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On Two Concepts of Environmental Instrumentalism: John Dewey and Aldo Leopold in Conversation

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Through a close reading of the works of John Dewey and Aldo Leopold, I demonstrate that it is possible to reframe intractable debates about the environment in language more amenable to robust and inclusive public discourse. There are at least two ways of framing the instrumental relationship between human and environmental health: (i) in terms of control and (ii) in terms of restraint. On the one hand, means of control are associated with an anthropocentric view of environmental value: the environment has worth only insofar as it provides resources for human benefit. On the other hand, means of restraint reflect increased concern for environmental health, sustainable living, non-anthropocentric (whether eco- or bio-centric) environmental value and lifestyles in harmony with nature—reminiscent of the rhythmic relationship between human and environment captured in the writings of Henry David Thoreau and John Muir. While John Dewey defends an instrumentalism of control, Aldo Leopold gives voice to an opposing instrumentalism of restraint. At first blush, these two instrumentalist concepts appear to form a dualism, resembling incompatible dyads in a permanently bifurcated relationship. However, the matter is not quite so simple as this—or so I argue. Dewey and Leopold's concepts of environmental instrumentalism prove more compatible than this simple control/restraint dichotomy suggests. Still, it is helpful to appreciate environmental issues in terms of these two competing instrumentalisms. To test the distinction's usefulness, I examine the wilderness debate, attempting to clarify and advance the debate by reframing the discourse in terms of an instrumentalism of control and an instrumentalism of constraint.[1]

Two Kinds of Instrumentalism—Control and Restraint

In its generic sense, instrumentalism means choosing efficient means to achieve valued ends. Among philosophers of science, instrumentalism tells us that a theory or concept is valued to the extent that it assists the scientist in making accurate predictions, not the degree to which it accurately represents some objective, free-standing reality. For pragmatists, instrumentalism is not just about fitting the most efficient means to ends, or predicting phenomena, but also about critically assessing the value of ends. Among many social philosophers, instrumentalism is viewed as

an adjunct to modern rationality, signaling the excesses of technological development, human warfare and man's long-standing domination of nature.[2] Even in modern times, conceiving the environment as an instrument for efficient use has a strong foothold in ecological thinking.[3] With some qualifications, John Dewey's model of experimental inquiry applied to environmental problems exemplifies this instrumentalism of control. Balancing an instrumentalism of control with an equally forceful instrumentalism of restraint is Aldo Leopold's land ethic, which sees humans as responsible members of biotic and Earth-bound communities, rather than stewards or exploiters of natural resources.

Dewey and an Instrumentalism of Control

For John Dewey, inquiry manifests in a matrix of knowing and acting events, involving the framing of a problem, proposing hypotheses, testing them, observing results and treating the experimental outcomes as fallible and revisable in the light of future testing. For the past three centuries, the purpose of experimental inquiry has been for humans to act upon and exert the greatest possible control over their environment.[4] Dewey reveals a generic pattern to experimental inquiry that widens its application beyond the domain of experimental science. His five-step method of inquiry was intended to apply to practical problems, or "problems of men," not solely to more specialized problems encountered in the laboratory (MW 10:42). In the first edition of *How We Think*, Dewey spells out the five stages of experimental inquiry. While encompassing experimental science, inquiry is experimental in a more general sense, that is, it involves experimental operations that can be applied to *both* common-sense and scientific problems: (i) observation, (ii) analysis, (iii) manipulation and (iv) reflection upon the conditions and consequences of a problematic situation.[5]

Experimental inquiry gives us reason for hope, reason to think that through technological innovation human civilization will experience never-ending progress. Dewey writes: "[W]e lose rather than gain in coming to think of intelligence as an organ of control of nature through action, if we are content [with Aristotle in asserting] that an unintelligent, unfree state persists in those who engage directly in turning nature to use, and leave the intelligence which controls to be the exclusive possession of remote scientists and captains of industry" (MW 9:265). Moreover, he recommends that school administrators and educators introduce gardening into the primary school curriculum: "Instead of the [technical] subject matter belonging to a peculiar study called botany, it [gardening] will then belong to life, and will find, moreover, its natural correlations with the facts of soil, animal life, and human relations" (MW 9:208). In these

ways, Dewey demonstrates how average citizens "turning nature to use" can democratize science and gain greater control over their environment. As he reminds us, "Life is a self-renewing process through action upon the environment" (MW 9:4)—and if we extend this principle, then human life means control of the environment through human action.

Leopold and an Instrumentalism of Restraint

For Aldo Leopold, one of the most well-known American ecologists and a contemporary of Dewey's, the boundary between environment and society cannot be strictly demarcated. Humans should act as members of the biotic community, caring for land and the creatures that inhabit it. Leopold (1966, pp. 258-9) distinguishes the ethic of control and the ethic of constraint in what he calls the "A-B cleavage": "In each field [whether ethics or ecology] one group (A) regards the land as soil, and its function as commodity-production; another group (B) regards the land as biota, and its function as something broader." In *A Sand County Almanac*, Leopold states that a "land ethic changes the role of *Homo sapiens* from conqueror of the land community to plain member and citizen of it. It implies respect for fellow members and also respect for the community as such" (1966, p. 240). Moral consideration is thereby extended beyond the human species to the non-human environment, as humans become stewards, not exploiters, of its resources. Indeed, ecology for Leopold "simply enlarges the boundary of the community to include soils, waters, plants, and animals, or collectively: the land" (1966, p. 239).[6]

How does one treat ecological systems and biotic communities ethically when they do not speak human languages, act autonomously or make moral claims? Leopold (1966, p. 262) clearly answers this question in one of the most oft-quoted passages in *A Sand County Almanac*: "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise." Cashing out what biological integrity, diversity and beauty mean in a concrete example will prove helpful here. Integrity is the capacity of all the interdependent elements of the ecosystem (e.g. soil, trees, deer and wolves) to work together. When one element (e.g. soil) is highly damaged by human activities, its poor state (or erosion) negatively impacts other elements that were once healthy (e.g. the root systems of trees) and, in turn, diminishes still other elements that consume it immediately and derivatively (e.g. the leaves that herbivores eat disappear, thereby lowering the population of herbivorous deer and finally reducing the numbers of predators such as wolves that consume the deer).[7] The stability of the ecosystem depends on this interconnectedness. Without integrity and stability, biodiversity diminishes

and, with it, the beauty that we, humans, delight in disappears.

In the section of *A Sand County Almanac* titled "Axe-in-hand," Leopold catalogs a series of instruments and their uses before ending with a clear message of restraint. Once invented, the "shovel" permitted someone to "plant a tree," the "axe" to "chop it down" and thus humans inherited "the divine functions of creating and destroying plants" (1966, p. 72). To qualify the culturally sanctioned instrumentalism of control and dominion, Leopold states that humans wield their tools, not vice versa. Since "all men... in effect wield all tools... men thus determine whether it is worth while to wield them" (1966, p. 72). In wielding tools and seeking a more balanced relationship with the environment, then, it is incumbent upon the person qua biotic citizen to exercise restraint rather than control, to use the axe to cut, but to do so with the purpose of, for instance, clearing non-native species, preventing crowding and harvesting only to the extent that what one takes can be restored.

A Closer Look at Dewey's Approach

At this point, I would like to take a closer look at Dewey's approach to environmental issues and add a strong qualification to the claim that Dewey's theory of inquiry exemplifies an instrumentalism of control. Despite this qualification, I believe that it is still helpful to frame environmental issues in terms of these two countervailing instrumentalisms.

There is evidence of a strain of an instrumentalism of restraint in Dewey's thought and writings, particularly in his book on secular religion titled *A Common Faith* (1934). In that work, Dewey invokes the notion of "natural piety" which involves humans living in harmony with nature, and adopting a "just perspective in life," not controlling it for the sake of realizing selfish benefit at the expense of the voiceless other: "Natural piety is not of necessity either a fatalistic acquiescence in natural happenings or a romantic idealization of the world. It may rest upon a just sense of nature as the whole of which we are parts, while it also recognizes that we are parts that are marked by intelligence and purpose, having the capacity to strive by their aid to bring conditions into greater consonance with what is humanly desirable. Such piety is an inherent constituent of a just perspective in life" (LW 9:18).[8]

Case Study: The Great Wilderness Debate

As early as the 1910s, a debate emerged among environmental thinkers, preservationists and ecologists as to what constitutes wilderness, and what wilderness is good for. Should the idea of wilderness be restricted to pristine forests, for instance, what we observe in Redwood or Yellowstone

National Parks? Or should we extend the idea of wilderness to swamplands that are not as aesthetically pleasing, but have as much or more biodiversity than forests? Are stands of trees in urban areas wilderness? Should we *preserve* wilderness for scientific, recreational or aesthetic reasons, or some combination of these three? Or should we *conserve* wilderness areas for the potential resources that they provide us? In other words, this is a debate that directly implicates the notion of environmental instrumentalism.

Though some would credit him for inventing the wilderness idea, it is probably more accurate to say that Leopold brought awareness to it.[9] This is both because he was instrumental in creating the first U.S. Forest Service wilderness area (Gila National Forest in the Southwest) and because of a short essay, "Wilderness as a Land Laboratory" (1941). In that essay, Leopold crystallized notions about the value of wild areas that were latent in the writings of ecologists and environmental thinkers for many years prior. First, I'd like to discuss the works of two of Leopold's contemporaries, each of whom anticipated the wilderness idea: Victor Shelford, a bio-ecologist known for his work on joint plant-animal communities or "biomes," and Charles Adams, an animal ecologist who helped found the Ecological Society of America. In Charles Adams' essay "The Importance of Preserving Wilderness Conditions" (1929/2008, pp. 60-2), he identifies five values or ends that preserving wilderness areas serves: (i) artistic values, (ii) scientific values, (iii) educational values, (iv) recreational values and (v) economic values. Unfortunately, those values that have the most purchase in public discourse about environmental issues are the final two: viz. purposes of promoting human recreation and economic gain. As early as 1916, Joseph Grinnell and Tracey Storer (1916/2008, p. 28) argued that "the same necessity" with which we understand national parks as sites for recreation "attaches to their adaptation for another end, hardly less important... namely, research in natural history." Arguably, it is at least equally necessary for national parks and nature sanctuaries to serve other purposes, such as educational and artistic values as well as an end Adams failed to mention, but that is at the center of the contemporary wilderness debate: namely, preserving biodiversity in representative landscapes and ecosystems (Callicott, 2008; Foreman, 2008). Shelford (1933/2008, p. 91) clearly stated the distinction between conservation and preservation; wherein to preserve is to allow "nature [to] take its course" or to be left alone and "[t]o conserve" means "to preserve while in use [or as utilized by humans as a natural resource]... [which] often implies ultimate depletion" of the resource. The distinction roughly corresponds to an instrumentalism of restraint (i.e. preservation) and an instrumentalism of

control (conservation). With Leopold, Shelford insisted that large tracts of "nonscenic" grasslands, "swamps, lakelands, river-routes and deserts" be set aside as national parks, monuments or wildlife sanctuaries, mainly because they represented "primeval America" and therefore deserved protection (cited by Warren (2008)).

Returning to Leopold's little essay, "Wilderness as a Land Laboratory," its seminal contribution to ecological thinking lies in how the author articulates the norms of land health. If an organism's health is its "capacity for internal self-renewal," then the function of well-preserved wilderness is to establish "a base-datum for [or reference point from which to measure] problems of land health" (Leopold, 1941/2008, p. 93). Leopold believed that this analogy between the health of organisms and the health of land (in his own words, "how healthy land maintains itself as an organism") permits ecologists and land managers to shift their approach, from the "art of land-doctoring," or merely fixing the superficial symptoms of deeper rooted problems, to the "science of land health," or directly addressing the underlying problems (1941/2008, p. 95). The art of land-doctoring usually fails to consider and treat all the relevant factors in an ecosystem, as evidenced in efforts to renew soil fertility by adding artificial fertilizers as well as altering the native flora and fauna, "without considering the fact that its wild flora and fauna, which built the soil to begin with, may likewise be important to its maintenance" (1941/2008, p. 94). Opting for land science instead of land doctoring, two "norms" or candidates for "a base-datum of normality" emerge: one, the ideal of land that has remained pristine or untouched "despite centuries of human occupation" and, two, the idea that preserved wilderness, even affected to some degree by human intervention, still offers what Leopold calls a "land laboratory"—i.e. an opportunity to study the factors that influence land health (1941/2008, p. 94). Unfortunately, there are extraordinarily few examples of ideal land health.[10] Instead, preserved wilderness is what Leopold (1925/1991, pp. 135-6) refers to as "a relative condition." Since practically all land has been altered to some degree by human intervention, we are left to compare those examples of land health that closely approximate the ideal with those deviate greatly from it, or suffer from land sickness. By restraining our activities—for instance, limiting the presence of humans and invasive species in wilderness areas—we can, in Leopold's words, observe "each biotic province" and "its own wilderness for comparative studies of used and unused land" (1925/1991, pp. 135-6). In the essay's conclusion, Leopold recommends the "preservation and study" of the Summit of the Sierra Madre in Chihuahua, Mexico (which he happened to have visited in 1936), as a land laboratory and base-datum for

measuring sickness in "lands on both sides of the borders" (1941/2008, pp. 95-6). In other words, for Leopold, our relations to land and land health should, for the most part, be mediated by an instrumentalism of restraint and, to a lesser extent, by an instrumentalism of control.[11]

Conclusion

I would like to conclude by reiterating the importance of language in framing (and reframing) debates about environmental issues. One of the primary difficulties that environmentalists and environmental ethicists face is that they typically embrace a non-anthropocentric view of environmental value and health (i.e. the environment's value and health are valuable in and of themselves), but feel pressured in the face of public norms to partake in a public discourse dominated by an anthropocentric view of environmental value and health (i.e. the environment and its health are only valuable insofar as they serve human ends). For instance, speaking at a large public meeting about the prospect of building a dam and appealing to the intrinsic value, even dignity and integrity, of the ecosystem that will be destroyed by flooding (as Deep Ecologists regularly do) will often cast the speaker as an environmental extremist—even a wacko. The speaker would feel that by adopting an unfamiliar voice, the voice of anthropocentrism, she would be untrue to her entire environmental philosophy—even though doing so, of course, would be more helpful to her cause. One might object that it is ridiculous to cling to non-anthropocentrism, for there is no value in nature (i.e. intrinsically or inherently) without someone who values it, and the valuing agent must, of necessity, be human. However, this objection is unlikely to persuade the environmentalist or environmental ethicist with a non-anthropocentric view of environmental value and health. To overcome this difficulty, I have proposed that we frame the discourse in terms of two concepts of instrumentalism. While there is an implicit anthropocentric bias to both instrumentalisms (more so for control, less so for restraint), the anthropocentricism implicit in an instrumentalism of restraint is so weak as to make it agreeable to all but the most radical environmentalists and environmental ethicists. Perhaps they will fear that some underlying hypocrisy is at work, that their public appeals to a weakly anthropocentric view of environmental value and health (i.e. an instrumentalism of restraint) will be inconsistent with their deeply-held commitment to non-anthropocentricism. Still, I'd speculate that the prospect of influencing the outcomes of environmental policy debates will likely outweigh any fear of hypocrisy. In the language of decision theory, my suggestion is that those who are wedded to non-anthropocentrism pursue a satisficing option, that is, not achieve an optimal solution (e.g. a situa-

tion in which non-anthropocentric reasons are on par with anthropocentric reasons), but satisfy a condition of adequacy: viz., their full participation in the public discourse about the environment.

Notes

[1] The cognitive scientist George Lakoff (2004, p. xv) defines frames as those "mental structures that shape the way we see the world. As a result, they shape the goals we seek, the plans we make, the way we act, and what counts as a good or bad outcome of our actions." Framing an issue is also roughly equivalent to applying what Kenneth Burke (1966, pp. 3-5) calls a "terministic screen," that is, a group of symbols that operate as a filter, structuring how they should be made intelligible by other language-users.

[2] Michael Purdy (1986, p. 1) observes "a Western predilection for control" (cited in Garrison (1996, p. 431)). In line with the Frankfurt school's critique of instrumental rationality, instrumentalism suggests a strongly anthropocentric view of environmental health value, i.e. the environment is a factory or resource for human use and exploitation. Thus, anthropocentrism connotes an instrumental view of environmental value, often opposed the inherent or intrinsic view of environmental value bound up with non-anthropocentrism, i.e. the ecosystem (in eco-centrism) or the biome (in bio-centrism) is valuable in-and-of-itself, regardless of whether the environment is valuable for human health, welfare or convenience. Ever since the age of Enlightenment, it is nearly impossible to deny that treating the natural environment as a tool or resource for the satisfaction of human ends is commonplace.

[3] According to "the dominant utilitarianism" of early twentieth-century America, pioneered by the Progressive-era conservationist Gifford Pinchot, "everything in the world must be made of some 'use' to humanity" (Sumner, 2008, p. 31).

[4] According to Dewey, "[e]xperiment[al science] developed in the seventeenth and succeeding centuries and became the authorized way of knowing when men's interests were centered in the question of control of nature for human uses" (MW 9:210).

[5] Dewey writes: "Upon examination, each instance [of intelligent inquiry] reveals more or less clearly, five logically distinct steps: (i) a felt difficulty; (ii) its location and definition; (iii) suggestion of possible solution; (iv) development by reasoning of the bearings of the suggestion; (v) further observation and experimentation leading to its acceptance or rejection; that is, the conclusion of belief or disbelief" (MW 6:236). Dewey's examples of experimental inquiry include figuring out how to get to an appointment on time, identifying the function of a pole on the front of a tugboat and determining why bubbles go outside and inside of a cup once washed with hot water and placed upside-down on a kitchen counter (MW 6:234-5). Conspicuously absent from these examples are many touchstone elements of experimental inquiry found in the social and hard sciences: (i) a research design, (ii) a measurement instrument, (iii) a data collection process, (iv) a data analysis technique, and (v) a method of generalizing data to a larger population.

[6] Note that this section closely follows Callicott's (2009) PowerPoint lecture at the Prescott City library as well as his presentation to participants in the National Endowment for the Humanities Institute on "Aldo Leopold and the Roots of Environmental Ethics," both on July 8, 2009. A fuller account of the Earth ethic will be given in Callicott's forthcoming book. Callicott gave me full permission to quote from the lecture's PowerPoint slides.

[7] This example illustrates what Leopold (1966, p. 252) calls "food chains" or "food pyramids" and the consequences when these suffer from human interference.

[8] I thank Stuart Rosenbaum for making me aware of this crucial passage and important qualification to my account.

[9] Indeed, when Robert Sterling Yard was about to appoint Leopold as the chair of a partnership of the Ecological Society and Wilderness Society, he explained why: "It is you who invented the title wilderness areas, making practical certain ideals which had been in men's minds for many years, and had occasionally crept timidly into print." Cited in Warren (2008, p. 101).

[10] The only example of ideal land health that Leopold (1941/2008, p. 95) could cite was in "northeastern Europe."

[11] An instrumentalism of control does enter Leopold's discourse at times, such as when he argues for more emphasis on scientific investigation of land relations in order to exert greater control over them: *"[W]e do not yet understand and cannot yet control* the long-time interrelations of animals, plants, and mother earth" (emphasis in original text, cited in Warren (2008, p. 104)).

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John Dewey's Basis for Moral Philosophy: Growth of Ordered Richness and *Eudaimonia*

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Abstract: I argue that the basis for John Dewey's ethical philosophy is an awareness that growth constitutes the basis for the good life—*Eudaimonia*. However, growth without qualification is vague and potentially moral deleterious. Therefore, I argue that Dewey's claim that growth of ordered richness provides the philosophic tools to restrict the meaning of *growth* to a specific set of constraints on meaning that are informed by the possibilities of activity to inform future growth and maintain meaningful activity within situations. I will discuss three qualities of ordered richness that relate to actives a person might perform. I will designate these three characters of meaning activity as preservation, conservation, and creation of meaning. This pragmatic theory of meaning solves a major problem in understanding Dewey's ethics as it clarifies and constrains what we can mean by growth and how growth can be the basis for Dewey's moral thought.

Dewey follows the tradition of Aristotle which holds that the reason to act in morally upright ways is to achieve a *eudaimonic* life. Dewey writes:

> Memory of the past, observation of the present, foresight of the future are indispensable. But they are indispensable *to* a present liberation, an enriching growth of action. Happiness is fundamental in morals only because happiness is not something to be sought for, but is something now attained, even in the midst of pain and trouble, whenever recognition of our ties with nature and with fellow-men releases and informs our action. (MW 14:182)[1]

I take Dewey's use of happiness here to be similar to the Aristotelian idea of *eudaimonia*—the end-in-view of human life is for a good life permeated by meaning. This statement points to growth of "ordered richness" as a goal of ethical activity. Moral life *is* growth of ordered richness which leads to the unification of past and future in a present situation and allows the individual to grow and interact in a more consummatory fashion with the world. Recall that all experience is, in some regard, problematic. Happiness, a very particular form of consummation, cannot occur without