

The Interrelationship of Ecological Science and Environmental Ethics*

Don E. Marietta, Jr.**

A recent trend among environmentalists (e.g., Aldo Leopold) of basing ethical norms for land use, resource management, and conservation on ecological principles such as homeostasis is examined, and a way to justify such an ethical approach through analysis of moral judgment is explored. Issues such as the *is/ought* impasse, the connection between value judgments and reasons for acting, and the question of whether moral judgments are definitive and categorical are treated as they relate to an ecological ethic, i.e., an environmental ethic grounded in ecological science. I argue that such an ethic is in such regards as sound as more traditional approaches.

I

Only recently have a few philosophers written on environmental ethics and attempted to clarify the grounds on which such an ethic could be based. These writers have for the most part applied traditional approaches to questions about our treatment of the environment. For example, William T. Blackstone has based environmental concern on the traditional principles of justice and utility,¹ Thomas McGinn has appealed to “humanistic moral grounds” to support responsibility toward our natural surroundings,² and John Passmore has interpreted damage to ecosystems as injury to persons, one of the primary moral offenses in traditional moral teaching. Passmore argues that conventional morality is sufficient to justify ecological concern. What is needed, he holds, “is not so much a ‘new ethic’ as a more general adherence to a perfectly familiar ethic.”³

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**Department of Philosophy, Florida Atlantic University, Boca Raton, FL 33432. Marietta’s main research interest is the phenomenology of ethical judgment. He has written articles on environmentalism for *Zygon* and *Religious Humanism* and is locally active in the Audubon Society and Sierra Club.

¹ William T. Blackstone, “Ethics and Ecology,” *Southern Journal of Philosophy* 2 (1973): 55–71.

² Thomas McGinn, “Ecology and Ethics,” *International Philosophical Quarterly* 14 (1974): 149–60.

³ John Passmore, *Man’s Responsibility for Nature: Ecological Problems and Western Traditions* (New York: Charles Scribner’s Sons, 1974), pp. 186f.

In an article written in 1975, Holmes Rolston, III recognizes the possibility of a new approach to environmental ethics.⁴ He distinguishes between the application of traditional ethical principles to ecological matters and recent attempts to derive ethical principles from ecology. In other words, the older approach applies established ethical norms to environmental questions while the newer approach derives ethical norms from such ecological principles as homeostasis, negative entropy, and a balanced order in nature.

Rolston cites as an example of the earlier approach Paul Sears' paper, "The Steady State: Physical Law and Moral Choice."⁵ Sears considers scientific knowledge to be an "invaluable guide," "relevant to making value judgments," but "values are the business of the humanities." The steady-state principle shows what is necessary for human survival "assuming that is our wish. . . ." Here appeal is made to a more ultimate value than homeostasis, i.e., human survival. As Rolston schematizes this, the ecological law (the steady-state principle) supports a proximate moral *ought* (preserve human life).

Thomas B. Colwell, Jr.'s paper, "The Balance of Nature: A Ground for Human Values,"⁶ is cited by Rolston as tending in the direction of deriving an ethic from ecology. Colwell sees the balance of nature as "an objective normative model which can be utilized as a ground of human value." Whatever values we do develop must be consistent with the balance of nature, which indicates "a naturally defined boundary."

Rolston cites Aldo Leopold's widely reprinted essay, "The Land Ethic,"⁷ as an example of the derivation of an ethic from ecological principles. Leopold considers land to be more than soil. It is a biotic pyramid of interdependent life forms, including man. A land ethic requires the maintenance of the integrity and dynamic stability of this biotic community. As Rolston schematizes Leopold's ethic, from the ecological law (recycling preserves the ecosystem) is derived the proximate moral law (you ought to recycle). The antecedent moral law (you ought to preserve the integrity of the ecosystem) is based on the value of a balanced ecosystem. Rolston says that in Leopold's ethics "we have a feedback from ecological science which, prior to any effect on the proximate moral oughts, informs the antecedent ought. There is a valuational element intrinsically related to the concepts utilized in ecological description."⁸

⁴ Holmes Rolston, III, "Is There an Ecological Ethic?" *Ethics* 85 (1975): 93-109.

⁵ Paul B. Sears, "The Steady State: Physical Law and Moral Choice," in Paul Shepard and Daniel McKinley, eds., *The Subversive Science* (Boston: Houghton Mifflin Co., 1969), pp. 395-401.

⁶ Thomas B. Colwell, Jr., "The Balance of Nature: A Ground for Human Values," *Main Currents in Modern Thought* 26 (1969): 46-52.

⁷ Aldo Leopold, "The Land Ethic," in *A Sand County Almanac* (London, Oxford, and New York: Oxford University Press, 1949), pp. 201-18.

⁸ Rolston, "Ecological Ethic," p. 99. Rolston says that Leopold's antecedent duty to preserve beauty and integrity are "high level," if not analytic. It is not arguable and without theoretic content.

Rolston's own attitude toward such an ecologically based ethics recognizes the danger and difficulties of moving into a new ethic, but he feels its great appeal. He says, ". . . it has my vote to be so if it can."⁹ His position is further developed in a recent article in this journal in which he distinguishes several positive senses in which persons can and ought to follow nature.¹⁰

Some other philosophers and scientists seem to have decided that there can be an environmental ethic based on ecology. From the perspective of philosophy, E. M. Adams' views ecological thought as normative. The world, he says, has a "normative structure," with an objective value structure in the nature of things.¹¹ A scientist, R. W. Sperry, sees science becoming a source and arbiter of values and belief systems at the highest level. "The grand design of nature" is intrinsically good. It is right to preserve, wrong to destroy it.¹² Ian McHarg, a noted landscape architect and environmentalist, believes there is an intrinsic value system discoverable in the character and direction of biological evolution. Fitness, as seen in stability, diversity, complexity, and interdependency, along with negative entropy, is the measure of evolutionary success.¹³

In this paper I will try to clarify in principle the way in which ecological science informs and supports moral obligation and attempt to meet objections to basing environmental ethics on ecological concepts. I will use the term *ecological ethics* to refer to environmental ethics based on ecological science.

I will not attempt to give a detailed description of an ecological ethic. Such an ethic has not been developed in detail, but the outline of it is suggested by Leopold, McHarg, and others. The basic concept behind an ecological ethic is that morally acceptable treatment of the environment is that which does not upset the integrity of the ecosystem as it is seen in a diversity of life forms existing in a dynamic and complex but stable interdependency. The integrity of the ecosystem is held to be a dynamic homeostasis which can be comprehended through ecological science. Ethical treatment of the environment requires that human beings not disturb this homeostasis, but rather incorporate human activities into it, as McHarg seeks to do in his style of landscaping. Maintenance of this dynamic homeostasis is the goal of Leopold's land ethic.

⁹ *Ibid.*, p. 109.

¹⁰ Holmes Rolston, III, "Can and Ought We to Follow Nature?" *Environmental Ethics* 1 (1979): 7-30.

¹¹ E. M. Adams, "Ecology and Value Theory," *Southern Journal of Philosophy* 10 (1972): 3-6.

¹² R. W. Sperry, "Science and the Problem of Values," *Zygon* 9 (1974): 7-21.

¹³ Ian McHarg, "Values, Process, and Form," in Robert Disch, ed., *The Ecological Conscience* (Englewood Cliffs, N.J.: Prentice-Hall, 1970), pp. 21-36, from *The Fitness of Man's Environment*, Smithsonian Annual II (Washington, D.C.: Smithsonian Institution Press, 1968), pp. 207-27.

The difference between the application of more traditional ethical systems, such as utilitarianism, to environmental issues and this new ethical approach based on ecology can be seen most sharply in their different approaches to environmental action which has no obvious benefit to human beings or to actions which might even be contrary to some (usually economic) interests of human beings. The claim that we ought to curtail land development to preserve species of plants and animals which are not of demonstrable value to human life is one such issue. Setting aside wilderness which few people will ever see, curtailing the construction of roads, airports, or dams to preserve endangered species and natural features, and limiting the use of animals in research are examples of conduct which might be more strongly undergirded by an ecological ethic than by a traditional approach. My present concern is not with specific applications of this ethic, but with the more general question of the relation between ecological science and ethical obligation.

II

Anyone familiar with contemporary philosophical ethics will realize immediately a problem with any attempt to base ethics on factual description of the world. This difficulty has been variously described as the logical gap between *is* and *ought* and the fact/value dichotomy. These are separate logical problems, but both these ways of interpreting the problem of justifying an ethical position on the basis of factual data present a challenge to the ethical position we are examining.

In his criticism of three attempts to resolve the *is/ought* impasse, Alan Gewirth characterizes all three as *internal models* in which the factual description includes the *ought* within it.¹⁴ These are Max Black's approach in terms of means and ends, John Searles' based on institutional facts, and Philippa Foot's relating human good and ethical obligation. Gewirth's comments on these attempts to resolve the impasse can be extended to our present study because the ecological ethic can also be classified as an internal model, with the valuational element already implicit in the factual description. He says the three attempts are circular in that they assume certain major premises regarding value or what one ought to do. Thus they do not derive *ought* from *is*. The *ought*, he holds, still needs justification. Does an ecologically derived ethic fall before the same criticism? Does it derive an *ought* by a circular argument?

Notice that the ethic we are examining need not really claim to *derive* an *ought* from purely factual descriptions. As Blackstone has pointed out, the ecological terms used are value terms as well as descriptive ones. The way the

¹⁴ Alan Gewirth, "The 'Is-Ought' Problem Resolved," *Proceedings and Addresses of the American Philosophical Association* 48 (1973-74): 34-61.

world is seen, and the way man is seen as part of the world, puts value almost at once into the basic descriptions. Colwell notes a difference in derivations of value from nature when we think in terms of *man-in-nature* rather than *man-and-nature*.¹⁵ The theme of man being defined ecologically is stressed by numbers of writers on environmental questions. Paul Shepard expresses this ecological thinking about man in several graphic metaphors. He says the human skin is "like a pond surface or a forest soil, not a shell so much as a delicate interpenetration." He says that "man did not arrive in the world as disembarking from a train in the city. He continues to arrive." He speaks of the world as "part of our own body,"¹⁶ a theme also used by Alan Watts, and one which can be strongly supported from the insights about the body in existential phenomenology, as in Sartre and, especially, Merleau-Ponty.

When man is defined ecologically as *man-in-nature*, the relation between fact and value is not so much circular as immediate. Rolston says of Leopold's approach that the *ought* is discovered simultaneously with the *is*. Rolston recognizes that the logic of this is "evasive."¹⁷ We need to examine it much more closely. Has the charge of deriving *ought* by a circular argument been answered? Can a relation between ecological principles and moral obligations be explained as something other than derivation? How can the fact/value and *is/ought* impasses be escaped?

III

First, let us examine the nature of these two impasses. As a logical difficulty, the problem lies in the logical relationship between statements, and so the impasse does not apply directly to moral insights and moral judgments as such. Moral judgments are seldom, if ever, simple deductions following the rules of statement logic, but this does not make them arbitrary and unfounded. Understanding actual moral judgments puts us into an area broader than deductive logic, an interface between logic and psychology.¹⁸ Examples of psychological studies of moral judgment which find a fusion of fact and value, of *is* and *ought*, can be found in the work of Abraham Maslow and the work of other researchers whom he cites.¹⁹ Of course, psychological data cannot solve logical problems, but psychological study can throw some light

¹⁵ Colwell, "Balance of Nature," p. 51.

¹⁶ Shepard and McKinley, *Subversive Science*, pp. 2-4.

¹⁷ Rolston, "Ecological Ethic," p. 101.

¹⁸ Several recent philosophers have been aware that perception of fact and value are not sharply distinguished. See Ray Lapley, *Value: A Cooperative Inquiry* (New York: Columbia University Press, 1949), pp. 167-89, and Nicholas Rescher, *Introduction to Value Theory* (Englewood Cliffs, N.J.: Prentice-Hall, 1969), pp. 10f.

¹⁹ Abraham H. Maslow, "Fusions of Facts and Values," *American Journal of Psychoanalysis* 23 (1963): 120-35.

on what actually occurs when people make moral judgments. Indirectly this supports an approach to ethics which conceives of moral judgment as broader than an exercise in deduction.²⁰ To be sure, descriptive statements do not logically entail prescriptive statements, but moral judgment is seldom so abstract a matter as arguing from descriptive premises to a prescriptive conclusion.

This observation can be strongly supported by the phenomenology of perception as developed by Husserl, Heidegger, Sartre, Merleau-Ponty, and others, but one does not need to accept a complete phenomenological approach to recognize the factors in perception on which my interpretation rests. I am basing my observations mainly on what is called the intentionality of consciousness, on the active role of consciousness in attending to objects and events and in constituting meaning in them as they are perceived in the world. To understand the point I am making, we must reject the notion that facts are perceived in bare objectivity (i.e., given by the world, impressed upon a passive mind) while values are only products of our subjective judgment (i.e., produced by the mind). Such a notion of brute, theory-free facts is an obsolete concept, no longer useful in science or the philosophy of science. Both factual and valuational observations of the world are constituted together by consciousness. We seldom perceive value-free states of affairs, and we never perceive facts unmediated by human consciousness. When we make purely descriptive *is* statements, these are abstracted from the world as experienced, the world as we live and participate in it. Even to accept a statement as a factual statement is to give it a sort of value (to make it a bearer of truth value) within a larger system of thought. We do not experience "brute facts," but we can abstract from the world as lived certain facts which are brute relative to a particular world view. An ethic founded upon ecology, since it is not derived abstractly from entailment relations between statements, does not deduce *ought* from *is*. It is rather a matter of recognizing the values embedded in our observations of the world, observations in which factual cognition and value cognition are fused, only to be separated by reflection. Rolston notices that in a primary ecological ethic "an 'ought' is not so much *derived* from an 'is' as discovered simultaneously with it," that the facts are not logically or chronologically prior to the value, but rather "the values seem to be there as soon as the facts are fully in."²¹ The later reflective separation of fact and value is not immediate in our seeing of the world, but is a second level interpretation of our seeing. Of course, these interpretations

²⁰ I am not concerned with intuitionist or emotivist approaches, but with interpretations of ethical decision which involve a close relation between ethical choices and factual information. Recent examples of such approaches are found in John Rawls, "Outline of a Decision Procedure for Ethics," *Philosophical Review* 66 (1957): 177-97, and in Maurice Mandelbaum, *The Phenomenology of Moral Experience* (Baltimore: Johns Hopkins Press, 1969), esp. chaps. 2 and 5.

²¹ Rolston, "Ecological Ethic," pp. 100f.

influence the way we will subsequently see the world, but seldom to the extent that we observe purely in terms of fact or purely in terms of value.

We may experience the fusion of fact and value when we consider such things as the interdependence of living organisms and their environment in an estuary. The more one realizes how many animal and vegetable life forms there are in the estuary and sees how this special environment enables this community to exist, the more one values it and finds it interesting, beautiful, health, good, and something-which-ought-to-be. I find this joined development of factual knowledge and value when people who have recently moved to Florida react to the Everglades. They are often disappointed at first, but as they learn more about this unique ecosystem, their appreciation of it grows with their knowledge. They do not infer from the facts which they learn that the Everglades is an exciting, beautiful, and valuable place. The realization of value *comes with* the facts.

Certain words used in ecological descriptions are the same words used in speaking of environmental values. Such words as *stability*, *diversity*, *unity*, *balance*, *integrity*, *order*, and *health* can be employed in strictly scientific, value-neutral ecological research papers, but they also show up in expressions of appreciation for the environment and in normative discourse. It does not seem coincidental that these words appear in the different contexts. Rather, the different uses of the same terms reflect the fusion of fact and value. Stability and diversity are both facts about a healthy ecosystem and values which we find in such a system.²²

Having taken ecological ethics out of the *is-implies-ought* frame of reference and placed it in an *is-with-ought* perception of the world, we have still not fully explained how we arrive at moral obligation. Peter Singer holds that what is usually debated as the *is/ought* problem is a three element matter involving first description, then value, then reasons for acting (*is* → value → *ought*).²³ We might schematize this as the relation between fact and value, and that between value and *ought*. Singer says the ethical descriptivists, e.g. Philippa Foot, have focused on the relationship between description and value, but have not justified a move from value to obligation, because value has been defined in terms of description. The prescriptivists (Singer uses the term *neutralist*), e.g., Richard M. Hare, can move from value to obligation because value is defined prescriptively in this approach, but it carries no factual content and is not justified by factual considerations. Singer seems to think that there is an unavoidable impasse here because value must be understood either in terms of factual description or prescriptively as containing an

²² I am indebted to Holmes Rolston, III for this observation about the words used in different ways of describing the environment.

²³ Peter Singer, "The Triviality of the Debate Over 'Is-Ought' and the Definition of 'Moral,'" *American Philosophical Quarterly* 10 (1973): 51-56.

imperative. “*X* has value” must be treated (1) as mere description, in which case it does not imply that one ought to act in certain ways toward *X*, or (2) as prescribing behavior toward *X*, in which case ascribing value to *X* does not describe *X* and cannot be based on factual considerations. Singer accuses philosophers who seek to combine the advantage of descriptivism (in giving a factually grounded justification for values) with the advantage of neutralism (in making moral principles by definition action guiding) of sliding from one definition of value to another.

Can an ethic based on ecology deal with value in such a way that it does not collapse into either descriptivism or prescriptivism (neutralism)? Can it do this without a thinly disguised slide, in short, an equivocation, in its definition of value? It seems to me that Singer’s strict separation of the two approaches to value is artificial. In actual moral experience they are not exclusively disjointed. Whether a value has been established by description or prescription, that value is action guiding. Our ecological ethic is closely related to descriptivism in that value is coincident with fact, or rather the value judgment is already present in the same consciousness of the world from which factual judgments can be made. The problem then is how to get reasons for acting or moral obligation from the value judgment. It seems that Singer is clearly correct in holding that it would be equivocal to employ the neutralist approach of making moral principles action demanding by definition. The connection between value judgments and obligation to act can be seen better in terms of the phenomenology of moral action. Rather than taking the neutralist position of holding that moral principles are action guiding by definition, I appeal to the role which these principles actually play in a decision to act one way rather than another. These principles affect the constitution of one’s life world and what appears to be called for in that world. Phenomenologically there is no gap between the good and the right. This is not because of definitions which figure in a logical deduction, but because principles do in fact influence conduct. When a person’s principles do not eventuate in appropriate conduct, we look for an explanation. Beliefs about what is morally desirable normally lead to a choice of actions. Valued states of affairs rank above nonvalued states. The most valued state is preferred above all others. There is no question any longer about what one should do. This does not, of course, guarantee that a person will act, but that is a matter of the degree of moral commitment, ability, or drive.

It would seem, however, that this approach fails to produce *oughts* which are definitive, one of the requirements given by Gewirth for successfully deriving obligation from fact.²⁴ In cases where two or more values can be satisfied only by mutually exclusive behaviors, the approach as delineated so far does not indicate which obligation takes precedence. It was shown that valuable

²⁴ Gewirth, “‘Is-Ought’ Problem,” p. 36.

states of affairs rank above nonvaluable states and are, therefore, regulative of conduct; but when several states of affairs are ranked above nonvalued states, how are the valued states to be ranked? Would it be a fatal flaw in ecological ethics if no *formal* criterion for making the distinction is available? Perhaps no formal criterion is needed in most cases because values, when perceived, do seem to be weighted. Some states are slightly valued, some highly valued, and some few are perceived as supremely valuable. Thomas McGinn gives one example of this weighting of values. He says that "by a kind of animal faith the instinctive judgment holds life to be more important than non-life."²⁵ We can discover other values that tend to be ranked as supremely valuable. A special value is placed on things that are irreplaceable, especially things of beauty. Values appreciated by large numbers of persons hold a high rank. Values supported by long-range considerations gain in rank. It might be pointed out that ideal utilitarianism is based on the high ranking of certain values, of which pleasure is only one.

A problem in making obligation definitive would appear only when equally ranked values cannot be secured by the same behavior. Every ethical system seems to run into this difficulty. Even contemporary formalism has no formal rules for resolving a conflict between two duties of perfect obligation, and rule utilitarianism seems to need some sort of "remainder rule."²⁶ An ecological ethic is probably no more vulnerable in this regard than traditional ethics. Ethical systems meet this difficulty by some workable (if not formal and logically explicit) device, and ecological ethics will have to adopt some such *ad hoc* device when the natural ranking incorporated in the experience of value fails to be definitive.

IV

I shall discuss one final problem in the way of an ecological ethic. In criticizing the three internal-model attempts to derive *ought* from *is*, Gewirth holds that they do not provide categorical obligations, which he considers a requirement for an adequate ethic.²⁷ Could not the same objection be raised against an ecological ethic? This requirement of providing categorical *oughts* is presented as a formal criterion in judging whether a proposed ethical system is morally adequate. Categorical obligations are absolute moral *oughts* which are not dependent on a person's interests or world view. They do not derive their meaning or their force from a particular context, as, for example, that provided by the findings of ecological science. Rather, they are universally binding on any rational person. Frankly, I see no way to make the

²⁵ McGinn, "Ecology and Ethics," p. 154.

²⁶ Richard B. Brandt, "Toward a Credible Form of Utilitarianism," in Hector-Neri Castaneda and George Nakhnikian, *Morality and the Language of Conduct* (Detroit: Wayne State University Press, 1963), pp. 133f.

²⁷ Gewirth, "'Is-Ought' Problem," p. 43.

obligations derived from ecology categorical in the sense required by Gewirth. Does this mean that we must abandon the attempt to find an ecological ethic? I believe not. Perhaps we can qualify Gewirth's requirement, and we need not do this in an *ad hoc* attempt to rescue a foundering ethical approach, but by way of clarifying what is a confused area of moral theory at large and not merely a problem for environmental ethics.

Philippa Foot, for instance, has recently objected to this supposed necessity of ethics requiring categorical obligations and has suggested instead an ethics of hypothetical imperatives.²⁸ Her proposals have been stoutly resisted by William Frankena²⁹ and others. This longstanding argument has roots in the past several centuries of moral philosophy, and, in its contemporary form, it goes back to the work of G. E. M. Anscombe.³⁰ I cannot survey this history here; rather I propose a way to resolve the issue at least to the extent of determining certain minimum requirements necessary for morality. I believe the issue is confused when stated in the terms *hypothetical* and *categorical*. To describe imperatives as hypothetical suggests that they are of an "if . . . then" form. "If you want *A*, do *B*." But this is not an adequate interpretation of serious moral imperatives as their nature is understood by those who enjoin them. Such *oughts* are not seen as being derived from contingent desires or goals, and so they are not hypothetical in the usual sense of the term. Rather they stand over and against the agent's desires and interests as binding upon him. They are closer to the form: "Because I believe (or know) *A*, I must do *B*." They have what we may call an overriding quality, not just in a psychological sense, but in the sense that rational consistency demands them.

This identifies that element about which moral theorists are concerned, and which they have mistakenly associated with a different sense of categoricalness. Obligations are overriding, and therefore meet one of the requirements for being moral *oughts*, when they are required by the world view of their advocates. But to require that moral obligation be categorical in the formal sense is to focus on another aspect of the concept of categorical, on a proposed requirement that obligations somehow be made independent of any world view, that they be dictated of abstract reason or be embedded in the essential nature of man. Numerous philosophers, of whom Kant was but one, have tried to develop an ethical system with obligations which any reasonable person would have to acknowledge regardless of his particular world view. While it would be gratifying to think that anyone rejecting our moral senti-

²⁸ Philippa Foot, "In Defence of the Hypothetical Imperative," *Philosophic Exchange* 1 (1971): 137-45; also, "Morality as a System of Hypothetical Imperatives," *Philosophical Review* 81 (1972): 303-16.

²⁹ William K. Frankena, "The Philosopher's Attack on Morality," *Philosophy* 49 (1974): 345-56.

³⁰ G. E. M. Anscombe, "Modern Moral Philosophy," *Philosophy* 33 (1958): 1-19.

ments was either irrational or subhuman, no one has yet made an adequate case for this, nor has a generally convincing case been made for making this absolute rationality a defining characteristic of morality. In the absence of this, we can content ourselves with the plausible argument that this overridingness of moral obligations described within a world view makes them sufficiently more than merely hypothetical so as to constitute genuine moral obligations. The person who learns of the dynamic homeostasis of an undisturbed ecosystem, and, along with this ecological knowledge, feels an obligation not to harm that system, is aware of a moral obligation. This obligation is not categorical in the sense which Gewirth considers necessary, nor is it hypothetical in the usual sense. So long as a person's world view incorporates the findings of ecological science, the obligation to preserve ecosystems is experienced as binding. In this respect, environmental ethics is in principle like other branches of ethics. What is different is the relevant aspects of a world view.

I suggest abandoning the terms *categorical* and *hypothetical* and rather viewing all moral obligations as contextual. (Gewirth uses the notion of context in claiming that Black, Searle, and Foot fail to derive *ought* from *is* because their obligations are not universally categorical. He refers to them as "only intracontextual," and says that a person may or may not commit himself to that particular context which requires the *ought* and makes it binding.³¹) Now if we consider moral obligations as contextual, we do acknowledge that they have no *absolute* justification, but they still derive an impressive meaning and imperative force (what we called their overridingness) from their relation to that world view which we accept. There are several advantages in taking this approach. First, we will not be in the difficult position of claiming the sort of rigorous justification for ethics which, after all, no system has been able to produce. Second, moral claims can be argued for and reasons given to support them relative to their several world views, and when the arguments exhaust all appeals to reason, the dispute can be clearly identified as a basic philosophical disagreement of world views and handled at this deeper level as such disagreements are dealt with. The naturalism/intuitionism conflict is put in proper perspective. Third, an ethical approach of this sort can, within a world view, give guidance to informed and well-intentioned persons, which is probably all we can reasonably expect of ethics. We expect too much when we ask an ethical system to adjudicate between world views.

Taking this approach does not mean an acceptance of whimsical and arbitrary ethics. We can still look critically at the larger context of a moral claim, including the world view within which it is appropriate. The acceptance of a world view and the behavior compatible with it will be relative in the sense that it is not required by abstract reason or an unchanging essence of man.

³¹ Gewirth, "'Is-Ought' Problem," p. 43.

Still, an ethical position, such as imperatives regarding treatment of the environment, can be justified. Such justification involves the question of the objective rightness, i.e., the actual effect for good or ill, of the conduct chosen by the agent, or approved by the moral critic of another person's actions. It also involves the matter of subjective rightness, i.e., the moral motivation and intention of the agent and the manner in which decision is made. Judgment on both questions must be made in the context of the judge's beliefs about the world, as I next show, and these factors apply whether one is deciding upon his own conduct or judging another's actions.

The objective rightness of a moral decision is often difficult to establish, for an element of uncertainty is usually unavoidable. Assessing the objective rightness of a principle of environmental ethics requires making an assessment of the ecological science on which it is based, along with taking account of any other relevant consideration. This is not a process by which one can arrive at dogmatic certainty. As Aristotle pointed out, ethics is not an exact science, and an educated person looks for no more precision than the subject matter warrants.³² Nevertheless, we do and must make judgments about the objective rightness of choices of actions; the fact that we may err does not justify our refraining from judgment. When we compare world views and conduct compatible with those views, choosing some and rejecting others, we do have available widely accepted critical methods for doing this. Our judgments do not need to be treated as mere matters of taste. Of course, we will be in doubt at times, and we may be forced to amend our judgments from time to time. But this is the nature of rational ethics, and an ethical approach based on ecological science will be no more subject to this doubt and impermanence than are other sorts of ethics.

A moral choice is subjectively justified, and not arbitrary, in that no better alternative method for making ethical judgments has been irresponsibly rejected. The person who adopts an arbitrary or purely self-serving ethic is not justified, because he has chosen the poorest of several alternative ways to found an ethic. That person is responsible who attends to all relevant considerations, who is self-consistent, and who derives his ethic from the soundest philosophical approach he can find. He may on occasion come to conclusions which differ from those of another responsible person, but this does not invalidate the whole ethical enterprise. It simply means that each person can be called upon to explain how his judgment is supported. This will include explaining and defending his world view and showing how his ethical decision is related to it.

³² Aristotle *Nicomachean Ethics* 1.3.

V

The conclusion reached is that our obligation toward the environment can be grounded in ecological principles, and this grounding is as sound as that available to any other ethical approach. Of course, any particular ecological views incorporating such notions as a *balance of nature*, *negative entropy*, or *homeostasis* will have to be critically evaluated, as must any world view. For example, the principles from which Aldo Leopold, R. W. Sperry, Ian McHarg, and others derive an environmental ethic have been called into question. A recent article by Colleen D. Clements attacks the popular model of "a benign and balanced ecosystem" as a myth which is not supported by available observations.³³ Without evaluating her paper here, I acknowledge that more philosophical analysis needs to be directed to evaluation of the world view in question. There are significant disagreements about the best way to understand the environment and man's place in it.

In the meantime, while such a newer sort of environmental ethic is being worked out, we can still function ethically in respect to the environment on the basis of traditional moral concepts. I have not attempted to show that they are inadequate. I do not claim that traditional ethical approaches must be abandoned. An ecologically derived ethic may be able to do no more than supplement the older approaches, even in treating environmental issues. Whether the ecological approach has broader relevance, extending beyond environmental questions, requires more study. Possibly, values found in ecology will require certain life styles and thereby influence other than environmental decisions, but I am not ready to make such a claim at this time. If, however, it is possible for thoughtful citizens of the world to achieve a broad and scientifically sound consensus about human ecology, we can also base our environmental ethics on this understanding, and this may offer us some new ethical principles founded upon sensitive insight into the total sphere of life. If such principles can be realized, it behooves us to facilitate their discovery.

³³ Colleen D. Clements, "Stasis: The Unnatural Value," *Ethics* 86 (1976): 136-44.