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# THE NEW DARWINIAN NATURALISM IN POLITICAL THEORY

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**T**here has been a resurgence of Darwinian naturalism in political theory, as manifested in the recent work of political scientists such as Roger Masters, Robert McShea, and James Q. Wilson. They belong to an intellectual tradition that includes not only Charles Darwin but also Aristotle and David Hume. Although most political scientists believe Darwinian social theory has been refuted, their objections rest on three false dichotomies: facts versus values, nature versus freedom, and nature versus nurture. Rejecting these dichotomies would allow the social sciences to be linked to the natural sciences through Darwinian biology.

**I**n recent decades, there has been a revival of Darwinian social theory among many social scientists (Barkow, Cosmides, and Tooby 1992; Degler 1991; Fox 1989; Frank 1988; Masters and Gruter 1992; Maxwell 1991; Maryanski and Turner 1992; Schubert and Masters 1991; Smith and Winterhalder 1992; Wright 1994). The early influence of this intellectual movement in political science became evident in the work of a few political theorists such as Fred Willhoite (1976), Robert McShea (1978), and Peter Corning (1983). More recently, this new Darwinian political theory has been elaborated by McShea (1990), Roger Masters, and James Q. Wilson.

The political naturalism of these theorists is not only Darwinian but also Aristotelian and Humean: they agree with Aristotle that human beings are by nature social and political animals; they agree with David Hume that human beings are by nature endowed with a moral sense; and they agree with Charles Darwin that human sociality and morality are rooted in human biology.

Most political scientists, however, assume that such a political naturalism grounded in Darwinian biology is refuted by three objections. First, Darwinian naturalism ignores the radical separation between *is* and *ought* by deducing moral values from biological facts. Second, it promotes a biological determinism that denies the human freedom presupposed by morality and law. Third, it fails to recognize that human morality and politics are products of social learning rather than biological instincts. I shall defend the new Darwinian naturalism by arguing that these objections rest on three false dichotomies: facts versus values, nature versus freedom, and nature versus nurture.<sup>1</sup>

## NATURAL MORALITY

One of the most pervasive assumptions in the social sciences is that there is an unbridgeable gap between *is* and *ought*. This is often called "Hume's law" to indicate that Hume was the first to discover it. Because of this separation between judgments of fact and judgments of value, it is thought, scientific objectivity in the social sciences dictates moral rela-

tivism (Brecht 1959). Consequently, one of the most common objections to any Darwinian theory of human morality as rooted in human nature is that this fallaciously infers moral values from natural facts (Kitcher 1985). Even many of those who propose Darwinian theories of ethics accept the fact/value dichotomy: "The very last thing the Darwinian wants to do is break Hume's law by denying that there is a genuine 'is/ought' distinction" (Ruse 1986, 251).

I would argue, however, that far from separating facts and values, Hume showed how moral judgments could be grounded in certain facts of human nature. This explains why Darwin and the new Darwinian political theorists can incorporate Hume's theory of the moral sense into their evolutionary account of human morality.

The common interpretation of Hume as having separated *is* and *ought* depends on only one paragraph in his *Treatise of Human Nature* (1888, 469–70). Some Hume scholars have shown that if one considers carefully both the textual and historical contexts of this paragraph, one sees that the common interpretation is wrong (Buckle 1991, 282–84; Capaldi 1966, 1989; Martin 1991). The textual context makes clear that Hume's claim is that moral distinctions are derived not from pure reason alone but from a moral sense. The historical context makes clear that Hume is restating Francis Hutcheson's criticisms of some early modern rationalists such as Samuel Clarke and William Wollaston, who believed that moral distinctions could be derived from abstract reasoning about structures in the universe that were completely independent of human nature.

Far from denying that moral judgments are judgments of fact, Hume claims that moral judgments are accurate when they correctly report what our moral sentiments would be in a given set of circumstances. Moral judgments do not have *cosmic objectivity* in the sense of conforming to structures that exist totally independently of human beings. Yet neither do moral judgments have only *emotive subjectivity* in the sense of expressing purely personal feelings. Rather, as Nicholas Capaldi (1989) has argued, moral judgments for Hume have *intersubjective objectivity* in that they are factual judgments about the species-typical

pattern of moral sentiments in specified circumstances.

Hume compares moral judgments to judgments of secondary qualities such as colors (1888, 469; idem 1985, 233–34). My judgment that this tomato is red is true if the object is so constituted as to induce the impression of red in normally sighted human beings viewing it under standard conditions. Similarly, my judgment that this person is morally praiseworthy is true if the person's conduct is such as to induce the sentiment of approbation in normal human beings under standard conditions. Just as an object can appear red to me when in fact it is not, so a person can appear praiseworthy to me when in fact he is not. The moral judgment whether some conduct would give to a normal spectator under standard conditions a moral sentiment of approbation is, Hume insists, "a plain matter of fact" (1902, 289). The moral sentiment itself, however, is a feeling or passion rooted in human nature that cannot be produced by reason alone.

When Hume declares that "reason is, and ought only to be the slave of the passions" (1888, 415), he is not promoting emotivist irrationalism. As the context of this remark makes clear, he believes that reason can *direct* action but not *motivate* it: "the impulse arises not from reason, but is only directed by it" (p. 414). When our passions are accompanied by false judgments, reason can properly correct them: "The moment we perceive the falsehood of any supposition, or the insufficiency of any means our passions yield to our reason" (p. 416). "Reason and judgment may, indeed, be the mediate cause of an action, by prompting, or by directing a passion" (p. 462); consequently, "reason and sentiment concur in almost all moral determinations and conclusions" (1902, 172). For example, reason might instruct us as to how justice could be useful to society, but this alone would not produce any moral approbation for justice unless we felt a sentiment of concern for the happiness of society (pp. 285–87).<sup>2</sup>

Aristotle agrees with Hume about the primacy of desire or passion in motivating human action. "Thought by itself moves nothing," Aristotle believes, although reason can guide the desires that do move us. Desire always moves us, but thought never moves us without desire (*De Anima* 433a10–31).<sup>3</sup> Deliberate choice (*proairesis*), therefore, requires a conjunction of desire and reason into "desiring thought" or "thinking desire" (*Ethics* 1139a36–b6).<sup>4</sup> Like Hume, Aristotle also believes that the passions manifest a natural moral sense, which is particularly evident in moral passions such as anger and indignation, as I have shown elsewhere (Arnhart 1981, 102–5, 114–34). Aristotle identifies the moral passions as praiseworthy states of character. Although they are not "virtues in the strict sense," because they do not arise by deliberate choice, they are the natural dispositions to morality that become moral virtues through the cultivation of proper habituation and prudential judgment (*Eudemian Ethics* 1233b16–34b11; *Ethics* 1144b1–18). Cicero restates Aristotle's position in explaining that all animals act according to nature

in satisfying their natural desires and that human beings act according to their distinctively human nature in satisfying their "primary natural desires" through the moral and intellectual virtues (Cicero, *De Finibus* 2.33–41 and 107–10; 3.16–22; 5.17–20 and 24–72). Thus, Aristotle recognizes—but does not elaborate—the psychological basis of ethics in the moral passions that is elaborated by David Hume and Adam Smith (Berns 1994).

Hume's moral sense is rooted in the natural social affections of human beings. In rejecting the "selfish system of morals" of Hobbes and Locke, who deny the natural sociality of human beings and argue that moral inclinations are utterly artificial products of a social contract, Hume insists that although the progress of the moral sentiments does require "the artifice of politicians," this political artifice succeeds only with the support of nature. If human beings were utterly selfish and solitary in their nature, they could never develop the social sentiments necessary for moral life: "The utmost politicians can perform, is, to extend the natural sentiments beyond their original bounds; but still nature must furnish the materials, and give us some notion of moral distinctions" (Hume 1888, 295–96, 500, 619–20; idem 1902, 214–15, 296–97).

Aristotle believes that the natural sociality of human beings and other political animals is an extension of parent-child bonding.<sup>5</sup> The various forms of friendly feeling that unite human beings as individuals, as fellow citizens, and as members of the human species radiate out from the natural affection between parents and offspring that human beings share with other animals whose offspring require intensive and prolonged parental care (*Generation of Animals* 753a8–14; *History of Animals* 612b18–20b9; *Ethics* 1155a1–33, 1159a27–37, 1160b23–62a29; *Rhetoric* 1371b13–26). Consequently, "in the household are first found the origins and springs of friendship, of polity, and of justice" (*Eudemian Ethics* 1242b1–2). Insofar as justice coincides with friendship, the claims of justice vary in proportion to the nearness of attachments (*Ethics* 1155a16–29, 1159b25–60a8, 1165a14–36). One's obligations are stronger to closer relatives than to more distant ones and stronger to close friends and fellow citizens than to strangers, although some friendly feeling is possible towards all members of one's species. There can be a kind of sympathy among animals of the same species; and this is especially true for human beings, so that "we praise those who love their fellow human beings" (*Ethics* 1155a20–21). Still, the humanitarianism of human beings will always be difficult to cultivate and almost always weaker than their egoism, their nepotism, and their patriotism.

Similarly, Hume regards the dependence of offspring on parental care as the natural root of human sociality and morality (1888, 483–86, 570–73; idem 1902, 189–90, 192, 201–8, 240, 295–311). The natural moral sentiments that bind people in families can expand to embrace larger groups. Then, gradually, through the experience of mutual intercourse between societies, the boundaries of justice can enlarge

as people discover the utility of extended social interdependence. This "natural progress of human sentiments" depends upon a natural sympathy or "sentiment of humanity"—a concern for the welfare of one's fellow human beings that extends in principle to all members of the human species. Of course, the concern for strangers will almost always be weaker than the concern for oneself and one's immediate family and friends, but the affection of humanity is strong enough to constitute the universal principle of morality. It is the "internal sense or feeling, which nature has made universal in the whole species" (Hume 1902, 169–73, 192, 218–29, 268–78).

If we accept the common view of Hume as having argued that we cannot infer what *ought* to be from what *is* the case, then it would seem that he contradicts himself by deriving morality from the natural inclinations of human beings. The contradiction disappears, however, once we see that the dichotomy between *is* and *ought* falsely attributed to Hume was actually first formulated by Immanuel Kant, who used it as an argument against the kind of ethical naturalism developed by Hume! Furthermore, once this point is understood, it becomes clear that while the proponents of Darwinian naturalism are Humeans, their critics are Kantians.

According to Kant, judging what *is* the case belongs to the "phenomenal" realm of nature, but judging what *ought* to be belongs to the "noumenal" realm of freedom (1956, 4–5, 18, 30–31, 99, 163–64; idem 1959, 4, 30, 44–45, 67–74, 80; idem 1965, 465, 472–79, 526; idem 1987, 286–87). (Kant employs the distinction in German between *sein* and *sollen*.) As opposed to Hume, Kant is a dualist. For Kant, the natural world is governed by causal laws that can be understood by natural science; and in this world there can be no free will, because every event must be determined by a causal mechanism. By contrast, in our moral experience, we praise and blame people in accordance with a moral law that transcends nature and is thus unknowable by natural science; and in this world we must assume free will, because moral judgment would be impossible unless we assumed that people were capable of freely choosing to obey or disobey the moral law. As moral agents, we obey categorical imperatives of what *ought* to be, but this *ought* expresses a moral necessity that has no place in nature: "When we have the course of nature alone in view, 'ought' has no meaning whatsoever" (idem 1965, 473). As moral agents, human beings transcend the realm of nature and enter a realm of freedom that belongs to them as rational beings not governed by the laws of nature.

Kant's separation of *is* and *ought* treats morality as an autonomous realm of human experience governed by its own internal logic with no reference to anything in human nature such as natural desires or interests. He does this because he accepts the Hobbesian view of human nature. Since human beings are by nature asocial, selfish animals, they cannot live together in peace unless they conquer their natural inclinations by willing submission to

moral rules devised by reason to pacify their conflicts (Kant 1970, 1987, 317–21; Simpson 1986).

When Darwin develops his evolutionary theory of morality, he adopts a Humean naturalism rather than a Kantian dualism. Darwin believes that his theory of evolution by natural selection will provide a biological explanation for what Hume, Adam Smith, and other Scottish moral philosophers identify as the moral sense (1936, 471–513, 911–19; idem 1987, 537, 558, 563–64, 619–29). When he begins his account of the moral sense in *The Descent of Man*, he quotes Kant's praise of moral duty, but he immediately suggests his departure from Kant by indicating that he will approach morality "exclusively from the side of natural history" (1936, 471).

Darwin sees that one of the central characteristics of the human species is the duration and intensity of child care. For that reason alone, human beings must be by nature social animals. The reproductive fitness of human beings requires strong attachments between infants and parents and within kin groups. Darwin believes this natural bonding of parents and children is the foundation of all social bonding and of the moral sense. "The feeling of pleasure from society is probably an extension of the parental or filial affections, since the social instinct seems to be developed by the young remaining for a long time with their parents; and this extension may be attributed in part to habit, but chiefly to natural selection" (1936, 478). For Darwin, this supports Hume's claim about the moral emotions of sympathy and benevolence as the basis for social cooperation (pp. 479–87).

Darwin also believes natural selection would favor mutuality and reciprocity as grounds for cooperation. Animals with the sociality and the intelligence of human beings recognize that social cooperation can be mutually beneficial for all participants. They can also recognize that being benevolent to others can benefit oneself in the long run if one's benevolence is likely to be reciprocated (1936, 443–44, 472, 479, 499).

Like Hume, Darwin explains human morality as emerging from the complex cooperation within groups competing with other groups, and thus only gradually and with great difficulty does human moral concern expand to include those outside one's own group. Throughout human history, justice has meant helping one's friends and harming one's enemies. Yet Darwin also agrees with Hume in claiming that as human beings are united into ever larger communities, their natural sympathy and benevolence can to some extent embrace all members of the human species (1936, 480–81, 491–95). One example of this extension of moral concern is the recognition that slavery violates the moral sense by treating some human beings as if they were not human (Chambers 1844, 379–83; Darwin 1936, 487–88; Hume 1902, 190–91; idem 1985, 383–91; Lincoln 1953, 2:222, 264–65, 271, 281–82; ibid. 3:541–42, 4:269).

Human beings are moral animals, Darwin explains, because they have the cognitive capacity to compare their desires or passions and judge that some are more important or enduring than others. As social

animals, they feel concern for the good of others, and they feel regret when they allow their selfish passions to impede the satisfaction of their social passions. The word *ought*, Darwin concludes, signifies the consciousness that since some passions are more persistent than others, one cannot be fully happy if one does not satisfy those stronger passions (1936, 480–87).

The moral propensity to act for the good of others might seem to contradict natural selection. For example, courageous individuals naturally inclined to sacrifice their lives in defense of their community might often leave fewer offspring than cowardly individuals. Darwin believed, however, that in the competition between groups those with the more courageous members would often prevail (1936, 443–44, 497–98, 500). Not only courage but other moral dispositions to social cooperation might strengthen one group against others. Although many evolutionary biologists regard this appeal to group selection as one of Darwin's regrettable mistakes (Dawkins 1976; Williams 1966), some recent research suggests that Darwin was correct. Although natural selection can act within a group to favor selfish individuals over others, it can also act between groups to favor groups of altruists over others. Group selection occurs in those circumstances where selection between groups is stronger than selection within groups (Eibl-Eibesfeldt 1989, 90–103; Sober 1993, 88–117; Wilson 1983; Wilson and Sober 1989).

As soon as Darwin published his naturalistic theory of morality in *The Descent of Man*, he was attacked by St. George Mivart (1871). Mivart insisted on a Kantian separation between nature and morality. Although the human body could be explained as a natural product of biological evolution, Mivart contended, the human soul was a supernatural product of divine creation. And as an expression of the soul's transcendence of nature, human morality manifested a uniquely human freedom from natural causality.

Thomas Huxley (1871) immediately defended Darwin's ethical naturalism against Mivart's dualist critique, but Huxley moved later in his life, particularly in his famous lecture, *Evolution and Ethics* (Huxley 1894), toward a dualistic theory of ethics that Mivart (1893) recognized as his own. Huxley adopted the Hobbesian-Kantian view that since human beings in their natural state were selfish and asocial, the moral improvement of humanity required a self-abnegating denial of human nature (1894, 31, 44–45, 59, 68, 75–77, 81–85). Because of the "moral indifference of nature," one could never derive moral values from natural facts: "The thief and the murderer follow nature just as much as the philanthropist" (*ibid.* 59, 80). More recently, in the continuing debate over the ethical implications of Darwinian biology, biologists such as David Lack (1957), John Eccles (1989), Gunther Stent (1978), and George Williams (1989, 1993) have adopted Huxley's Kantian claim that ethics cannot be rooted in human nature because of the unbridgeable gulf between the selfishness of our natural inclinations and the selflessness of our moral duties.<sup>6</sup>

McShea, Masters, and Wilson, however, defend a

naturalistic theory of ethics similar to that proposed by Hume and Darwin. They argue that contemporary sociobiological theories for explaining altruistic behavior confirm Darwin's view of sociality and morality as rooted in sympathy, mutuality, and reciprocity. The theory of "inclusive fitness" (Hamilton 1964) explains how natural selection could favor caring not only for ourselves and our offspring but also for our close kin. The theory of "reciprocal altruism" explains how natural selection would favor our helping others and gaining a reputation for being helpful if that increases the probability that others will help us in the future (Alexander 1987; Axelrod 1984; de Waal 1992; Trivers 1971, 1985).

Furthermore, Wilson (1993a, 1993b) argues that natural selection may have promoted a generalized psychological propensity to "attachment" or "affiliation." What he calls "affiliation" corresponds to what Aristotle calls "friendship" (*philia*), a natural drive to social bonding diversely expressed as sexual, familial, companionate, political, or philanthropic attachments (*Ethics* 1155a1–72a15). Wilson believes that the human sentiments of sympathy and benevolence, which throughout most of human evolutionary history would have enhanced reproductive fitness by inclining human parents to care for their young, can now be extended to people who are not one's offspring or even to non-human animals. In thus affirming the social dispositions of human beings as rooted in biological nature, Wilson belongs to that growing number of social scientists who argue for going "beyond self-interest" in social theory (Frank 1988; Mansbridge 1990).

Is such naturalistic reasoning about ethics fallacious in moving from *is* to *ought*? If we agree with Kant that the "moral ought" belongs to an utterly autonomous realm of human experience that transcends the natural world, then we would have to say that any move from human nature to human morality is mistaken. But if we agree with Hume that moral obligation is grounded in natural human sentiments or desires, then we would have to say that human morality must be rooted in human nature.

"Value for humans," McShea claims, "arises out of and is validated by their species-specific feeling pattern" (1978, 659). Parenthood is a human value because human beings have a strong feeling for parental caregiving. Friendship is a human value because human beings have a strong feeling for their friends. Courage in war is a human value because human beings have a strong feeling for patriotic loyalty. Such values are natural to human beings, because such feelings arise from what Hume called "the original fabric and formation of the human mind, which is naturally adapted to receive them" (1902, 172). Pure reason alone cannot create values because it cannot create feelings. Reason can, however, elicit, direct, and organize feelings to ensure their fullest satisfaction over a complete life. Indeed, what distinguishes human morality from the behavior of other animals is the cognitive capacity of human beings for reflecting on their present feelings in the light of past experiences and future expectations.

For McShea (1990), the species-typical feelings or desires, which emerged from human evolution to become embedded in the genetic structure of human nature, constitute a universal pattern of motivation for human beings. The good for human beings is the satisfaction of their desires, doing what they feel like doing, doing what they want to do. This is difficult because to do what we want to do, we must know what we really want to do, and then we must know how to get what we want in particular circumstances. Since our natural desires are not reducible to one another, and since they often conflict, their harmonious satisfaction over a whole life requires good habits of choice and prudent judgment. What we ultimately seek in all of our action but attain only with great effort is what Hume called "the state of calm passion," in which each desire is muted to allow for all the others (1888, 417–22, 437, 583; 1902, 239–40).

In this view of morality, ethical naturalists do not commit a "naturalistic fallacy" in moving from *is* to *ought*, McShea explains, as long as they "limit themselves to the assertion that for a particular intelligent species certain feelings are predictably aroused by certain facts and that the experience of such feelings is the only basis on which we can make evaluative judgments" (1990, 226). Again, "Values are prescriptive, imply obligation, because we feel that they do. The fact of obligation is nothing more nor less than the feeling of obligation" (p. 235). Masters endorses McShea's Humean naturalism and sees it as compatible with both Aristotelian and Darwinian naturalism in basing morality on the natural human desires (Masters 1992, 300–302; idem 1993, 115–16). Likewise, Wilson adopts the Humean argument for morality as grounded on sentiment or feeling in developing his own theory of the natural moral sense (1993a, 237–40). Evidence from neurology, behavioral biology, and the social sciences supports this claim that there is a natural sense of justice that arises in the human brain from the interaction of reason and emotion (Damasio 1994; Masters and Gruter 1992).

## NATURAL FREEDOM

Kant's primary argument for a radical separation of the natural *is* and the moral *ought*, which would render ethical naturalism indefensible, was that such a separation was a necessary condition for the freedom of the will that must be assumed in all moral judgment (Kant 1965, 409–15, 464–79). For morality to be possible, moral agents must be able to transcend nature through free will. Those who accept Kant's dualism must conclude that biology and the natural sciences in general have nothing to contribute to our understanding of morality, because morality is an utterly autonomous realm that transcends nature (Stent 1978).

In contrast to this Kantian notion of moral freedom as freedom *from* nature, the ethical naturalist would argue that our moral experience requires a notion of moral freedom as freedom *within* nature. For Aristotle,

Hume, and Darwin, the uniqueness of human beings as moral agents requires not a free will that transcends nature but a natural capacity to deliberate about one's desires.

Aristotle accounts for moral responsibility with no reference to a free will acting outside the order of nature.<sup>7</sup> He believes we hold people responsible for their actions when they act voluntarily and deliberately (*Ethics* 1109b30–15a3; *Rhetoric* 1368b27–69a7). They act voluntarily when they act knowingly and without external force to satisfy their desires. They act with deliberate choice (*proairesis*) when, having weighed one desire against another in the light of past experience and future expectations, they choose that course of action likely to satisfy their desires harmoniously over a complete life. Such deliberation is required for "virtue in the strict sense," although most human beings most of the time act by impulse and habit with little or no deliberation (*Ethics* 1116b23–17a9, 1144b1–21, 1150a9–16, 1151a11–28, 1179b5–30).

Children and other animals are capable of voluntary action. But only mature human adults have the cognitive capacity for deliberate choice. Thus, for Aristotle, being morally responsible is not being free of one's natural desires. Rather, to be responsible one must organize and manage one's desires through habituation and reflection to conform to some conception of a whole life well lived. One must do this to attain happiness, which is the ultimate end of all human action.

Similarly, Hume believes success in our pursuit of happiness requires a "general calm determination of the passions, founded on some distant view or reflection" (1888, 417–19, 437, 583; idem 1902, 239–40). Rather than acting on the passion of the moment, we can pause while we imagine other passions that we have felt in the past or are likely to feel in the future. Unlike other animals, who act to satisfy whatever desire is stirred by their immediate circumstances, we are moral beings because we can reflect on our desires as experienced over a whole life and weigh what we want now against what we might want in the future. Thus our freedom comes from our ability to delay, to reflect, and then to choose between alternative courses of action based on their distant consequences.

Hume rejects the contrast between free will and determinism as a false dichotomy (1888, 399–412; idem 1902, 80–103). Moral freedom should be identified not as the absence of determinism but as a certain kind of determinism. We are free when our actions are determined by our deliberate choices. In contrast to Kant, Hume doubts that we ever have any real experience of people acting outside the laws of nature. Moral judgment assumes a regular and predictable connection between what people desire and what they do. To hold people responsible for their actions, we must assume that their motives causally determine their actions.

Darwin agrees that "every action whatever is the effect of a motive," and therefore he doubts the existence of free will (1987, 526–27, 536–37, 606–8).

Our motives arise from a complex interaction of innate temperament, individual experience, social learning, and external conditions. Still, although we are not absolutely free of the causal regularities of nature, Darwin believes, we are morally responsible for our actions because of our uniquely human capacity for reflecting on our motives and circumstances and acting in the light of those reflections: "A moral being is one who is capable of reflecting on his past actions and their motives—of approving of some and disapproving of others; and the fact that man is the one being who certainly deserves this designation is the greatest of all distinctions between him and the lower animals" (1936, 912).

Neuroscientists appear close to explaining the neural basis for voluntary action and moral deliberation. Animals with sufficiently large and complex frontal lobes are capable of voluntary action, in the sense that they can learn to adapt their behavior to changing environmental circumstances. Because human beings have larger and more complex frontal lobes than other animals, human beings can use images and words to compare alternative courses of action through mental trial and error and then choose between them, a capacity for rational choice that can be impaired by damage to the frontal lobes (A. Damasio 1994; H. Damasio et al. 1994; Luria 1980, 257–327; Passingham 1993, 1–12, 222–61).

It might seem, however, that such scientific advances in the biological psychology of human action challenge any notion of moral responsibility (E. Wilson 1978, 71–78). For instance, some scientists claim that the inclination to violent criminality is somehow rooted in the neurophysiological constitution of the criminal. This has led some legal scholars to conclude that holding criminals responsible for their crimes is unscientific (Jeffery 1994). If so, this would confirm the common fear that biological explanations of human behavior promote a reductionistic determinism.

Masters and Wilson agree that biological factors influence criminal behavior, because they believe the distinctive character traits of violent criminals—such as impulsiveness and lack of empathy—are to some extent biological (Masters 1994a, 1994b; J. Wilson 1991, 1993a; J. Wilson and Herrnstein 1985). For example, the tendency to certain kinds of impulsive violence seems to be associated with low levels of serotonin (a neurotransmitter).<sup>8</sup> This tendency to violence seems to increase when a deficiency in serotonin is combined with hypoglycemia and alcoholism (Virkkunen et al. 1987, 1989). To the extent that these factors are influenced by genetic endowment, it would seem that some people are naturally more susceptible to criminal violence than others.<sup>9</sup>

Masters and Wilson insist, however, that such biological explanations of human behavior do not deny human freedom. They argue that the biological mechanisms governing human behavior (e.g., the serotonergic system) are too complex to be explained in a simple, reductionistic manner (Tork 1990; Yuwiler, Brammer, and Yuwiler 1994). Genetic propensities interact with individual experience, social learn-

ing, and the physical environment. There is some evidence, for example, that social interaction may induce higher levels of serotonin in those individuals who attain high social status (Madsen 1985, 1986; Raleigh and McGuire 1994; Tiger 1992, 248–59).

Alcoholism displays the same causal complexity. Although there probably is some genetic factor influencing alcoholism, the influence is slight in comparison with individual motivation and social circumstances. Some research suggests that people become alcoholics when they are motivated to acquire the habit of drinking alcohol and therefore give up their alcoholism when they are sufficiently motivated to change their habits—although as the habit of heavy drinking becomes stronger, the motivation to change must also become stronger to succeed (Bower 1988a, 1988b; Fingarette 1988a, 1988b). The body of an alcoholic might be abnormal in the way it metabolizes alcohol, but the metabolic process does not itself force the alcoholic to introduce alcohol into his body. The neurophysiological reactions to alcohol occur only after the alcoholic chooses to drink. This sustains Aristotle's claim that alcoholics can be held responsible for their drinking and punished for their conduct while intoxicated, because the *habit* of drinking excessively results from often choosing to drink excessively (*Ethics* 1113b22–14a30).

Knowing that some people have a biological propensity to alcoholism or any other disruptive behavior does not lessen their moral responsibility. On the contrary, Masters (1994b) and Wilson (1991) insist, such knowledge enhances their responsibility to control their bad propensities through medical treatment or proper habituation. If we discover that people inclined to low serotonergic functioning and hypoglycemia become dangerously impulsive when they drink alcohol, we could require them to refrain from drinking.<sup>10</sup> If we could identify children who are most at risk for becoming criminals as adults, we could look for ways to alter their childhood environment to promote those moral habits that would protect them against criminality. Knowledge of how good and bad character traits emerge from the complex interaction of nature and nurture enhances our moral freedom.

## NATURAL NURTURE

In denying the presumed gaps between facts and values and between nature and freedom, the Darwinian naturalists must also deny the presumed gap between nature and nurture. Many social scientists assume that human biology is largely irrelevant to human social behavior, because they believe that human social life arises from a uniquely human openness to nurture or culture that transcends biological nature. Consequently, the critics of Darwinian explanations of human social behavior insist that "we know of no relevant constraints placed on social processes by human biology" (Allen et al. 1978, 290). Yet if human morality is rooted in natural biological

inclinations, and if human freedom is freedom within nature rather than freedom from nature, then the moral freedom that human beings exercise through nurture or culture is biologically natural.

Many social scientists have adopted John Locke's idea that at birth the human mind is a *tabula rasa*, or "white paper," that "receives any characters" (Locke 1959, 1:48, 87, 121). In the absence of innate principles, the mind receives whatever experience and custom write onto it. This would seem to support cultural relativism.<sup>11</sup> Moral principles cannot be naturally innate, Locke argues, if we see that there is hardly any moral norm that has not been violated by some society somewhere in the world. For example, parental care for children might seem to be one moral principle that has been naturally imprinted on the mind. Yet the customary practice of infanticide in some societies shows that even parental care is not a natural moral principle and thus that custom is "a greater power than nature" (Locke 1959, 1:69–88).

Masters argues, however, that Locke is mistaken in his assumption that since the innate or the natural must be universal and invariant, any diversity or flexibility in human behavior must be purely cultural or customary (Masters 1993, 118–29). Modern biology shows that innate traits in most cases are not absolutely fixed, because the observed phenotype emerges from the interaction of inborn potential, developmental history, and the external environment. The human brain and human behavior arise from a complex interplay of natural inclination, individual experience, and social learning (Brauth, Hall, and Dooling 1991; Kandel 1991; Kandel and Jessel 1991). This modern biological account of the interaction of nature and nurture, Masters concludes, conforms more to Aristotle's understanding of human nature than to Locke's view of the mind as a blank slate.

Aristotle believes that what is naturally right varies according to the variable circumstances of particular individuals and particular communities. This does not dictate moral relativism, however, because for any given set of circumstances, there are naturally better and worse ways to satisfy the natural desires of human beings (*Ethics* 1103a14–27, 1107a1–7, 1134b18–35a5, 1137b11–32, 1140a24–45a2; *Politics* 1256a20–b7, 1288b10–89a25; *Rhetoric* 1360b4–66a23; see also Mulhern 1972). Parental care for children, for example, is so deeply rooted in human biology that although its expression will vary according to individual temperament and social conditions, any attempt to abolish parent-child bonding (as suggested in Plato's *Republic*) would be contrary to human nature (*History of Animals* 588b24–89a10; *Ethics* 1161b16–62a28, 1168a22–27; *Politics* 1261b16–62b37).

Similarly, Hume claims that while there is great diversity in the physical world as well as the moral world, in both worlds the diversity is naturally regular: "There is a general course of nature in human actions as well as in the operations of the sun and the climate" (1888, 402). Just as different kinds of trees regularly produce different kinds of fruit in different regions of the world, so do differences in sex, age,

and social conditions regularly produce differences in human behavior. If a traveler told us of a country in the Arctic where all the fruits ripen in the winter and wither in the summer, we would not believe him, because this would violate the regularities of physical nature. Nor would we believe him if he told us of a people who lived by the principles of Plato's *Republic* or Hobbes's *Leviathan*, because this would violate "the necessary and uniform principles of human nature" (ibid.).

If one examines carefully the apparent diversity of morals across cultures, Hume contends, one sees that "the principles upon which men reason in morals are always the same, though the conclusions which they draw are often very different" (1902, 335–36). People are often mistaken in their moral reasoning; but since the fundamental principles of morality are uniform, erroneous conclusions can be corrected by better reasoning and wider experience. For instance, in societies like Athens, parents could be motivated by their love of children to commit infanticide if they lacked the resources to care for children properly (1902, 334). Contrary to Locke, Hume believes the practice of infanticide in circumstances where caring for the child is difficult does not deny the naturalness of parental affection (1888, 483–84, 486, 570–73; 1902, 189–92, 201–8, 295–311). Hume would agree with Darwin that parental love and all other moral sentiments are natural to human beings, although their full development requires cultivation by "habit, example, instruction, and reflection" (Darwin 1936, 94).

McShea, Masters, and Wilson agree in rejecting Locke's claim that infanticide shows parental care to be purely a product of culture rather than nature (McShea 1990, 219–22; Masters 1993, 118–29; Wilson 1993a, 18–23). Infanticide tends to occur only in specific circumstances (Daly and Wilson 1988; Eibl-Eibesfeldt 1989, 186–201; Scrimshaw 1984): the infant is deformed, or there is not enough food to feed the infant, or the paternity of the infant is uncertain. Children older than one month are rarely killed, because by then the mother's bond to the child is usually strong. Parents in desperate circumstances may have to kill one infant to preserve another infant or even to preserve themselves. Parental love is natural; but it must compete with other natural sentiments, and this competition forces parents to make tragic choices when their physical and social resources are scarce.

Like human beings, some other animals practice infanticide and abortion in some circumstances (Hausfater and Hrdy 1984). This does not deny the naturalness of parental care for these animals. Rather, it shows the natural variability of animal behavior in adapting to variable circumstances. Behavioral ecology applies Darwinian theory in explaining such behavioral plasticity as biologically natural (Krebs and Davies 1993). Natural selection can favor individual behavioral differences in a species, and these individual differences can be caused either by genetic differences or by mechanisms of phenotypic plasticity such that a single genotype produces be-

havioral differences in different environments (Kagan 1994; D. Wilson 1994). Thus, as Masters argues, behavioral ecology rejects the assumption of Locke and many social scientists that nature must be invariable and universal (1993, 125–29).

For any organism, the transformation of genotype into phenotype depends upon its unique developmental history of environmental conditions (Lewontin 1992; Oyama 1985). Moreover, animal behavior manifests great phenotypic variability, particularly for those animals with complex nervous systems, so that animals are endowed by nature with the capacity to change their behavior in response to changing circumstances (Gordon 1992; Real 1994). Behavioral ecologists have found that animals in complex societies must weigh social and ecological variables as they make decisions about their lives (Emlen and Wrege 1994; Harcourt and Waal 1992; Masters 1994c). Social intelligence is particularly important for primates (Byrne and Whiten 1988; Seyfarth and Cheney 1994). Some nonhuman primates display, between groups, cultural variation that reflects the unique social history of each group (Dunbar 1988; Goodall 1986; McGrew 1992; Wrangham et al. 1994). So it seems that human beings are not the only cultural animals.<sup>12</sup>

Sociobiology, particularly as developed by E. O. Wilson (1975), has been perceived by its critics as attempting to explain human social behavior as controlled mostly by genetic inheritance, which seems to ignore the complexity and flexibility of human behavior as a purely phenotypic response to variable environments (Kitcher 1985). Behavioral ecology, however, is concerned precisely with such adaptive responses to environmental conditions. Even some of the critics of sociobiology have conceded that human sociobiology would be defensible if it were transformed into human behavioral ecology (Kitcher 1990).<sup>13</sup>

Rather than trying to choose between nature and nurture as the predominant influence on human behavior, the human behavioral ecologist studies the complex interaction of nature and nurture by considering how social and ecological factors influence behavioral flexibility both within and between populations (Borgerhoff Mulder 1991; Crook 1989; Winterhalder and Smith 1992). As a product of Darwinian evolution, human nature should manifest some general propensities that were adaptive in human evolutionary history. Yet the individual expression of those propensities will vary according to individual temperament and in response to the social and physical circumstances of the individual.

Patterns of differential parental investment in children in response to variations in socioecological conditions conform to the predictions of Darwinian theory (Becker 1981, 1991; Voland 1988, 1989). For example, lower-class women in the United States who become teenage mothers might be optimizing the timing of their reproduction for their socioeconomic circumstances, in contrast to middle-class women whose circumstances justify delaying the age of first reproduction. In the conditions of modern

industrialized societies, the increasing costs of children for high-status families may favor their investing in fewer children (Lancaster 1994). Thus, parental care for children varies in response to the socioecological conditions of both the parents and the children. This socioecological variability, however, conforms to the regularities of human nature. By contrast, utopian communities attempting to abolish parent-child bonding completely (e.g., the "perfectionists" in Oneida, New York, and the kibbutzim in Israel) discovered that the natural propensity for parental love will eventually assert itself (Klaw 1993; Muncy 1974; Sheper and Tiger 1975; Spiro 1979).

The influence of parenting on children manifests the complex interplay of nature and nurture. Traditionally, many psychologists have assumed that the effects of parental care on children show that environmental socialization is more important than innate temperament in human development. This assumption seems dubious, however, in the face of recent research in behavioral genetics—based largely on adoption and twin studies—that indicates how the natural temperament of the child shapes the social environment. Aristotle and Darwin believe that much of the variability in the mental dispositions of human beings and other animals arises from traits inherited at birth that guide development to adulthood (*Generation of Animals* 767b24–69b31; *Ethics* 1144b1–5; Darwin 1936, 413–15). This seems to be confirmed by the evidence in behavioral genetics that genetic propensities explain much of the variation in human behavioral traits (Bouchard et al. 1990; Plomin, DeFries, and McClearn 1990; Plomin, Owen, and McGuffin 1994). Human variability in personality arises from individual differences in the neurochemical mechanisms that mediate perception and behavior, and to some degree these temperamental differences are inherited (Kagan 1994; Masters 1993, 81–83, 122–23). To a large extent a child's natural propensities foster psychological differences indirectly by influencing the environment of the child. Children with different temperaments evoke different responses from their parents. As children grow older, they have increasing power to modify or select their environments to conform to their individual temperament. Successful parenting is not the imposition of external norms on the child but the cultivation of the child's innate potential. Therefore, we should think of the development of children under parental care as expressing not "nature versus nurture" but "nature through nurture" or the "nature of nurture" (Plomin and Bergeman 1991; Scarr 1992).

The regularity in the patterns of parental care across cultures manifests inborn inclinations shaped by natural selection in evolutionary history. The variability in those patterns manifests the flexibility of human social behavior as shaped by individual experience and social learning. Like other animals, human beings display innate potentialities and propensities that are neither absolutely fixed nor absolutely malleable.<sup>14</sup> For the full development of human beings, nature must be nurtured.

## CONCLUSION

The new Darwinian naturalism in political theory challenges the dichotomies that have traditionally separated the social sciences from the natural sciences. There is no absolute gap between *is* and *ought* if human morality is founded on a natural moral sense. There is no absolute gap between nature and freedom if human freedom expresses a natural human capacity for deliberate choice. And there is no absolute gap between nature and nurture if habituation and learning fulfill the natural propensities of human beings. If the new Darwinian naturalists succeed in defending these conclusions, the science of social and political order could become once again—as it was for Aristotle, Hume, and Darwin—the science of human nature.

## Notes

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1. Another common objection to ethical naturalism is that it presupposes a teleological view of nature that has been refuted by modern science. In reply, I would argue that although modern biology does not support a cosmic (Platonic) teleology, it does support an immanent (Aristotelian) teleology. For elaboration of this distinction, see Arnhart 1988, 1990 and Lennox 1992, 1993.

2. Hume suggests that his science of human nature could be rooted ultimately in biological sciences such as anatomy and physiology (1888, 7, 13, 176–79, 190, 212, 248, 275–76, 324–28, 340–41; idem 1902, 10, 104–8). Some recent research in neurobiology seems to confirm Hume's argument that reason and emotion are distinct and yet complementary causes of human behavior, because rational conduct must be guided by emotional assessments that enforce a system of preferences. If this is so, then Kant's conception of ethical rationality as utterly free from emotion is impossible (Damasio 1994; McShea 1978, 665–66; Masters 1993, 130–34). As Aristotle saw, the emotions are essential to good reasoning because they contain judgments about the world as it relates to our lives (Arnhart 1981, 111–34).

3. The translations of Aristotle's Greek are mine, although I have consulted the translations in *The Complete Works of Aristotle* as edited by Jonathan Barnes (Aristotle 1984).

4. Aristotle's remarks about the primacy of desire in motivating moral action were often cited with approval by the moral-sense philosophers (e.g., Barratt 1869, 20, 97, 192, 197).

5. Contrary to the assumption of some feminists that Aristotle's biological naturalism denigrates women, his argument for maternal caregiving as the natural root of human sociality elevates the claims of women (Arnhart 1992, 1994b).

6. This Kantian separation between natural selfishness and moral selflessness shows the influence of Augustinian asceticism. For Augustine, no act is truly virtuous if it is rooted in self-love, but since self-love is natural to human beings in their fallen state, true virtue requires a transcendence of nature through grace (*City of God* 5. 12–13, 20; 8. 8; 14. 13, 28). By contrast, Aristotle believed that since the final end of ethics is happiness, living virtuously expresses one's natural self-love (*Ethics* 1168a28–69b2). From Aristotle's perspective, the Kantian view of morality as utterly selfless makes it hard to see what motive anyone would have to be moral. Thomas Aquinas follows Aristotle in teaching that by nature, our love of others is an extension of our self-love, and thus we should

love those nearest to us—our family, friends, and fellow citizens—more than strangers (*Summa theologiae* II-II, q. 26, aa. 4–8; q. 31, a. 3). Aristotle and Aquinas would disagree with those sociobiological theorists who identify morality with altruism and then define altruism as selfless behavior (Chandler 1991; Dawkins 1976, 215; Wilson 1975, 578).

7. Some scholars believe the idea of free will was not even discussed by anyone until Augustine first formulated it as a tenet of his theology (Arendt 1978; Augustine 1964), although some early Christian theologians interpreted Aristotle's *proairesis* as free will (Pelikan 1993, 129–31, 144, 159–60, 283, 323). In Kant's commentary on the biblical account of Creation in the book of Genesis, he developed the modern concept of culture as a uniquely human expression of freedom from nature that manifests the moral dignity of human beings as created "in the image of God" (Arnhart 1994a; Kant 1983). Contemporary creationist critics of Darwinian biology advance the same dualistic claim for human culture as transcending biological nature (Morris 1985, 178–208). Unlike Kant and the creationists, Darwinian naturalists such as McShea and Wilson believe that human morality has a purely natural basis (McShea 1990, 49–53; Wilson 1993a, 220–21). Masters seems more open to the claims of religious faith (1993, 6–11, 152–53). If Kant's notion of freedom as transcending nature is a postulate of his religious faith and is therefore part of his project "to deny knowledge, in order to make room for *faith*," it would seem that such an idea cannot be derived from natural reason and natural human experience without the aid of divine revelation (Kant 1965, 29).

8. One likely explanation for the success of Prozac (fluoxetine) as a popular antidepressant drug is that it raises the level of serotonin (Jacobs 1994; Kramer 1993).

9. Modern research on the psychology of criminal behavior as surveyed by Wilson and Herrnstein (1985) seems to confirm Aristotle's insights (*Ethics* 1148b15–49a20; *Rhetoric* 1372a4–73a40).

10. Even so resolute a libertarian as John Stuart Mill would support this: "The making himself drunk, in a person whom drunkenness excites to do harm to others, is a crime against others" (1956, 119).

11. Locke himself, however, was not a cultural relativist, because he thought some moral principles could be rooted in human nature (Grant 1987, 38–51).

12. I agree with Gary Johnson (1995) that if we define government as "centralized coordination of a social system" and politics as "competition over the conduct of government," then government and politics can be found in the life of every sexually-reproducing social species—from ants to chimpanzees to human beings. This would confirm Aristotle's claim that human beings are not the only political animals (Arnhart 1994a).

13. Some social scientists assume that sociobiology has been refuted by biological critics such as Stephen Jay Gould and Richard Lewontin. The flaws in the argumentation of Gould and Lewontin are so serious, however, that their work is now studied as a model of sophistical rhetoric in science (Bazerman 1993; Borgia 1994; Charney 1993; Gould and Lewontin 1979).

14. Both Masters and Wilson view the collapse of Marxist socialism in the Soviet Union as historical evidence against the cultural determinist belief that human beings are infinitely malleable through social learning (Masters 1993, 94, 118–19, 135, 198–200; Wilson 1993a, 232, 251). Similarly, a Chinese scholar has argued that the failure of Maoist socialism confirms the sociobiological theory of human nature (Zhang Boshu 1994).

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