalistic fallacy, strictly speaking, prohibits only the identification of *natural* facts—facts about the empirical, material world—with values. It does not forbid the linking of values with nonnatural facts, as G. E. Moore, one of the major proponents of the naturalistic fallacy, did. Nor does it deny that values can be linked with supernatural facts, as is done in theological ethics. However, Rue, a convinced naturalist, should find neither of these options open to him. The only way for values to be objective is for them to be part of the natural world. In Rue's view, that is not a philosophical option open to a scientifically informed naturalist. Avoiding the naturalistic fallacy requires making values subjective.

I maintain that the naturalistic fallacy poses no insuperable hurdles for a scientifically informed naturalistic account of the relationships between fact and value, an account that makes them an objective part of the natural world. I first examine the three central forms of the naturalistic fallacy—the deductive fallacy, the genetic fallacy, and the open-question challenge—and show that these forms of the fallacy can be avoided. I then propose a positive account of the factual basis of moral values that derives from the scientifically supported cultural and evolutionary accounts that Rue finds central to the myth that forms the foundation for his proposal for a naturalistic religion.

*Avoiding the Naturalistic Fallacy: Preliminaries.* A scientifically naturalistic ethics, one that uses the science to support claims that substantively connect moral values and natural facts, need not be based in evolutionary theory exclusively or at all. Nevertheless, I focus on evolutionary ethics for two reasons. First, Rue makes evolution, in the broad sense that includes cultural and biological evolution, central to his account of the facts that along with values constitute the myth central to his naturalistic religion. Second, biological evolution seems to be the most problematic of natural foundations for moral values. If a case can be made that evolutionary ethics has nothing to fear from the naturalistic fallacy, it becomes more plausible that other sciences, too, such as psychology, economics, sociology, and anthropology, may have important contributions to make without in any way violating the naturalistic fallacy.

In the main, philosophers, both past and present, remain skeptical about evolutionary theory's prospects for providing justification of moral claims. Without attempting to analyze the various sources for their skepticism, it seems clear that they often are associated with some form of the naturalistic fallacy.<sup>13</sup> There are three classical versions of the naturalistic fallacy. First is the *deductive* form made famous by David Hume, which involves the fallacious deduction of evaluative or normative premises from factual premises. Second is the *genetic* form, which is based on a confusion of causal origins with justifying reasons. Third is the *open question* challenge, which is constituted by an illegitimate identification of evaluative properties with natural properties.

Here is the problem in its starkest form (Rottschaefer 1980; 1991; 1997; 1998; 2000). Suppose that we grant to a proponent of evolutionary ethics that there can be a *science of moral value*. As a science of values, let us suppose that it is a scientific discipline that has the following characteristics:

1. It identifies some things that are in fact valuable for the human species and its members.
2. It discovers empirical regularities that show how these values are related to moral actions, beliefs, and motivations and to the conditions in which all of these occur.
3. It develops theories that explain these regularities by laying out the causal factors that are at work in producing the regularities.
4. It gives us an understanding of the causal foundations of some of our values and moral norms.

Given the current status of the relevant biological disciplines, these are, on anyone's view, very generous concessions. Nonetheless, as is well known, the critics of evolutionary ethics contend that even the most complete descriptive and explanatory account of values and norms is not sufficient for a genuine evolutionary ethics. What we need to know is not just what our values and norms are or were or even will be but what they *ought* to be. We need ethics, the philosophical discipline concerned with the study of moral values and obligations and with the prescriptions that bind us morally as well as with the ways in which we can justify these prescriptions and give an adequate foundation for them and for moral values. It may be that capacities for altruistic behavior, for instance, are evolutionary adaptations and promote survival and reproduction, and an evolutionary science of values may help us understand why that is so. But such a science of values, so the objection goes, can tell me neither what particular helping action I ought to perform nor whether I—or anyone else—ought to perform any helping behavior at all. It cannot give us any justificatory reasons for what we ought to do. Nor can it provide moral norms or identify moral values



that might provide general guidance for moral decision making and assessment. To put it very simply, science deals with events and causes, but ethics deals with values and justificatory reasons. The evolutionary ethicist has confused her science of evolutionary values with ethics. Thus she has committed the naturalistic fallacy in attempting to derive what ought to be the case from what is the case.

*Avoiding the Deductive Form of the Naturalistic Fallacy.* The most straightforward way in which such a fallacious derivation might occur is by attempting to deduce a normative or evaluative conclusion from purely factual premises.<sup>14</sup> For instance,

Argument I: The Deductive Fallacy

1. Helping members of one's immediate group who are injured is something that evolution has shaped humans to do.

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2. Therefore, helping members of one's immediate group who are injured is morally valuable.

Clearly such reasoning is logically fallacious, because the conclusion contains terms that do not appear in the premise. But there is no need for an evolutionary ethicist to adopt this form of reasoning in the justification of her moral claims. The above argument can be made logically valid by adding a second premise as follows:

Argument II: The Deductive Fallacy Eliminated

3. What evolution has shaped humans to do is morally valuable.
4. Helping members of one's immediate group who are injured is something that evolution has shaped humans to do.

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5. Therefore, helping members of one's immediate group who are injured is morally valuable.

Argument II is a logically valid one. Thus Hume's deductive form of the naturalistic fallacy is easily avoided. However, the naturalist is not out of the woods yet. Premise 3 is an evaluative premise, and in order to get a sound argument it needs to be justified. It will do no good merely to introduce another deductive argument, because that will still leave unsupported evaluative premises. To avoid this problem we need to justify Premise 3—or some equivalent premises that make claims about moral values—in a nondeductive fashion. The evolutionary ethicist claims that we derive Premise 3 or other premises that make claims about what is morally valuable abductively using factual premises without committing another form of the naturalistic fallacy, the genetic form.

*Avoiding the Genetic Form of the Naturalistic Fallacy.*

Argument III: An Abductively Based Argument for Evolutionarily Based Objective Values

Consider the following abductive argument:

6. Helping members of one's immediate group who are injured is something that evolution has shaped humans to do.
- 
7. Therefore, probably, helping others within their immediate group who are hurt is morally valuable.

The first thing to notice is that this form of abductive reasoning is a perfectly legitimate one for the evolutionary ethicist, even though the conclusion contains terms that do not appear in the premises. Such inferences are common in science. For instance, on the basis of various spectrographic analyses, we infer that certain electron transitions have occurred in an atom. If, then, there are questions about the adequacy of an argument that has the form of (III), they should not be about the inadequacy of its logical form. Rather, they should be about the justification for its premise(s) and the adequacy of the support that these premises provide for its conclusion.

In particular, critics argue that the abductive argument commits the genetic fallacy. That is, it confuses causes with reasons, attempting to justify claims about moral values on the basis of claims about their evolutionary origins, their genesis, rather than reasons that support the truth of the claim about moral values. It is like claiming that my having gotten the idea that  $1+1=2$  from a good mathematician is a good reason for believing the claim to be justified and true. The cause of an idea is distinct from the reasons that justify it. Indeed, Rue might concede that the use of abductive reasoning when both premises and conclusion are factual is legitimate but nevertheless balk at its legitimacy when its premises are factual and its conclusions normative or evaluative. To alleviate these qualms, I shall present a sketch of a scientific naturalistic account of the role that facts play in the justification of moral values and norms,<sup>15</sup> showing that the genetic form of the fallacy can also be avoided in moral reasoning.

In solving philosophical problems, naturalists make use of hypotheses that appeal to processes and entities of this world rather than to a priori accounts or to hypotheses about nonnatural properties or supernatural agencies. Scientific naturalists adopt the best current findings and theories of the natural and social sciences in the pursuit of answers to their questions.<sup>16</sup>

Can evolutionary theory justify morality? In considering this question, it is important to be clear about the meaning of its central terms. By *evolutionary theory* I mean the current neo-Darwinian synthesis, including the recent advances in sociobiology and evolutionary psychology. By *morality* I mean a whole range of phenomena, including moral institutions,

moral practices, moral values, moral attitudes, general moral principles, broad- and narrow-gauge moral norms, and more specific moral rules, along with particular moral actions, judgments, intentions, motivations, beliefs, and emotions. What counts as being in the moral realm as opposed to the realms, for instance, of law, aesthetics, prudence, customs, or manners? What distinguishes moral from nonmoral phenomena turns out to be a very difficult question to answer. This is so whether one pursues the question from an ordinary, scientific, or philosophical perspective (Rottschaefter 1998). However, I take a traditional and relatively noncontroversial position that a sufficient condition for an action to be, for instance, morally relevant functionally (that is, in terms of how the action is performed) is that the agent performs an action with a sufficient degree of knowledge and freedom, and for it to be morally relevant substantively (that is, in terms of what the content of the action is) it is sufficient that the action be concerned with the welfare of others.

That leaves us with *justify*. I go into more detail concerning the nature of justification because it is at this point that major controversies occur that lead to diverging assessments of past efforts and future prospects (Rottschaefter 1998). I cannot here lay out an entire theory of moral justification, so I simply illustrate what I have in mind. Before I begin, there are four caveats. First, justifiers are relative to what is being justified. For example, the requirements for the justification of moral principles are different than those for the justification of a belief about the morality of a particular moral action, whether currently intended or previously performed. The former may require reasoning; the latter may not. Second, sometimes the evidence for a hypothesis about values or norms is not sufficient to establish that hypothesis as superior to its competitors. This is a form of the underdetermination problem as it appears in ethics. Third, justification is a matter of probabilities, not certainties, and the degree of justification is measured in an ordinal fashion with relation not to all possible competing moral claims but to currently competing ones. Fourth, no single theory, including evolutionary theory, will be able to provide a complete justification for moral beliefs, motivations, or actions. Failure to take these points into account causes much confusion and often leads to negative assessments of the attainments and prospects of evolutionary ethics with respect to the problem of justification.

To illustrate the scientific naturalistic approach to justification, consider an analogous problem that arises in epistemology concerning the justification of a belief. Recall that the classical definition of *knowledge* is “justified true belief.” Take *belief* to mean what can be expressed in a propositional assertion. Take *true* to mean corresponds to what is the case. So the claim “I am writing this paper on Loyal Rue” is true if and only if it is the case that I am writing this paper on Rue. But knowledge requires more than just a true belief; it requires adequate justification. Having

sufficiently good reasons constitutes an adequate justification for a belief. Having an adequate justification for a belief allows one to hold with some, though not complete, assurance that a belief is true.

What count as sufficiently good reasons that are constitutive of an adequate justification? Consider the following case. Suppose I am writing a paper on naturalistic theories of religion. You ask me how my work is going. I reply that I am making good progress and expect to finish it with no problems. But you are the Socratic type and ask me for the basis of my optimistic assessment. I respond that my personalized set of tarot cards indicated clearly that I would complete an excellent paper with ease. My response sounds like a joke rather than a justification of my claim. At best, consulting tarot cards explains how I may have gotten the idea that I will have no problem finishing an excellent paper. But what I need for a justification includes something like the following facts: I have successfully completed papers in the past; my current paper is like those I have done in the past; and there aren't any features of this current paper—for instance, the difficulties concerning understanding religion—that make this paper different from the others.

The point is straightforward. There is a big difference between where one gets an idea about something and what justifies it. The issue is the same as the one we considered earlier concerning whether Rue himself commits the genetic fallacy in presenting a scientifically based naturalistic account of religion. There we argued that he did not because he is keeping his causal account of the origin and maintenance of religion distinct from attempts to justify claims about the existence and nature of claims about supernatural beings. The lesson is that the means for justifying beliefs are distinct from the ways in which they are discovered. To make judgments about justification of a claim on the basis of its origin is to commit the genetic fallacy.

But now consider another case. You are out with some friends for the evening. While you are eating at a local restaurant, you spot Suzy and Mikey in the ticket line at the theater across the street. "There's Suzy and Mikey," you announce. You are surprised, because you thought that they were going to be working on their paper concerning the evolutionary origins of religion. A Socratic friend is at your side with the familiar question: How do you know that it was Suzy and Mikey whom you saw? The area is well lighted. You are at a window table. You have just had your eyes checked, and they are in good shape. So you respond that you *saw* them and request that your friend take a look for herself. Now consider how you got the idea that Suzy and Mikey were in the ticket line. You saw them. And how do you attempt to justify your idea? By your visual observations! You are using the very same process that you used to get your idea in order to justify it. Are you committing the genetic fallacy? No. Sometimes the way that we get an idea is also a reliable means for justifying it. This often

is the case with perceptual beliefs. So even though the mechanisms by which we acquire ideas are not always satisfactory for justifying them, sometimes they are. What we want to find are the mechanisms that reliably generate true beliefs. If we do, we can use them to justify the beliefs that they generate. That, then, gives us some, though not complete, assurance that our belief is true.

Let us apply this example to moral beliefs. Those who think that there is an abductive naturalistic fallacy accuse evolutionary ethicists of confusing how we acquire our moral views with how we justify them. These opponents of evolutionary ethics admit that evolutionary theorists may be able to identify some of the causes that bring us to our moral stances and so explain them, but they cannot thereby identify the good reasons that justify these stances. Under this interpretation of the naturalistic fallacy, a critic sympathetic to Rue's claims is accusing the evolutionary ethicist of committing a version of the genetic fallacy. But recall the previous examples. We can grant to the skeptic that not all ways of getting to a moral stance also justify that moral stance. But this does not mean that none will. If we can find the mechanisms that reliably generate morally good stances, we can appeal to them in our justifications as well as our causal explanations. Just as you appealed to the exercise of your perceptual capacities to justify your claim that Suzy and Mikey were in the theater ticket line, so you could appeal to the processes that have reliably led you to your moral belief to justify it. As a result, you have some assurance of its truth. Of course, nobody is infallible. Maybe you mistook Suzy and Mikey for Melanie and Tony. And you might have mistaken that delicious dish of ice cream you were eating when you spotted Suzy and Mikey as something that is of long-term value for you. An evolutionary ethicist claims that by identifying some of the behavioral, motivational, and cognitive capacities and processes that have been selected for in human evolutionary history she has identified some of the reliable mechanisms for ascertaining genuine human values. As a result, these capacities and processes can be appealed to in justifying claims about what one ought to do, just as perceptual capacities and processes can be appealed to in the justification of beliefs. Thus she argues that her evolutionary science concerning the nature and causes of evolutionary adaptations has an intrinsic connection with moral norms and values.

How might this work in a particular case? Suppose that Suzy helps Mikey's little brother, Joey, by picking him up after he has fallen and bandaging his bleeding knee. We ask Suzy why she helped little Joey, and she responds that she saw that he was hurt, and she felt she ought to help him. There are three major sorts of moral claims that Suzy might make: (1) I performed a morally right action in helping Joey; (2) I was morally appropriately motivated in helping Joey; (3) I have a justified moral belief that helping Joey was a morally right action. Let us focus on the last claim.

Developmental psychologist Martin Hoffman (1975; 1981; 1983; 1988; 2000) has provided evidence that the capacity for empathic distress is a reliable evolutionarily based affective, cognitive, and motivational mechanism that enables one to affectively discern another's distress and then moves one to help. He and others have gathered evidence supporting the development of empathy and prosocial behavior in infants and very young children (Eisenberg 1992; Eisenberg and Mussen 1989; Hoffman 1988; 2000; Zahn-Waxler and M. Radke-Yarrow 1982; 1990). What relevance do these empirical findings have for the justification of Suzy's belief that she has done a morally right action? Using our epistemological model, the answer seems clear. If empathic distress is a reliable mechanism for discerning another's distress, and if the alleviation of that distress is a morally good thing to accomplish, Suzy is justified in believing that she performed a morally right action, because her belief has been produced by a reliable mechanism. But in this case both conditions are fulfilled. So Suzy's claim that helping Joey was a morally right action is justified. In this case the mechanism that originates the moral belief turns out to be a reliable mechanism—that is, it often enough produces true moral beliefs. Thus, it can serve as a source of justification of a moral belief. The evolutionary ethicist has not, as the critic alleges, committed the genetic fallacy.

Empathy has its limitations, however (Hoffman 1984; 2000). Because it is based on a bystander perspective, and because there is a tendency to respond more empathically to those who are present than absent and more to those who are like us than not, it may well happen that the capacity for empathic distress fails one in certain situations. We must keep in mind that reliable does not mean infallible. It may not enable us to discern another's distress when it is present, provide sufficient motivation to help, or enable us to act when we ought. Nor is empathy the only mechanism for discerning, motivating, or actually bringing about helping behavior. But these limitations on empathy should not surprise us. Given the evolutionary and learning-history origins of empathy, we should not expect it to be a reliable mechanism in all circumstances. Our perceptual powers have limitations, even though in normal circumstances and with respect to middle-sized objects they are generally reliable. That is, they work fairly well in conditions for which they have been designed to work, designed by both natural selection and the contingencies of our natural and social learning environments. With regard to nonmoral truths, we need to supplement our perceptual mechanisms in situations in which the truth we seek concerns nonobservable realities. Similarly, we can expect that in situations where the stimuli that arouse empathy are not present or when those stimuli are so overpowering that they turn one's attention elsewhere, empathy alone will fail us. For instance, when attention turns to concerns about oneself and away from the other who is in need, one's empathically based discernment needs to be complemented by higher-level cognitive

capacities, perhaps those that enable the formulation and use of ethical principles.

Finally, I have not specified the relationship between Suzy and Joey. Suzy might be Joey's mother, sister, aunt, cousin, friend, or neighbor, a passing acquaintance, or a total stranger to him. The bases of the causal mechanisms used as justifiers are undoubtedly more likely to be evolutionary if Suzy and Joey are related. We expect more learning to be required in the case of nonrelatives. But whether the mechanisms are evolutionarily based, individually learned, or culturally acquired—or some combination thereof—the key requirement on justification, from the scientific naturalist's point of view, is the reliability of the mechanisms used in the formation of the moral belief or motivation and the performance of the action.

We can call the appeal to empathic distress a local justification. It is analogous to the so-called direct or immediate justifiers referred to by epistemologists, such as perception. The moral good achieved by Suzy in helping Joey is that Joey's knee is taken care of and infection prevented. But we can well suppose the persistent seeker of justification asking why it is substantively morally valuable that Joey's knee is infection free or how acting on feelings fulfills the conditions of functional moral relevance. Focusing on the substantive side, we can imagine a series of responses and questions concerning substantive issues in which requests for and responses to requests for justification move from immediate or local justifications to more global and mediated justifications. Consider questions concerning the moral goodness of the object of Suzy's empathically produced belief. Why is it substantively morally valuable that the wound be attended to? Because otherwise it may become infected. Why is it a moral value that knees be infection free? Because infected knees can lead to immobility. Why is mobility morally valuable? Because immobility and infection can lead to a loss of a limb. Why is the possession of a limb a moral good? Because it is important for general health. Why is general health morally good? Because survival is morally valuable. Why is survival morally good? Because it facilitates other moral goods, including reproduction. Why is reproduction morally good? Because having children and rearing them is morally valuable. Why is having children and rearing them morally good? If the only scientific theory that I have in my arsenal of justifiers is evolutionary theory, I cannot take you any further in terms of global justification. But I have already taken you quite far. Here, too, I have not specified whose survival, reproduction, and children are involved. As in the case of local justifications, what can be established on the basis of evolutionary theory is less general than what can be established on the basis of evolutionary theory together with theories about reliable individual and cultural learning mechanisms. Specifically, the proponent of an evolutionarily based theory of moral values need not claim that evolutionary theory alone allows one to establish that, for instance, the survival of all humans is morally

valuable. I take this to be a limitation of a purely evolutionary ethics, not something that bans it from any role in a scientific naturalistic ethics.

*Avoiding Circularity in the Justification of Value Claims.* Nevertheless, our critic may think that this sort of global abductive justification is fallacious because it begs the question. He might argue that the evolutionary ethicist is claiming that the justification for the belief that helping little Joey is a morally right thing to do is necessarily dependent on the belief that it is morally valuable to survive, reproduce, and raise children. But the evolutionary ethicist is justified in believing the latter only if she believes the former. In schematic form, the critic accuses the evolutionary ethicist of arguing in a viciously circular fashion as follows:

Argument IV: Initiating Vicious Circularity

8. Helping little Joey is the right thing to do.

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9. Therefore, it is right to survive, and have and raise children, probably.

But how are we to justify Premise 8? Reflecting on the above global justification for Suzy's action, the critic may discern the following argument:

Argument V: Tying the Noose of Vicious Circularity

9. It is right to survive, and to have and raise children.

---

8. Therefore, it is right to help little Joey, probably.

This reasoning appears to be viciously circular. How might the evolutionary ethicist respond to this criticism? First, recall that survival, reproduction, and rearing children are invoked as the ultimate biological bases for the value of helping behavior.<sup>17</sup> Given the evolutionary hypothesis about an ultimate human value and a number of intermediate hypotheses, as well as auxiliary hypotheses, one can provide an *explanation* of why helping behavior is a morally valuable behavior. The explanatory process involves a valid deductive argument, and, if the premises are adequately justified, a sound one. The explanatory argument goes roughly as follows:

Argument VI: Evolutionary Explanation of a Morally Right Action

10. If survival, reproduction, and rearing children are morally valuable, and assuming other auxiliary hypotheses, then helping little Joey is morally right.
11. But survival, reproduction, and rearing children are morally valuable.
12. The assumed auxiliary hypotheses are correct.

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13. So helping little Joey is morally right.



But how does one *justify* Premise 11, the hypothesis about the moral value of survival, reproduction, and caring for children? Very roughly as follows:

Argument VII: Evolutionary Justification of a Claim about Moral Values

14. If survival, reproduction, and rearing children are morally good, and if healthy bodies are important for reproduction and survival, and if sturdy and well-functioning limbs are important for healthy bodies, and if other assumed auxiliary hypotheses are correct, then, given that Suzy (and others in similar situations) have developed in an evolutionarily normal environment, we would expect her (and others) to (a) form the moral belief that it is right to help Joey, (b) be motivated to do so, and (c) actually do so when he has fallen and cut his knee.
15. But Suzy is helping Joey when he has fallen and cut his knee and reporting that she is doing so because that is the right thing to do.

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16. Therefore, among other things, surviving, reproducing, and rearing children are probably morally good things to do.<sup>18</sup>

Notice that there is no circle involved in the use of (VI) and (VII). Argument VI is an example of how an evolutionary ethicist might provide an explanation for the morality of a particular action. It is a valid deductive argument. To be a sound argument its premises must be true. To provide support that the premises are true, the proponent of the argument must provide some justification for the premises of the argument. The crucial premise that requires support is Premise 11. Argument VII is designed to provide that support. It is an abductive argument that provides support for Premise 11 of Argument VI. Of course, as formulated, the justification would be weak in the extreme if it appealed only to Suzy's actions and beliefs. However, I have formulated it so that it may acquire stronger justification by including in the predictive consequence of Premise 14, the observation of helping actions from others besides Suzy with similar empathic capacities. One could fashion similar hypotheses about other sorts of situations in which assistance of various types might be called for. Other forms of support, for instance, from the implications of certain independently justified moral principles, also provide more justification for (16).

Even though the justification is very complex and uses many subordinate and auxiliary hypotheses, it is fundamentally no different from other abductive inferences used in the sciences. To see this, consider the explanation of a particular location of the planet Mars in its trajectory and the justification of the Newtonian laws used in its explanation.

## Argument VIII: Newtonian Explanation of the Path of Mars

17. If Newton's law of gravitation is correct, and if his three laws of motion are correct, then, given claims about the initial conditions of Mars such as time and location and the relative positions of other planets, at time  $t$  Mars is in location  $x, y, z$ .
  18. Newton's law of gravitation is correct.
  19. Newton's three laws of motion are correct.
  20. The claims concerning the initial conditions of Mars are correct.
  21. The claims concerning the relative positions of other planets are correct.
- 
22. Therefore, Mars is in location  $x, y,$  and  $z$  at time  $t$ .

## Argument IX: Justification of Newtonian Laws

23. If Newton's laws of gravitation and motion are correct, then, given the solar system that we have, we would expect Mars (and the other planets in our solar system) to take positions that follow an elliptical path.
  24. Mars and the other planets in the solar system do take the expected elliptical paths.
- 
25. Therefore, probably Newton's laws of gravitation and motion are correct.

The form of explanatory and justificatory reasoning used in the moral Arguments VI and VII is identical to that used in the scientific Arguments VIII and IX. If such arguments are acceptable in the sciences, the critic of naturalistic ethics needs to offer some principled reasons why such inferences cannot also be employed legitimately by the evolutionary ethicist. In this case of global ethical justification, as in Argument IX, the scientific naturalistic ethicist claims that the complex reasoning and testing processes used in the assessment of causal hypotheses in the natural and social sciences can be applied to high-level value and normative hypotheses. She also argues that, as in the scientific cases, these reasoning processes sometimes function as reliable mechanisms for achieving the justification of high-level moral claims. And, in the case of ethical explanation, as in Argument VIII, the naturalist can use the results of the global ethical justification to support the key evaluative premise of her explanation. In neither the scientific nor ethical cases does the combination of explanatory and justificatory reasoning involve vicious circularity.

What sort of justification of her action should we expect of Suzy? That depends on her age and capacities. If she is five years old, we would probably say that it is sufficient for justification that the motivations for her

action are constituted by empathic distress in such a way that her action derives from them, even though she herself finds questions about justification baffling. To use the terminology of externalist epistemologists, she *is justified* even though she is not able to *show justification*. If she is fifteen years old, we might demand more. If she is an evolutionary ethicist, even more will be expected of her, perhaps something like Argument VII. But in each case the form of the justification is the same: An appeal is made to a process that reliably produces the goal in question, whether it be a morally good action, a morally worthy motive, or a true moral belief.

Evolutionary theory and scientific knowledge generally play another role in ethical justification besides their role in local and more global justifications. Evolutionary theory and developmental, cognitive, and social psychology provide knowledge about human capacities. Using this knowledge, the naturalistic moral theorist can critique certain sorts of proposed ethical demands as unrealistic and probably unrealizable. She can reject other sorts of normative proposals as demanding too little. For instance, given what we currently know about human cognitive capacities, the utilitarian demand that in making a moral decision one calculate all the consequences of one's anticipated action appears to be a moral demand with which we are unable to comply. So we are under no obligation to follow it. Alternatively, ethical theories that presuppose that humans are essentially self-centered can be criticized for demanding too little of us. Thus a scientifically based ethics can play a positive role in the justification of moral claims by identifying reliable processes of moral belief formation. They also can play a critical role in eliminating ethical demands that either require reliable processes that, as far as we know, humans do not possess or fail to acknowledge ethically relevant capacities that, as far as we know, we do possess or can acquire.

*Avoiding the Open-Question Form of the Naturalistic Fallacy.* The critic has one more charge of fallacy up his sleeve. Why should anyone accept survival and the having and rearing of children as what is morally valuable? This is, of course, a version of Moore's (1978) well-known open-question argument against the identification of moral values with any natural state of affairs. Moore argues that, since one can legitimately raise this question with respect to any alleged identification of evaluative and natural properties, we have sufficient evidence that such identifications are problematic, indeed fallacious, because no genuine identification would countenance such a question as legitimate. If the naturalistic ethicist is seeking an identification of fact and value, she is after a posteriori ones, based on adequate empirical evidence (Brink 1989; Rottschaefel 1998; 1999). One can always raise questions about such identifications, but when the identification in question is adequately established, merely raising a question about the identification does not force a retreat from it. Questions originating

from genuine empirical problems are one thing; those arising from non-naturalistic presuppositions about the nature of values or from merely logically possible alternatives are quite another.

Suppose I claim that water is  $H_2O$ . You are certainly at liberty to ask whether water really is  $H_2O$ . I have to admit that it is logically possible that water is not  $H_2O$ . But, if I have a good enough theory of the atomic constituents of matter, I have committed no fallacy in making the identification between  $H_2O$  and water.<sup>19</sup> Given the adequacy of evolutionary theory and the theory of natural selection, the evolutionary ethicist is in a position similar to that of the chemist. Even though she need not claim that survival, reproduction, and rearing children are the only moral values or the only ultimate moral value, she is justified in claiming that they are morally valuable. They are morally valuable in the minimal sense that they are necessary conditions for the pursuit of any other goals that are considered morally valuable. More precisely, survival is a necessary condition for the pursuit of other personal moral values, and reproduction and the raising of children is a necessary condition for the pursuit of nonpersonal moral values.

*Avoiding the Naturalistic Fallacy: Conclusions.* What, then, is the status of the claim that no evolutionary ethics—indeed no scientifically based ethics—can provide an adequate justification of norms and values because it commits some form of the naturalistic fallacy? I have examined three central understandings of the naturalistic fallacy and in each case found that the charge does not stand up. Evolutionary ethicists need not attempt to deduce evaluative conclusions solely from factual premises, so they do not necessarily commit a fallacy of deductive logic. In attempting to justify normative and evaluative claims, evolutionary ethicists can recognize the distinction between the way beliefs are discovered and the way they are justified. They can distinguish origins from justifications. They also point out that the mechanisms for acquiring belief function at times as reliable mechanisms for justification of beliefs and thus can avoid committing the genetic fallacy. Because determining which mechanisms are reliable is an empirical question, an a priori veto on all mechanisms making use of factual input to move to evaluative conclusions begs the question against ethical naturalism. Finally, evolutionary ethicists can grant that any connecting of values with matters of fact (by means of reductive identifications or supervenience relations) requires justification and is open to question. But they urge that there is a distinction between questions motivated by genuine empirical problems about alleged connections and those based merely on the speculations about logically possible alternatives or on question-begging assumptions about the nature of values. Only empirically based motivated questions pose a potential problem for the naturalist. Thus, naturalistic moral philosophers have a response to the open-question version of the naturalistic fallacy.

Moreover, if, as I have argued, the problem of naturalistic justifications has been solved, even if evolutionary ethics should fail to account for any or some of the connections between facts and values, its failure will not derive, as the critic opines, from an intrinsic inability of a scientific naturalistic ethics to provide adequate justifications of moral norms and values. If evolutionary ethics should fail, one plausible source of its failure would be that, in fact, the major and most relevant mechanisms of moral agency are not evolutionary in origin. Even in that case, the relevant mechanisms and the values they achieve, as well as the norms they instantiate, are open to empirical investigation by developmental and cognitive psychologists and social scientists. Scientific ethical naturalism will continue to flourish, even if for empirical reasons evolutionary ethics takes a back seat.<sup>20</sup>

Even if the naturalistic fallacy in its various forms does not present an in-principle barrier to a naturalistic account of values, one may still question whether such an account has much empirical or scientifically based plausibility. To address this question, I next sketch the outlines of a positive account of evolutionarily based objective moral values.

#### A POSITIVE ACCOUNT OF SCIENTIFICALLY BASED OBJECTIVE MORAL VALUES: SELECTION EXPLANATIONS

Moral realists have at least two different accounts of the conception of moral facts. On the maximal account, they are constituted entirely by object-side factors, independent of the moral agent. On the moderate understanding, they are constituted by both object- and subject-side factors; besides the moral beliefs, attitudes, and actions of the moral agent there are object-side moral facts about practices, institutions, situations, and events. Some of these object-side facts are morally valuable; others are not. Moral values are thus relational properties, involving both properties of objects independent of moral agents and properties of moral agents. Moral antirealists hold that morality concerns only subject-side moral factors such as pro and con attitudes or collective pro or con tendencies.<sup>21</sup> They should be distinguished from moral nihilists and moral skeptics. The latter claim that we cannot know whether there are any moral values, and the former deny that there are any.

Rue implicitly supports moral antirealism, that is, a subject-side account of moral values, and denies the objectivity of moral values that involve any object-side facts.<sup>22</sup> He claims that the natural world is valueless and that agents project subjective values onto a valueless natural world. Rue offers no arguments for his view save that he assumes that his position is required in order to avoid the naturalistic fallacy. I have already shown in some detail how the major forms of the naturalistic fallacy can be avoided while maintaining that there are objective natural moral values. I now want to offer a positive argument for a moderate moral realism by showing how a generally accepted account of one common form of scientific theoretical

explanation in biology and psychology—the sciences most prominent in Rue's own antirealist account of moral values—makes use of objective moral values in explaining human behavior. A realist understanding of such successful explanations supports the claim that there are objective natural moral values.

One common argument against moral realism, championed by the American philosopher Gilbert Harman (1985; 1986; 1988) and others, is that any account of behavior in terms of objective moral values is explanatorily inert. Harman argues that object-side moral facts, if there are any, explain nothing about an agent's moral perceptions, beliefs, and actions; they are epiphenomenal. Moral realist Nicholas Sturgeon (1985; 1986a, b) contends that adequate explanations of moral phenomena require the invocation of object-side moral facts.<sup>23</sup> This debate is a crucial one, for a central way to establish the existence of some factor is to show that it helps explain some phenomena, in this case moral actions. Thus, we can pose the question whether antirealism or moderate realism better explains the phenomenon of moral action. Does the explanation of moral action require only subject-side moral facts, or does it require something more, subject- and object-side moral facts?

Findings from moral development psychology about moral internalization break this stalemated discussion and lend tentative support to moral realism. Moral internalization is how developmental psychologists describe what moralists have examined as the development of conscience. It refers to a psychological state and its development, in which one feels or believes that she has an obligation to act in accord with moral norms. Developmental psychologists understand moral norms in various ways, but one acceptable and nonbiasing version is that a moral norm is a norm that requires one in a specific situation to act for the welfare of another. An agent manifests moral internalization when, in situations where a conflict of interests exists between the welfare of another and her own interests, she consistently acts to promote the welfare of the other rather than to attain social approval or egoistic aims.

Parental-discipline situations are apt occasions for promoting moral internalization. Psychologists have identified three importantly different methods by which parents facilitate moral internalization. First, parents use assertions of power, which involve such measures as the use of force, deprivation of privileges, threats, and commands. Second, parents use withdrawal of love, which includes expressions of disapproval and anger. Finally, in inductive techniques, parents point out to the child the effects of the child's behavior on others, provide information about moral norms, and communicate their values regarding the consideration of others. The current consensus on the results of both naturalistic and experimental studies is that the most effective means of moral internalization are inductive techniques (Eisenberg 1992; Eisenberg and Mussen 1989; Hoffman 1970; 1977;

1988; Macoby 1982; Macoby and Martin 1983; Moore and Eisenberg 1984; Radke-Yarrow, Zahn-Waxler, and Chapman 1983; Zahn-Waxler, Radke-Yarrow, and King 1979; Zahn-Waxler and Radke-Yarrow 1990). It is hypothesized that this technique is effective because it associates moral norms with empathic feelings, in particular empathic distress, and guilt feelings, producing what psychologists call a “hot cognition”—one that has motivational power. The hot cognition can enter into future considerations independently of any considerations about approval or disapproval or fear of punishment.

Consider a hypothetical moral-learning situation. Sandra is a moral neophyte, though not necessarily of the blank-slate type, since she possesses some empathic capacities. Suppose she is hitting her baby brother, Teddy, for no reason. Her caregiver, no matter what internalization technique she employs, considers Sandra’s current activity to be morally wrong. She tells Sandra that what she is doing is wrong and that she should stop hitting little Teddy. Idealize the situation and suppose that there are three versions of our drama differentiated by the three different discipline methods of power assertion, love withdrawal, and inductive techniques. The findings tell us that inductive techniques will be the most effective in enabling Sandra to internalize moral norms. When object-side facts play a role in discipline techniques, those techniques are more effective in producing moral internalization than when they do not, as is the case in the techniques of power assertion, which invokes fear of punishment, and love withdrawal, which invokes anxiety. Moral internalization is explained better by postulating a complex type of property with related subject-side and object-side components than by attributing it merely to subject-side factors. For example, the internalization of helping capacities involves the object-side features of the injured or harmed person to be helped and the subject-side sympathetic capacities of the would-be moral agent.

Granting that this complex property has more explanatory power than the simpler subject-side ones, a critic will object that these moral properties are not likely to be ones that any reputable scientific theory invokes. On a standard view of scientific explanation the properties that play explanatory roles constitute natural kinds that make no appeal to subject-side factors.<sup>24</sup> Consequently, a scientifically based account of these properties is doomed.

But this objection fails. A whole group of perfectly respectable scientific theories—*selection theories*—invoke properties that involve both object- and subject-side factors.<sup>25</sup> Significantly for our discussion, evolution by natural selection is one of the most prominent of selection theories.

Selection theories have the following form:<sup>26</sup>

1. Capacity C (e.g., empathy) in organism O (e.g., a human being) tends to bring about effect E (e.g., helping) in situation S (e.g. when someone is hurt). (Causal clause)

2. C is there in O because in the past C has often been successful in bringing about E in S. (Goal clause)
3. Having C and bringing about E in S allowed O-1s to do better than O-2s that had trait C\* (e.g., a tendency to act fearfully) rather than C, or better than O-1s themselves would have done, if they had had C\*\* (a tendency to feel personal distress) rather than C. (Benefit clause)
4. When Es are in the moral realm, O-1's doing better than O-2 means doing better morally. (Moral Benefit clause)

In the case of humans, some of these benefits are moral goods. That is, they are (a) the goods of human flourishing, such as food, shelter, clothing, safety, companionship, and the development of intellectual, creative, practical, and social capacities and (b) goods of the human community, such as social and distributive justice and moral rights.

When organisms have relevant, heritable genetic differences the selection is evolutionary. With respect to organisms that differ because of non-genetically based (noncognitive or cognitive) capacities the selection is social/cultural and/or intentional. A goal of a robust account of moral agency is to find adequate selection-based explanations of the origin of each of the component capacities of moral agency. It is likely that base-level capacities of moral agency are evolutionarily derived or are the result of operant conditioning, while higher-level capacities originate from various forms of individual or social/cultural learning. What is selected for is differentially good or bad for the organism and others.

Thus, selection explanations of moral agency support the objectivity thesis. Cognitive and motivational capacities are selected for because they enable behaviors that cause the actualization of dispositions of object-side events, objects, and situations that enable the agent to attain objectively valuable states (Scarantino 2003). And these valuable states bring about through their consequences the capacities that are responsible for their actualization. Moral beliefs are therefore true because they refer to objective facts, facts constituted by complex subject- and object-side properties, those of the selecting environment and the selected-for capacity.<sup>27</sup> And moral desires are satisfied because they bring about states of affairs that are objectively fulfilling for the agent.

To see how selection explanations support the objectivity thesis in more detail, let us focus on the emotions, because they are central to Rue's account of the valence operators. Valence operators constitute one leg of the tripod of modules—reality operators and executive operators being the other two—that constitute, in Rue's view, the mechanisms that enable human behavior.

Valence operators are rules and mechanisms that guide neural systems in mapping information about an organism's bioregulatory system—the biological value system—onto mental objects generated by the reality operators. By virtue of this



process various shades of relevance and value are attributed to a value-free world of objects event, properties and relations. (Rue 2005, 54)

Rue himself makes extensive use of neuroscientist Antonio Damasio's (1994) somatic-marker theory of emotion. According to Damasio emotions are bodily states that result from either externally or internally generated stimuli, and feelings are perceptual states, either conscious or unconscious, that mark the bodily state as in some way either pleasant or unpleasant. These feelings are associated with their environmental sources and mark them as, roughly, to be avoided or pursued. In addition, Rue employs psychologist Richard Lazarus' (1991) appraisal theory of emotion, in which emotions are cognitive appraisals of some environmental situation, event, or person that determines its relevance to, congruence with, and potential to enhance an agent's goals. On Rue's account of valence operators, an agent's values, whether biological, cultural, or individual—including moral values—are attached to environmental situations, events, and persons.

What explains this attaching of values to fact? The process cannot reflect any discovery of value in the situation, event, or persons in the natural or social environment, for that would violate the strict fact/value dichotomy to which Rue is committed.<sup>28</sup> Yet, fortuitously, the attachment processes achieve, when working properly, differential survival and reproduction by means of personal fulfillment and social harmony.

Rue appeals to myth as the ultimate means by which humans unite—though fallaciously—fact and value. Yet in a given social, cultural, and historical circumstance some myths work and others do not. Some enable the achievement of the intermediate means that are conducive to the more general means for differential survival and reproduction of personal fulfillment and social harmony. What makes one myth's account of fact and value successful and another's not? Indeed, why is differential survival and reproduction marked out as valuable? Why do our valence operators put their print on this set of valueless facts? Rue does not tell us. I opine that he does not because there is no further story to be told, given his acceptance of the philosophical thesis about the fact/value dichotomy. All that is left to Rue is to assess the achievements of overarching myths in terms of subjectively determined values. One overarching type of myth is failing—the type that joins valueless states, events, and situations in the natural world with subjective states of positive and negative valence in the intentions of a transcendent personal being (the Semitic religious traditions) or the structure of a transcendent impersonal reality (the Indian religious traditions). Another type of myth or metamyth has prospects for being more successful. It is one that attaches value to this world's realities, that is, to Nature. But this attachment is just as arbitrary as the former one. Nihilists are correct. But, as Rue tells us, we need an adaptive falsity to survive and reproduce. In order to be motivated to act in a valueless natural world, we must erroneously find values in it.<sup>29</sup>

According to the selection-theory account I have outlined above, cognitive capacities, including emotions, can be explained at least in part in terms of the behavioral consequences for the organisms that they enable. Specifically, emotional capacities are selected for because they enable perception of values (Charland 1997; Prinz 2004; Millikan 1996). The selection-theory account of objective moral values, understood as properties that relate states of an agent with states of the natural and social environment, provides an explanation for what in Rue's account is an arbitrary but at times fortuitously adaptive process of attribution or projection. I believe that both Damasio's and Lazarus' account of emotions as somatic markers and appraisal processes fit nicely into this selection-process account (Dalglish and Power 1999; Griffiths 2004; Scherer 1999). Emotions and evaluative cognitions are selected for by both natural and social environmental factors because they more successfully pick out those environmental factors that are relatively more personally and socially fulfilling.

I conclude that scientifically based reasons provide positive support for the position of moderate moral realism. Not only is there no scientifically required distinction between moral values and natural facts, but there are positive reasons deriving from certain forms of scientific explanations, selection theories, to assert the existence and explanatory role of natural moral values in accounting for human action.

#### CONCLUSION

Accepting Rue's naturalistic project, I have argued that his proposal for a scientifically based religious naturalism faces two major problems. First, it suffers from internal subversion. Reflectively knowledgeable advocates of religious naturalism on Rue's account are aware that its identification of values with Nature is erroneous. Consequently, given the central role that the belief in the objectivity of moral values plays in Rue's account of motivation and practice, it is difficult to explain how religious naturalism will provide the motivation necessary for achieving the goals toward which all religions aim, individual flourishing and social harmony. However, I do not contend that I have shown that this problem is insurmountable. A second problem poses a more formidable challenge for Rue's project. Rue's account of religion and its role in human life depends crucially on the view that there are no objective moral values. However, he does not offer support for this view, asserting merely that any attempt to show otherwise commits the naturalistic fallacy. I have shown that the naturalistic fallacy poses no problem for maintaining the objectivity of moral values. In addition, I have presented positive reasons based on scientific findings in both biology and psychology for claiming that there are objective moral values. In doing so, I have argued for a moderate view of moral realism, one that makes moral values relational properties that link the capacities of an agent

and their exercise and fulfillment with certain features of its natural and social environment.

I have left open several pressing questions. Does this alternative view of naturalized religion, which claims that there are natural objective moral values, fare any better in meeting the current challenges facing humanity than Rue's alternative and its traditional religious competitors? Is there any reason to call my alternative a religious one? Or is it merely an alternative secular account? What role, if any, is left for religion, once myth making is not required?

In addition to these and other important questions, I have only sketched in bare bones the nature of the biologically and psychologically based account of moral agency that my alternative view implies (Rottschaefer 1998).

Although I think that Rue's proposal suffers from at least one fatal flaw, I also believe that it deserves very serious attention, both because of its breadth and richness and because of the extreme importance of the problems for which it is intended to provide a thoughtful and helpful set of proposed solutions.

#### NOTES

1. Rue allows that these secondary operators need not always seek ends compatible with those of the primary operators. However, they are constrained by the former, which serve as default mechanisms.

2. This is the religious naturalism interest group. Their Web site is accessible through that of the Institute for Religion in the Age of Science, [www.iras.org](http://www.iras.org).

3. Rue correctly, I believe, departs from Pals's overall conclusion that general theories of religion have been shown to be inadequate and implausible and that local culturally bound theories are more likely to be successful, though of course limited in scope. Pals neglects the recent surge of theoretically informed empirical studies stemming from evolutionary biology and psychology and from cognitive psychology that support claims that a general theory of religion, though one sensitive to local cultural variations, has great promise. Rue focuses primarily on the theories of evolutionary biology and psychology. J. Samuel Preus (1987) gives a very helpful outline of some of the earliest modern attempts to understand religion naturalistically.

4. Sociobiologist E. O. Wilson suggested this in *On Human Nature* (1978). In his *Darwin's Cathedral*, evolutionary biologist D. S. Wilson (2002) has argued for a group selectionist account of religion.

5. For instance, Pascal Boyer (1994; 2001) and Scott Atran (2002) argue roughly that religious capacities are the result of the use of other evolutionarily based cognitive and motivational capacities that have evolved for aiding in the bringing about of those behaviors that enhance relative biological fitness. As such they are spandrels.

6. Rue adopts the idea that the root metaphor of the new myth that might replace the Judeo-Christian myth is based on an evolutionary cosmology. As myth its function is to unite fact and value.

7. Because Rue does not construct an argument to support the claim that something is valuable, it is difficult to discern whether he intends to argue implicitly for the existence of the value of life. If he does, an argument could take the form of an a priori Kantian argument to a necessary condition: Because life is valuable, there is something that is valuable. On the other hand, it could take an empirical form. On the hypothesis that something is valuable, life is one of those things that are. Scientific findings could then be brought to bear to show that organisms do things that indicate that life is valuable for them. A naturalistic objectivist about values would favor the second sort of approach. Rue is noncommittal.

8. In this volume Rue mistakenly equates the naturalistic fallacy with the discrepancy between facts and values: "This discrepancy between facts and values has been formulated by

philosophers as the so-called naturalistic fallacy" (p. 56). Of course, the naturalistic fallacy is the mistake of claiming that values can in some way be identified with natural facts. The discrepancy represents the supposed correct view of things, not the mistaken one.

9. Rue, of course, should have said that the naturalistic fallacy is *committed*, not *transgressed*, in the overlaying of facts with values.

10. Rue could adopt an instrumentalist stance with respect to scientific theories. That is, he could hold that scientific theories concerning unobservable entities are incapable of being either true or false but rather are tools for helping us to organize observable phenomena and to make accurate predictions about such phenomena. However, to a large extent, depending on the level of description, the external and internal states of an organism that constitute the fulfillment of their needs and the objects of an organism's activities are observable phenomena. In order to avoid objectivity about these states Rue would have to adopt a phenomenalist position about their reality. That is, he would have to claim that they have no independent reality from that of the observer. Rue has not argued for either an instrumentalist or a phenomenalist view of science. Nor does he do so for either what he calls intuitive or ad-hoc science. Phenomenalism is a very implausible epistemic interpretation of the biological sciences, and instrumentalism is barely more plausible. However, this is not the place to argue for these claims.

11. I omit here some complexities. There are nonrealist adherents of traditional religions who "believe in" and practice a traditional religion while interpreting the claims of their tradition in a noncognitive fashion. The views of such are expressed and propounded by, for instance, Don Cupitt and D. Z. Phillips in the Christian tradition and by some forms of Zen Buddhism in the Indian religious tradition. Some proponents of religious naturalism, including Karl Peters and Ursula Goodenough, hold that there are objective natural moral values. On Rue's account, of course, they are mistaken.

12. In *By the Grace of Guile: The Role of Deception in Natural History and Human Affairs* (1994) Rue elaborates how nature uses various forms of deception to achieve evolutionary ends. I do not address here the claims that he makes in that book. Suffice it to say that Rue is not without means to respond to the aporia that I have posed.

13. I do not contend that the only problem with evolutionary ethics is its failure to provide an adequate justification of norms and values, but this is one of its central problems.

14. William Frankena (1939) provides the classical modern discussion and naturalist reply.

15. The approach that I take uses a mode of argumentation that is a central feature of the recent resurgence of a scientific naturalism in philosophy, especially in naturalistic epistemology. Philip Kitcher (1992) has sketched the deep roots of this movement in modern epistemology before it took the linguistic turn. I suspect that a similar story could be told about ethics. If I am correct, recent efforts to naturalize ethics also have their roots in a continuous and, I believe, progressive research program.

16. Although such findings may at times be in conflict with so-called ordinary or humanistic understandings, I do not believe that such conflicts are intrinsic or necessary.

17. Critics sometimes attempt to pose the problem of moral motivation for an evolutionary ethics by pointing out that no one seems motivated to act on the ultimate value of getting more copies of their genes into future generations. Although I think there is something to the problem of moral motivation, I do not think that it is as severe as this objection may portray it. I prefer to formulate the basic ends and values of an evolutionary ethics in terms of having and raising children. That seems to be generally motivating enough for most humans and other organisms. One need not be a reductionist to be an evolutionary ethicist.

18. In using this example, I do not intend to endorse the hypothetico-deductive method of justification. I merely use it to illustrate a form of abductive justification that—along with the pattern of explanation illustrated in the text—helps to avoid the charge of vicious circularity. I maintain, though I do not argue for it here, that the scientific naturalist could substitute for the hypothetico-deductive form of justification other suggested accounts of justificatory scientific reasoning, such as Bayesian inference or inference to the best explanation. So too it is not necessary to formulate scientific explanations in terms of deductive arguments.

19. I am suspicious of philosophical demands that in order to pick out genuine natural kinds, identifications must hold across all possible worlds.

20. Although the lineaments of a scientific naturalistic account of moral norms and their bases is far from worked out, the scientific naturalistic research program in ethics does not face an intrinsic obstacle to connecting moral values with natural facts by means of naturalistic

justifications. Indeed, Stephen Darwall, Allan Gibbard, and Peter Railton (1992, 126) in their review of the major trends in metaethics during the twentieth century identify the naturalistic program as one of the two major current programs in current metaethical reflection. In addition, they urge that such reflection be informed by empirical research in psychology, anthropology, and history.

21. However, this classification of moral realism and antirealism does not fit Michael Smith's (1994) rationalist moral realism, because, although he holds that subject-side factors are sufficient for moral realities, he counts himself as a moral realist. Smith's realism is objectivist insofar as he argues against moral relativism. I also omit here a discussion of the response-dependent accounts of moral value. These accounts may be thought to occupy a middle ground between realist and antirealist views. The moderate realist position that I propose resembles response-dependent views insofar as it appeals to both agent-independent and agent-dependent factors, but it is not a response-dependent view insofar as the moral value constituted by those factors is not itself constituted by an agent's response. Rather, a selection process involving both the selecting environment and variant candidate capacities is responsible for the selected-for capacity. That capacity in interaction with the environment achieves something morally beneficial. Expressivist and ideal-agent accounts of moral agency and moral judgment are response-dependent accounts because the way that the moral agent responds to an object-side feature is constitutive of its moral rightness. On the selectionist account that I am proposing, an object-side factor is morally valuable because it has certain properties such that in interaction with the responding moral agent who is doing the right thing something morally valuable comes to be.

22. Rue's notion of moral nihilism is ambiguous. It includes moral nihilism as I have defined it as well as antirealism. I interpret Rue's admission that nihilism is correct in several places to be equivalent to the claim that moral antirealism is correct. In other words, as opposed to the moral nihilist, Rue maintains that there are values but that they are subjective, subject-side only. On my account of moral nihilism, Rue is a moral antirealist, not a moral nihilist.

23. See also Boyd 1988; Railton 1986; 2003. Both realists and antirealists in these discussions support their respective position by considerations of linguistic practice and appeals to imaginary and hypothetical cases. I appeal to scientific findings to move this discussion beyond its stalemated position (Rottschaefer 1999).

24. For instance, hydrogen, a specific element of the periodic table, causes its phenomenal properties. Hydrogen has a set of identifiable properties that have nothing to do with the subject doing the identifying, and they are not constituted by complex relationships with other elements. Suppose that scientific natural kinds may not be constituted by a set of necessary and sufficient conditions but rather are homeostatic property clusters (Boyd 1988). Even so, moral kinds appear to be weird sorts of clusters. Both object- and subject-side factors, as well as the relationships between them, constitute such a homeostatic property cluster. The antirealists object that scientific theories do not deal with those sorts of kinds.

25. There are various ways to understand explanation in the sciences (Kitcher and Salmon 1989). The deductive nomological, the causal, the unificatory, and the pragmatic are prominent among these. I take causal explanations to include explanations in terms of constitutive factors or in terms of either efficient or final causes. Constituent factors identify what a thing is and can be characterized either functionally or substantively. We can distinguish efficient and final causes as mechanical and teleological respectively. Typically, mechanical causes are forces and teleological causes goals. More generally, mechanical and teleological explanations refer respectively to explanations in terms of a phenomenon's antecedents and consequences respectively. A selection theory offers an explanation of the acquisition of capacities that enable intentional actions or goal-directed behaviors and of functions based on adaptations. All of these phenomena display a common teleological structure, where the consequences that serve to explain the acquisition and use of the capacities in question are the result of interactions with object-side environmental factors. I use a selectionist model of explanation to show how teleological explanations play a part in some scientific causal explanations. With respect to an explanation of moral agency, I argue that moral values play an explanatory role as teleological causal factors in the acquisition of the moral capacities constitutive of moral agency (Rottschaefer 1998).

26. This schema is a variation on the familiar Wright function. Larry Wright (1973; 1976) is the source of modern discussions of the structure of teleological explanation. I follow roughly

the modified versions of Ruth Millikan (1989), Philip Kitcher (1993), and Peter Godfrey-Smith (1994) as they apply to biological adaptations and functions, without taking sides on their differences. Jon Ringen (1976) has worked out the case for operant conditioning. The schema leaves open whether these goods are to be understood to be reduced to, supervene on, or emerge from their nonmoral bases. In any case, these goods, including moral goods, are understood in an entirely naturalistic fashion, that is, as instantiated in physical, chemical, and biological properties, so that they can play an explanatory role in the acquisition, activation, and operation of the moral capacities constitutive of moral agency.

27. Such selection-based accounts require the kinds of properties that antirealists find so objectionable. Both object- and subject-side properties and the relationships between them constitute such properties. Nevertheless, to the extent that selection explanations are scientifically respectable, explanations of the origin of each of the components of moral agency that are based on selection theories are scientifically respectable.

28. We have here another tension in Rue's account between the sciences in terms of which he builds his views about human beings and his philosophical presuppositions. We have noted that biological "teloi" that Rue attributes to all living things point to object-side features of the environment that are valuable to an organism. So too the events, situations, and persons that are important to a person point to object-side features of value to a human agent for her personal fulfillment and for social harmony. The evolutionary, biological, neuroscientific, and psychological theories used by Rue all point to a different sort of account of the relationships between fact and value than his philosophical commitments allow him (compare Griffiths 2004).

29. Rue's theory resembles J. L. Mackie's (1977) error theory. According to Mackie, moral values are erroneously attributed to reality. Thus moral beliefs, although capable of truth and falsity, are in fact all false. Error theory is opposed to the traditional noncognitivist account of moral judgments. On that account moral claims are incapable of truth and falsity, being expressions either of emotions or commands. Emotions on this view are also understood in a noncognitive fashion.

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