Why Norton's Approach is Insufficient for Environmental Ethics

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There has been an ongoing debate about the best approach in environmental ethics. Bryan Norton believes that "weak anthropocentrism" will yield the best results for public policy, and that it is the most defensible position. In contrast, I have argued that an ecocentric, holistic position is required to deal with the urgent environmental problems that face us, and that position is complemented by the ecosystem approach and complex systems theory. I have called this approach "the ethics of integrity," and in this paper I show why this perspective suggests better solutions to difficult cases, for which "weak anthropocentrism" fails to provide an answer.

The environment is man's first right
We should not allow it to suffer blight
The air we breathe we must not poison
They who do should be sent to prison
Our streams must remain clean all season
Polluting them is clearly treason
The land is life for man and flora,
Fauna and all: should wear that aura,
Protected from the greed and folly
Of man and companies unholy.

—Ken Saro-Wiwa[1]

THE ECOLOGICAL POINT OF VIEW AND THE CANADIAN "FISH WARS"

On 10 March 1995, a story appeared on the front page of Canada's national newspaper, *The Globe and Mail:* "Four warning bursts of machine gun fire across the bow brought the Spanish trawler Estai to a halt after a four hour chase through the foggy Atlantic." The problem was overfishing beyond the two-hundred-mile limit in the Grand Banks off the coast of Newfoundland. When

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[1] Ken Saro-Wiwa, "Right Livelihood Award Acceptance Speech," Stockholm, Sweden, 9 December 1994.

increased national quotas and the use of complex modern fishing technologies internationally, reduced the availability of fish in the North Atlantic,[2] the Spanish fishers pushed their trawlers beyond the legal two-hundred mile limit, thus coming too close to the already depleted waters surrounding the Canadian mainland. Use of gunpowder in defense of fish stocks is almost unprecedented in Canadian history, but Newfoundland's premier, Clyde Wells, explained his action. He argued that the Canadians in many fishing villages have not only watched their communities slowly die as European vessels fished large amounts of cod and flounder from 1988 to 1993 and caused the disappearance of the cod in 1992, but they have also seen Spanish vessels take as much as fifty thousand tons of turbot over the last three years, in spite of their own 16,300-ton limit (and the Spaniards' own legal limit of only 3,400 tons).

Is this simply a controversy between two nations, a dispute to be settled through dialogue, diplomacy, and negotiations? This view of the problem misses the major point of the controversy, captured in the wording on a placard waved in a Newfoundland fishing village by one of the six-thousand demonstrators against Spain: "This is a World Fishery, not a Spanish One."[3] The "turbot battle" was eventually settled through an international deal between Canadian fisheries' minister Brian Tobin and the European Community's representatives. It was clearly a *world* issue in the eyes of the Newfoundland fishers, who had already seen the results of the collapse of the cod stocks and the resulting disappearance of their economy and traditional lifestyles. Canada and all other countries must learn to curb their overall economic goals, and even reduce them from previous years' expectations, if they are not prepared to face complete extinctions not only of specific fish, but also of traditional lifestyles.

The quest for increased profits based on increased quotas, even if they are sought to support traditional lifestyles, is not necessarily desirable. For instance, although natives in the Amazon claim to be living harmoniously with nature (and they are indeed less disruptive to natural processes than commercially exploitive foreign practices in the area), their goals and those of conservation biology do not necessarily mesh.[4] The problem is that native hunters, for instance, may pursue a species to extinction and then move on to exploit another "resource" beyond its capacity to recover.

From the scientific perspective of the ecosystem approach (and of complex systems theory), there is no guaranteed "safe," commercial, sustainable catch,

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[2] Carl Walters, *Fish on the Line* (Vancouver: David Suzuki Corporation and the Fisheries Centre, University of British Columbia, 1995).

[3] *The Globe and Mail,* Toronto, Canada, 13 March 1995.

[4] Kent H. Redford and Allyn M. Stearman, "Forest Dwelling Native Amazonians and the Conservation of Biodiversity: Interests in Common or in Collision?" *Conservation Biology* 7, no. 2 (1993): 248–55

but there is *also* no clear linear causality showing the connection between the overfishing of resources such as cod and their extinction.[5] Such factors as climatic changes, increases in ultraviolet rays because of ozone depletion, increased pollution and dumping in the oceans, and toxic rain, may all be contributing causes. Hence, it is not acceptable to argue that because some practice was followed in past years, therefore, on the basis of earlier quotas, the *same* guidelines should be followed in the future and that continued increases in fishing quotas cannot be supported on the available scientific evidence. For instance, new fishing technologies may need to be abandoned, such as gill nets, which Carl Walters calls "one of the more destructive and wasteful fishing gears ever invented."[6]

Further, neither Canada nor any other country can simply focus on the economic aspects of a natural "resource" as its only value, the value of natural ecosystems far transcends this narrow view; plants and animals all play important parts in the ecosystems in which they live and they fulfill specific functions that are no longer present if they are extinct, or even if their numbers are not sufficient to support their ecosystemic function. For instance, in a discussion of ecosystems and sustainability in fisheries, Hammer et al. state, "Whereas species diversity is a property at the population level, the *functional diversity,* what the organisms do and the variety of responses to environmental changes, especially the diverse space and time scales to which organisms react to each other and the environment, is a *property of the ecosystem*."[7] To limit oneself to dealing with the areas in which *our* interests lie (e.g., areas of ecosystem health, viewed and treated as instrumentally valuable) is to ignore the larger picture and the life-support and benchmark functions of the wild, in landscapes of appropriate geographical size (biomes). Hence, the primary concern must focus on the wild (core areas), even when sustainability is the question at issue. Sustainability is here understood as undiminished function capacity, supported by the undiminished structural systems of wild areas of appropriate size.[8] To put it plainly, sustainable agriculture, sustainable forestry, and sustainable fisheries make little sense unless sustainability of wild ecosystems is addressed first, at least in the long term anticipated, and in fact *required* by most North American and global regulations and treaties, all of which include future

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[5] Robert Ulanowicz, "Ecosystem Integrity: A Causal Necessity", in *Perspectives on Ecological Integrity,* ed. Laura Westra and John Lemons (Dordrecht: Kluwer Academic Publishers, 1995), pp. 77–87.

[6] Walters, *Fish on the Line,* pp. 50–52.

[7] Monica Hammer, Ann Mari Jansson, and Bengt-Owe Jansson, "Diversity, Change and Sustainability: Implications for Fisheries," *Ambio* 22, no. 2–3 (1993): 97–105.

[8] Laura Westra, *An Environmental Proposal for Ethics: The Principle of Integrity* (Lanham, Md.: Rowman and Littlefield, 1994); see Laura Westra "Ecosystem Integrity and Sustainability: The Foundational Value of the Wild," in Westra and Lemons, eds., *Perspectives on Ecological Integrity,* pp. 12–33.

generations in their reach. Some will argue that as we don't have a precise reference point or base line for ecosystem integrity, we don't need anything to which we ought "to conform" or "to return" environmentally. But we don't need to know the specific composition or the detailed structure of a landscape in order to know when it no longer functions. Because of all-pervasive pollution and environmental degradation, we cannot be assured that any area is "as it should be," meaning that the changes that have occurred (including biodiversity losses) are purely due to its natural trajectory and to nonanthropogenic stresses. But we do know when a system has collapsed, that is, when it has lost all its natural capacity to function appropriately for its scale and geographical location. Reed Noss writes:

> Ecosystems remain viable only when their processes-nutrient cycling, energy flow, hydrology, disturbance-recovery regimes, predator-prey dynamics, etc.—continue to operate within their natural range of variability. . . . Furthermore, the integrity of aquatic ecosystems is directly linked to the condition of the landscape around them.[9]

In a general sense, neither specific systemic processes nor "predator/prey dynamics" can remain unaffected when either naturally occurring predators or prey are eliminated from a system. We also know that when whole areas, or whole countries, are so affected, they no longer function in support of humans.

Because ecological sustainability must remain primary,[10] I argue that (1) as many others have noted, current evaluations of technology (and of the business enterprises that depend on these technologies), are insufficient for public policy if they are only based on cost-benefit analyses; and that (2) even the necessary introduction of traditional moral theories, and of respect for democratic institutions and practices, is not sufficient to acknowledge the required ecological component of public policy decisions, as the "fish wars" indicate, in spite of the free, informed citizen choices that prevailed at the time.

In the next section, I examine the limits of "economic evaluations" based purely on human preferences. I then turn to a major stumbling block one encounters when proposing a biocentric, holistic approach, that is, the belief that nonanthropocentric theories fail, when they are used in support of environmental choices. Some view all holistic theories as lacking, from both a philosophical and a practical point of view. I argue, instead, that they are superior on both theoretical and practical grounds, using an example that deals with natural systems and populations (the "fish wars" example), and that we need to go far beyond both economic and even traditional (intrahuman) moral evaluations, in order to achieve sound environmental policy.

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[9] Reed F. Noss, "What Should Endangered Ecosystems Mean to the Wildlands Project?" *Wild Earth* 5, no. 4: (1995–1996): 21.

[10] Robert Goodland, "Environmental Sustainability and the Power Sector-Part I: The Concept of Sustainability," *Impact Assessment* 12, no. 3 (1994): 276.

THE LIMITS OF ECONOMIC EVALUATION AND ANTHROPOCENTRISM

Although the use of firearms to protect the natural world is new to Canada until March 1995, illegal protests and even violence have occurred elsewhere. For example, in 1994, protesters from Canada and the United States made their way to British Columbia, threatened violence, and chained themselves to trees, to subvert corporate activities and prevent the logging of old-growth forests in Clayoquot Sound. In taking this action, protesters were appealing to international law and to regulative bodies beyond those of the countries involved in the dispute. This tactic was an unprecedented, comparable, for instance, to protests by native groups, whether in Canada or in the United States, intended to support the rights to certain lifestyles (and the beliefs that support them). I have argued this point in detail elsewhere.[11]

One wonders, however, whether an appeal to traditional, anthropocentric moral doctrines is sufficient not only to address, but also to prevent such problems from developing, in the face of increasing environmental disintegration and degradation, and mounting scarcity of "resources" as populations increase. Many have addressed the need to ensure that cost/benefit analyses and economic evaluations of technology are made to focus prominently on ethical considerations beyond aggregate utilities and majority preferences.[12] I believe that the anthropocentric/nonanthropocentric distinction presents a false dichotomy in several senses, and that it is no more than a red herring, advanced by those concerned with defending the present status quo. Accordingly, they are led to propose a somewhat modified, "greened" revamping of the same hazardous, uncritically accepted practices to which all life on Earth has been subjected, as I argue in the next section.

Utilities and preferences are normally understood (in philosophical and political theory) as reflecting the wishes, and maybe the (descriptively) perceived "good" of a society, as do appeals to rights, justice, fairness, and due process. The question, however, is whether ethical considerations based on moral doctrines designed primarily for intraspecific interaction, that is, designed to guide our interpersonal behavior, are in fact sufficient, as well as being clearly necessary to ensure that our activities conform to an inclusive and enlightened morality. Recent global change affecting our resource base everywhere *proves* the inadequacy of calculations that depend solely on economics, so that evaluations founded on moral doctrines and upholding both "natural" and

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[11] Laura Westra, "Environmental Racism and the First Nation People of Canada: Terrorism at Oka," in *Canadian Studies in Applied Ethics,* ed. W. Cragg and A. Wellington (Toronto: Broadview Press, 1997); see also J. Baird Callicott, *In Defense of the Land Ethic* (Albany: State of New York University Press, 1989), esp. "Traditional American Indian and Western European Attitudes toward Nature: An Overview," pp. 177–201.

[12] Mark Sagoff, *The Economy of the Earth: Philosophy, Law and the Environment* (Cambridge: Cambridge University Press, 1988).

"civil" rights, appear indeed mandatory. Would that approach have been sufficient in the case of the Newfoundland fishers and the North Atlantic fish stocks? The fishers' earlier arguments, even before the decline of the cod population, could have been supported from the standpoint of human ethics and anthropocentrism. They were concerned with (1) sustainable development (Newfoundland is probably the poorest province in Canada) and with increased financial security for themselves and their families; (2) aggregate utility, not for their "preference wants" but for their basic needs; (3) their local/national "visions" specific to the place they inhabited;[13] and (4) their democratic right to free choice.

Although their grounds appeared *prima facie* to be unimpeachable and could be defended not only from a moral but also from a legal point of view; thus, in our present worldwide environmental situation, all four points need reexamination in the light of what Don Scherer calls our "upstream/downstream" world.[14] The underlying notion of human rights is also questionable, in view of McGinn's argument about "technological maximality" and the hazards that approach engenders. The combination of (1) "absolute" human rights (that is, of human rights viewed as primary even when they support nonessential, nonbasic preferences), (2) greatly increased numbers of such "right-holders," and (3) the well-entrenched drive to newer/bigger and more, that is, to "technological maximality," jointly engenders threats that are not present in any separate individual action. As I showed in the previous section, Goodland argues for the primacy of ecological sustainability; McGinn proposes "contextualized" theories of rights.[15] Either of these positions could have been helpful in responding to the mounting environmental problems that eventually led to the Canadian "fish wars" since they both recommend that the scientific information be available to policy makers and the general public, and that the "rights" of fishers to increasing quotas and the access to more complex fishing technologies be jointly evaluated.[16]

While both these arguments focus primarily on human beings, they are anthropocentric in an enlightened and morally sensitive way. This sort of anthropocentrism (at least on the part of McGinn) may be close to what Bryan Norton calls "weak anthropocentrism."[17] However, Goodland's argument hinges also on the basic role of natural systems' integrity, in regard to general

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[13] Ibid.

[14] Donald Scherer and Thomas Attig, eds, *Upstream/Downstream* (Philadelphia: Temple University Press, 1990).

[15] Robert E. McGinn, "Technology, Demography, and The Anachronism of Traditional Rights," *Journal of Applied Philosophy* 11, no. 1 (1994): 57–70.

[16] Walters, *Fish on the Line*.

[17] Bryan G. Norton, "Why I am Not a Nonanthropocentrist: Callicott and the Failure of Monistic Inherentism" *Environmental Ethics* 17, no. 4 (1995): 341–58; see Bryan G. Norton, "Environmental Ethics and Weak Anthropocentrism," *Environmental Ethics* 6, no. 2 (1984): 131–48.

life support (for both humankind and nonhuman nature).[18] McGinn acknowledges the existence of the ecological impasse to which we are brought by present individualism and by preference-based, largely unrestricted choices, but he believes that it might be sufficient to shift the emphasis to *community* concerns, hence to contextualize present theories of rights.[19]

Could the communitarian emphasis have prevented the crash of the fisheries, which led to violence in the normally peaceful fishing industry? It seems that it would not have been enough. Returning for a moment to the arguments to which the fishers might have appealed, at least one of the strongest is already communitarian, for one of their concerns was the support of communitarian values and traditional lifestyles. Yet, in this typical case, even subordinating *individual* rights to aggregate community/national ones, was not enough, unless the "community" that would have been accepted as primary, could have been, minimally, the international global community or—as I argue in the next section—the community of life.

In contrast, neither the Canadian nor the Spanish fishing communities would have raised the question of other international community rights or the need to reexamine or contextualize their own, as McGinn suggests. Even Mark Sagoff's position, if adopted, might have been insufficient to prevent the violent conflict that arose.[20] He would have suggested that the Canadian government should have supported its *citizen* values, incorporating their local beliefs and practices, rather than the *consumer* (and *producer*) values of increased availability of reasonably priced fish and profit maximization. But Newfoundlanders are a proud people who love both their land and their traditional lifestyles. In their case, their continued dependence on successful local fisheries represents far more than either a consumer's or a producer's preference. It is instead the embodiment of a national, or specifically "place-based vision" of what a traditional "good life" should be. Therefore, one could argue that it was "citizen values," rather than consumer values, that motivated their continued quest for increased quotas for cod and eventually turbot.

The same argument could be applied to the Spanish fishermen and *their* "traditional" village values on the other side of the ocean. Thus, even if the motive of *all* fishermen were not purely economic, the problem of the commons would persist, or of the "common pool," as Eric Freyfogle puts it. He writes, "According to many economists, the solution to the tragedy of the common pool is to divide the common asset and distribute shares or parts to individual users."[21]

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[18] Robert Goodland, "Environmental Sustainability and the Power Sector-Part I: The Concept of Sustainability," *Impact Assessment* 12, no. 3 (1994): 275–304.

[19] Robert E. McGinn, "Technology, Demography, and the Anachronism of Traditional Rights," *Journal of Applied Philosophy* 11, no. 1 (1994): 57–70.

[20] Sagoff, *The Economy of the Earth*.

[21] Eric T. Freyfogle, *Justice and the Earth: Images for Our Planetary Survival* (New York: Free Press and Macmillan, 1993), p. 27.

Returning to the "fish wars," if we continued our present practices without restraints other than a different allocation of the quotas, and all the North Atlantic fish stocks crashed, we might be able to develop some alternative source of protein, but it would do nothing to restore the fishers' communities or lifestyles. Conversely, we might instead turn to aquaculture as a comparable source of food, and a socially adequate source of comparable employment. Nevertheless, aquaculture is also environmentally hazardous, as it releases nutrients and wastes into ecosystems, thus disrupting their natural processes. The introduction of transgenic fish also affects natural populations, thus biodiversity, and often releases antibiotics into the system and into the food chain.[22]

The basic problem for us anywhere, not just for Canadian fisheries, is sustainability. William Rees, for instance, proposes adopting an "ecological worldview," in contrast with the prevailing established "expansionist worldview," which represents "the dominant social paradigm."[23] As Leopold did before him, Rees recognizes that we are not independent of, and separate from, an "environment," but, as in Goodland's work, ecological sustainability is foundational, so that it makes perfectly good sense to abandon our present unsustainable and indefensible worldview. Rees and Wackernagel write, "By contrast, an ecological economic perspective would see the human economy as an inextricably integrated, completely contained, and wholly dependent subsystem of the ecosphere."[24]

This position is supported by Rees's research in the Vancouver-Lower Fraser Valley region of British Columbia, Canada, but can be easily generalized for all urban, affluent Northwest centers. His findings show that "assuming an average Canadian diet and current management practices," the local "regional population support(s) its consumers' lifestyles" by importing "the productive capacity of at least 23 times as much land as it occupies." To put this point in a more general way, "the ecological footprints of individual regions are much larger than the land areas they physically occupy."[25]

When we continue to import others' carrying capacity, we are "running an unaccounted ecological deficit," and "our populations are appropriating carrying capacity from elsewhere or from future generations."[26] The same can be

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[22] J. A. Hutchings and R. A. Myers, "What Can be Learned from the Collapse of a Renewable Resource? Atlantic Cod, *Gadus Morhua,* of Newfoundland, Labrador," *Canadian Journal of Fisheries and Aquatic Science* 51 (1994): 2126–46; see Hammer, Jansson, and Jansson, "Diversity, Change and Sustainability: Implications for Fisheries," and M. C. Beveridge, M. Lindsay, G. Ross, and L. A. Kelly, 1994. "Aquaculture and Biodiversity," *Ambio* 23, no. 8 (1994): 497–502.

[23] William E. Rees, and Mathis Wackernagel, *Our Ecological Footprint* (Gabriola Island, B.C.: New Society Publishers, 1996), p. 16.

[24] Ibid., p. 4.

[25] Ibid., pp. 14–16.

[26] Ibid., pp. 55–57.

said about "sinks" for our wastes: for both resource appropriation and waste disposal. Our approach in northwestern nations such as Canada has been one of neocolonialism with regard to less developed countries, and one of ruthless exploitation (through "environmental racism") toward minorities and the disempowered in our own countries.[27]

Crises could have been avoided only through policies and practices consistent with an "ecological worldview," one going beyond competing aggregate preferences of various human groups. In the next section, I discuss what such a worldview might require. I argue that the radical change called for by the current emergencies can only be supported through an ecocentric or biocentric viewpoint, whether or not our concern is primarily directed toward human beings.

What is required is a radically changed approach, starting from ecocentrism, and a major shift in burden of proof theories and standards. Robert Ulanowicz argues that, even in highly funded, uncontroversial research, such as research into cancer causes, a holistic approach would be far more fruitful than the present reductionist method, with an exclusive focus on genes or viruses.[28] Holism can make a large difference in issues concerned with the interface between humans and the environment. In addition, in accordance with an ecocentric perspective, all untried and potentially hazardous substances as "guilty" until proven "innocent" beyond a doubt. Even then, given the uncertainties endemic to the scientific method, the precautionary principle still needs to be applied.[29]

The shift in the burden of proof, here suggested, is already part of the language of the Great Lakes Water Quality Agreement, through its emphasis on "zero discharge," and on "sunset" and "sunrise" chemical controls.[30] These substances can be viewed minimally as not contributing to the natural evolutionary processes of ecosystems, thus as naturally inimical to the mandated respect for ecosystem integrity. In essence, I argue that an ecosystem can be said to possess integrity (I_a) when it is an "unmanaged" ecosystem, although not necessarily a pristine one. This aspect of integrity is the most significant one; it is the aspect that differentiates (I_a) from ecosystem health (I_b), which is compatible with support/manipulation instead.[31] Hence, exotic, potentially

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[27] Laura Westra and Peter Wenz, eds., *The Faces of Environmental Racism: The Global Equity Issues* (Lanham, Md.: Rowman and Littlefield, 1995).

[28] Robert Ulanowicz, *Ecology: The Ascendent Perspective* (New York: Columbia University Press, forthcoming).

[29] Donald A. Brown, "The Role of Law in Sustainable Development and Environmental Protection Decisionmaking," in John Lemons and Donald A. Brown, *Sustainable Development: Science, Ethics and Public Policy* (Dordrecht: Kluwer Academic Press, 1995), pp. 64–76.

[30] Thomas Muir and Anne Sudar, "Toxic Chemicals in the Great Lakes Basin Ecosystem," in *Science Advisory Board Report to the International Joint Commission* (Burlington, Ont.:Environmental Canada, 1987), p. 18.

[31] Laura Westra, "Ecosystem Integrity and Sustainability: The Foundational Value of the Wild,"

hazardous substances and processes are judged to be inappropriate, or "guilty," in order to prevent their introduction into natural systems. As McGinn argues, meaningful changes in our evaluation of technology cannot take place unless we are willing to question our assumptions about rights and the role of democracy.[32]

BEYOND THE ANTHROPOCENTRISM/ NONANTHROPOCENTRISM DEBATE

The conclusion reached in the previous section indicates that to ameliorate presently accepted technology-dependent lifestyles or redress present inequities, it is preferable to change our approach and accept the primacy of ecological integrity, as many national and international laws and regulations already do, at least in their language, rather than expect real change from "end-of-pipe" solutions. Insofar as ecocentrism is akin to deep ecology's platform, however, such a position is in direct conflict with a position such as Bryan Norton's: "As academics, spokespersons for deep ecology have been able to avoid adopting policies on difficult, real world cases such as elk destroying their wolf-free ranges, feral goats destroying indigenous vegetation on fragile lands, or park facilities overwhelmed by human visitors."[33]

To the contrary, a truly holistic position, such as the one supporting the primacy of integrity has clear-cut answers for all such questions, though not necessarily popular ones, as can be seen from our approach to the fish wars. In every case, when there is human interference giving rise to problems in the wild, it is not only acceptable but mandatory to interfere again to redress the difficulty, temporarily, and with the clear goal of withdrawing when the system's evolutionary path has been restored, according to the best scientific information available, and under the guidance of the precautionary principle.[34] The goal in the case mentioned is one of restoration, when the area affected is wild. That is to say, although the present goal is to restore natural function and systemic health, the ultimate goal is to withdraw all support and manipulation, so that some restored systems can return to a state of integrity, or of unmanaged evolutionary processes once again—hence, the present call for the establishment of marine fisheries reserves.[35]

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in Westra and Lemons, *Perspectives on Ecological Integrity,* pp. 12–13; Westra, *An Environmental Proposal for Ethics: The Principle of Integrity,* pp. 24–27, 41.

[32] McGinn, "Technology, Demography, and the Anachronism of Traditional Rights," pp. 57–70.

[33] Bryan G. Norton, *Toward Unity among Environmentalists* (New York: Oxford University Press, 1991), p. 222.

[34] Brown, "The Role of Law in Sustainable Development and Environmental Protection Decision-making," pp. 64–76.

[35] Donald Pauly, "Principles of Marine Ecology Applied to the Establishment of Marine Fisheries Reserves," 125th Meeting of the American Fishery Society, Tampa, Florida, 1995.

This approach does not mean that we must discontinue altogether human-centered practices everywhere. It simply indicates that we must recognize the necessity of (1) leaving appropriately sized areas on both land and seas, wild and unmanipulated (the sizes required need to be established in dialogue with conservation biology and aquatic ecosystem science); and of (2) limiting our intrusive practices upon the rest of the Earth to whatever will not have an adverse impact on integrity/core/wild areas.[36] Conservation biology, entomology, ecology, and biology all contribute to the necessary dialogue to establish the scales appropriate to either one or the other of these approaches in different landscapes, globally. As I have argued elsewhere,[37] the ultimate goal of the principle of integrity is to protect and restore both structural and functional aspects of ecological integrity, and doing so requires that large areas be kept wild.[38] It also demands that we be prepared to "embrace the challenge of, complexity," as Kay and Schneider argue, that one be willing to abandon the misconception that all systems can and should be managed.[39] Instead, management and controls should be confined to human individuals and societies, except when needed briefly for restoration purposes in core and buffer areas, in natural landscapes.

By way of contrast, I noted in the case of Canadian fisheries the dismal failure of the presumption to manage nature. Educated guesses about how far we can push the safety factor with our quotas, particularly when these are manipulated by economic and political interests (both of which are notoriously short-sighted), and supported by uneducated democratic preferences and "values," are simply insufficient to protect either the fish species or the local survival needs of affected humans. Norton has argued that "Long-sighted anthropocentrists and ecocentrists tend to adopt more and more similar policies as scientific evidence is gathered because both value systems—and several others as well—point toward the common-denominator objective of protecting ecological contexts."[40]

Norton is not alone in this belief. Gary Varner, for instance, appears to concur.[41] But in his effort to continue his ongoing campaign against the supporters of intrinsic natural value, Norton appeals to two concepts, which, as I show, are

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[36] Westra, *An Environmental Proposal for Ethics;* Westra, "Ecosystem Integrity and Sustainability: The Foundational Value of the Wild."

[37] Westra, *An Environmental Proposal for Ethics*.

[38] Reed F. Noss, "The Wildlands Project: Land Conservation Strategy," *Wild Earth,* special issue (1992): 10-25; Reed F. Noss and A. Y. Cooperrider, *Saving Nature's Legacy* (Washington, D.C.: Island Press, 1994).

[39] James J. Kay and E. Schneider, "The Challenge of the Ecosystem Approach," *Alternatives* 20, no. 3 (1994): 1-6; reprinted Westra and Lemons, *Perspectives on Integrity,* pp. 49–59.

[40] Norton, *Toward Unity among Environmentalists,* p. 246.

[41] Gary E. Varner, "Can Animal Right Activists be Environmentalists?" in *People, Penguins and Plastic Trees,* ed. Christina Pierce and Donald VandeVeer, 2d ed. (Belmont, Calif.: Wadsworth Publishing Co., 1995): 254–73.

also problematic, either practically or theoretically. Norton refers to a rare, if not nonexistent ethic—that of the "long-sighted anthropocentrist." Where does one find such a position? Not among politicians and policy makers, to be sure: the hard pressure of political correctness with regard to other issues tends to relegate green concerns to the back burner, although some examples can be cited, such as the Endangered Species Act and some policies on radwaste disposal, both of which take a "long-sighted" approach. What about large multinational corporations? These are somewhat vulnerable to public opinion, but even more vulnerable to shareholders' displeasure and internal and external competition. It is hard to find much "long-sightedness" in those boardrooms, beyond public relations campaigns to calm the public's "irrationality" and their fears. If one were to encounter that *rara avis,* "long-sighted anthropocentrists," how would one distinguish them from their ecocentrist counterpart?

Norton describes their salient characteristics: they would appreciate "scientific evidence," and thus be disposed to share with the ecocentrist the "objective of protecting ecological contexts."[42] But this characterization is only trivially true. That is, they would be willing to follow that path if and only if they were convinced that no other path would support their interests equally well. Such beliefs and sentiments are indeed shared by politicians, industry giants, and many others; they are easy to voice because they remain vague and unspecific. Serious questions can be raised: for instance, *how far* would the weak/long-sighted anthropocentrist go to protect such systems? Another question is, for *what* would they understand that protection to be necessary? For the weak/long-sighted anthropocentrist, continued exploitation, variously defined, might be a convincing candidate. However, given science's imprecision and the "challenge of complexity," and thus the impossibility of finding a guaranteed point of "safe" pollution/exploitation, particularly in the face of cumulative and synergistic stresses, how easy it would be to convince the weak/long-sighted anthropocentrist that his or her interest would be amply served by an ecologically untenable position? Newfoundand's fishers had every interest in the continued thriving of the fish species upon which they depended, in a far more immediate and vital way than any politician; yet they could not make the connection, even in their own interest.

One could object that scientific uncertainty would also work against the ecocentrist's approach. The differences between the two approaches are significant and they can be captured in two main points. First, the ecocentrists start from the primacy and value of wilderness; hence, they begin by questioning any intrusive or risky practices and shift the burden of proof to the would-be risk imposers. Their criteria becomes progressively more stringent when the proposed technology and economic activity is intended for human settlements and cities or for areas of ecosystem health (sustainable agriculture of forestry

[42] Norton, *Toward Unity among Environmentalists,* p. 246.

areas, for instance). Most technological intrusion would be excluded from wild, core areas, as required in order to protect their role and function.[43]

Second, given the primary value of preserving or restoring natural, evolutionary function in certain designated areas, and the necessity to ensure this function through human activities compatible with this goal, the nonanthropocentric holists would use the precautionary principle to decide on all economic and technological issues. The precautionary principle (Principle 15 of the Rio Declaration on Environment and Development), states:

> In order to protect the environment, the precautionary approach shall be widely applied by States, according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental damage.[44]

Finally, how will the weak/long-sighted anthropocentrist vote and act when environmental protection conflicts with local jobs or other legitimate human aspirations without relying entirely on the example I have proposed? This question, it seems to me, is the "litmus test" for the convergence of ends that Norton envisions between his weak/long-sighted anthropocentrist and the ecocentrists, despite Norton's assertion that his position "recognizes the crucial role of creative, self-organizing systems in support of economic, recreational, aesthetic and spiritual values."[45] As I showed in the fish war example, even such recognition may not be enough.

Yet, in some sense, Norton is right: there is a commonality between the two positions, but this commonality only emerges when we subordinate "human economic, recreational, aesthetic and spiritual values," whatever these might be, to the imperative of survival. This imperative represents the common denominator we share with the rest of life. When we recognize the primacy of that commonality and the ways in which ecological integrity supports it for all, globally, then we are ecocentrists, or biocentric holists (the term I have chosen), because our anthropocentrism has been so weakened as to be nonexistent, dissolved into the reality of our presence first and foremost, as part of the biota of natural systems.[46]

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[43] James Karr and Ellen Chu, "Ecological Integrity: Reclaiming Lost Connections," in Westra and Lemons, *Perspectives on Ecological Integrity,* pp. 34–48; see Noss and Cooperrider, *Saving Nature's Legacy;* and Reed F. Noss, "Maintaining Ecological Integrity in Representative Reserve Networks," World Wildlife Fund Canada/World Wildlife Fund/United States Discussion Paper, January 1995.

[44] Brown, "The Role of Law in Sustainable Development and Environmental Protection Decision-making," p. 67.

[45] Bryan G. Norton, "A New Paradigm for Environmental Management," in *Ecosystem Health,* ed. Robert Costanza, Bryan G. Norton, and Benjamin D. Haskell (Washington, D.C: Island Press, 1992), p. 24.

[46] Westra, *An Environmental Proposal for Ethics;* see also G. Daily, ed., *Nature's Services* (Washington, D.C.: Island Press, 1997), esp. "Introduction."

Some will argue perhaps that it is not necessary to argue for intrinsic value for other nonhuman animals and other individuals and wholes; rather, it is sufficient to recognize that we are a part of the biota of natural systems and that we share our habitat with the rest of life. Those who support this position, will view weak/long-sighted anthropocentrism as theoretically/philosophically defensible; all others, based on ecocentrism or biocentrism, will not find it to be acceptable. Norton has certainly held this position consistently through the years.[47] The polarization of the two positions is well documented in the environmental ethics literature.[48] But this polarization remains—to say the least—misguided.

The weaker anthropocentrism becomes, the less defensible it is *as such,* that is, as a variant of anthropocentrism. But why should we weaken anthropocentrism in the first place? Norton's answer, if I understand him correctly, is because humankind has more than economic interests. These other "interests" represent "values" that mitigate the crassest forms of purely economic anthropocentrism, thus making the position more acceptable. Norton defines his position as follows: "A value theory is weakly anthropocentric if all value countenanced by it is explained by reference to some felt preferences of a human individual or by reference to its bearing upon the ideals which exist as elements in a world view essential to determinations of considered preferences."[49]

This position is therefore *weak* from the standpoint of moral theory as well: it is open to all the charges to which utilitarianism is open, in its weakest formulation. Based upon Norton's position, all we can offer to any group, individuals, or policy makers intent upon advancing their common interests, which might be strongly anthropocentric, is our plea for the support of "values," explained by reference to some "felt or considered preferences of a human individual."[50] Whether or not these are aggregate rather than individual preferences, and whether they even embody some ideal, the answer is still the same: the result can be purely utilitarian in a time-limited sense (although Rawls's position might mitigate it to some extent). Choices based on preference-satisfaction are often blind to other individual rights and to justice considerations. They can also be "culturally relative" (for example, for some cultures, female genital mutilation is part of a "moral" family-oriented ideal); hence, many such preferences may not be universally defensible from a moral standpoint.

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[47] Bryan G. Norton, "Environmental Ethics and Weak Anthropocentrism," *Environmental Ethics* 6, no. 2 (1984): 131–48; Norton, Bryan, "Why I am Not a Nonanthropocentrist," pp. 341–58.

[48] See, for instance, William Aiken, "Ethical Issues in Agriculture," in *Earthbound: New Introductory Essays in Environmental Ethics*, ed. Tom Regan (New York: Random House, 1984), pp. 247–88, and Tom Regan, *The Case for Animal Rights* (Berkeley: University of California Press, 1983), to mention but two other opponents of arguments for holism of the ecocentric/biocentric variety.

[49] Norton, "Environmental Ethics and Weak Anthropocentrism," p. 133.

[50] Ibid.

The example of the fish wars, where *citizen* as well as *consumer* preferences were involved, shows how useless such a position would have been, from the standpoint of reaching an environmentally fair and ecologically sound solution. Any position that presents a choice between "considered preferences A"and "considered preferences B" offers no ground, other than a counting of heads, efficiency, or (for a policy maker) perhaps political expediency, for the ultimate result. Hence, the proponents of such a position must bear the responsibility for their stance even if, in their individual case, their choice might have been just as sound and prudent as one reached on ecocentric grounds.

The problem is one envisioned by Plato, that is, of knowing the road to Larissa, without knowing why. In other words, even reaching a right decision on wrong principles may not be sufficient, if the principles are such that they would permit a morally bad decision on another occasion. The issue is not exclusively a matter of personal moral purity; it also involves responsibility for consequences to which others, even human innocents now and in the future, may be subjected through our choices and our choice of principles.

Norton rejects all defenses of intrinsic value in nonhuman nature, whether holistic or individualistic,[51] although he aims his attack primarily at Callicott's own position and his interpretation of the land ethic of Aldo Leopold.[52] Leaving aside for the moment individual grounds for intrinsic value in nonhuman animals, a holistic perspective supports respect for all parts of natural systems, as well as the wholes within which they function. We ourselves are parts, at least physically, of these structures. They also respect system functions, that is, the process they engender, which involve their biotic and abiotic parts, a necessity when we wish to defend the survival of any species.[53]

An ecocentric position such as the biocentric holism recommended by the principle of integrity, recognizes (1) the interrelationship between human and nonhuman nature and their "connaturality"[54] and kinship,[55] hence, (2) the intrinsic value of natural/evolutionary processes,[56] and (3) the foundational value of life-support systems for ecological sustainability.[57] It also acknowledges that (4) ecological sustainability is primary, as it alone supports economic and social

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[51] Regan, *The Case for Animal Rights,* p. 50; Holmes Rolston, III, *Environmental Ethics: Duties to and Values in the Natural World* (Philadelphia: Temple University Press, 1988); Kenneth Goodpaster, "On Being Morally Considerable," *Journal of Philosophy* 75 (1978): 308–25; Paul W. Taylor, *Respect for Nature: A Theory of Environmental Ethics* (Princeton: Princeton University Press, 1986).

[52] Norton, "Why I am Not a Nonanthropocentrist."

[53] Noss, "Maintaining Ecological Integrity in Representative Reserve Networks."

[54] Klaus Meyer-Abich, *Revolution for Nature,* trans. Mattthew Armstrong (Cambridge: White Horse Press, 1993).

[55] Aldo Leopold, *A Sand County Almanac and Sketches Here and There* (New York: Oxford University Press, 1949).

[56] Karr and Chu, Ellen, "Ecological Integrity," pp. 34–48.

[57] Robert Goodland and Herman Daly, "Universal Environmental Sustainability and the Principle of Integrity," in Westra and Lemons, *Perspectives on Ecological Integrity,* pp. 102–24.

sustainability.[58] Therefore, (5) at the most basic level—that is, at the *life* level—the dichotomy between anthropocentrism and nonanthropocentrism is a false one. I believe it is false *not* because anthropocentrism is the only defensible theory, but rather because "preferences" sometimes address want-interests as well as need-interests and because at the basic survival level *only,* we have no interests that are completely separate from those of all other life, so that their "values" and our "values" coincide.[59]

Hence, the argument here proposed is not that humans have interests that are defensible because they are intrinsically valuable beings, unlike anything else, but because humans and nonhumans *share* an interest, a need for a safe habitat, and—whether or not it is consciously acknowledged—the value of survival conditions persists and includes the valuable contributions of all participants in ecosystemic processes. This view does not render all life equal, but it shows that all living things are possessed of value singly and collectively, for themselves and for all else. Rather than relying on "preference satisfaction" indicators, a position that has been found morally lacking in risk assessment and technology assessment,[60] my approach defends the general (human and nonhuman) value of integrity and health for various habitats, in appropriate proportions.[61]

Norton prefers to isolate another common regulatory and legislative strand, which, like the appeals to ecological integrity, can also be found in many documents: the issue and rights of future generations (of humans, if I understand him correctly). If he is looking for a publicly accepted legislative priority, he is correct. If, however, Norton is seeking a moral basis that is less hard to defend, or less controversial than "intrinsic value" for nonhumans, then the "future generations" emphasis he has chosen is both controversial and debated, and even less easy to sell to the man or woman in the street as a possible preference than ecological life support, with all its prudential implications.[62]

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[58] Goodland, "Environmental Sustainability and the Power Sector-Part I: The Concept of Sustainability," pp. 275–304; Westra, "Ecosystem Integrity and Sustainability: The Foundational Value of the Wild," in Westra and Lemons, *Perspectives on Ecological Integrity,* pp. 12–33.

[59] Westra, *An Environmental Proposal for Ethics.*

[60] Kristin Shrader-Frechette, *Nuclear Power and Public Policy* (Dordrecht: Kluwer Academic Publishers, 1982); Kristin Shrader-Frechette, *Risk and Rationality* (Berkeley: University of California Press, 1991); McGinn, "Technology, Demography, and The Anachronism of Traditional Rights."

[61] Noss and Cooperrider, *Saving Nature's Legacy;* Hans Lenk, "Ecology and Ethics: Notes about Technology and Economic Consequences," *Research in Philosophy and Technology*. 12 (1992): 157–76.

[62] Ernest Partridge, "On the Rights of Future Generations," in Scherer, *Upstream/ Downstream,* pp. 40–66; Richard De George, "The Environment, Rights and Future Generations," in *Ethics and Problems of the 21st Century,* ed. Kenneth E. Goodpaster and Kenneth M. Sayre, eds., (Notre Dame: Notre Dame University Press, 1979), pp. 93–105; Ruth Macklin, "Can Future Generations Correctly be Said to have Rights?" in Ernest Partridge, ed., *Responsibilities to Future Generations* (Buffalo, N.Y.: Prometheus, 1981); Kavka, Gregory, "The Paradox of Future Individuals," *Philosophy and Public Affairs* 2, no. 2 (1982): 92–112; Derek Parfit, *Reasons and Persons* (Oxford: Oxford University Press, 1984).

In conclusion, *pace* Norton, there is no clear, obvious, and philosophically defensible difference between the concepts and values that sustain the argument of the weak/long-sighted anthropocentrist, and those that support the intrinsic value beliefs of the ecocentrist, nor is ecocentrism as vacuous and "exotic" as Norton claims.[63] In practice, Norton claims holistic/intrinsic value arguments are impotent. But, when dealing with agencies and government bodies (such as Environment Canada or the Great Lakes International Joint Commission) or major organizations such as the IUCN, it is no easier to attempt to support environmental action by appealing to the *details* of philosophical debates regarding future generations, than it is to appeal to intrinsic value arguments. At the level of scientific evidence and with the support of ecology, the intrinsic value arguments are not only easier to use, particularly for wholes and processes (though, admittedly, less so for individual animals, unless endangered), but by the very same arguments culled from ecology, they are a necessary, and integral part of the "future generations" arguments that Norton prefers. In order to accept a determinant role for duties to future generations, we must understand why we need to respect the life-support function of systemic processes. In other words, if the consequences of unrestrained technological and economic activities were simply various changes in the natural environment requiring changes in preferences and the exercise of our ingenuity and our technological abilities, we would have little or no reason to moderate our activities in respect for the future, as some argue.[64]

It is only because of the mounting evidence showing the life-support function of systemic processes and the role of their component parts that we must accept that it is not the deprivation of this or that resource that we may inflict on the future, but the limitation of the very basis for any life at all. It goes without saying, neither ecology nor biology can make absolute pronouncements about these issues. However, the evidence (mentioned in our discussion of agricultural and fishing practices) appears to be on the side of the defense of naturally evolving entities. We affect, severely, the health of all human and nonhuman animals through anthropogenic stress to ecosystems leading to nonevolutionary changes.[65]

Warming trends represent *indirect* global changes that affect reproduction, hence individuals as well as species. Recent research has shown that *direct impacts* extending to reproductive functions and sell beyond it, can be traced

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[63] Norton, "Why I am Not a Nonanthropocentrist."

[64] Richard De George, "The Environment, Rights and Future Generations," in Goodpaster and Sayre, *Ethics and Problems of the 21st Century,* pp. 93–105.

[65] Westra, "Integrity, Health and Sustainability: Environmentalism without Racism," in C. L. Soskolne snd R. Bertollini, eds., *The Science of the Total Environment* (Oxford: Elsevier, 1996); Rita Colwell, "Global Change: Emerging Diseases and New Epidemics," President's Lecture, 10 February 1996. American Association for the Advancement of Science; Janice D. Longstretch and Frank R. de Grujil et al., "Effects of Increased Solar Ultraviolet Radiation on Human Health," *Ambio* 24, no. 3 (1995): 153–65.

to certain features of our technological lifestyles and the corporate activities that foster and support them. The ground-breaking research of Theo Colborn and others has shown how human-made chemicals, long known to be hazardous and carcinogenic, and also many others, thought to be biologically inert affect the reproductive organs and related capacities of most species from fish, to bird, to mammals, including humans.

As "hormone mimics," they also alter significantly our behavior, intellectual capacities and parenting abilities.[66] The results of Colborn's research present a clear indictment of the way that we interact with corporations and industry. After cataloging a litany of horrors resulting from even minute exposures to PCBs, affecting vulnerable persons, women of reproductive age, infants, fetuses and children, Colborn says, of the move to produce PCBs: "Confident of their safety as well as their utility, the Swann Chemical Company, which would soon become part of Monsanto Chemical Company in 1935, quickly moved them into production and onto the market."[67]

In essence, it is the corporations, the large businesses who have the resources to research, test, and market these complex and novel products and processes. Even in democratic nations, however, we have no institutional or collective mechanism to oversee, acquire information (impossible, because of "trade secrets" laws), debate, let alone impose limits, on these industrial giants. Even the tiniest molecule of a PCB compound is not biodegradable; moreover, it is durable; it travels and persists; hence, it has a range of negative effects: "Researchers studying declining seal populations have found that seventy parts per million of PCBs is enough to cause serious problems for females, including suppressed immune systems and deformities of the uterus and of the fallopian tubes. . . ."[68]

Nor are PCBs the only chemicals with far-reaching, transgenerational effects. In addition to DDT, "PCBs (209 compounds), . . . 75 dioxins, and . . . 135 furans" were invented by chemists in laboratories "to kill insects threatening crops and to give manufacturers new materials such as plastics." Inadvertently, however, the chemical engineers had also created chemicals that jeopardize fertility and the unborn. Even worse, we have unknowingly spread them far and wide across the face of the Earth.[69]

As long as our quietism permits the continuation of present practices, and because governments do not appear to be eager to mandate controls given the present unemployment and slow economies, emphasis is on deregulation rather than on tighter controls.

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[66] Theo Colborn, Dianne Dumanoski, and John Peterson Myers, *Our Stolen Future* (New York: Dutton, 1996), pp. 116, 186.

[67] Ibid., p. 89.

[68] Ibid., p. 88–89.

[69] Ibid., p. 81.

In that case, although Colborn and her collaborators propose principles of mitigation and change based on the "Wingspread Consensus Statement"[70] within the present political and institutional system, it may be hard to achieve acceptance of and compliance with her recommendations, right as they are. The tobacco industry resisted regulation and controls for a very long time, although there were clear, unambiguous links between their products and the number of deaths caused.[71]

I argue that we need to understand and accept this responsibility and recognize our obligation to respect life-support systems from a biocentric standpoint in order to support the changes indicated by the existence of these hazards. From Norton's point of view, in order to introduce arguments about future generations, we also need to understand the many ways that we may have negative impacts upon them. For this task, simple interhuman considerations will not suffice: we need to expand our consciousness, our understanding, and our respect as required to include these processes and causal links. The holistic position would thus extend Norton's argument to all future generations, to human and nonhuman life.

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[70] Ibid., pp. 251–60.

[71] Jon Cohen, "Tobacco Money Lights Up a Debate," *Science* 272 (1996): 488–94.