In Search of Ecocentric Sentiments:
Insights from the CAD Model
in Moral Psychology

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One aspect of J. Baird Callicott's foundational project for ecocentrism consists in explaining how moral consideration for ecological wholes can be grounded in moral sentiments. Some critics of Callicott have objected that moral consideration for ecological wholes is impossible under a sentimentalist conception of ethics because, on both Hume and Smith's views, sympathy is our main moral sentiment and it cannot be elicited by holistic entities. This conclusion is premature. The relevant question is not whether such moral consideration is compatible with the moral psychologies elaborated by Hume and Smith themselves, but, rather, whether it is possible given the moral psychology human beings actually possess. To answer this question, we must turn to empirical moral psychology and consider the possibility of a sentimentalist ecocentrism based on the community, autonomy, diversity (CAD) model, a very promising model of human moral psychology developed by psychologists Richard Shweder, Paul Rozin, and Jonathan Haidt. This model can be used to assess the possibility of grounding ecocentrism in human moral sentiments. In light of this assessment, ecocentrism should be understood as a new form of naturalistic ethics informed by the moral emotions of disgust, shame, awe, and wonder.

[word should be "divinity"]

INTRODUCTION

One aspect of J. Baird Callicott's foundational project for ecocentrism consists in explaining how moral consideration for ecological wholes such as communities, ecosystems, and the biosphere can be grounded in moral sentiments. In doing so, Callicott revisits David Hume and Adam Smith's sentimentalist accounts of ethics and argues that an ecological awareness should extend our moral sentiments to ecological wholes.

Some critics have objected that such an extension is psychologically impossible or implausible because, on both Hume and Smith's views, sympathy is our main moral sentiment and it cannot be elicited by holistic entities.[1] While these critics

[1] Gary E. Varner, "No Holism without Pluralism," *Environmental Ethics* 13 (1991): 173–79; Alan Carter, "Humean Nature," *Environmental Values* 9 (2000): 3–37; Y. S. Lo, "Non-Humean Holism, Un-Humean Holism," *Environmental Values* 10 (2001): 113–23; Ernest Partridge, "Ecological Morality and Nonmoral Sentiment," in Wayne Ouderkirk and Jim Hill, eds., *Land, Value, Community* (Albany: State University of New York Press, 2002), p. 24; John Barkdull, "How Green is the Theory of Moral Sentiments?" in Ouderkirk and Hill, *Land, Value, Community*, p. 45; Jennifer Welchman, "Hume, Callicott, and the Land Ethic: Prospects and Problems," *Journal of Value Inquiry* 43 (2009): 201–20.

make some valid points, I believe that their conclusion is precipitous. As I see it, the main problem with this debate as it has unfolded so far is that most, if not all, participants have limited their treatment of the issue to the moral psychologies elaborated by Hume and Smith themselves. The relevant question, however, is not whether moral consideration for ecological wholes is compatible with Hume and Smith's own moral psychologies, but rather whether it is possible given the moral psychology human beings actually possess. Thus, as Y. S. Lo has recently argued, the questions of "[w]hether, and to what extent, there are such original [holistic-environmentalist] ingredients of human psychology, . . . are more properly seen as empirical questions not single-handedly answerable by philosophers a priori."[2]

I propose to take her advice in this essay by considering the possibility of a sentimentalist ecocentrism in the light of a recent and very promising model of human moral psychology: the CAD model. This model has been developed by research groups in empirical moral psychology revolving around the work of Richard Shweder, Paul Rozin, and Jonathan Haidt; and has been carried over to philosophical metaethics by Jesse Prinz, a contemporary advocate of a sentimentalist view of ethics.[3] According to the CAD model, ethics in all cultures develops into three independent domains: community, autonomy, and divinity or natural order (hence, the initials: C-A-D). These three domains concern respectively the duties we have to our community, to autonomous individuals, and to God, the gods, or the natural order. The aim of this article is to use the CAD model to reevaluate the prospects for grounding ecocentrism in our moral psychology. To do so, I first provide an outline of the CAD model as developed by Shweder, Rozin, Haidt, and Prinz, and then assess the possible groundings of ecocentrism in each of the three ethical domains defined by the model. Doing so allows me to examine the previous formulations of the moral psychology of ecocentrism from a new perspective, and to show that, even though it has been overlooked by environmental ethicists, the last of Shweder's domains (divinity or natural order) appears to be the most appropriate as the basis of a holistic environmental ethics. The associations between each domain and their specific moral emotions also allows me to begin building a case for *awe* rather than *patriotism* (the emotion preferred by Callicott) or *sympathy* as the main sentiment involved in ecocentrism.

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[2] Y. S. Lo, "Making and Finding Values in Nature: From a Humean Point of View," *Inquiry* 49, no. 2 (2006): 123–47.

[3] Richard A. Shweder, Nancy C. Much, Monamohan Mahapatra, and Lawrence Park, "The 'Big Three' of Morality (Autonomy, Community, Divinity) and the 'Big Three' Explanation of Suffering," in Allan M. Brandt and Paul Rozin, eds., *Morality and Health* (New York: Routledge, 1997), pp. 119–69; Paul Rozin, Jonathan Haidt, Clark McCauley, Lance Dunlop, and Michelle Ashmore, "The Cad Triad Hypothesis: A Mapping Between Three Moral Emotions (Contempt, Anger, Disgust) and Three Moral Codes (Community, Autonomy, Divinity)," *Journal of Personality and Social Psychology* 76, no. 4 (1999): 574–86; J. Haidt, S. H. Koller, and M. G. Dias, "Affect, Culture, and Morality, or Is It Wrong to Eat Your Dog?" *Journal of Personality and Social Psychology* 65 (1993): 613–28; Jonathan Haidt, *The Happiness Hypothesis: Finding Modern Truth in Ancient Wisdom* (London: Random House, 2006); Jesse J. Prinz, *The Emotional Construction of Morals* (Oxford; New York: Oxford University Press, 2007).

THE CAD MODEL

On the basis of research conducted in Bhubaneswar in the Indian state of Orissa, Richard Shweder and his colleagues developed an analysis of moral discourse which divides ethical concerns into three categories. Forty-seven residents of Bhubaneswar were interviewed. They were presented with different scenarios involving situations known on the basis of previous ethnographic knowledge to be moral transgressions in their culture, and they were asked to explain *why* the actions described were wrong. Their answers were analyzed according to the themes they invoked, and classified into three domains of conceptually related themes: autonomy, community, divinity.

The first domain, the *ethics of autonomy*, has to do with the obligations moral agents have to individuals as such. Its focus is "the self as an individual preference structure," and it "aims to protect the zone of discretionary choice of 'individuals' and promote the exercise of individual will in the pursuit of personal preferences."[4] Hence, the obligations it entails are independent of the moral patient's location in the social order and the world. According to Shweder, this ethical domain is prevalent in the Western world, where individual freedom is often seen as the primary good. The second domain, the *ethics of community* concerns the rules that ensure the good functioning of community life. It involves obligations moral agents have to each other according to the different roles they play in the group. These include the asymmetric duties between unequals (parents/children, people in power/their wards), the role-based social status, family and community obligations, and so on. Hence, this domain regulates the relations between individuals, but its standard is set at the level of the community. This domain presupposes a holistic view of the community defined as "a corporate entity with an identity, standing, history, and reputation of its own."[5] The third and last domain, the *ethics of divinity*, relates to obligations derived from what is perceived as the sacred and/or natural order, the natural law, as well as from the concepts of sanctity, sin, and pollution that they involve. The motivation behind this domain is "to protect the soul, the spirit, the spiritual aspects of the human agent and 'nature' from degradation."[6] It is noteworthy for my purposes that some aspects of this last domain are consonant with some common environmentalist intuitions. For example, Shweder says that the ethics of divinity involves the "idea that every entity in nature enjoys its particular right to exist and to be what it is according to its own nature . . ." and the thought that "every entity that exists is entitled to be what it is, and has its proper place in the order of things."[7] However, in the context of the Orissa culture studied by

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[4] Shweder et al., "The 'Big Three' of Morality (Autonomy, Community, Divinity) and the 'Big Three' Explanation of Suffering," p. 138.

[5] Ibid.

[6] Ibid.

[7] Ibid., pp. 147–48.

Shweder, the ethical obligations associated with the ethics of divinity mostly take the form of taboos with no obvious bearing on environmental concerns.[8] I return to this issue later.

An important aspect of the model is that it allows for cultural diversity in two ways. First, the three domains do not themselves carry normative contents, but are containers to be filled by various contents according to cultures. Second, the relative importance accorded to each domain can vary between cultures. Some cultures are more autonomist and others more communitarian or naturalist. This space for variety has an advantage with respect to the project of grounding environmental ethics in human psychology. In Hume and Smith's moral psychologies, moral sentiments were conceived as fixed in a universal and unchanging human nature. This conception left little scope for local and historical differences in morals, and such fixity prevented the emergence of new ethical attitudes (ecocentric ones in our case).[9] In contrast, the CAD model, by being "content-neutral," leaves scope for such emergence. Under Shweder's model, ecological awareness could lead to the integration of ecocentric attitudes into our moral sensibilities by filling one or some of our three moral domains with ecocentric content.[10]

THE CAD MODEL AND MORAL EMOTIONS

According to recent classifications, there are at least three main types of moral emotions: the *other-critical*, the *self-conscious* and the *other-sensitive emotions*. The *other-critical emotions* are those we feel when witnessing a moral transgression by somebody else, the *self-conscious emotions* are those we feel when we ourselves have done something wrong, and the *other-sensitive emotions* are those responsible for our moral consideration for others.

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[8] For example, the following transgressions scored high with the ethics of divinity: "Six months after the death of her husband the widow wore jewelry and bright-colored clothes"; "One of your family members eats beef regularly"; "A widow in your community eats fish two or three times a week"; see ibid., pp. 132–35.

[9] For arguments against the possibility of moral consideration for nature on the grounds that our moral sensibility cannot change, see Jennifer Welchman, "The Virtues of Stewardship," *Environmental Ethics* 21 (1999): 411–23; Carter, "Humean Nature"; Partridge, "Ecological Morality and Nonmoral Sentiment"; and Barkdull, "How Green Is the Theory of Moral Sentiments?"

[10] This way of presenting things may seem committed to a relativist view of ethics. Yet, not all ethical sentimentalists are relativists. Neo-sentimentalism, a metaethical approach which introduces a normative element into the account of the relationship between emotions and evaluative judgments, i.e., which defines good things as those that *merit* positive emotional responses (rather than merely those that *in fact* elicit positive emotional responses), is gaining support among metaethicists. Thus, a neo-sentimentalist ecocentrist could escape relativism by arguing that ecological wholes *merit* some positive emotional responses. In this essay, however, I leave open the question of whether the resources provided by the CAD model should be used to articulate a classical non-cognitivist or neo-sentimentalist version of sentimentalist ecocentrism. On neo-sentimentalism and its prospects for environmental ethics, see Katie McShane, "Neosentimentalism and Environmental Ethics," *Environmental Ethics* 33, no. 1 (2011): 5–23.

SHWEDER'S THREE DOMAINS		
Emotions Felt toward the Transgressor		*Emotions Felt toward the Moral Patient*
Other-Critical Emotions	*Self-Conscious Emotions*	*Other-Sensitive Emotions*
Anger	**Guilt**	**Sympathy**
Contempt	**Embarrassment**	**??**
Disgust	**Shame**	**??**

The leftmost column labels (outside the three domains columns) read: *Autonomy*, *Community*, *Divinity* for the three data rows respectively.

Table 1: Associations between Other-Critical, Self-Conscious, and Other-Sensitive Moral Emotions and Shweder's Three Domains.

Rozin et al. have proposed an association between some specific moral emotions of each of these three types and Shweder's three domains. *Anger*, *contempt,* and *disgust* would be the *other-critical emotions* that relate respectively to the ethics of autonomy, community, and divinity; and *guilt, embarrassment,* and *shame* would be the *self-conscious emotions* that relate respectively to the same three domains (see Table 1). The first association has been given empirical support by Rozin.[11] The second association has not yet been given much empirical support, but it seems very plausible, especially in the case of the connection between *shame* and the ethics of divinity. Shame can be seen as some sort of *disgust* with oneself. Thus, if others' violations of the ethics of divinity elicit disgust, it seems plausible that one's own violations of this domain elicit shame.[12]

The most discussed *other-sensitive emotion* is *sympathy*, which plays a central role in the moral psychologies of classical sentimentalists such as Hume and Smith. Still today, it is widely acknowledged that sympathy is involved in our moral concern for other individuals, and so plays an important role in the ethics of autonomy. However, a question that has been raised is whether *sympathy* can be felt toward non-sentient entities. If the answer is negative, then ecological wholes may not be plausible objects of the ethics of *autonomy*.[13] As far as I know, proponents of the CAD model have not dealt explicitly with the issue of what *other-sensitive*

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[11] Rozin et al., "The Cad Triad Hypothesis: A Mapping Between Three Moral Emotions (Contempt, Anger, Disgust) and Three Moral Codes (Community, Autonomy, Divinity)."

[12] The association between *shame* and the ethics of divinity finds support in at least one informal study conducted by Jesse Prinz. According to Prinz, most subjects have said that they would feel *guilt* if they "[took] something from someone and never return[ed] it"; and that they would feel *shame* if "in a moment of weakness, they allow[ed] a person who is really old to kiss [them] romantically." See Prinz, *The Emotional Construction of Morals*, p. 77.

[13] Prinz seems to assert that sympathy can only be felt toward human beings, but it is not clear whether, by saying this, he is making a claim, or he simply did not consider the possibility of sympathizing with nonhuman entities. See ibid., p. 83.

emotions should be associated with the *community* and *divinity* domains (if there are any). In later sections, I offer some suggestions.

DOMAIN 1: ECOCENTRISM AND THE ETHICS OF AUTONOMY

Environmental philosophers taking a Kantian extensionist approach can be seen as attempting to make use of Shweder's *autonomy* domain. Broadly, their approach consists in reworking Kant's argument that human beings, by virtue of their rational nature, should be recognized as *ends in themselves*, in order to extend this status to some nonhuman beings. The first step in this approach was taken by Tom Regan, who argued that *having interests,* rather than being rational, is sufficient for a being to be an end in itself, and hence that all conscious nonhuman animals should be included in the moral community.[14] Reasoning further along these lines, Paul Taylor argued that *having a good of one's own*—a quality shared by all living beings (conscious or not) because of their teleological nature—is what is required for a being to be an end in itself and consequently to be part of the moral community.[15] Finally, Lawrence Johnson and James Sterba pushed this Kantian extensionist approach to include ecological wholes by explaining the living organisms' teleological nature in terms of thermodynamics and by arguing that, when teleology is so understood, ecological wholes are teleological too and so should also be included in the moral community.[16]

The Kantian extensionist philosophers just mentioned are not ethical sentimentalists. They adopt more of a rationalist approach, as they all attempt to *logically* derive an ethical obligation to treat the nonhuman beings in question as members of the moral community from the fact that they all pursue ends in their own way.[17] However, a sentimentalist version of their approach could be conceived. As I noted, the *other-sensitive* moral sentiment associated with the ethics of autonomy is *sympathy*. It is because we sympathize with our fellows that we come to care about their good. Thus, from a sentimentalist perspective, the relevant question now would be whether moral agents can plausibly *sympathize* with ecological wholes. For some, this question immediately warrants a negative response because

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[14] Tom Regan, *The Case for Animal Rights* (Berkeley: University of California Press, 2004).

[15] Paul W. Taylor, *Respect for Nature: A Theory of Environmental Ethics* (Princeton: Princeton University Press, 1986).

[16] For Johnson and Sterba, living entities are teleological because they are in a "persistent state of low entropy, sustained by metabolic processes for accumulating energy whose organic unity and self-identity is maintained in equilibrium by homeostatic feedback processes." See: James P. Sterba, "From Biocentric Individualism to Biocentric Pluralism," *Environmental Ethics* 17 (1995): 191–207; Lawrence E. Johnson, *A Morally Deep World: An Essay on Moral Significance and Environmental Ethics* (Cambridge and New York: Cambridge University Press, 1991), chap. 4.

[17] Although I am deeply skeptical of these attempts at deriving *ought* from *is*, explaining the reasons would take me far beyond the scope of this paper. My purpose here is not to defend ethical sentimentalism itself but to show that, in light of the CAD model, it can accommodate ecocentrism.

sympathy can only be felt towards *sentient* beings.[18] Callicott himself chose this route, pointing out that it is supported by the etymology of the word (*with-feeling*).[19] This answer also appears to be implied by Hume's classical analysis of sympathy, which involves sharing the feelings of others, and thus requires sentient objects.[20] Against this view, however, Patrick Frierson, drawing upon Smith's account of sympathy, has argued that sympathy does not require sentience.[21] According to Smith, Frierson recalls, we do not sympathize with the *actual* sentiments of others, but with the sentiments that *we* (the observers), when taking the perspective of a hypothetical impartial spectator, think they would be justified to feel in their situation. For Frierson, this implies that the object of sympathy does not necessarily have to be sentient because the impartial spectator can put him or herself in the place of non-sentient entities and determine what they would be justified to feel in a given situation, were they sentient.

Some support can be found for Frierson's view in the distinction that the psychologist Nancy Eisenberg draws between *sympathy* and *empathy*. She defines *empathy* as "an affective response that stems from the apprehension or comprehension of another's emotional state or condition, and that is identical or very similar to what the other person is feeling or would be expected to feel."[22] By contrast, she defines *sympathy* as

> . . . an affective response that consists of feeling sorrow or concern for the distressed or needy other (rather than feeling the same emotion as the other person). Sympathy is believed to involve other-oriented, altruistic motivation. Although sympathy probably stems primarily from empathy in many contexts, it may also result from cognitive processes as perspective taking. . . .[23]

According to these definitions, it is *empathy* (our apprehending of another's emotional states) and not *sympathy* (our concern for the other) that necessarily requires sentient objects. If, as Eisenberg says, *sympathy* need not involve *empathy*, then there seems to be no reason why one could not sympathize with non-sentient entities such as ecological wholes. However, not all moral psychologists agree with Eisenberg. Shaun Nichols, for instance, argues that even if one must not conflate

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[18] See note 1 for references to some philosophers who have made this point.

[19] J. Baird Callicott, *Beyond the Land Ethic: More Essays in Environmental Philosophy* (Albany: State University of New York Press, 1999), pp. 68 and 182.

[20] It is noteworthy that Hume explicitly stated that nonhuman animals could be objects of sympathy. See David Hume, *A Treatise of Human Nature*, ed. L. A. Selby-Bigge and P. H. Nidditch, 2nd ed. (Oxford and New York: Oxford University Press, 1978), p. 309; quoted in Barkdull, "How Green Is the Theory of Moral Sentiments?" p. 203.

[21] Patrick R. Frierson, "Adam Smith and the Possibility of Sympathy with Nature," *Pacific Philosophical Quarterly* 87 (2006): 442–80.

[22] Nancy Eisenberg, "Empathy and Sympathy," in *Handbook of Emotions* (New York: Guilford Press, 2008), p. 677.

[23] Ibid., p. 678.

empathy and sympathy, the latter cannot occur without a minimal empathic capacity which he describes as "a minimal capacity for mindreading, the capacity to attribute negative affective or hedonic mental states like distress."[24] Moreover, it is not at all clear that even if sympathy did not require empathy, this would necessarily support Frierson's position. Perhaps we can sympathize without empathizing, but only with beings we *could* hypothetically empathize with, that is, with *sentient* beings. Frierson himself admits that sympathizing with ecological wholes requires one to see them as if they felt emotions, and, even though Frierson denies it, this seems to involve a false belief that they are sentient.[25] So, at this point, I think we can take it that it is at least doubtful (if not impossible) that sympathy can be directed to non-sentient objects.

Another reason why I think sympathy has little use as a ground for an ecocentric ethic is connected to the ecocentric view of how we human beings relate to ecological wholes. The paradigm case of sympathy is the situation where we view another as a fellow creature, and by doing so are led to value his or her well-being as our own. In such a situation, we see the other as leading an existence parallel to our own, as sharing our condition. It thus involves the more or less conscious thought that the other is somehow *like us* and for this very reason should matter to us. In other words, as I see it, a perceived fellowship is essential to sympathy, and this limits candidates for sympathy to beings with which we share a common plight and can identify. If this is right, then sympathy will not be the most suitable sentiment for ecocentrism. By espousing an ecological worldview, ecocentrism situates us *in* nature as a part of it, rather than *beside* nature as its fellow or equal. Central to ecocentrism is our humble recognition of the deep fact that we belong to nature and not the converse. In short, an ecocentric attitude to nature is tightly connected with the view that we are in a part-whole relationship with nature. Hence, sympathy with nature, by carrying the implicit view that nature is our fellow rather than a larger order of being to which we belong, is incompatible with a main component of the ecocentric sensibility.

For these two reasons, I conclude that the ethics of autonomy does not offer promising ground for ecocentrism. An ecocentric ethic seems to require an ethical domain and moral sentiments that do not necessitate sentient objects and that reflect our part-whole relationship with ecological wholes.

DOMAIN 2: ECOCENTRISM AND THE ETHICS OF COMMUNITY

Under the taxonomy of the CAD model, Callicott's own approach is best described as appealing to the domain of community. Following Aldo Leopold, Callicott develops ecocentrism around the analogy drawn by Charles Elton between communities

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[24] Shaun Nichols, *Sentimental Rules: On the Natural Foundations of Moral Judgment* (Oxford: Oxford University Press, 2004), p. 63.

[25] Frierson, "Adam Smith and the Possibility of Sympathy with Nature," pp. 457–68.

and ecological wholes through the concept of *biotic community*.[26] On the basis of this analogy he argues that ecological awareness should extend our moral sentiment toward the community to embrace the whole *biotic* community: ". . . as Hume observed, . . . we also are endowed with a sentiment, the proper object of which is society itself. Ecology and environmental sciences thus inform us of the existence of something which is a proper object of one of our most moral passions."[27] To highlight its holistic character, Callicott even occasionally connects Leopold's land ethic with Plato's holistic view of the state.[28] Thus, for Callicott, the ethical holism of ecocentrism is *communitarian*. Human moral agents must act according to their proper place in the biotic community, and this place is defined in order to promote the good of that community as a whole.[29]

Callicott has proposed some counterparts to *sympathy* in the form of *other-sensitive* emotions felt toward the community *per se*. These emotions are "group pride, patriotism, loyalty, indignation at aggression, and so on."[30] They seem plausible suggestions to fill in the CAD model as the community counterpart of *sympathy*. In the context of ecocentrism, they also appear to be more suitable than sympathy. *Group pride* and *patriotism* seem to grasp the idea that our relation with the biotic community is a *part-whole* relationship rather than a *fellowship*. If we take seriously the Eltonian idea that we form a community of reciprocal connection with all the living beings in our ecosystem, and start feeling a sense of belonging to the community of life, it seems plausible at first sight that a resulting feeling that we partake in life's amazing achievements in the odyssey of evolution should lead us to feel something close to *group pride* or *patriotism* toward the community of life itself.

But should we take this interpretation of the Eltonian idea seriously? I see three reasons that we should not. First, as Ernest Partridge objected to Callicott, if there

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[26] Aldo Leopold, *A Sand County Almanac, and Sketches Here and There* (New York: Oxford University Press, 1987), pp. 203–05. See also Charles S. Elton, *Animal Ecology* (London: University of Chicago Press, 1927).

[27] J. Baird Callicott, *In Defense of the Land Ethic: Essays in Environmental Philosophy* (Albany: State University of New York Press, 1989), p. 126; see also p. 57.

[28] Ibid., p. 28.

[29] Some critics have argued that Callicott cannot ground ecocentrism in moral sentiments toward the community because Hume and Smith both denied that any such sentiment existed. However, Hume and Smith's stances on this issue do not have much relevance here, for, as I said in the introduction, what matters is whether moral obligations to the community as a whole can *in fact* be components of our moral psychology, and not whether Hume and Smith thought they could. The empirical data supporting the CAD model suggest that they can. For instances of the debate between Callicott and his critics on this issue, see Varner, "No Holism without Pluralism"; Callicott, *Beyond the Land Ethic*, p. 67; Carter, "Humean Nature"; Lo, "Non-Humean Holism, Un-Humean Holism"; Partridge, "Ecological Morality and Nonmoral Sentiment," p. 24; Barkdull, "How Green Is the Theory of Moral Sentiments?" pp. 45–48; J. Baird Callicott, "My Reply," in *Land, Value, Community* (Albany: State University of New York Press, 2002), p. 293.

[30] Callicott, *Beyond the Land Ethic*, p. 183.

are analogies between human and biotic communities, there are also serious dif-
ferences:

> Callicott correctly points out that it is scientific knowledge that makes us "ecologically
> well-informed" by teaching us that the ecosystem is a figurative "community" in the
> sense of a cooperative scheme of interacting parts. . . . But the social sciences also
> point out significant dissimilarities between ecosystems and human communities of
> persons, with their complex systems of moral control (e.g., reciprocating rights and
> duties, procedural distributive justice, sanctions, moral sentiments).[31]

In Partridge's analysis, the main difference between social and biotic communi-
ties is that the structure of the first can be consciously criticized and modified by
its members according to moral standards, while biotic communities cannot: ". . .
political institutions must measure up morally. If they do not, we strive to reform
them, and failing that, we are entitled to abolish them."[32] This is an important
dissimilarity with ecocentrists' view of our duties to the biotic community. What
they support is the humble preservation of the biotic relational structure, not the
hubristic reformation or abolition of it when it does not meet our human needs
and ideals.[33] This seems to be an important limitation of the community analogy.
A second problem with the community analogy is that *patriotism* and *group
pride* function as a mark of distinction between those who are and those who are
not part of our community. In other words, the communitarian "us" is defined in
contradistinction with an outside "them"; and one's care for one's community is
usually related to the fear of destruction or assimilation by another. This antago-
nism is troublesome in the case of ecocentrism. The biotic community is not to be
defended against an *outside* menace, but from some *inside* human inhabitants. The
threat to life on Earth which is the focus of ecocentrism comes from noxious ways
of life on Earth, not from an expected alien invasion! Thus, ecocentrism requires
an ethical holism that is more all-inclusive than what patriotism and group pride
usually bring forth.

A third problem with the community analogy is that it has been significantly
attenuated in ecological science. Biotic communities are no longer seen as stable

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[31] Partridge, "Ecological Morality and Nonmoral Sentiment," p. 26.

[32] Ibid., p. 27.

[33] This anti-hubristic aspect of ecocentrism is stressed in the "Thinking like a Mountain" chapter of
Leopold's *Sand County Almanac*. This chapter illustrates the inevitable incompleteness of our ecologi-
cal knowledge, and humans' incapacity to predict accurately the consequences of the ways they act on
nature. Central to ecocentrism is the adage that "nature knows best," and that the wisest way to "man-
age" nature is to manage it as little as possible. Callicott expresses the same ecocentric wisdom when
he argues against animal ethics because of its logical implication that we should eradicate predators
in order to protect their prey. For Callicott, changing the structure of the biotic community according
to such a human nonviolent ideal would be tantamount to dismantling it and so destroying it, which is
contrary to the precepts and goals of ecocentrism. See Leopold, *A Sand County Almanac*, pp. 129–33;
Callicott, *In Defense of the Land Ethic*, pp. 56–57.

and tightly integrated sets of irreplaceable species, but increasingly as contingent and fluctuating collections of individuals.[34] If something is preserved of the holistic intuitions of classical ecology, it is more from the perspective of *ecosystem* ecology than from that of *community* ecology.[35] Though it is a matter of debate in ecological science, it can still be expected that an objective criterion of good functioning (such as ecosystem health) will eventually be defined for ecosystems taken as wholes. This seems less plausible for communities. This scientific shift has led Callicott to move away from an emphasis on *community integrity* in ecocentrism and to recast the theory around the concept of *ecosystem health*. In doing so, however, he seems not to have realized how much this shift undermines the community metaphor on which his moral psychology rests. Ecosystems, as Callicott remarks, are not biological but thermodynamic entities. Their components are not individual organisms, but rather complex networks of channels of matter and energy fluxes.[36] Therefore, ecosystems differ even more from human communities than biotic communities. As a result, if, as I have argued, the community metaphor was already problematic when ecocentrism was focused on biotic communities, it is even more so now that it centers on ecosystems.

Consequently, I conclude that the ethics of community is, in the final analysis, no better ground for ecocentrism than the ethics of autonomy.

DOMAIN 3: ECOCENTRISM AND THE ETHICS OF THE NATURAL ORDER

In the literature on the CAD model, there are two designations for the third domain (divinity and natural order). Even though "divinity" is the more prevalent of the two, there are reasons to think that "natural order" is a better label. Among cultures, the idea of a sacred natural order is more common than the idea of divinity in a strict sense, which involves the existence of a personal transcendent being. Shweder himself makes it clear that he intends "divinity" in a broad sense: "The experience of divinity may or may not be theistic. It may or may not involve a personified God or Goddess. Mystical-aesthetical experiences of a more diffuse kind are also communications with divinity."[37] Similarly, Haidt calls the section

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[34] See Daniel B. Botkin, *Discordant Harmonies: A New Ecology for the Twenty-First Century* (New York: Oxford University Press, 1990); Callicott, *Beyond the Land Ethic*, chap. 7; Gregory John Cooper, *The Science of the Struggle for Existence: On the Foundations of Ecology* (Cambridge; New York: Cambridge University Press, 2003), chap. 3; Michael G. Barbour, "Ecological Fragmentation in the Fifties," in *Uncommon Ground: Rethinking the Human Place in Nature*, ed. William Cronon (New York and London: W. W. Norton and Co., 1996).

[35] See Stanley N. Salthe and Barbara M. Salthe, "Ecosystem Moral Considerability: A Reply to Cahen," *Environmental Ethics* 11, no. 4 (1989): 355–61; Callicott, *Beyond the Land Ethic*, pp. 349–50.

[36] J. Baird Callicott, Larry B. Crowder, and Karen Mumford, "Current Normative Concepts in Conservation," *Conservation Biology* 13, no. 1 (1999): 27.

[37] Shweder et al., "The 'Big Three' of Morality (Autonomy, Community, Divinity) and the 'Big Three' Explanation of Suffering," p. 149.

of his book on the ethics of divinity "Divinity with or without God."[38] This, and the fact that many cases related to this domain presented in the questionnaires of the empirical studies supporting the model featured violations that are not clearly religious, have led Prinz to promote the use of "natural order" instead of "divinity" to designate it:

> Within religious cosmology, nature is subsumed by the divine; the natural order is the order that has been established by the gods. Violations of divine nature elicit disgust because they are violations against nature, not conversely. Such violations are first and foremost unnatural acts. Therefore, I will say that . . . moral disgust is directed at transgression against the perceived natural order.[39]

As ecocentrists do not seek to develop a religious ethic (even though ecocentrism might be compatible with some religious traditions), this emphasis on *natural order* rather than *divinity* makes the third domain a more propitious ground for ecocentrism. In this section, I want to propose and explore an understanding of ecocentrism as a *natural order ethic*.

The idea that we have duties to nature *per se,* while very old and widespread in the world's cultures, is not familiar in the contemporary West, where it has been repeatedly criticized by philosophers.[40] As I noted earlier, modern Western ethics is almost totally limited to the *autonomy* domain, and we usually view the idea of naturalistic ethics in a negative light as it is associated with doctrinaire conservative morals.[41] It is thus important for me to situate the ecocentric naturalistic ethics I am proposing in relation to the traditionalist one. The most problematic aspect of traditionalist naturalistic ethics is that it involves a mystical and dogmatic conception of the natural order that is received uncritically from the tradition. Therefore, it rarely reflects an order of nature that is real, but rather projects arbitrary conventions onto nature.[42] However, in a naturalistic ethics filled with ecocentric content, such a dogmatic component would be absent. The ecocentric obligations to nature are to be derived from environmental sciences, which are revisable and responsive to empirical data about the ecological world. The fact that some actions threaten the ecological order is a matter of scientific investigation (rather than a matter of clinging to tradition). Also, an ecocentric naturalistic ethics is harm-based, as opposed to traditionalist ethics, which tends to insist on unquestionable rules

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[38] Haidt, *The Happiness Hypothesis*, chap. 9.

[39] Prinz, *The Emotional Construction of Morals*, p. 73.

[40] A classical and well-articulated statement of this critique is J. S. Mill's essay "Nature," in John Stuart Mill, *Nature, the Utility of Religion, and Theism* (London: Longmans, Green, Reader, and Dyer, 1874).

[41] Lene Arnett Jensen has confirmed this association by providing cross-cultural empirical support for the view that "progressivists" focus more on the ethics of *autonomy* while orthodox people reason more in terms of the ethics of *community* and *divinity*. See Lene Arnett Jensen, "Moral Divisions within Countries between Orthodoxy and Progressivism: India and the United States," *Journal for the Scientific Study of Religion* 37, no. 1 (1998): 90–117.

[42] This was part of J. S. Mill's critique. See Mill, *Nature, the Utility of Religion, and Theism*, pp. 21–25.

sanctioning victimless wrongs. For an ecocentrist, it is because they are *materially* harmful to the ecological order that some actions must be avoided.[43] Despite these important differences, an ecocentric naturalistic ethics maintains the central intuition of Shweder's third domain that there is an order of nature to be respected.

Another reason why naturalism is unfamiliar in modern ethics has to do with the scientific-mechanistic conception of nature prevailing in modern culture. In opposition to older views in which the natural order is conceived as an arrangement of natural tendencies with which humans can more or less harmonize, the mechanistic view of the natural order portrays nature as a set of necessary and deterministic laws that cannot be disturbed in any way. For instance, one cannot act against gravity, since, as massive objects, we are under its rule whatever we do. The *necessary* aspect of scientific laws of nature thus undercuts the distinction between acting *with* and *against* nature. This is visible in two famous passages by Francis Bacon and René Descartes. According to Bacon, "Nature to be commanded must be obeyed; and that which in contemplation is as the cause is in operation as the rule."[44] For Descartes, "All that is artificial is withal natural: for it is not less natural for a clock, made of the requisite number of wheels, to mark the hours, than for a tree, which has sprung from this or that seed, to produce the fruit peculiar to it."[45] In short, under the mechanistic conception of the natural order inherited from seventeenth-century science, a norm of conformity to nature was inevitably meaningless, and so any form of natural order ethics was ruled out from the start on conceptual grounds.[46] What is important here is that with the development of biology, ecology, and other environmental sciences, natural order ethics can now be conceptually ruled in. As a matter of fact, these sciences describe the *contingent but long-lasting* natural patterns or trends that maintain life, and they increasingly attract our attention to the vulnerability of these trends and to the consequent fragility of life. In contrast with those of physics, the regularities of *living* nature are not framed in the elemental fabric of the universe, but are rather "frozen accidents" of the Earth's history.[47] They are not physically ineluctable, they could cease to be, and they have continued to operate so far partly thanks to complex homeostatic

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[43] Of course, this presupposes that the idea of "harming nature" makes sense, and this idea has been challenged. Although this issue stands beyond the scope of this essay, I think that the challenge can somehow be met. For good formulations of the challenge, see Harley Cahen, "Against the Moral Considerability of Ecosystems," *Environmental Ethics* 10, no. 3 (1988): 195–216; Gary E. Varner, *In Nature's Interests? Interests, Animal Rights, and Environmental Ethics* (New York: Oxford University Press, 1998).

[44] Francis Bacon, *Novum Organum*, ed. Joseph Devey (New York: P. P. Collier and Son, 1902), pt. 1, no. 3.

[45] René Descartes, *The Principles of Philosophy*, trans. John Veitch (Salt Lake City: Project Gutenberg, 2003), pt. 4, no. 203. To lighten the presentation, I omitted the square brackets that the editor placed around "all that is artificial is withal natural," indicating that this part is from an addition made by Descartes to the French version (the translation being mainly from the original Latin version).

[46] As I read it, drawing this conclusion from the Western scientific worldview is Mill's main line of argument in his "Nature" essay. See Mill, *Nature, the Utility of Religion, and Theism*, pp. 3–65.

[47] See Robert N. Brandon, "Does Biology Have Laws? The Experimental Evidence," *Philosophy of Science* 64 (1997): 444–57.

processes and resilience patterns which rely on a fragile fine-tuning of underlying factors. In short, contrary to the physical world, the biological and ecological worlds can be turned upside down. For instance, through exploitation disrespectful of the soil's ecological dynamics, a fruitful land can be turned into a barren place; contamination by pollutants can turn food into poison; and the *bio*sphere can be made unsuitable for life if we seriously disrupt its carbon cycle. This ecological fragility makes it meaningful, with respect to *ecological* nature, to say that some actions are in harmony *with* nature while others go *against* nature, and so a norm of conformity with nature is no longer meaningless. As I observed earlier, the natural order involved in an ecocentric natural order ethics is that of *ecological* nature.

I have attempted to show how the domain of the natural order, filled with ecocentric content, avoids two important problems posed by traditionalist naturalistic ethics. What I have to show now is why the natural order domain is a better ground for ecocentrism than the two first domains. A first reason in favor of this is quite simple. When grounded in *autonomy* or *community*, nature had to resemble something other than itself to become an object of moral consideration. Nature was not morally considerable *qua* nature, but *qua* individual or community. To make these approaches plausible, sophisticated theoretical work was needed to make ecological wholes look like individuals or communities in ethically relevant senses. To the contrary, if ecocentrism is grounded in the domain of the natural order, nature *qua* nature deserves moral consideration. Moreover, the fact that there are many people who have continued to subscribe to some forms of (usually traditionalist) naturalistic ethics even in the West—despite its alleged theoretical incompatibility with the dominant scientific worldview—shows how it is a resistant component of our moral imagination.[48] If people tend to be inclined to feel that they ought to live in agreement with nature, environmentalists should indeed make the most of this inclination.

One may doubt, however, that there really is a connection between traditionalist ethical naturalisms and ecocentrism. After all, in Shweder's empirical study, most transgressions of the natural order were harmless transgressions of taboos grounded in religion with no apparent ecological bond.[49] Against the apparent implausibility, I want to suggest that there *is* a connection between the two. It would require a degree of historical and anthropological input that goes well beyond the scope of this essay to make the point, but I will at least try to provide rough support for this suggestion. What a quick panorama of the religious traditions of the world discloses is that most of them deal in some way with how human beings should relate to

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[48] Lene Arnett Jensen has documented the liveliness of divinity ethics in the United States. Lene Arnett Jensen, "Habits of the Heart Revisited: Autonomy, Community, and Divinity in Adults' Moral Language," *Qualitative Sociology* 18, no. 1 (1995): 71–86; Lene Arnett Jensen, "Culture Wars: American Moral Development across the Lifespan," *Journal of Adult Development* 4 (1997): 107–21.

[49] An exception is Vasquez's study, which explicitly classifies environmental protection in the third domain. See Kristin Vasquez et al., "Cultural Variations and Similarity in Moral Rhetorics: Voices from the Philippines and the United States," *Journal of Cross-cultural Psychology* 32, no. 1 (2001): 93–120.

the world (the cosmos). Undeniably, religions extend along a continuum between very abstract and symbolic belief systems and more concrete ones closely tied to the geographical reality of their followers. In the most concrete ones, an ecological intention is easily observed. For instance, the anthropologist Reichel-Dolmatoff describes how the Amazonian Tukano proto-ecological cosmology stresses the importance of living in balance with the energy cycles in nature, and how the Tukano derive sexual and food taboos from it, so that they maintain this balance through birth control and limited use of resources.[50] In the same vein, the anthropologist and ethnobotanist Wade Davis describes how the Tairona of the Sierra Nevada in Colombia see themselves as the guardians of life in the world, and believe that their ancient laws (dictates of the "Great Mother") "balance the . . . potential of the human mind with all the forces of nature."[51] But what is even more remarkable is that in the case of some religious traditions with the least apparent links to ecological concerns, ecological intentions can still be traced to their origins. For instance, in *This Fissured Land,* Madhav Gadgil and Ramachandra Guha describe how the Indian caste system, by assigning different economic activities to different subgroups, mimics the specialization of species in an ecosystem, which allowed a greater number of people to live sustainably in a restricted environment.[52] Likewise, Daniel Hillel, in *The Natural History of the Bible,* describes how the myths of the Abrahamic religions contain symbols and rites integrated from older Mesopotamian religions, which themselves arose from a fascination with the forces of nature and a concern with fertility.[53] A similar connection to fertility and the forces of nature seems to be an ingredient of most religious traditions. Thus, it is conceivable that the religious taboos of traditionalist naturalistic ethics are remnants of rules that had some (more or less sound) ecological justifications when they were established, but that later became more abstract and symbolic bans with the institutionalization of their religious authority, and then remained in the form of dogma when they ceased to be ecologically relevant. If this is true, then a connection between traditionalist naturalistic ethics and ecocentrism becomes traceable.

Perhaps what the CAD model predicts regarding the emotions involved in ecocentric morality when it is conceived as an ethic of the natural order will corroborate these conjectures.[54] According to Rozin, Haidt, and Prinz, transgressions of the natural

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[50] G. Reichel-Dolmatoff, "Cosmology as Ecological Analysis: A View from the Rain Forest," *Man* 11, no. 3 (1976): 307–18.

[51] Wade Davis, *The Wayfinders: Why Ancient Wisdom Matters in the Modern World* (Toronto: House of Anansi Press, 2009), p. 141.

[52] Madhav Gadgil and Ramachandra Guha, *This Fissured Land: An Ecological History of India* (Oxford and New York: Oxford University Press, 1993), chap. 3.

[53] Daniel Hillel, *The Natural History of the Bible: An Environmental Exploration of the Hebrew Scriptures* (New York: Columbia University Press, 2006).

[54] It is important to remember that naturalistic ecocentrism, even if it is a naturalistic *ethic*, does not require any form of anti-Moorean or anti-Humean naturalist *metaethics*. One need not subscribe to any reduction of values to natural properties or direct logical derivation of *ought* from *is* to accept it. Although naturalistic *metaethics* supports such a logical derivation or metaphysical reduction, naturalistic *ethics*

order elicit *disgust*. These authors explain moral disgust as a cultural development from a core disgust (with no moral dimension) that has the evolutionary function of protecting the mouth from contaminants. On this view, disgust responses were culturally extended to threats to health in general, and, in many religious cultures, to threats to the purity of the spirit. That is why disgust is the main emotion involved in taboos related to food and sex.[55] As a matter of fact, disgust occupies an important place in environmentalist discourse. Pollution provokes disgust. Moreover, the very use of the word *pollution* to describe contamination of nature is evocative, since this term originates with traditionalist ethics, where it was used to describe actions causing impurity. The ease with which the term was borrowed by environmental discourse to describe environmental contamination speaks for itself.[56] Also significant is the alleged connection between disgust and threats to health. Pollution is disgusting largely because we know it induces sickness (human or nonhuman). Rozin et al. remark that the discovery of germs by Pasteur has modified our disgust reactions. A similar change seems to be happening now owing to the discovery of the health threat posed by environmental pollution. Finally, the ideas of *purity* and *impurity* are also very common in environmental discourse. Many wilderness lovers seek purification in nature, and people tend to like nature unspoiled and pure.[57]

As noted earlier, Rozin, Haidt, and Prinz also suggest that *shame* is the main emotion elicited when we perceive ourselves as having transgressed natural order ethics. In the *Handbook of Emotion*, shame is differentiated from guilt (the self-conscious emotion associated with the ethics of autonomy) in that *guilt* is directed to the *action* performed and presses the transgressor to focus on how to repair the harm caused, whereas *shame* focuses more on the *agent* him or herself and makes him or her wish to hide and disappear. In other words, while guilt attaches moral wrongness to specific *acts*, shame reviles the global self of the person at fault.[58]

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need not do so. In my sentimentalist proposal, the fact that some action *is* harmful to ecosystems does not, by itself, imply that we *ought* to avoid it. This obligation is implied *via* our negative emotional responses to the fact that ecosystems are harmed. Therefore, the naturalistic ecocentrism I am proposing is safe from the naturalistic fallacy charge.

[55] Paul Rozin, Jonathan Haidt, and Clark R. McCauley, "Disgust," in *Handbook of Emotions* (New York: Guilford Press, 2008), pp. 757–76.

[56] The 1913 version of *Webster's Revised Unabridged Dictionary* defines "to pollute" as: "To make foul, impure, or unclean; to defile; to taint; to soil; to desecrate; — used of physical or moral defilement. . . . To violate sexually; to debauch; to dishonor. . . . (Jewish Law) To render ceremonially unclean; to disqualify or unfit for sacred use or service, or for social intercourse." Synonyms given for this verb are: "To defile; soil; contaminate; corrupt; taint; vitiate; debauch; dishonor; ravish." See the entry for "pollute" in Noah Porter, ed., *Webster's Revised Unabridged Dictionary* (Springfield, Mass.: G. and C. Merriam Co., 1913), available online at http://machaut.uchicago.edu/websters.

[57] A study of people's judgment of naturalness showed that *natural* follows the principles of purity and contagion according to which adding just a small amount of a perceived impure substance to a perceived pure one is sufficient to reduce its perceived purity significantly. See Paul Rozin, "The Meaning of 'Natural': Process More Important than Content," *Psychological Science: A Journal of the American Psychological Society* 16, no. 8 (2005): 652–58.

[58] Michael Lewis, "Self-Conscious Emotions: Embarrassment, Pride, Shame, and Guilt," in *Handbook of Emotions* (New York: Guilford Press, 2008), p. 748.

Reflections on our species' responsibility for the current global environmental crisis have led many environmental philosophers to target the global spirit of Western culture as morally faulty. They insist that the point is not to find specific technological fixes to localized environmental problems, but to engage in a profound questioning of our whole view of ourselves and our place in the world. Such a way of thinking resonates well with the above depiction of shame as being directed to the global self of the agent (here Western society) rather than to some of her specific mistakes. These philosophers express a sense of shame at what modern humanity has become, not mere guilt about some of its particular ecological transgressions. Shame seems to be the main emotion involved in Callicott's discussion of what is morally wrong in the current anthropogenic mass species extinction. Commenting on what, as he notes, "many people, I included, intuitively regard as the most morally reprehensible environmental thing going on today," he asks rhetorically:

> Does being the first biological agent of a geologically significant mass extinction event in the 3.5-billion-year tenure of life on Planet Earth morally become us *Homo sapiens*? Doesn't that make a mockery of the self-congratulatory species epithet: the sapient, the wise species of the genus *Homo*?[59]

Such a gibe at humanity's overweening self-satisfaction seems to suggest a deep sense of shame about ourselves.

As I noted in the beginning, in previous formulations of the CAD model, no *other-sensitive* emotion has been explicitly associated with the domain of the natural order. However, Haidt has drawn a connection between the emotion of *awe* and the ethics of divinity, and I would like to build on this association to suggest that *awe* and its cousin, *wonder,* are the *other-sensitive* emotions felt toward nature and/or the divinities in this ethical domain.[60] This suggestion gains credence from an empirical study of *awe* by Shiota et al.,[61] which supports four conclusions:

(1) Awe is elicited by information-rich stimuli;
(2) Awe leads awe-prone people to revise their mental representation of the world;
(3) Awe is related to a sense of smallness of the self and the presence of a reality larger than the self;
(4) Awe increases one's sense of the self as part of a greater whole.

These four characteristics of *awe* make it perfectly suitable for the CAD model's third domain (and this is true whether the emphasis is put on immaterial divinity or on nature). With respect to (1), both a divinity and nature as a whole are information-

[59] Callicott, *Beyond the Land Ethic*, p. 136.
[60] See Haidt, *The Happiness Hypothesis*, pp. 200–06.
[61] Michelle N. Shiota, Dacher Keltner, and Amanda Mossman, "The Nature of Awe: Elicitors, Appraisals, and Effects on Self-Concept," *Cognition and Emotion* 21, no. 5 (2007): 944–63.

rich objects of thought which defy our understanding. With respect to (2), both are also very often associated with epiphanies and intense moments of profound intuitive comprehension.[62] With respect to (3) and (4), a sense of smallness of the self and belonging to a greater whole is surely an important ingredient of both religious imagination and ecological consciousness (and can reflect the part-whole character of our relationship with ecological wholes). That this sentiment plays a role in eliciting sentiments of care and respect for nature is confirmed by a recent empirical study in environmental psychology according to which almost all of the respondents who said they believe in nature's intrinsic value "also spoke passionately of moments in which they experienced feelings of awe and wonderment inspired by aspects of nature."[63]

Awe-related terms are also frequently used by environmental ethicists, even if they do not explicitly attempt to ground their ethics in this sentiment. For example, Leopold says that the Darwinian discovery that we partake in a long evolution of species should have given us "a sense of wonder over the magnitude and duration of the biotic enterprise."[64] Similarly, Rolston describes experiences in nature as "rich experiences . . . perhaps of awe, mystery, vastness, aesthetic beauty" in which we "gain a sense of proportion, place, identity; we are humbled in some ways, exalted in others."[65] Likewise, Callicott speaks of the ecocentric stance of "tribal peoples of the past" where "other life forms . . . were respected as fellow players in a magnificent and awesome . . . drama of life,"[66] and he even seems to suggest that it is *wonder* that makes possible the holistic character of ecocentrism in Leopold's thought:

> Ignoring the more collective or holistic object of the feeling of *wonder*—the whole biotic enterprise, its magnitude and duration—to which Leopold refers in his informal derivation of the moral implications of the theory of evolution, we are led beyond humanism and animal liberationism to what I have elsewhere labeled "the reverence-for-life ethic" [i.e., biocentrism]. But we have not yet reached "soils and waters."[67]

It is interesting to note too that in his criticism of naturalistic ethics, nineteenth-century liberal philosopher J. S. Mill saw "the astonishment, rising into awe, which

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[62] Such experiences in relation to nature are well described by romantic environmentalists such as Thoreau and Muir, but also by more scientifically inclined ones. Aldo Leopold's flash of insight when seeing the green fire in the eyes of the wolf in "Thinking like a Mountain" is clearly an instance of such experience. Also, Bryan Norton's discussion of the *transformative* value of biodiversity points to this same epiphanic power of nature. See Leopold, *A Sand County Almanac*, p. 130; Bryan G. Norton, *Why Preserve Natural Variety?* (Princeton: Princeton University Press, 1987), chap. 10.

[63] W. F. Butler and T. G. Acott, "An Inquiry Concerning the Acceptance of Intrinsic Value Theories of Nature," *Environmental Values* 16, no. 2 (2007): 156.

[64] Leopold, *A Sand County Almanac*, p. 109.

[65] Holmes Rolston, III, *Philosophy Gone Wild: Environmental Ethics* (Buffalo, N.Y.: Prometheus Books, 1989), p. 121.

[66] Callicott, *In Defense of the Land Ethic*, p. 33.

[67] Ibid., pp. 125–26.

is inspired . . . by any of the greater natural phenomena" as the driving force behind people's inclination to think that humans must conform to nature.[68]

The idea that *awe* and *wonder* are what ties together ecological *facts* and environmental *values* has also been advanced more explicitly. In a recent essay on Rachel Carson, Kathleen Dean Moore explores the ethical role of wonder:

> Some philosophers and scientists would have us believe that they are separable worlds, the "is" and the "ought." But I believe the two worlds come together in a sense of wonder. The same impulse that says, this is wonderful, is the impulse that says, this must continue.[69]

In the same way, Mary Midgley identifies *awe* and *wonder* as the emotions involved in our acknowledgement of the intrinsic value of nature.[70] Taken together, these observations strongly suggest that when Callicott points to a "passion which is actuated by the contemplation of the complexity, diversity, integrity and stability of the community,"[71] the passion referred to is more plausibly *awe* than *patriotism*, *group pride*, or *sympathy*, the emotions belonging to Shweder's two other ethical domains.

CONCLUSION

I have used Shweder's CAD model and some related empirical research in moral psychology to bring insight to the debate around Callicott and the moral psychology of ecocentrism. I began by showing that the domains of *autonomy* and *community*, and their related emotions, *sympathy* and *group pride* are not a good fit with the holistic and impersonal nature of ecological wholes. I then argued that, contrary to *autonomy* and *community*, the *natural order* domain offers good prospects for ecocentrism, in part because, by definition, it allows for nature to be morally considerable *qua* nature, but also because it helps connect ecocentrism with an ingrained component of human moral sensibility: ethical naturalism. Doing so allowed me to identify *disgust*, *shame,* and *awe* as emotions that should play a capital role in environmental sensibility, a conjecture that seems to find confirmation in both scholarly and informal environmental discourse. Of course, what I presented here is only a sketch, and not a complete formulation or a conclusive defense of a naturalistic ecocentrism. More attention should be paid to the relationship between ecocentrism and the valuation of naturalness and to how *disgust, shame,* and *awe* can be valuing attitudes that are ethically relevant. I hope that I have nevertheless succeeded in setting out the lineaments of a new approach to embedding ecocentrism in our ethical sensibility.

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[68] Although he dismissed it as "natural prejudices, being grounded on feeling." See Mill, *Nature, the Utility of Religion, and Theism*, p. 26.

[69] Kathleen Dean Moore, "The Truth of the Barnacles: Rachel Carson and the Moral Significance of Wonder," *Environmental Ethics* 27 (2005): 265–77.

[70] Mary Midgley, *The Essential Mary Midgley*, ed. David Midgley (London and New York: Routledge, 2005), pp. 362–64.

[71] Callicott, *In Defense of the Land Ethic*, p. 126.