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Thanks for the Dirt

Gratitude As a Basis for Environmental Action

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WHILE IT IS FAIRLY common for people to voice general concerns about environmental degradation and destruction, their concerns do not often enough translate directly into effective personal and social reform. Though people will say that issues like global warming, species extinction, depleted fisheries, habitat loss, soil erosion, deforestation, aquifer depletion, and biological pollutants are causes for worry, it is just as likely that when they vote or shop they will choose in ways that directly undermine or compromise their concerns. How are we to account for this disconnect, and what can environmentalists do to help people bring their practical living into closer alignment with their stated concerns? Clearly, given the scope of ecological damage and the great risks we run leaving it unaddressed, environmentalists need a fresh approach if we are to move from general, abstract concerns to concrete, political and economic action.

The reality of popular ignorance, apathy, and inactivity with respect to ecological issues should be of concern to environmentalists, since it suggests that think-tanks, publicity campaigns, education efforts—all costing millions of dollars and volunteer hours—have not gotten us very far. Not surprisingly, Michael Shellenberger’s and Ted Nordhaus’s manifesto, “The Death of Environmentalism,” touched a raw nerve when they argued that even after several decades of very hard work, especially in the last fifteen years, environmentalists had “strikingly little to show for it” (2004). National legislation, for the most part, has not moved in a direction that would substantially reduce greenhouse gases, improve the

conditions of our soil, water, and air, or enhance the health and resiliency of organisms and habitats. Environmentalists are at a critical crossroads, Shellenberger and Nordhaus contend. What we need to do is rethink in a most fundamental and expansive way how a compelling vision can be drawn and presented to the broader public that will draw them and their wallets in and effect significant change.

Even if we do not accept all the analyses of their report, Shellenberger and Nordhaus are clearly correct in warning that environmentalists must not be perceived as yet another special interest group pleading for their due at the trough of political consideration and clout. The environment is not a separable “thing” out there that we can or cannot choose to defend. A meaningful environment always begins with the sense that every given place is first a home, and thus a source of nurture for ourselves and the many organisms we share our places with. The environment is not some abstract or general space that surrounds us (and thus can easily be taken for granted). It is, rather, a specific, life-giving place that through particular fields, forests, waterways, vegetation, and animal life feeds and sustains us with gifts of food, nurture, and productive and aesthetic enjoyment. I don’t drink water “in general,” but the water that (in my case) comes from the Elkhorn Creek watershed. This watershed connects me to specific farmers of the region, as well as to the Toyota manufacturing plant in town and to the thousands of homeowners who douse their lawns with fertilizers and weed-control products. All of our actions together, plus the gifts of natural habitats and weather, contribute to every drink I take.

When we talk about something like an environmental “crisis,” therefore, we need to understand that what we are really dealing with is a crisis of culture, a failure to be properly “at home,” and a distortion of what it means to be embodied beings living (necessarily and beneficially) in a geo-chemical and biologically driven world. For us to exist at all as bodies that breathe, drink, and eat we need to be sure that the sources of air, water, and vegetation are properly cared for and maintained. To think otherwise is to invite not only ecological but also human collapse. Saying this does not narrowly reduce ecological concerns to the human realm. Environmental activism is not simply about or for us. What I am suggesting is that we—the “public”—need to learn to see our living as more deeply implicated in the living of other organisms and their habitats, and vice-versa, so that when the one is under threat so too is the other.

In other words, we need to overcome the ecological amnesia that supposes our bodies can thrive while all other natural bodies languish or die. We are not self-standing, autarchic beings, but creatures profoundly in need of the nutrients and help that others give to us. We must recover the ancient ecological insight, an insight previously taken for granted due to the practical contexts of hunter-gatherer and agricultural life, that humans and habitats share a common, perpetually co-mingling past and future fate. We live *in terms of* our bodies, which also depend on other, innumerable bodies. The health and vitality of humanity depends on the health and vitality of the ecological systems upon which we depend.¹ This is the truth we must all internalize and be inspired by.

There are a great number of dimensions to what the intermingling of humanity with geo-biological systems and organisms means. I would argue that figuring them out, and being able to present them in a coherent and compelling way to a broad public that naively, and sometimes arrogantly, dismisses or underestimates ecological limits, will be key for a future environmental agenda. This essay will explore one aspect of this problematic. What interests me here is the question alluded to at the start of this essay: why is it that individuals, even when they profess some understanding of and commitment to addressing ecological problems, fail to act on those beliefs? Why this discrepancy between belief and action, and what can be done to address it? As I will later argue, our lack of gratitude, or more fundamentally, our inability even to see the need for gratitude, has a lot to contribute to our understanding of these questions. Gratitude is the clearest sign that we have come to appreciate, however incompletely, the range and vitality of the memberships that join people to their natural life-giving homes.

Having taught environmental ethics and philosophy for a number of years, it is a source of frustration to see students nod their heads in agreement as the litanies of ecological destruction or exhaustion are trotted out in depressing detail, and then leave the class with personal or economic habits unchanged. Though some of them “get it”—they recognize that the problems “out there” intersect deeply with choices we are making as individuals and as groups—many simply are unable to understand that ecological issues go to the heart of who or what we understand ourselves

1. Sir Albert Howard, grandfather of the organic gardening/farming movement, gave a classic statement to this position when he argued that that we must treat “the whole problem of health in soil, plant, animal, and man as one great subject” (1947: 11).

to be and how and where we are to move in the future. I can't really fault them, however, because it has been ingrained in us (partly owing to the academic specialization and compartmentalization that characterizes university/college life: how often do humanities disciplines seriously engage the natural and agricultural sciences?) that humanity in its essential nature exists apart from or in conflict with our natural homes. Whether we believe ourselves to be immortal souls, disembodied intellects, or highly sophisticated (mechanical/ computational) processors, the assumption in many instances is that humans are not really natural or biological beings at all. In fact, if futurists like Ray Kurzweil are to be believed, eventually we will shed ourselves of bodies altogether so that we can live in a techno-virtual paradise. Our perennial temptation is to think we exist at a higher or deeper or spiritual level, a level that renders us exempt from the limits, possibilities, and challenges of ecological life.²

The *idea* that we can live in relative disregard of our biological homes has (especially in the last two centuries) taken on dramatic *practical* forms as societies have become urbanized and people reduced to the status of consumers. While urbanization is not in and of itself evil, what is clear is that several forms of urban life facilitate the illusion that we don't really depend on soils, watersheds, forests, glaciers, earthworms, bees, and butterflies. What we need is available on demand or on tap. The view from our comfortable, climate-controlled cars, offices, and homes has the effect of shielding or insulating us from ecological realities, or distorting their ecological meaning (as when rain is primarily understood in terms of its potential to disrupt a golf outing). We expect that whatever we need will be cheaply and conveniently available at the store, and have no thought or concern for the health of ecological systems that make our living possible. We all want to believe that simply by shopping at Sears (or some other superstore) we can enjoy "The Good Life, at a Great Price, Guaranteed!"

To live in a postmodern world is to live the life of a spectator who is constantly on the move scanning for possibilities among realities that are "virtual" or not (the line between them is sometimes hard to know). Numerous sociologists and cultural critics have observed that it is the precarious, transient, frenetic character of so much contemporary practical life that makes deep knowledge and understanding so difficult. Lacking the deep bonds that are built and sustained through time and communal

2. I have developed this theme in my 2003 essay "Placing the Soul: An Agrarian Philosophical Principle."

effort, many of us are simply not in a position to appreciate the effects of what we do (Best and Kellner 1997; Bauman 1998, 2000; Harvey 1990; Giddens 1990). We live, for the most part, in the bubbles of our own or someone else's (usually a successful marketer's) making.

Can we be responsible agents who will care for each other and our biological homes when we live with such ignorance? Among ancient Greek philosophers there was a widely shared assumption that to know the good is also to do it. What this means is that abstract knowledge, the sort that comes strictly from books or screens or that is acquired as a spectator, is a deficient form of knowledge, particularly when it comes to matters of moral significance. In an important sense, for us to really know a moral truth or claim we must come to it through daily practices that involve us intimately in the realization of a good. We don't know why an action is good until we see, from the inside, the effects of our acting or not acting in a particular way. Upon seeing first hand how what we do has the potential to contribute to the good or flourishing of others, we will, almost automatically, be inclined to do that good action again. After all, who does not enjoy seeing the good in another develop and thrive?

This point can be made clear by considering the requirements of good farming. Farming that is good, and not merely profitable, will have the health of fields and animals firmly in view. What health means, however, cannot be known in the abstract because every farm and herd is different, having particular needs and limits. A good farmer is therefore one who carefully attends to the farm's potential and does not try to impose on it an abstract or foreign motive (such as quotas or stock share). By working carefully the farmer learns what makes and keeps soils and animals productive without their exhaustion or degradation. This is knowledge that cannot come from books. It is acquired through daily contact and committed, patient work. Through this sort of work the meaning and requirements of a *good* farm come into view and are deeply known.

If the people of this nation are to develop the kinds of understanding and knowledge that will overcome the belief/action divide (and thus lead them to care for natural habitats), there will need to be a period of appropriate training in which certain kinds of sympathies, acuities, affections, and character traits can develop. We need to learn to see how our living connects in multiple ways with ecological realities, and we need to appreciate how our economic choices have ecological effects. For this to happen we will need to get out of our cars and homes more often and fol-

low the trails of our consumer choices. Where did the stuff we buy come from and how was it made? Was it made in ways that honor the integrity of natural places and human communities? We will need to develop the sorts of imagination that appreciate the agricultural worlds of soil fertility, water availability, and rural development presupposed by something so basic as a loaf of bread, just as we will need to develop the complex knowledge of coal fields, blown-up mountains, shattered communities, and corporate profits that lies behind the flip of an electrical switch.³

To summarize so far: while people openly profess care for the environment, their actions as voters and consumers suggest a different, often destructive, set of priorities. One reason for this discrepancy has to do with the superficiality of our knowing and outright lack in understanding of the deep connections between human health and the health of natural habitats. Practical conditions of contemporary life entrench and make highly likely the continuation of our ignorance. If we are to move forward in a way that will bring healing and vitality to our habitats we will need to develop practices that encourage deep and rich forms of sensitivity and sympathy for the natural and social places we call home.

Let's now make this all more concrete. When I consider the life of my grandfather, and the many agrarians like him, I see a much more seamless connection between what he thought and what he did. He understood, appreciated, and valued his land and his animals because he worked daily, intimately, and practically with them. This last point is especially important. He knew in a way that few of us today do that human life is possible because of the many connections that bind us to microorganisms, earthworms, humus, plants, chickens, pigs, cows, water, and sunlight. He knew this because he literally—through his stomach, with his hands and muscle, but also through his aesthetic enjoyment—drew his own life from them. The fact of the matter is that we too inescapably live within these connections, most basically through our eating, but we don't really appreciate or understand them because we do not have sustained or practical engagements with the variety of geological and biological elements that constitute our natural homes and food sheds.

3. The development of local economies will be crucial to this effort because in a local economy the distance between production and consumption decreases, while the awareness of the effects of what we do increases. For a development of these ideas, see Berry 2002 and Wirzba 2007.

Another way to put this is to say that my grandfather understood with an uncommon measure of sensitivity and sympathy the requirements for a creaturely (as distinguished from a godly) human life, a life that is embodied and therefore necessarily and beneficially enfolded within broad geological and biological patterns. Our life, if it is to be true to its own nature, must be lived in response to these patterns. He understood that his own health and well-being depended on the health and well-being of his land and animals, and that he could not flourish alone or at the expense of his non-human neighborhood. Cruelty to or disregard of his animals was thus strictly forbidden. Considerate kindness, even affection, was expected and modeled. His sympathies and desires, while clearly centered on his family and friends, did not end there but extended to his fields and barns. In a fundamental sense he understood that as one creature among others, his life was characterized by need and interdependence. The first rule of an honest, but also humble, life is to honor our need and those we depend upon with kindly and attentive work, with work that does not abuse others for personal gain.

Agrarian, but also hunter-gatherer, societies have clearly been in a more advantageous position to develop this sort of deep insight and understanding that comes from physical proximity and sustained, practical contact. Of course, farmers have never been perfect and could be as destructive as we are. Owing to intense economic pressure, but also personal obstinacy and communal xenophobia, rural communities have often been places of social and ecological failure. Our task is not to advocate for a “back to the land” movement. What we need to consider is how we today, now mostly urbanites and suburbanites, can develop the sorts of sympathies, understanding, and affection that will lead to a sustainable, healthy world. The future of our natural homes and our communities will depend on the economic and political choices made by urban dwellers that have a richer and deeper appreciation for their dependence on land. As thoughtful consumers they can then make the decisions that will encourage and support good farming, good forestry, and good fishing.⁴ But here we must start with the frank admission that for the most part, we are ignorant about the “natural” world surrounding us, not knowing how it works, what its limits and potential are, or what it means.⁵

4. An excellent resource documenting urbanization trends, but also offering practical suggestions for social, economic, and political reform, can be found in Starke 2007.

5. Consider here the observation of Aldo Leopold: “One of the penalties of an eco-

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My proposal is that we begin by figuring out how to expand the scope of our sympathies and care. What mental, bodily, and practical habits do we need to promote so that the care of our ecological homes comes into free and spontaneous alignment with the care of ourselves? My presupposition is that we will only care *for* what we care *about*. For instance, the reason I care as much as I do about my family and friends is because I see them as valuable. They mean deeply to me because they intersect with my living at many levels, and I see without too much trouble how their living and fate intersect with my own. I have sympathy for them not simply because of how they benefit me but because I understand and appreciate how our lives are enfolded within each other. I recognize that in their harm I too am harmed.

When we perform some cultural analysis it becomes clear rather quickly that the scope of what we care about has been significantly narrowed in the modern world due to social forces like urbanization, industrial/market economies, consumerism, and technology. I am not suggesting here that we have suddenly become unfeeling brutes. Rather, the way we feel, and what we are in a position to have feelings about, has changed. What I mean is this: the character of our contact with the non-human world has become much more indirect and highly mediated by asphalt and concrete, climate-controlled buildings, light switches, mega grocery stores, automobiles, televisions, and computer screens. Lacking direct contact with the natural sources of life we are becoming more and more the victims of mass biological or ecological amnesia. Whether we appreciate it or not, most of us operate from and within a “nature-deficit” condition. We don’t understand well enough how our living intersects with the living of non-human others.

The most obvious example here would be food. Few of us grow our own food any longer, even a small portion of it. After all, it is humbling, time-intensive work, and requires a vast knowledge of plant, soil, and animal life. Because food comes to many of us in the form of a readily available package—food is always on the store shelf—it is tempting to think that food bears little relation to geological and biological patterns.

logical education is that one lives alone in a world of wounds. Much of the damage inflicted on land is quite invisible to the layman . . . One sometimes envies the ignorance of those who rhapsodize about a lovely countryside in process of losing its topsoil, or afflicted with some degenerative disease in its water systems, fauna, or flora” (Callicott 1987: 286).

In fact, Wendell Berry has remarked that we live with one of the greatest of human superstitions, namely that “money brings forth food” (Berry 2003: 48)! Missing out on food production, we at the same time miss out on one of the most intimate and practical ways we know in which to enact our interdependence with ecological realities. Moreover, since food comes from far away (on average 1300 miles), and is processed under conditions largely invisible to us, it is easy to think of it in a cavalier fashion and as little more than a product on a par with other factory-manufactured products (e.g., Pollan 2006, Kingsolver 2007).

When we engage members of the non-human world primarily as products to be purchased and consumed, their integrity and depth are significantly reduced. Commodities come to be seen in isolation, cut off from the web of relationships that make them what they uniquely are. In this context it is much easier for us to forget that when we eat a slice of bacon we are eating a pig that had to be cared for and then eventually killed, that when we eat apple sauce we are benefiting from the fruit of a well-tended orchard and mild enough Spring, and that when we drink water we presuppose a sufficient snow-pack and uncontaminated ground water. The sources of life—oxygen, water, soil, sunlight, plants, and animals—though basically free to us, are not without great cost. We know this because for any of us to eat, others must die.

When we forget the costliness of life we not only eat with profound ignorance, we also eat with ingratitude. I take it that one of the hallmarks of gratitude is that we engage and receive others from the perspective of their integrity and value. When we say thank you for something or someone what we are really saying is that they matter and count on their own terms, and that their being enables and betters our own. It is not necessary that we reduce their value to how they improve narrowly conceived human interests. After all, we can take delight in the fact that members of the natural world contribute to the vitality or flourishing of a biotic community far removed from our own spheres of practical living. In fact, one of the key elements of a grateful mind is that it begins with the recognition that what I need and enjoy is not mine by right or personal might. The expression of gratitude is thus at the same time the acknowledgment and the affirmation that for my own life I depend on another. The sources of life, all gifts that make our living possible and potentially a joy, are occasions for gratitude precisely because they are not extensions of myself and cannot be reduced to the status of a possession.

Their meaning or significance is not exhausted in the fact that I bring them under my own control or consume them. There is, in other words, an irreducible wildness and gratuity at the heart of all life, a wildness that exceeds our comprehension and our powers to calculate and control. It is on this wildness that we depend for life (think here of Thoreau's claims: "In Wildness is the preservation of the World," and "Life consists with wildness." [Thoreau 1991]). Before it we must, if we are honest, pause and acknowledge our dependence.⁶

I suppose that one of the great delusions of the modern or postmodern worlds is the idea that we can live within an entirely domesticated world, a world in which the reach of our control is complete. The hype of biotechnology and genetic engineering can lead us to believe that eventually we will construct a world in which we are dependent on nothing but our own ingenuity and power. I am not a Luddite and do not want to suggest that genetic research should simply stop. What I am arguing, however, is that we be careful not to forget that at the most fundamental level, at the levels of respiration and digestion, we live through multiple patterns of interdependence with wild habitats and organisms that have their own forms of integrity and depth. It is arrogant and dangerous to think that we can bring the vast diversity and complexity of our natural world within our complete control.⁷ Arrogant because there is simply too much we don't know about how things relate to each other. Dangerous because our presumed control often leads to unforeseen effects that are destructive.⁸

6. The shifting, precarious character of modern and postmodern life makes it much more difficult to acknowledge and embrace our interdependent need because the practical conditions for trust are eroding. Because the bonds we share with others are not deep and always subject to risk, we find it difficult to place our trust in others to be a source of help and nurture to us. This dynamic has been admirably analyzed by Seligman (1997).

7. The danger is that in our desire to control we will reduce the world to manipulatable elements that have the effect of distorting our understanding. For a lucid account of how reductionism had such adverse effects on our understanding of diet, see Michael Pollan (2008). Pollan tells the story of how food was reduced to a set of nutrients and the many adverse health effects that followed. A more complete understanding acknowledges that "even the simplest food is a hopelessly complicated thing to analyze, a virtual wilderness of chemical compounds, many of which exist in intricate and dynamic relation to one another, and all of which together are in the process of changing from one state to another." Food, in short, is more than the sum of its nutrient parts, for "the whole may well be more than, or maybe just different from, the sum of its parts" (62).

8. The arrogance and danger associated with our "management" of habitats and or-

What I have been suggesting is that a disposition of gratitude is a key indicator of ecological intelligence or understanding because it is informed by the wide and deep sensitivity that human life is enfolded within and dependent upon a bewildering array of geological, biological, and cultural memberships. When we are grateful we acknowledge that what we receive is valuable and matters beyond what I may or may not be able to do with it. After all, life does not begin and end with us. The human story, in a sense, is meaningful and possible only because it arises within a dynamic evolutionary story that has an integrity all of its own. Gratitude goes hand in hand with a detailed appreciation for this story of life's complexity and mutual interdependence. It presupposes a refined set of sympathies that have been honed through careful observation and patient practices of engagement. It results in the humble admission that we do not and cannot live alone, but must learn to organize our living so as to be in better alignment with the living of others.

Our alignment should begin with the ground under our feet. Soil, dirt, dust, humus—whatever you want to call it—is simply indispensable. Yet it is easily taken for granted by us today. This was not always the case. Ancient literatures refer frequently to the view that all life, humanity included, comes from the soil and to it all the living will return. It is to be revered because it is so much like a great dispenser of life. Not because it is simply the “container” or receptacle of various mineral and chemical elements (as the nineteenth-century chemist Justus von Liebig argued),⁹ but because it is like a transformer that perpetually cycles death into new life. Hans Jenny, one of the great soil scientists of the last century, spent his entire life mesmerized by the complexity and diversity of soils. Though not an organism (soil does not multiply like critters do), it made eminent sense to him to describe dirt as a living system that bridges the biotic and abiotic worlds, because when looking at the root—soil boundary under a powerful microscope Jenny noted that the scientific observer cannot neatly or precisely distinguish where the biotic part ends and the abiotic begins. Soil represents a deeply mysterious bridge between the living and

ganisms, not to mention the whole globe, are well described by Botkin (1990).

9. Reducing soil fertility to the elements of nitrogen, potassium, and phosphorous, as Liebig did, made possible (along with Fritz Haber and Carl Bosch's invention of nitrogen production) the age of synthetic fertilizer. For the story of how this has led to a decrease in soil health and fertility, see Howard (2006: 69–72).

non-living without which we, as well as plants and animals, simply could not exist.

We would not know or appreciate any of this if it were not for agrarians or people like Jenny who spent the time to work with soil and see it in its details. One could say that the more he saw the wider his range of sympathies grew, so that at the end of his life he could confess to feelings of reverence for it. This reverence for dirt (!), which is closely tied to the disposition of gratitude, turned him into an advocate on behalf of the soil's preservation (see Stuart 1984). Why? Because the soil, in addition to its indispensable role in the processes of life, has its own integrity deserving of our respect and care. The human story would have been impossible without the story of soil. It is perhaps this agronomic realization that sits behind both the Hebrew (*adam/adamah*) and English (*humus/humanity*) etymologies that link people to the soil.

Soil is a wonder. Besides containing over a thousand different species of lower animals (ranging from earthworms to ants, amoebas, and nematodes), it is also host to millions of molds, bacteria, and other microorganisms. In one piece of research Jenny estimated that there is more living biomass under the ground than there is above it. Together these living elements transform dead bodies into the compounds or basic building blocks for new life. It thus makes good sense to see, in varying degrees of course, that the development and deterioration of civilizations has something to do with soil quality: healthy soils are the indispensable prerequisite for vibrant food production and water retention and filtration. As soils are compromised—as they were in Sumeria, Mesoamerica, the Mediterranean, and the eastern seaboard of the United States—the cultures that live upon them are also compromised (Hillel 1991, Montgomery 2007, Diamond 2005).

If we are to get into a position where we can be grateful for soil, and thus also take better care of it, we have to stop seeing it as mere inert matter that doesn't matter. Soil is not a thing but a complex web of relationships that succeeds because of multiple, dynamic associations that we have barely begun to understand. It is in terms of these relationships that life's possibilities emerge. As William Bryant Logan likes to point out, soil is a continuous and necessary experiment at the boundary of organic and inorganic life, which means it is more like a living system than a mere collection of inert matter and chemical elements. It is an experiment in hospitality because what we see in dirt is a perpetual "making room" for

new life to flourish and grow (Logan 1995: 19).¹⁰ Insofar as we fail to understand soil in this complex manner we are fundamentally ignorant. As ignorant and without understanding, it is difficult for us to be grateful or to see soil as deserving of our concern and care.

At this point one could object to this whole project by saying that nature does not deserve our gratitude. We might want to say, following the evolutionary biologist George Williams, that “Mother Nature is a wicked old witch!” (1993: 217). After all, endemic struggle and massive and seemingly pointless suffering or death greets us at every turn. Though we may like to romanticize Nature as our warm and nurturing mother, the fact of the matter is that for those who really get close to it there are precious few signs of reciprocal care. And so in our more sober moments we are inclined to agree with Annie Dillard when she says, “Evolution loves death more than it loves you and me” (1974:176). Or, less dramatically, we may follow Lawrence Slobodkin, who advises, “Nature is neither wise nor benign nor malicious . . . Let humanity do its worst! Rain will still fall, rivers will still flow, and there will be storms and floods and droughts . . . However, there is no certainty that any particular species or landscape will survive” (2003: 11, 99).

Though it may be going too far to ascribe wickedness to the natural world (since this would be an example of a reverse, and thus equally guilty, personification of the natural world), we do need to take seriously the contention that nature’s apparent indifference to us renders our gratitude platitudinous or naively pious. Are evolutionary processes uniformly death-wielding or etched in bloody struggle? Clearly not, for then we would be at a loss to explain the evolutionary development of symbiotic or cooperative relationships that produce mutual benefits (think here of the bacteria that while finding our bodies a suitable home also aid us in gastro-intestinal work). Moreover, evolutionary processes have produced various forms of sociality among higher organisms that in certain instances, most notably in primates, give rise to dispositions of affectionate

10. Compare the poetic and theological observation of Wendell Berry, who says: “The most exemplary nature is that of the topsoil. It is very Christ-like in its passivity and beneficence, and in the penetrating energy that issues out of its peaceableness. It increases by experience, by the passage of seasons over it, growth rising out of it and returning to it, not by ambition or aggressiveness. It is enriched by all things that die and enter into it. It keeps the past, not as history or as memory, but as richness, new possibility. Its fertility is always building up out of death into promise. Death is the bridge or the tunnel by which its past enters its future” (1969: 19).

care, love, and altruism. Perhaps even more significantly, however, is the fact that evolutionary processes, in varying ways, times, and places often give rise to greater diversity and increased complexity, something we would not expect if evolution were one vast death machine and nothing else. Though the evolutionary record testifies to a good deal of aimless and painful wandering, it has not been entirely without point or value.

Consider here the words of Holmes Rolston: “Logically and empirically, there must be an interplay of order and disorder if there is to be autonomy, freedom, adventure, success, achievement, emergents, surprise, and idiographic particularity. In a world without chance there can be no creatures taking risks, and the skills of life would be very different, if indeed life—as opposed to mechanism—were possible” (Rolston 2003: 69). What Rolston is pointing to is the fact that the diversity and complexity of life require the interplay of order *and* disorder. Without disorder, unpredictability, risk—the very conditions that give rise to pain and death—we would have only the uniformity and regularity of a dead machine. Life forms develop and grow precisely because they are in biological contexts that challenge and can always potentially defeat them. Noting this is not to say that “Nature” is systematically rigged toward our defeat. There is simply too much “success” to see, too many forms of life that prompt us to stand in awe.

Nature’s randomness and chance is thus not sufficient warrant for us to say that it is not deserving of our gratitude. Evolutionary processes have given rise to so many diverse, complex, beautiful forms of life that we would have to be blind not to sense their value. That the biological context for their emergence includes suffering and death ought only to increase their value—and thus also our gratitude—because we now have a deeper appreciation for the fact that they did not need to be. Recognizing the contingency of things ought to help us see that the world comes to us as gift. It is never simply a brute presence but always a *given* presence. There is a fundamental gratuitousness about life which ought to give us pause.

My argument in this essay has been that we do not pause enough and then find in our pausing the opportunity and need for gratitude and care. We are, most of us, too hurried in life, too beset by the worries of our own ambition, too locked within the narrow scope of our own worlds. There are simply too many walls, disciplinary and otherwise, that separate or shield us from the wide non-human world. What, practically speaking, can be done about this? By way of conclusion I will offer some

suggestions, particularly in the domain of education, of how dispositions of gratitude can be nurtured or cultivated, recognizing that gratitude can be one of the most salient and powerful contexts for responsible environmental action.

Earlier on I mentioned that ignorance, the inability to see details, complexity, and gratuity, forms a primary obstacle to an appreciation of another's value. If this is so, then it is of the utmost importance that we figure out how to get people informed about ecological realities so that they come to understand how their living depends in multiple ways upon the diversity and health of other living systems. What I have in mind here is not simply the addition of an ecological course here and there, because what we need is more than the transmission of biological information. People will not become ecologically literate because they have learned in an abstract manner that they also happen to be biological beings. The knowledge and understanding we are after should be of the sort that is practical and intimate, that goes to the heart of our identity.

Given this basic ignorance it has been well suggested that we need to revise our educational curricula in fairly dramatic fashion.¹¹ If at one time we thought the university to be the transmitter of "high culture," the place where we learn the cultural referents (in literature, philosophy, the fine arts and sciences) that enable us to navigate through life with decency and honor, the time is now right to imagine and implement universities that will provide ecological referents that will enable people to see in unmistakable terms the many ways in which human flourishing or success is always premised upon biological flourishing. This means that virtually all the disciplines will need to be grounded in the ground, rooted in the soil, so that we do not take for granted economies without trees and water and sunlight, histories without arable land, God without creation, music without birdsong or the beating heart, philosophy without stomachs, architectural/urban design without renewable resources, or medicine without healthy agriculture.

What I'm suggesting here is not quite like "ecology across the curriculum" but rather ecology *beneath* and *within* the curriculum, ecology that *permeates* the curriculum. The point is that ecology is not an add-on to an otherwise fine course of study. Students need to see that the "course" or "running" that the curriculum itself is (from the Latin *currere*) would

11. On the primary/secondary school level, see Sobel 2004 and for higher education, see especially Orr 1991.

stop dead in its tracks were it not for the life processes that are at work deep within it. If I am correct in this suggestion, that means a greatly expanded role for trained ecologists in virtually all university departments. I don't mean simply that we need a greater number of ecologists or agrarians (though that would not hurt), but that we need ecologists who can bridge disciplines, who can make the connections between soil health and bodily health, habitat resilience and economic sustainability, clean water and social justice. These will be ecologists who, in a practical and detailed manner, will deepen our appreciation for the many layers of human interdependence.¹² In this deepening we will witness the expansion not only of our sensitivities, but also our sympathies and care, for at the very least we will now recognize that there is so much more to care about.

The sort of learning I am talking about, if it is to be successful, cannot merely be a learning of the head. I would argue that we need to bring our hands and our stomachs back into the equation. One of the best ways to do this is to get people involved again in the production of their own food. Here we need to remember that for centuries the overwhelming majority of people did in fact grow their own food. We are the odd ones who have lost this ability and the sensitivities and sympathies that go with it (as a test case, how many of us, given the right equipment and seed stock, fertile land, and ideal growing conditions, could provide for our own nourishment throughout the year?). We do not need to recommend that everyone become a farmer, but we should encourage people to become reacquainted with gardening. For this we do not each need a lot of land, nor do we need to grow all of our own food. What we do need are the sensitivities that come from putting our hands and stomachs directly in touch with soil. The growing popularity and success of urban farms, community gardens, and farmer's markets indicate the sensitivity is already there and simply needs to be cultivated (e.g., Halweil 2004).

Hans Jenny once said that he felt fairly confident that healthy soils make for healthy people. He also wanted to think, though he could not do so with anything more than anecdotal evidence, that good soils make for

12. One avenue of approach is for ecologists to highlight "nature's services" to humanity, which is to document the many ways in which natural processes or outcomes directly benefit human activities (Daily 1997). This sort of work needs to be made much more widely available and accessible, particularly in urban contexts where people often lack a rudimentary appreciation for these benefits.

good people.¹³ What he meant by this, I think, is that putting our hands into dirt teaches us important things about ourselves: that we really do grow out of the ground, that a properly human life is a humble life (i.e., the connections between humus, humanity, and humility are not merely etymological), and that we live through the gifts of others. It would be a grand thing if our schools and universities could play a more active role in the cultivation of an authentic humanity. They can do this more readily if they bring the arts of soil cultivation back into the university. I mean this quite literally.

When I taught at the University of Saskatchewan (Canada) I often rode my bike past test plots and barns. The sights and smells, besides being a personal comfort to me, were a daily reminder that soil, vegetation, water, and sunlight form the indispensable nexus for whatever else went on in our buildings. Being present with corn, canola, pigs, and dairy cows made it more likely that I would contemplate the aesthetics of dirt or the ontology of milk, or that I would at least not see them as irrelevant to aesthetic or metaphysical inquiry. Could our schools do a better job forging the connections between our minds, bodies, and biological habitats? That they could do so is beyond doubt. The question is whether or not they will. I happen to think that our students, not just the little ones, would welcome the opportunity to touch the earth and to become reacquainted with their biological homes. This is why it would be such an excellent idea for universities and colleges to start planning vegetables along with flowers in the midst of their quads, *and have students and faculty take care of these gardens*. Why should this gardening activity not become a vital part of the curriculum and our daily diet?

At Oberlin College David Orr teaches a class in sustainable agriculture each spring. His students, most of them urbanites or suburbanites, have never seen a farm, yet the class is always full. As part of their experience they go to visit David Kline's Amish farm. While there they smell, many of them for the first time, the aroma of freshly plowed soil. They see and stroke his dairy cows, and walk among freshly sprouted vegetables. When they enter the bus to go back home, often with considerable reluctance, many of them simply remark, "This has been the

13. We should observe that in its earliest, middle English usage, the word "culture" referred to a cultivated piece of land and, presumably, the skills needed for people to secure their livelihood on it. A "cultured" person thus referred to a husband of the soil (Bate 2000: 13–14).

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sanest day of my life.” Some of them even vow to pursue careers in agriculture! What this example shows is that more people than we might think are ready to immerse themselves in the natural world and find there their sanity and joy. Should not we as educators do everything we can to facilitate that desire?

The task before us, as I see it, is for ecological intelligence or literacy to become an intimate and vital part of our self-understanding as humans. We need to imagine and implement ways that will foster a detailed and complex appreciation for the many ways in which human life is enfolded within broad geo-chemical and biological processes. With this appreciation will come a sense for the value and wonder of our world, and with that, hopefully, the response of gratitude. I can't think of a better or more inspirational way for environmental concerns to register and take root in our public consciousness than from out of a context and disposition of gratitude.

Response

Biogeochemistry on the Farm

WILLIAM H. SCHLESINGER

HUMANS SEEM TO HAVE spent the first 2 million years of their evolution figuring out how to live apart from nature—first in caves, then in castles, and finally in modern cities. Each step has led to a progressive segregation of a large fraction of our population from nature, where we are sustained by agriculture, trade, currency, and other laudable human constructs that allow the bounty of nature to be carried to the urban sphere. Just as my lack of talent has encouraged my absence from the basketball court and thus any hope of understanding the nuances of the game, so too has the average citizen given up on farming in favor of knowing that a bag of apples is always to be found at Kroger food stores. We have lost the knowledge of nature that might tell us that a particularly tart apple comes with an early cold spell in autumn.

Wirzba asks us to look more deeply, to think about how we might react if the bag of apples was not at Kroger and hadn't been there for weeks. Or suppose a drought on the prairie made it impossible for Kellogg's to produce cornflakes. Or a pandemic disease of cattle meant that Burger King was not able to find beef for its hamburgers. This is beyond the plight of the hungry homeless; consider a day when every citizen is hungry. How many of us would be capable of growing our own food? Where is the once widespread knowledge of the land?

Separation from watching our food grow represents only one of many ways in which humans have separated themselves from nature and lost track of the services that nature provides. Abundant, cheap fossil energy has allowed us to substitute pesticides for predators, irrigation for natural rainfall, and fertilizers for composting. Our water is purified in industrial plants rather than aerating streams, our clothes are dominated

by synthetics vs. natural fiber, and our transportation is by jet airplanes and private motor vehicles versus wind and animals. Our food is distributed over vast distances, and we find summer produce, like strawberries, in our grocery store in February. Perhaps this is what we should expect when we invite 6.8 billion people to dinner every night.

Many of Wirzba's arguments echo those of Michael Pollan in his best-selling book, *The Omnivore's Dilemma* (2006). Pollan and Wirzba both argue for a return to biogeochemistry on the farm—that is, to realize that nature is remarkably effective at recycling nitrogen, phosphorus, and other essential nutrients between the soil, plants, animals, and our food. Wirzba focuses our attention on the soil, where a vast community of microbes transforms wastes into resources, producing a closed biogeochemical cycle that neither loses important nutrients nor requires new inputs from outside. Pollan argues in favor of polyculture farming, where crops and animals are carefully planned to cohabit the landscape and recycle wastes. Along with lesser environmental impact, Pollan says that the food tastes better.

Wirzba does not want us to grow our own food, necessarily. He believes that the separation of everyday human life and thought from our dependence on nature explains our indifference to a wide variety of environmental issues, such as ozone depletion, climate change, and overfishing, that should warn us of unsustainable human impact on the global biosphere. Not suggesting that it is in our spirit to return to the Earth, he recommends that we must reinvigorate a gratitude for nature in our voting citizenship. Youngsters playing in a local stream, teenagers on a weekend camping trip, and adults in their backyard garden will be reconnected to the Earth and the species that share the planet with us. We may be happy that we sleep in a cozy bed at night; nevertheless, we will appreciate what nature does for us, “out there.”

Of course, he is right, and his ambition is a small first step to reversing the behavioral evolution of the genus *Homo* before it is too late. We will not grow our own food—at least not 6.8 billion of us, but to know nature and her soil is to respect her, so she can sustain us all.