

# Defending Darwinian Natural Right

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Those influenced by Leo Strauss cannot agree on how to solve what he identified as the fundamental problem of natural right. The problem is that the ancient Aristotelian idea of natural right seems to depend on a teleological conception of the universe that has been refuted by modern natural science. Roger Masters and I have argued that a Darwinian natural science can support an Aristotelian conception of natural right, and in my recent book, I have elaborated my defense of what I call "Darwinian natural right." Francis Fukuyama has taken a similar position in arguing for the biological roots of social norms. But many, if not most, of those influenced by Strauss would reject this position, because they believe that Darwinism must deny the fundamental premises of natural right in denying the uniqueness of human beings as set apart from the rest of animal nature and in denying the cosmic teleology that sustains human purposefulness. Richard Hasting speaks for them in his recent article on my book.<sup>1</sup> Hasting directs his criticisms mostly at Chapter 9, "The Ends and Kinds of Life." In response to Hasting, I will restate and elaborate some of my reasoning for a Darwinian understanding of "natural kinds" and "natural ends" that supports the idea of "natural desires."

But first consider the problem as stated by Strauss. In the Introduction to *Natural Right and History*, he claimed that the most serious problem for the ancient Greek idea of natural right is that it seems to have been refuted by modern natural science.<sup>2</sup> Natural right in its classic form requires a teleological view of nature, because reason can discern what is by nature good for human beings only if they have a natural end. Strauss thought Aristotle had the clearest view of this dependence of natural right on natural teleology. Modern natural science, however, seems to deny natural teleology by explaining natural phenomena as determined by mechanical causes that act without ends or purposes. This creates a dilemma. If the science of man is to be part of a nonteleological science of nature, then human action must be explained by reduction to physical impulses, which seems inadequate to explain human ends. The only alternative appears to be "a fundamental, typically modern, dualism of a nonteleological natural science and a teleological science of man," but this rejects the comprehensive naturalism of the premodern exponents of natural right such as Aristotle and Thomas Aquinas. Neither reductionism nor dualism is fully satisfactory. Strauss concluded: "The fundamental dilemma, in whose grip we are, is caused by the victory of modern natural science. An adequate solution to the problem

of natural right cannot be found before this basic problem has been solved." "Needless to say," Strauss then added, "the present lectures cannot deal with this problem," because the lectures published as *Natural Right and History* are "limited to that aspect of the problem of natural right which can be clarified within the confines of the social sciences."

Strauss saw a dilemma in which we seem to be forced to choose between two unsatisfactory alternatives, which I would call "reductionist monism" and "transcendentalist dualism." According to reductionist monism, everything should be ultimately reducible to physical mechanism, but this cannot adequately explain the evident purposefulness of human thought and action. According to transcendentalist dualism, human beings are uniquely free to transcend the nonteleological realm of natural causes, but this typically modern dualism denies us the comprehensive science that we need to make the whole intelligible as a whole. As Hassing indicates, Strauss sometimes spoke of a "dualism of the sciences: the sciences of nature and the sciences of man as man" as a "convenient practical solution." But he regarded this as only "provisionally indispensable," because he thought the final goal should be a "comprehensive science" (Hassing, p. 138).

As an escape from this dilemma that would move towards a "comprehensive science," my conception of "Darwinian natural right" rests upon what I would call "emergentist naturalism." Unlike the transcendentalist, I affirm the continuity of nature and the integration of human beings within the natural order. Unlike the reductionist monist, I affirm the irreducible complexity of nature in which novel properties emerge at higher levels of organization that cannot be reduced to lower levels, so that the uniqueness of human beings comes from the emergent properties that distinguish the human species. I thus draw from a long tradition in Darwinian biology of thinking about "emergent evolution."<sup>3</sup>

## NATURAL KINDS

Against my position, Hassing argues that Darwinian scientists must deny the essential differences in kind between human beings and other animals, which promotes the sort of scientific reductionism that subverts Aristotelian natural right. I would reply by contending that Darwinian biology recognizes "emergent" differences in kind as part of a comprehensive science of living forms that supports a scientific view of natural right.

Ernst Mayr, one of the preeminent evolutionary biologists of this century, explains: "Systems almost always have the peculiarity that the characteristics of the whole cannot (not even in theory) be deduced from the most complete knowledge of the components, taken separately or in other partial combinations. This appearance of new characteristics in wholes has been designated as *emergence*."<sup>4</sup> An example of this in an inorganic system would be the properties of

water that cannot be inferred from our knowledge of the properties of hydrogen and oxygen. The novel properties that emerge as ice becomes water and water steam illustrate emergence passing over “critical thresholds” of rising temperature. At the level of organic systems, the novel properties of life, mind, and consciousness illustrate emergence. These and many other examples illustrate nature’s irreducible potential for forms, in which forms at the higher levels are consistent with the natural laws governing the lower levels, although the higher levels are not simply reducible to the lower. Nature thus manifests an underlying continuity combined with a fundamental discontinuity at the critical thresholds of organization. Biological phenomena show different levels of reality; and the biological phenomena as a whole depend upon, but are not reducible to, the laws of physics and chemistry.

Since Darwin recognizes that every species of living beings is unique, I do not understand Hassing’s claim that Darwinian theory must deny “species difference” and affirm “species neutrality” (Hassing, pp. 135–38). Clearly, evolutionary theory recognizes both continuity and diversity. There is continuity because living species have evolved from ancestral species through natural selection and other evolutionary mechanisms. But there is also diversity because each species has been adapted for a specific way of life in a specific ecological niche.

Hassing correctly quotes Darwin’s assertion that “there is no fundamental difference between man and the higher mammals in their mental faculties,” because the difference “great as it is, is certainly one of degree and not of kind.”<sup>5</sup> But while Darwin does say that the difference is only a quantitative difference in degree, he also suggests in various passages that there is a qualitative difference in kind insofar as human beings are unique in their capacities for conceptual thought, symbolic language, and moral judgment. “No one supposes that one of the lower animals reflects whence he comes or whither he goes—what is death or what is life, and so forth.” “Articulate language is . . . peculiar to man.” “Of all the differences between man and the lower animals, the moral sense or conscience is by far the most important.” “A moral being is one who is capable of comparing his past and future actions or motives, and of approving or disapproving of them. We have no reason to suppose that any of the lower animals have this capacity” (vol. 1, pp. 54, 62, 70, 88; vol. 2, pp. 391–92). Darwin is caught in this contradiction—both affirming and denying that the human difference is only a difference in degree not in kind—because while he recognizes the uniqueness of human capacities as showing a difference in kind, he fears that acknowledging this will suggest a *radical* difference in kind due to “spiritual powers” beyond nature (vol. 1, p. 186). He does not see that an *emergent* difference in kind allows for qualitative novelty but without any break in the underlying continuity of nature. A radical difference in kind would suggest a transcendentalist dualism with an absolute separation between natural law and human freedom. An emergent difference in kind recognizes human uniqueness but without such a dualistic separation.<sup>6</sup>

Leon Kass observes: "It never occurred to Darwin that certain differences of degree—produced naturally, accumulated gradually (even incrementally), and inherited in an unbroken line of descent—might lead to a difference in kind (or at least its equivalent), say, in mental capacity or inner life."<sup>7</sup> I agree with Kass and with his suggestion that Darwinian biology supports an emergent naturalism in which novel traits arise in evolutionary development at each higher level of organization in an "unbroken line of descent" leading to differences in kind (see Kass, pp. 12, 14, 39, 59–63, 76–79).

Hassing cites and generally endorses Kass's writings, and he wonders why I say nothing about Kass. Actually, I have been much influenced by Kass, and I suspect that most of what I have defended as Darwinian natural right would be consistent with Kass's striving for "a more natural science" that would require the kind of biological understanding of nature that could account for the ethical and intellectual purposefulness of human life as an expression of nature. Like Kass, I seek a biological science that recognizes "the tacit ethical dimension of animal life," and thus the "natural, animal bases for the content of an ethical life." Like Kass, I believe such a science of living nature would reject both reductionist monism, which reduces life to homogeneous matter, and transcendentalist dualism, which sees human mental and moral experience as simply separated from the rest of nature.<sup>8</sup> Like Kass, I think such a science could bring together Aristotle and Darwin.

At times, however, when Kass speaks of the influence of Rousseau and Kant on his thinking, he seems to move away from an Aristotelian naturalism rooted in human biology and towards a Rousseauist-Kantian historicism rooted in human transcendence of biology through culture.<sup>9</sup> But Kass is never completely clear about this. For example, he can report Rousseau's claim that human beings show "the absence of any ruling instincts or appetites" and thus "the freedom of complete indeterminacy." But then he immediately adds that "Rousseau, of course, exaggerates," because "it is not true that human beings have no instincts of their own" (*The Hungry Soul*, pp. 82–83).

Like Kass, Allan Bloom took the same ambiguous position. "Aristotle's human sciences," Bloom explained, "are part of the science of nature, and his knowledge of man is connected to and in harmony with his knowledge of the stars, bodies in motion and animals other than man." But after Rousseau and Kant, the study of human beings becomes completely separated from the study of nature. Bloom described this ejection of man from nature as an intellectual "crisis," in which the social sciences treat man as "another of the brutes, without spirituality, soul, self, consciousness, or what have you," and the humanities treat man "as though he is not an animal or does not have a body." This suggests the need for a comprehensive science of nature that would include human nature, but Bloom implied that that is not possible in the modern world, and therefore a typically modern dualism such as that developed by Rousseau and Kant might be unavoidable.<sup>10</sup> Like others influenced by Strauss, perhaps includ-

ing Hassing, Bloom seemed to accept a transcendentalist dualism as “provisionally indispensable.”

Strauss recognized that the ultimate source of the modern dualistic separation of nature and culture is Hobbes. Despite the monism of Hobbes’s materialism, his political teaching presupposes a dualistic opposition between animal nature and human will or reason: in creating political order, human beings use their rational will to transcend and conquer nature. This Hobbesian dualism was explicitly developed by Kant, who originally formulated the modern concept of culture. Culture is that uniquely human realm of artifice in which human beings escape their natural animality to express their rational humanity as the only beings who have a “supersensible faculty” for moral freedom. Through culture, human beings free themselves from the laws of nature.<sup>11</sup> To overcome the intellectual crisis created by this Hobbesian-Kantian dualism, Strauss hoped for a comprehensive science of nature that would reconcile modern natural science and Aristotelian natural right. But he was resigned to accepting a dualism between nature and humanity until his hope for a comprehensive science could be fulfilled.

One reason Strauss found dualism unsatisfactory is that it was one of the fundamental themes in Martin Heidegger’s philosophic endorsement of Nazism. Arguing against “biologism,” which treats human beings as rational animals rooted in the natural world, Heidegger believed that National Socialism would vindicate the spiritual freedom of the German people as “world-building” historical beings who transcend their natural animality. This dichotomy between the freedom of human history and the determinism of animal nature supported Heidegger’s historicist nihilism as unconstrained by natural right.<sup>12</sup>

In contrast to such dualistic separation between man and nature, the sort of comprehensive science that Strauss sought might look a lot like what Edward O. Wilson describes in *Consilience: The Unity of Knowledge*.<sup>13</sup> Wilson adopts the term “consilience” for the idea that nature is governed by a seamless web of causal laws that cross the traditional disciplines of study. Like Strauss, Wilson is unsatisfied by the modern fragmentation of knowledge into apparently unrelated domains, and he argues for linking the natural sciences, the social sciences, and the humanities in the common effort to explain everything through the laws of nature, which would include the moral and intellectual activities of human beings.

There is an ambiguity in Wilson’s position, however, because he adopts two opposing views of consilience.<sup>14</sup> Sometimes he identifies consilience as a strong form of reductionism, which someone like Strauss would rightly find implausible. But at other times, Wilson identifies consilience as emergent complexity, which is more plausible. On the one hand, he insists on reduction of everything to the laws of physics as the ultimate aim. On the other hand, he insists that emergent phenomena at higher levels of organization cannot be predicted by the laws of physics. He urges his fellow biologists to cure themselves of “physics

envy,” for “they inevitably encounter emergence, the appearance of complex phenomena not predictable from the basic elements and processes alone.” He identifies human beings as “emergent animals” who have capacities that are constrained by, but not specifically determined by, the laws of physics (*Consilience*, pp. 54–55, 67–68, 70–71, 83–86, 109, 162–67, 172–73, 240, 255, 263, 266, 276, 297–98).

This emergent conception of consilience is clear in what Wilson says about the “epigenetic rules” of ethics. Ethics is ultimately an expression of natural moral sentiments, which are natural in the sense that normal human beings in normal circumstances are born with natural propensities to learn the moral emotions necessary for living as social animals. And yet the specific content of moral rules will vary according to individual temperament and social circumstances. Judging what is right for particular people in particular situations will require practical judgment or prudence. This way of understanding the science of ethics as part of a comprehensive science of nature would seem to come close to what Strauss sought.

#### NATURAL ENDS

As Strauss indicated in the Introduction to *Natural Right and History*, he was pessimistic about the possibility of reconciling modern natural science and Aristotle’s teleological conception of the universe. Like Roger Masters, I think Strauss was wrong in suggesting that the question of teleology depends on physics or astronomy, because Aristotle’s teleology is primarily biological, and so the question is whether teleology is necessary for explaining *living* nature.

Aristotle’s biological teleology is not a *cosmic* teleology but an *immanent* teleology, and this immanent teleology is confirmed by Darwinism (see Arnhart, *Darwinian Natural Right*, pp. 238–48). Darwinian theory does away with any cosmic teleology by which the universe as a whole would be seen as ordered to some end. The principle of natural selection explains the adaptation of species without reference to any forces guiding nature to secure a cosmic scale of perfection. Yet, although the evolutionary process does not serve goals, the organisms emerging from that process do. Darwin’s biology does not deny, rather, it reaffirms, the immanent teleology displayed in the striving of each living being to fulfill its specific ends.<sup>15</sup> Reproduction, growth, feeding, healing, courtship, parental care for the young—these and many other activities of organisms are goal-directed. Biologists cannot explain such processes unless they ask about their ends or purposes, and thus they must still look for “final causes.” In thus arguing for the immanent teleology of biological phenomena, I agree with Kass that a crucial part of a “more natural science” would be a Darwinian understanding of teleology as rooted in “the internal and immanent purposiveness of individual organisms” (*Towards a More Natural Science*, pp. 249–75).

Hassing is not satisfied with this, because he thinks natural right requires a cosmic teleology so that the order of the whole universe supports human goodness. He writes: "Plato's Good, the noble, Aristotle's Intellect betoken ancient attempts to make coherent sense of the belief that 'the good man orders himself in relation to the whole, and the wicked one orders the whole in relation to himself.' This seems to require an account of the whole—however conjectural or problematic—in which man is not the highest being. We are back to the shaky game of cosmic teleology—shaky, but, I suspect, unavoidable if we are to defend the notion that we have ends prior to choice whereby to limit our transcendent powers of domination" ("Darwinian Natural Right," p. 147).

Hassing's quotation in this passage is from Rousseau's "Profession of Faith of the Savoyard Vicar" in the *Emile*.<sup>16</sup> This is odd, because Rousseau indicates that there are a "multitude of objections" to what the priest says there. It seems that what is said there is edifying in supporting a transcendental dualism but not completely true (pp. 294–95). Is Hassing intimating that what he says about the need for a cosmic teleology to support natural right is a kind of noble lie? After all, he explicitly says that a cosmic teleology is "conjectural," "problematic," and "shaky."

Perhaps Hassing's reference to Bloom's translation of the *Emile* is significant, because Bloom showed the same ambiguity in his remarks on teleology. Even as Bloom seemed to endorse the idea of natural teleology as rooted in human biology, he also suggested that such natural teleology is only an illusion, even if a noble illusion. "I mean by teleology," Bloom wrote, "nothing but the evident, everyday observation and sense of purposiveness, which may be only illusory, but which ordinarily guides human life, the kind everyone sees in the reproductive process" (*Closing of the American Mind*, pp. 110, 130–31). The qualifying phrase—"which may be only illusory"—allowed him to simultaneously deny and affirm the truth of natural teleology, which creates a strangely ambiguous position that one can find among many of Strauss's students, wanting to root Aristotelian natural right in a science of human nature, but also wanting to adopt a Kantian dualism that separates nonhuman nature and human culture.

One reason for this is that Bloom and others (like Hassing) think that the teleology required for natural right is a cosmic teleology that has been rendered implausible by modern science. But as I have argued, Aristotelian natural right requires only an immanent teleology—the observable goal-directed character of living beings—that is supported by modern Darwinian biology.

## NATURAL DESIRES

Natural teleology is evident in the movement of animals to satisfy their desires. Like other animals, human beings move to satisfy their natural desires in

the light of their information about the world. Only human beings, however, can pursue happiness as a deliberate conception of the harmonious satisfaction of their desires over a whole life, because only they have the cognitive capacities for reason and language that allow them to formulate a plan of life, so that they can judge present actions in the light of past experience and future expectations. As Aristotle and Darwin saw, that makes human beings the only truly moral animals.

Thomas Aquinas indicated that the fundamental premise for Aristotelian natural right is that “the good is what all beings naturally desire.”<sup>17</sup> If the good is the desirable, then human ethics is natural insofar as it satisfies natural human desires. One of my fundamental claims for Darwinian natural right is that Darwinian biology can confirm our commonsense perception that there are at least twenty natural desires for human beings: a complete life, parental care, sexual identity, sexual mating, familial bonding, friendship, social ranking, justice as reciprocity, political rule, war, health, beauty, wealth, speech, practical habituation, practical reasoning, practical arts, aesthetic pleasure, religious understanding, and intellectual understanding. In *Darwinian Natural Right*, I elaborate the evidence and arguments for some of these natural desires, particularly, parental care, sexual mating, and political rule. I also develop some examples of social practices that can be condemned because they frustrate natural desires, practices such as slavery and female circumcision (clitoridectomy and infibulation).

In the book, I mention but do not elaborate the idea that incest avoidance is one good example of how ethics expresses natural desires. Sexual mating is a natural desire manifested in every human society throughout history. A universal pattern in the expression of that desire is incest avoidance. Human beings generally avoid and condemn sexual mating between mother and son, between father and daughter, or between siblings. Beyond the nuclear family, the pattern of incest avoidance varies according to customary rules of kinship.

Among the Socratic philosophers, the universality of the incest taboo was considered an illustration of a natural standard of right and wrong rooted in natural human emotions. In Plato’s *Laws*, Socrates speaks of the avoidance of incest as an “unwritten law” that is so strong that “among the many there isn’t the slightest desire for this sort of intercourse.” The strength of this law arises from the fact that everyone from the moment of birth hears incest condemned as “hateful to the gods and the most shameful of shameful things.” Plato leaves unclear, however, why this sacred taboo arises in the first place. The discussion of incest avoidance in Plato’s dialogue arises in the context of a concern for devising laws for a good city that will be “according to nature.” But there is no explicit discussion of whether—and if so, how—the law of incest avoidance might have natural causes. In Xenophon’s *Memorabilia*, however, Socrates identifies the “unwritten laws” legislated by the gods as laws that could not be disobeyed without natural penalties. He speaks of the incest taboo as one of



those “unwritten laws,” because those committing incest will tend to produce defective offspring.<sup>18</sup>

Following in this Socratic tradition, Thomas Aquinas condemns incest as contrary to the “natural right” (*ius naturae*) that governs sexual mating and familial bonding. Similarly, Adam Smith condemns incestuous marriage as “shocking and contrary to nature,” and thus Smith rejects the claim of Hobbesian philosophers like Bernard Mandeville that the abhorrence of incest is not natural at all, but a purely learned response based only on custom.<sup>19</sup>

There is now a good Darwinian explanation of incest avoidance that confirms the Socratic insight into the incest taboo as an expression of natural right. That Darwinian account was provided by Edward Westermarck in a series of publications beginning with his *History of Human Marriage*, first published in 1889. Westermarck’s theory of the incest taboo is rightly presented by Edward O. Wilson as the best example of how a comprehensive science of nature could explain ethics as rooted in the moral emotions of human nature. Westermarck’s theory shows how ethics could become part of an empirical science of nature.<sup>20</sup>

Citing the passage from Plato’s *Laws*, Westermarck argued that incest avoidance was indeed an “unwritten law,” because it was rooted in the moral emotions of human biological nature. Westermarck saw that incest is almost universally condemned as a morally abhorrent violation of nature. All societies prohibit mothers from marrying their sons and fathers from marrying their daughters. And with few exceptions, all societies prohibit marriages of brothers and sisters who are children of the same parents. Westermarck observed that the many theories offered to explain this are unsatisfactory.

The theories in question imply that the home is kept free from incestuous intercourse by law, custom, or education. But even if social prohibitions might prevent unions between the nearest relatives, they could not prevent the desire for such unions. The sexual instinct can hardly be changed by prescriptions; I doubt whether all laws against homosexual intercourse, even the most draconic, have ever been able to extinguish the peculiar desire of anyone born with homosexual tendencies. Nevertheless, our laws against incest are scarcely felt as a restraint upon individual feelings. And the simple reason for this that that in normal cases there is no desire for the acts which they forbid. Generally speaking, there is a remarkable absence of erotic feelings between persons living closely together from childhood; among the lower animals, also, there are indications that the pairing instinct fails to be stimulated by companions and seeks strangers for its gratifications. . . . Plato showed a sharper eye for the problem of incest in his observation that an unwritten law defends as sufficiently as possible parents from incestuous intercourse with their children and brothers from intercourse with their sisters, and that the thought of such a thing does not enter at all into the minds of most of them.

Sexual indifference, however, is not by itself sufficient to account for exogamous prohibitions. But such indifference is very generally combined with sexual

aversion when the act is thought of; indeed, I believe that this is normally the case whenever the idea of sexual intercourse occupies the mind with sufficient intensity and a desire fails to appear. . . . Aversions which as generally felt readily lead to moral disapproval and prohibitory customs and laws. This I take to be the fundamental cause of the exogamous prohibitions. Persons who have been living together from childhood are as a rule near relatives. Hence their aversion to sexual relations with one another displays itself in custom and law as a prohibition of intercourse between near kin.<sup>21</sup>

So, like Plato and the other Socratic philosophers, Westermarck does not think the incest taboo can be explained simply as a product of “law, custom, or education,” because “in normal cases” there is a natural aversion to incest that constitutes “an unwritten law.” This natural aversion is then expressed as a legal or customary prohibition against incest. And yet this natural aversion and its expression in law and custom are not natural necessities that hold in every case but natural propensities that hold in most cases. The incest taboo, like any moral rule, is a generalization of natural emotions that hold sway “normally” in the minds of “most” people in response to circumstances that occur “as a rule.” Thus, as Aristotle argued, what is naturally right is variable, but it is still natural insofar as it expresses natural propensities of the human animal diversely expressed in human custom and law.

Westermarck’s Darwinian theory for explaining this can be stated in three propositions. First, inbreeding tends to produce physical and mental deficiencies in the offspring that lower their fitness in the Darwinian struggle for existence. Second, as a result of the deleterious effects of inbreeding, natural selection has favored the mental disposition to feel an aversion to sexual mating with those with whom one has been intimately associated from early childhood. Third, this natural aversion to incest has inclined human beings to feel moral disapproval for incest, and this moral emotion has been expressed culturally as an incest taboo.

Westermarck’s view of incest illustrates his account of ethics as rooted in natural emotions shaped by natural selection in human evolutionary history. The avoidance of incest works through an emotional aversion favored by natural selection. Because this emotion tends to be shared by most human beings, it gives rise to moral emotions of disapproval that are expressed in customary and legal rules that prohibit incest. These customary and legal rules are culturally variable in their specific details, but the cultural rules are grounded in an emotional propensity of human nature that is universal.

Westermarck’s theory of incest was rejected by Sigmund Freud and others who believed that the incest taboo shows how moral rules arise as cultural inventions that suppress the immoral emotions of human nature. Freud was a Hobbesian, in the sophisticated tradition of ethical conventionalism, who saw human beings as so naturally selfish in their emotions that they could not live

together in civilized societies unless they created cultural rules to subdue their natural inclinations. Freud thought that civilization required a rational rule of law to conquer "man's natural aggressive instinct, the hostility of each against all and of all against each."<sup>22</sup> Human beings must deny their animal nature through the moral imperatives of human culture as an autonomous realm of human rationality set apart from nature. The incest taboo was the most momentous manifestation of this human denial of nature, Freud insisted, because it was "the most drastic mutilation which man's erotic life has in all time experienced" (p. 51). The incest taboo illustrated the general character of ethics as the rule of the "cultural super-ego" in demanding the renunciation of natural inclinations (pp. 89–91). Ilham Dilman, in his book *Freud and Human Nature*, comments on the remarkable similarity of Freud's view of human nature to that taken by the sophist Callicles in Plato's *Gorgias*.<sup>23</sup>

If Westermarck's ethical theory really is founded on an empirical science of human nature, as he suggests, then it should be subject to empirical confirmation or falsification. The debate over his theory of the incest taboo illustrates how his claims might be tested by scientific research. Beginning with Freud, Westermarck's theory has been dismissed with two criticisms. First, the occurrence of incest in all societies seems to indicate that there no natural resistance to it. Second, if the taboo were natural, there would seem to be no need for cultural rules to enforce the taboo.<sup>24</sup> But these criticisms assume a simple dichotomy between fixed instinct and flexible culture that Westermarck denies. According to Westermarck, the instinctive propensity to incest avoidance is a tendency to learn sexual aversion when certain conditions are satisfied: most human beings are inclined to feel sexual aversion towards those with whom they have been reared from early infancy. Westermarck predicts, therefore, that most human beings raised in the familial environment typical for human beings will feel a strong aversion to incestuous relationships. But he also predicts that in some circumstances, some human beings will not acquire this aversion. For example, father-daughter incest is more likely to occur when the fathers have been separated from their daughters during their early rearing. Furthermore, he predicts that because of the natural variability in human emotional temperaments, a few human beings will not develop the aversion to incest that is normal for most people, and these deviant individuals will provoke a deep disgust from others. Because of this circumstantial and temperamental variability, human communities will develop cultural practices to enforce an incest taboo expressing the general feelings of the community in condemning those few who are inclined to commit incest (Westermarck, *History of Human Marriage*, vol. 2, pp. 82, 88, 192, 201–3).

The incest taboo thus illustrates how social order arises from the complex interaction of nature and convention: the incest taboo is a social convention that expresses the human nature of the moral emotions. As a social convention, the incest taboo will vary across societies with diverse kinship systems. But as an

expression of natural emotions, the incest taboo will show a natural propensity for most people to learn a sexual aversion to those with whom they have been reared from early childhood.

Arthur Wolf has indicated, in his survey of the scientific study of incest, that Westermarck's predictions seem to have been confirmed by the evidence.<sup>25</sup> Wolf's special contribution to this research is his study of marriage in China. In parts of China, there were once three forms of marriage. In the "major" form of marriage, the bride went to live with her husband's family on the day of the wedding. In the "minor" form, a girl in infancy would join the family of her future husband as a *sim-pua*, or "little daughter-in-law," but she would not be married until she reached sexual maturity years later. In the "uxorilocal" form, the husband would submit to the authority of his father-in-law. From his meticulous study of marriage records in Taiwan, Wolf concluded that people in minor marriages showed far more sexual dissatisfaction than those in the other forms of marriage. They tended to produce more divorces, more adultery, and fewer children. He saw this observable behavior as showing that having been reared together in the same family from early infancy (age 3 or earlier), these spouses felt the sort of sexual aversion to one another that would be predicted by Westermarck's hypothesis. Although they were not genetically related as brother and sister, they displayed the same emotional discomfort with sexual union that brothers and sisters typically feel towards one another. Natural selection has endowed us with a natural instinct to learn an emotional aversion to sexual mating with those with whom we have been intimately associated in our early years of rearing, because in the circumstances of evolutionary history this would avoid the deleterious consequences of breeding with close kin. This same natural propensity will produce such an aversion even when the people with whom we have been reared are not our genetic kin.

The experience from the Israeli kibbutzim shows the same pattern.<sup>26</sup> In kibbutzim with collective child-rearing, children from different families grew up together from earliest infancy. Although not biologically related, they lived with one another as if they were siblings. And although they were permitted to marry, they never did, because they felt no sexual attraction to one another. As predicted by Westermarck, early childhood association inhibited sexual attraction.

Freud and other critics of Westermarck assumed that human beings were the only animals that avoid incest, and thus it seemed that the incest taboo must be a uniquely human cultural invention by which human beings subdue their animal emotions. But there is now evidence that nonhuman animals show a tendency to avoid incest that is similar to that displayed by human beings. As with human beings, incest does occur among other animals, but it is unusual, and it seems to arise only among exceptional individuals with abnormal temperaments or among those who have no close bonding with their kin.<sup>27</sup> Incest avoidance is clear among chimpanzees, and since chimpanzees are genetically closer to human beings than is any other living species, it is likely that incest avoidance arises from a genetic propensity derived from a common ancestor.

Westermarck surveyed the biological research of his time suggesting that inbreeding tended to produce high rates of infant mortality and of mental and physical defects. Modern genetic research confirms this conclusion. Inbreeding increases the probability that deleterious recessive alleles in a population will be expressed, because any allele is more likely to be inherited simultaneously from both the paternal and maternal lines of a genealogy. This probability of producing genetically defective offspring increases in direct proportion to the closeness of the genetic relationship between two inbreeding individuals.<sup>28</sup>

The evidence for Westermarck's theory of the incest taboo comes from a variety of intellectual disciplines: sociology, anthropology, primatology, genetics, and evolutionary biology. In this way, it provides Edward Wilson with one of his best examples of "consilience," because it shows the search for the unity of knowledge based on the idea that nature is governed by a seamless web of causal laws that cross the traditional disciplines of study, a search that began, Wilson thinks, with the ancient Greek philosophers. Moreover, as Wilson rightly emphasizes, Westermarck's Darwinian theory of the incest taboo shows how a moral rule can be explained as an expression of human nature, and thus it confirms a tradition of ethical naturalism that goes back to Aristotle's *Nicomachean Ethics* (*Consilience*, pp. 248–49).

Understanding the incest taboo as a cultural expression of a natural moral emotion shaped by natural selection as part of human nature illustrates Darwinian natural right. As Fukuyama has said, the incest taboo as explained by Westermarck provides "one of the best illustrations of how natural instincts can shape social norms" (Fukuyama, p. 159). Contrary to the claims of Kantian dualists like Freud, ethics does not require an exercise of reason or will in transcending nature through cultural conventions. Ethics is rooted in natural teleology, but it is an immanent rather than a cosmic teleology, which manifests the goal-directed character of the human species, as including a natural inclination to learn sexual aversion towards early childhood associates.

I thus defend Darwinian natural right as a move towards the "comprehensive science" sought by Strauss, a science of nature that would include the ethical striving of human nature as part of the natural universe. This would be a science of emergent naturalism that would escape the dilemma of choosing between a reductionist monism and a transcendentalist dualism. Instead of the artificial separation between the natural sciences, the social sciences, and the humanities, we need a new science of nature that would integrate all the intellectual disciplines as we try to understand human nature within the natural order of the whole. Nothing less is required if we want to solve what Strauss identified as the fundamental problem of natural right.

#### NOTES

1. See Larry Arnhart, "Roger Masters: Natural Right and Biology," in Kenneth L. Deutsch and John A. Murley, eds., *Leo Strauss, the Straussians, and the American Regime* (Lanham, MD:

Rowman and Littlefield, 1999), pp. 293–303. Larry Arnhart, *Darwinian Natural Right: The Biological Ethics of Human Nature* (Albany: State University of New York Press, 1998). Francis Fukuyama, *The Great Disruption: Human Nature and the Reconstitution of Social Order* (New York: The Free Press, 1999). Richard Hassing, "Darwinian Natural Right?" *Interpretation* 27, no. 2 (1999–2000):129–60.

2. Leo Strauss, *Natural Right and History* (Chicago: University of Chicago Press, 1953), pp. 7–8.

3. For one of the classic statements, see Conwy Lloyd Morgan, *Emergent Evolution* (London: Williams and Norgate, 1923). For a survey of this whole tradition of thought, see David Blitz, *Emergent Evolution* (Boston: Kluwer Academic Publishers, 1992).

4. Ernst Mayr, *The Growth of Biological Thought* (Cambridge: Harvard University Press, 1982), p. 63.

5. Charles Darwin, *The Descent of Man, and Selection in Relation to Sex*, 1st ed., 2 vols. (London: John Murray, 1871), vol. 1, pp. 35, 105.

6. See Larry Arnhart, *Political Questions: Political Philosophy from Plato to Rawls*, 2d ed. (Prospect Heights, IL: Waveland Press, 1993), pp. 223–27.

7. Leon Kass, *The Hungry Soul: Eating and the Perfecting of Our Nature* (New York: Free Press, 1994), p. 62.

8. Kass, *The Hungry Soul*, pp. 8–9, 230–31; Kass, *Towards a More Natural Science* (New York: Free Press, 1985), pp. 277, 284, 295, 347.

9. Kass, *Towards a More Natural Science*, pp. 292–93; Kass, "Man and Woman: An Old Story," *First Things*, no. 17 (November 1991), pp. 14–26; Kass, *The Hungry Soul*, pp. 210–211; Kass, "The Permanent Limitations of Biology," unpublished paper.

10. Allan Bloom, *The Closing of the American Mind* (New York: Simon and Schuster, 1987), pp. 110–16, 126, 130, 166, 181, 300–302, 307, 357–59.

11. Leo Strauss, *The Political Philosophy of Hobbes* (Chicago: University of Chicago Press, 1952), pp. 7–9, 168–70. Immanuel Kant, "Speculative Beginning of Human History," in "*Perpetual Peace*" and *Other Essays*, trans. Ted Humphrey (Indianapolis: Hackett, 1983); Kant, *Critique of Judgment*, trans. Werner S. Pluhar (Indianapolis: Hackett, 1987), secs. 83–84.

12. See Martin Heidegger, *Being and Time*, trans. John Macquarrie and Edward Robinson (New York: Harper and Row, 1962), pp. 71–75; Heidegger, "Political Texts," in Richard Wolin, ed., *The Heidegger Controversy: A Critical Reader* (Cambridge: MIT Press, 1993), pp. 54, 59, 62, 64, 68; Heidegger, "Letter on Humanism," in *Basic Writings*, ed. David Farrell Krell (San Francisco: HarperCollins, 1993), pp. 226–30, 245, 254; Heidegger, *The Fundamental Concepts of Metaphysics*, trans. W. McNeill and N. Walker (Bloomington: Indiana University Press, 1995), pp. 255–71, 312–15.

13. Edward O. Wilson, *Consilience: The Unity of Knowledge* (New York: Knopf, 1998).

14. For elaboration of this reading of Wilson, see Larry Arnhart, "Evolution and Ethics," *Books and Culture* 5 (November–December 1999): 36–39.

15. See James G. Lennox, "Teleology," in Evelyn Fox Keller and Elisabeth A. Lloyd, eds., *Keywords in Evolutionary Biology* (Cambridge: Harvard University Press, 1992), pp. 324–33; and James G. Lennox, "Darwin Was a Teleologist," *Biology and Philosophy* 8 (1993): 409–21.

16. Jean-Jacques Rousseau, *Emile*, trans. Allan Bloom (New York: Basic Books, 1979), p. 292.

17. Thomas Aquinas, *Commentary on the "Nicomachean Ethics"*, secs 9, 21, 94, 106–7, 202.

18. Plato, *Laws*, trans. Thomas Pangle (New York: Basic Books, 1980), 838a–39b. Xenophon, *Memorabilia*, IV. iv.19–23.

19. Thomas Aquinas, *Summa Theologica*, II–II, q. 154, a. 9; Suppl., q. 54, a. 10; *Summa Contra Gentiles*, bk. 3, ch. 125. Adam Smith, *Lectures on Jurisprudence*, ed. R. L. Meek, D. D. Raphael, and P. G. Stein (Oxford: Clarendon Press, 1978), pp. 141–43, 438. Bernard Mandeville, *The Fable of the Bees*, 2 vols. (Oxford: Clarendon Press, 1924), vol. 1, p. 330.

20. See Edward Westermarck, *The History of Human Marriage*, 5th ed., 3 vols. (New York: Allerton Book Company, 1922). I have elaborated my view of Westermarck and the incest taboo in two papers: "Westermarck's Ethics as Darwinian Natural Right," a paper presented at the international Westermarck symposium in Helsinki, Finland, November 19–22, 1998; and "The Incest Ta-

boo as Darwinian Natural Right," a paper presented at a conference on "Incest, Inbreeding, and the Incest Taboo," at Stanford University, sponsored by the Department of Anthropological Sciences, February 24–26, 2000. A closely related paper is "Natural Law as Darwinian Natural Right," to be published in *Social Philosophy and Policy*.

Michael Ruse and Edward O. Wilson, "Moral Philosophy as Applied Science," *Philosophy* 61 (Summer 1986): 173–92; Charles J. Lumsden and Edward O. Wilson, *Promethean Fire: Reflections on the Origin of Mind* (Cambridge: Harvard University Press, 1983), pp. 64–65, 115, 119, 124–27, 133–38, 175–80; Wilson, *Consilience*, pp. 173–80.

21. Westermarck, *Ethical Relativity* (London: Kegan Paul, Trench, Trubner, 1932), pp. 248–49; *History of Human Marriage*, vol. 2, pp. 192, 197, 214.

22. Sigmund Freud, *Totem and Taboo*, in *The Standard Edition of the Complete Psychological Works of Sigmund Freud*, vol. 13, trans. James Strachey (London: Hogarth Press, 1955). Freud, *Civilization and Its Discontents*, trans. James Strachey (New York: Norton, 1961), pp. 42, 58, 62, 69, 87.

23. Ilham Dilman, *Freud and Human Nature* (Oxford: Basil Blackwell, 1983).

24. See Richard Lewontin, Steven Rose, and Leon Kamin, *Not in Our Genes: Biology, Ideology, and Human Nature* (New York: Pantheon, 1984), p. 137; and Philip Kitcher, *Vaulting Ambition: Sociobiology and the Quest for Human Nature* (Cambridge: MIT Press, 1985), pp. 280, 348.

25. Arthur Wolf *Sexual Attraction and Childhood Association: A Chinese Brief for Edward Westermarck* (Stanford, CA: Stanford University Press, 1995).

26. See Joseph Shepher, *Incest: A Biosocial View* (New York: Academic Press, 1983); and Wolf, *Sexual Attraction and Childhood Association*, pp. 435–38.

27. See Wolf, *Sexual Attraction and Childhood Association*, pp. 388–422; Anne Pusey, "Inbreeding Avoidance in Chimpanzees," *Animal Behavior* 28 (1980): 543–52; Jane Goodall, *The Chimpanzees of Gombe* (Cambridge: Harvard University Press, 1986), pp. 466–71; and Anne Pusey and Marisa Wolf, "Inbreeding Avoidance in Animals," *Trends in Ecology and Evolution* 11 (May 1996): 201–6.

From her observations of wild chimpanzees, Jane Goodall reports: "Copulations between fathers and daughters and between paternal siblings are unlikely to be inhibited, for the individuals concerned do not 'know' their relationship. There is no close bonding between them, and they do not achieve the high level of familiarity that presumably underlies incest avoidance between mothers and sons and maternal siblings" (*Chimpanzees of Gombe*, p. 469).

28. See William Durham, *Coevolution: Genes, Culture, and Human Diversity* (Stanford, CA: Stanford University Press, 1991), pp. 293–309.