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Naturalism and Nature: The Ecology of Physicalism

We explored, in the previous chapter, the implications of physicalism on human heroism and creativity. We now turn our attention outward, from how we look inward at ourselves as human persons to how we view the world around us. What are the implications of physicalism on the question of how humans ought to interact with natural world? What sorts of ecological behaviors might follow from a philosophy of physicalism, if taken seriously and lived consistently?

We will begin by looking at implications of a very narrow sort of belief espoused by Raymond Kurzweil—ideas that may not yet be broadly accepted even among the most ardent physicalists. Then we will turn to two more implications that follow from more general forms of physicalism.

Virtual Reality and the Disembodied Human

"We don't always need real bodies. If we happen to be in a virtual environment, then a virtual body will do just fine."[1] This may sound like a statement from *The Matrix*, where the human race has (unknowingly) ceased to use their bodies and exists entirely in a virtual world. But it is the voice, once again, of Ray Kurzweil. Kurzweil foresees and welcomes a world in which our lives become dramatically more virtual through *neural implants*: devices that bypass our actual physical senses and directly control the parts of the brain that respond to those senses, thus giving

1. Kurzweil, *Age of Spiritual Machines*, 142.

us the illusion of sight, sound, touch, taste, and smell even when there is nothing in the physical world corresponding to those sensory perceptions. Now while this early stage of his futuristic vision makes most of our bodies irrelevant, as with the Matrix it still requires that we have our biological brains, albeit enhanced. However that is only the first step. He also makes the startling prediction that by the end of *this* century humans will no longer need *any* part of our bodies. Not even our brains. We will be able to download our consciousness into computer memory and lead eternal virtual and idyllic lives where all of our wishes can be instantly fulfilled—as long as our wishes correspond to sensory perceptions.

Ideas such as this have drastic ecological implications. At first glance it may seem that a world view affirming only the bodily reality would place a *higher* value on the physical world—that is, on what we usually call *nature*—and as such could provide a better basis for healthy environmental practices. But passages like that above should make it clear: this is not the case at all. Physicalism in the vein of Raymond Kurzweil devalues some of the most important principles and motivations for healthy ecology.

Let us begin by exploring Kurzweil's idea further. The previous chapter in his book explains his view of how this next step of human evolution will unfold. In the same way that humans have already begun replacing bad knees and hips with synthetic ones, and replaced parts of our hearts with artificial valves and pumps, we will also eventually replace our brains with nanotechnology. This, he argues, will be a much better form of intelligence than our current biochemical brains. If you begin with Kurzweil's assumptions about our mind being no more than our brain, and our consciousness no more than a physical reality, then what he promises makes sense even if the technology is a long way off. The difficulties of building synthetic human brains have to do only with the complexity of the brain, and not with any fundamental philosophical difference in kind between human minds and silicon-based "intelligence." Having reduced our minds to automata, not only will it eventually be possible, in theory, to build a computer and write a program to *do* anything our human brains can *do*—that is, to *think* any thoughts we can *think*—there will be nothing to prevent us from replacing our brains with computers. The prosthesis experiment discussed in Chapter 1 ceases to be a *thought experiment* and becomes a real-world goal.

But once we have replaced our brains, why do we need our bodies at all? If we go through all the work of loading our consciousness into a

computer, and thus replacing our biochemical brains as computing devices with modern nanotechnological computing devices, why should we then bother to take that computer and hook it back into our frail bodies with all their many limitations? Our bodies, after all, are susceptible to disease and aging. If our brains are just computers, we might as well carry out our entire existence as part of a computer, where virtual reality could eliminate those limitations, and also synthetically provide the illusion of whatever sensory perceptions we desire. We could all be like Neo in *The Matrix*, unbound by the physical limitations of mortal flesh.

This, indeed, is Kurzweil's thinking, as he himself goes on to suggest. "There is no obvious place to stop this progression until the human race has largely replaced the brains and bodies that evolution first provided."[2] In short, he promises, since consciousness is nothing more than advanced computation, we will be able to download our consciousness into a computer.

> Actually there won't be mortality by the end of the twenty-first century. Not in the sense that we have known it. Not if you take advantage of the twenty-first century's brain-porting technology. Up until now, our mortality was tied to the longevity of our *hardware*. When the hardware crashed, that was it. For many of our forebears, the hardware gradually deteriorated before it disintegrated. Yeats lamented our dependence on a physical self that was "but a paltry thing, a tattered coat upon a stick." As we cross the divide to instantiate ourselves into our computational technology, our identity will be based on our evolving mind file. *We will be software, not hardware.*[3]

As I noted, this is a rather stunning idea. It is *this* century he is speaking of. That last sentence is not even stated as a *remote* possibility of what *might* happen, but as a *prophecy* of what *will* be: we will cease to be bodily creatures altogether and will become just disembodied brains, or brains with only virtual bodies—though brains that are far more powerful than our current ones. "Today, our software cannot grow," he writes. "It is stuck in a brain of a mere 100 trillion connections and synapses. But when the hardware is trillions of times more capable, there is no reason for our minds to stay so small. They can and will grow."[4] And a little

2. Ibid., 141–42.

3. Ibid., 128–29, emphasis original. Kurzweil is quoting from W. B. Yeats's poem "Sailing to Byzantium."

4. Kurzweil, *Age of Spiritual Machines*, 129.

later, he adds that "our twenty-first-century physical technology will also greatly exceed the capabilities of the amino acid–based nanotechnology of the natural world."[5] For some the idea is terrifying. For some it holds wonderful promise. For some, it is perhaps both.

Again, lest we have any misunderstanding of this vision, or doubts that Kurzweil could really be making this promise, two sections of chapter 7 of his book are suggestively titled "Virtual Bodies" and "The Sensual Machine." These chapters explain what will follow from his promises. For example, there are powerful implications for romantic and sexual human relationships. "In addition to direct sensual and sexual contact, virtual reality will be a great place for romance in general," Kurzweil envisions. "Stroll with your lover along a virtual Champs-Élysées, take a walk along a virtual Cancún beach. . . . Your whole relationship can be in Cyberland."[6] What will make all this possible? Kurzweil explains his predictions.

> By the fourth decade [of this century], we will move to an era of virtual experience through internal neural implants. With this technology, you will be able to have almost any kind of experience with just about anyone, real or imagined, at any time. It's just like today's online chat rooms, except that you don't need any equipment that's not already in your head, and you can do a lot more than just chat. You won't be restricted by the limitations of your natural body as you and your partners can take on any virtual physical form. Many new types of experiences will become possible.[7]

Indeed, Kurzweil goes on to say, our experiences will not be limited to simulating physical experiences; we will be able to directly control our emotions, ideas, and spiritual experiences as well, since he claims that these are all just biochemical sensations of the brain.[8] "Regardless of the nature and derivation of a mental experience, spiritual or otherwise, once we have access to the computational processes that give rise to it, we have

5. Ibid., 138.

6. Ibid., 148.

7. Ibid.

8. As noted earlier, Kurzweil's use of the word *spiritual* here is a clever though misleading ploy. Kurzweil denies any objective spiritual reality—that is, any reality beyond the physical/material reality testable by science. Specifically, he denies the existence of spirit or soul in any dualistic sense. Whereas we suggest that our sense of our own spirituality, which seems to be a universal human experience, is a pointer to something real in the world, Kurzweil claims that the human sense of spirituality is simply part of our computational process, and will be controllable.

the opportunity to understand its neurological correlates." What follows, he then claims, is this: "With the understanding of our mental processes will come the opportunity to capture our intellectual, emotional, and spiritual experiences, to call them up at will, and to enhance them."[9]

I could continue giving more examples of this thinking, about which Kurzweil himself elaborates at length, but at this point it is worth turning from the ideas to their implications. At the heart of this is the promise that we will be free of our physical bodies (including our biological brains); we "won't be restricted by the limitations of [our] natural body." This is what it means to live in a *virtual* (as opposed to material) reality. Our physical bodies are no longer important. Indeed, they are hindrances. Now *ridding ourselves* of the material body may seem like a strange end to reach when we begin at the starting place of affirming *only* the material body, but Kurzweil does a convincing job of showing how his goals flow naturally from his assumptions. It is very reasonable—perhaps nearly unavoidable—for one who holds the basic assumption that humans are complex biochemical computers to be drawn at some level to Kurzweil's goals of enhancing our computational powers and freeing ourselves from our bodies.

And yet these goals may be deadly to healthy human interaction with the natural world in which we live. Put another way, the ecological practices that will emerge from the presuppositions shared by Kurzweil and others, have a high and terrible cost. For when you devalue the physical body you devalue the entire physical world. For the body is the very means by which we interact with this world of *nature*. It is with our hands that we work the soil and bring forth fruit. It is with our mouths that we taste the goodness of that fruit, and with our bodies we receive its nutrition. And it is with our eyes and ears that we can experience and appreciate its beauty. If we can create virtual tastes, then why cultivate real, healthy food? If we can live with virtual bodies, then why care for the world that in turn cares for our bodies? Why worry at all about the health and beauty of the world, when we can live in virtual worlds of our own imaginings? And, on the other side, it is our bodies that will grow sick—and, indeed, already grow sick—as the air, soil, and water around us get progressively more toxic. But if our bodies don't matter any more, who cares?

9. Kurzweil, *Age of Spiritual Machines*, 151.

The philosopher Norman Wirzba explains this well in his essay "Placing the Soul: An Agrarian Philosophical Principle."

> To put the point more practically, can we *properly* engage the world if we despise the bodies in terms of which such engagement occurs, or despise the natural bodies upon which our own lives so clearly depend? One of the lasting contributions of [Wendell Berry's collection of essays] *The Unsettling of America* was to show that on both counts the answer is a resounding *No!* Though we might dream of ourselves as disembodied, immortal souls, or as complex computers that will finally shed all biological and physiological limitations, the fact remains that we live necessarily through our bodies.[10]

The answer to Wirzba's initial question, "Can we *properly* engage the world if we despise . . . the natural bodies upon which our own lives so clearly depend?" is, I believe, "No. We cannot." If we despise our natural bodies (as Kurzweil apparently does), then we will not properly engage the world. Our only engagement with the *natural, material* world will be to extract energy necessary to fuel our *virtual* worlds—and perhaps, for a short time only, to extract resources to sustain our physical bodies until we can be rid of them.

Now, it is fair to ask whether I am taking Kurzweil's ideas too far. The answer, I think, is that I am taking them no further than Kurzweil himself. He explicitly envisions for us a new world, and he claims his new world is not only good, but better than our current one. With respect to the destruction of the world that results from this type of thinking, and the subsequent destruction of all the good and healthy benefits our bodies enjoy from a healthy ecology, Kurzweil seems to say, *So what? Soon we won't need it*. In fact, he promises something like this explicitly. "Food, clothing, diamond rings, buildings," he writes, "could all assemble themselves molecule by molecule." But what about fruit and vegetables and the produce of the soil? In his envisioned new virtual world, he tells, us, "Any sort of product could be instantly created when and where we need it. Indeed, the world could continually reassemble itself to meet our changing needs, desires, and fantasies."[11] The underlying assumption here is that the world exists only to meet our needs, desires, and fantasies.

10. Wirzba, "Placing the Soul: An Agrarian Philosophical Principle," 86.

11. Kurzweil, *Age of Spiritual Machines*, 140.

His most frightening comment comes two pages later. "If we're going to enter a new world, we had better get rid of traces of the old."[12]

Though made in the context of making virtual reality experiences more realistic, this comment is very suggestive of the underlying agenda. Anybody who cares about the healthy ecology of this world, who cares about the cleanliness of our water and air, or the ability of our soils to continue to sustain diverse life—who cares about anything in the natural world beyond the production of energy to fuel the computers that will sustain our perpetual virtual lives—should be terrified by Kurzweil's vision. It is a vision that calls for getting rid of any remaining traces of our old, physical, ecological world. The consequences of this materialist thinking—in particular, of viewing the brain as a mere complex computational device—is devastating to the health of the physical earth on which we live. And this ought to lead us also to ask whether this sort of thinking really rings true. If we live it out, and practice it, does it satisfy the soul or spirit?

A final thought is in order in this section. I began this chapter by suggesting that the first set of implications explored is particular to Kurzweil's brand of physicalism. Many physicalists would distance themselves considerably from this vision. Ideas that Kurzweil puts forth as promising, others would see as disastrous. So we must ask, are these extremes, which envision humankind moving toward virtual reality, truly a logical conclusion to physicalism as Kurzweil makes them out to be? There are enough thoughtful philosophers who share Kurzweil's basic presuppositions of physicalism but deny his conclusions that I won't argue that these conclusions follow *inevitability* from the underlying philosophy. And yet I cannot help but notice that many in our current Western culture—a culture strongly influenced by physicalism—show frightening signs of moving wholeheartedly toward living virtual lives.

Consider, for example, not merely the popularity of spectator sports (which have been around since the ancient Greeks), but of so-called "fantasy" sports. These virtual leagues are growing at a phenomenal rate and now exist not only for baseball and football, but also for basketball, hockey, and even fishing. Not only would we rather watch sports on television than play the sports ourselves with our own bodies—not only do we root passionately for carefully managed personae we have never met, following the ongoing crises and attention ploys of star players as

12. Ibid., 142.

carefully as anybody follows soap operas or tabloids—but with the rise of fantasy teams, we no longer even care about the actual regional teams we watch. We may be more interested in our fantasy team than in the "real" teams, and thus more interested in statistics of players independent of actual outcomes of games than we are in who wins the game.

And this is only the mildest of examples. We could speak about the meteoric rise of video game cultures over the past two decades. Most video games are set in virtual worlds, where players spend hundreds or even thousands of hours playing the parts of virtual characters with virtual bodies (enhanced by imaginary powers) fighting virtual battles for virtual rewards. One could argue that we are already living virtual lives.

A few year ago, Ken Myers, director of the *Mars Hill Audio Journal*, gave another poignant illustration of how our lives are becoming more virtual, commenting on popularity of the television series *Hannah Montana* that aired from 2006 to 2011.

> Miley Cyrus . . . plays the lead character on Hannah Montana, a character named Miley Stewart. Stewart has migrated west from her humble Tennessee origins to live in Malibu, to pursue her dreams as a superstar singer known to the public as Hannah Montana. Hannah Montana is thus a persona, an alternate identity assumed by Miley Stewart. Miley Stewart is also a character, performed by Miley Cyrus. What makes it even more reflexive is that Miley Cyrus performs in concert as Hannah Montana, bypassing Ms. Stewart entirely. One might ask if Miley Cyrus is really a celebrity pop sensation, or whether she just pretends to be a pop sensation when she's in character.[13]

Now Myers was not specifically addressing the concern of living in an increasingly virtual world, but rather the "disorders encouraged by celebrity culture." He is wondering if our "six- and seven-year-old daughters really benefit from having as a guide to growing up a performer playing a performer playing a performer."[14] But the topics are related, and his final comment is very revealing. It is already an abstraction—a move toward virtual reality—when we are more absorbed by celebrity performers than by real people who live next door. But now we are absorbed by "a performer playing a performer playing a performer." We are three levels of abstraction away from reality. We are living a virtual reality inside a

13. Ken Myers, *2008 Summer Letter* (to Mars Hill Audio subscribers), June 2008.
14. Ibid.

virtual reality inside a virtual reality.[15] Have we already entered Kurzweil's vision?

Wendell Berry, one of the most important writers of the past fifty years to focus on environmental and agrarian concerns, also addresses the impact of this way of thinking about the mind and body. The topic is important enough that he touches upon it in several of his essays, but perhaps his clearest comments can be found in his essay "The Body and the Earth."

> And it is clear to anyone who looks carefully at any crowd that we are wasting our bodies exactly as we are wasting our land. . . . Our bodies have become marginal; they are growing useless like our "marginal" land because we have less and less use for them. After the games and idle flourishes of modern youth, we use them only as shipping cartons to transport our brains and our few employable muscles back and forth to work.[16]

Berry's observations are profound. We are already acting like a society that has denied the importance of body and thinks only of mind.

Nothing Unnatural

Though there seems to be at least some cultural evidence that our lives are becoming ever more virtual—and as noted earlier even my small Vermont town has a multi-million dollar research company dedicated to bringing into being Kurzweil's vision of a downloaded consciousness—still some would argue that such a complete devaluing of the body is peculiar only to Kurzweil's brand of physicalism. However, there are other ecological implications of naturalism that are worth exploring, because they are potentially of great consequence. One inescapable conclusion of naturalism is that everything humans do is, *by definition*, natural. Indeed, according to physicalism everything we do is not only natural, but also outside of our control—the control of any possible free will. It is even inevitable, in a certain sense, though perhaps unpredictable.

15. It is interesting to note that Miley Cyrus also provided the voice-over for the character Penny in the 2008 animated film *Bolt*. Penny is a child actor with a regular television show. So Cyrus is once again an actress providing the voice of an actress playing a part. Except now the actress Penny, voiced by Miley, is entirely virtual, the figment of computer animation. And her television character is even more virtual: a science-fiction action television series starring a dog with superhuman powers.

16. Berry, "The Body and the Earth," 103.

Pulitzer Prize winner Gary Snyder is one of today's best-known American nature writers. It is altogether likely that Snyder would cringe in revulsion at the futuristic vision of Raymond Kurzweil and would warn readers of its dangers much as I did in the previous section. However, in at least one essay Snyder also defends a worldwide of naturalism. His definition of "nature," from his essay "The Etiquette of Freedom," includes "'the material world or its collective objects and phenomena,' including the products of human action and intention." In other words, humans are fully a part of nature. Not just human bodies, but human action *and intention* are part of nature. This means that *all* our thoughts have naturalistic explanations. This is almost a definition of physicalism. It is certainly a denial of any sort of dualistic nature that sees humans as both spiritual and bodily beings. Or, rather, philosophically speaking, the implication works in the other direction: if we assume that humans are physical beings only, and not beings with any spiritual or supernatural nature, then it follows immediately that everything we do is not only *explainable* by nature (materialistic causes only), but is actually a *part* of nature. That means *everything* we do is natural. Snyder thus brings his readers to a conclusion consistent with his assumption. "Science and some sorts of mysticism rightly propose that *everything* is natural.[17] By these lights there is nothing unnatural about New York City, or toxic wastes, or atomic energy, and nothing—by definition—that we do or experience in life is 'unnatural.'"[18]

This bears repeating. If the assumptions of strict naturalism and its child physicalism are correct, then everything done by humans, including fouling the rivers, depleting the ozone, toxifying or plowing under our soil, razing Amazonian rain forests, causing the extinctions of species, or carrying on war with one another, is completely natural *by definition*. To reference a famous old question, "Does a bear poop in the woods?" we answer, "Yes, that is the natural thing for a bear to do." And likewise if we ask, "Does a human dump sewage into the river?" our

17. As noted in chapter 1, science does not propose that everything is natural. The statement "Everything is natural" is a philosophical statement and not a scientific one. It is completely possible—and history has numerous examples—to be a scientist and to do science, exploring cause-and-effect relationships *within* the natural world, without holding to this naturalistic presupposition that these are the *only* sorts of causal relationships. If one does hold to this philosophy, however, then one can subsequently claim that science is sufficient to explain everything. Again, however, this is a philosophical assertion, and not a scientific one.

18. Snyder, "The Etiquette of Freedom," 8.

answer to this question also *must* be, "Yes, that is the natural thing for humans to do." If humans have done it, and if humans are entirely part of nature, then it must be natural. Under the philosophy of naturalism, humans dumping sewage, or spilling unimaginable quantities of oil into the Gulf of Mexico, or removing entire mountains from Kentucky and West Virginia, is as natural as grass growing, bees collecting pollen, and water flowing downhill. Sewage in rivers as well as oil in the Gulf *must* be viewed as *the natural state of things*

Not only is it natural, but it is also *inevitable*. That is, not only has the fouling of our air, water, and soil been a natural outcome, but under the assumption of strict determinism it has been the *only* possible outcome since the beginning of the universe. And even under the broader form of determinism allow for quantum unpredictability, the outcome was just the result of the laws of physics plus the rolling of a lot of dice. In that sense, none of us had any real choice in the matter, any more than we had free will to determine any of our behaviors such as (to use Russell's example) writing poems or murdering people.

Again, the latter statement that humans are not really responsible is true under the assumptions of physicalism even if strict determinism is false. Whether the physical world functions in a fully predictable way entirely according to laws, or in a partly unpredictable way because of quantum effects, it is still the case that human behavior is entirely *natural* and is devoid of free will. In other words, even if we allow unpredictable quantum effects under the umbrella of physicalism, we still have to view the current state of things, and the results of all human activities, as unavoidable if not inevitable. It is all the result of purposeless, decisionless movements of physical particles. Only random luck and not any sort of human choice could have made things different. The only thing responsible for the environmental destruction we are now experiencing—from lost ozone over the South Pole to the dramatic decline of polar bears due to lost ice at the North Pole to ocean dead zones as large as 50,000 square kilometers—is the universe itself. We have no more choice about the polluting we have already done than water has a choice of whether or not to flow downhill, eroding soil and even rock as it goes. And the question of whether we continue destroying the earth or instead change our habits and try to stem or reverse the decline has also already been determined since the moment the universe came into existence. In fact, in this philosophy, the notion of destroying nature must be understood as a misnomer. Nature is whatever exists, in whatever state it is in.

Now, I need to be clear. Snyder was by no means trying to promote toxic wastes, atomic energy, or the growth of the next New York City. And the world would do well to pay attention to his writings and follow more closely some of his suggested lifestyles. Nor was he promoting a sort of fatalism—that whatever is going to happen will happen, because it was already determined. The writings of Snyder, like those of many great nature writers of the past few decades, hopefully motivate a change in our actions so that we care more about the world around us, and live and act in ways that are healthier for that world and our fellow inhabitants of it. Snyder was simply being honest about the philosophical implications of the world view of naturalism.

Our first question, however, is whether this understanding of our human nature helps motivate what might otherwise be called "healthy environmental behavior." Certainly there are plenty of people who hold Snyder's philosophy who are also model citizens with respect to environmental practices. But in many ways the world view itself doesn't seem to promote it. I might express a *personal* distaste for toxic waste, especially in my own backyard, as the saying goes. But I can't complain that it is somewhat *un*natural or *against* nature, if everything we humans do is by definition natural. The best I can do is argue that these sorts of behaviors (toxic dumping, etc.), however natural they might be, will result in lives that are less desirable for the majority of humans. And then I must hope that those who wield the power to influence the decisions agree with me, or at least that they agree that it will be less desirable for them also.

But at the same time, the physicalist needs to understand that whatever is going to happen is already in the programming of the universe (which may or may not have a random number generator in the form of quanta, but is a computer program nonetheless, according to the causal closure principle of physicalism). The future, including my own future behavior as well as the future of polar bears, is outside of the free will of any human. If I argue against toxic dumping, or for cleaner high-mileage cars, or for a reduction in coal-based electricity, or for cleaner but more costly coal-based energy, it is only because I am programmed to do so. If I prefer clean air and water, biodiversity, and a world in which polar bears still roam the arctic (even if I never get to see one), it is only because I am programmed to do so, and not because my preferences are somehow better or more natural. And, of course, the opposite is true; if I prefer a consumptive and exploitive lifestyle, and the luxury and material comfort that can often go along with that (at least for the minority who

have money or power), it is also because I am programmed to have that preference and to behave in that way.

And then we ask the second question—the one that is behind chapters 2 through 4 of this book. We ask not whether this understanding of our human nature helps motivate healthy environmental behavior, but simply whether it feels or rings true to us. Does this make sense as the truth about the world in which we live? Can you really believe that polluted rivers and toxic waste dumps are *natural*? If you cannot, then you are denying physicalism from which this conclusion inevitably follows; you are affirming that we humans are more than physical beings in a causally closed universe.

The Absence of "Other"

The final set of implications of physicalism explored in this section are akin to those of the previous section. The argument is, once again, that the physicalist philosophy (if taken seriously and followed to its natural conclusions) not only has the strong potential to lead to unhealthy ecological practices—and is ultimately therefore unlivable in the long run for us as a race—but also that it contradicts what we intuitively understand to be true about ourselves and our relationships with those around us.

The central argument of this section is as follows. If physicalism were true, then there would be no meaningful concept of an individual autonomous self, only a single causally closed system composed of a huge number of material atomic particles each obeying laws of physics. If there is no individual *self*, then there is no individual *other*. If there is no *other*, then there is nothing and nobody *else* to care for, and also no real *ecology* to speak of—no interactions of distinct beings.[19] Furthermore, as we noted in the previous chapter's discussion on heroism, under determinism there is no ultimate purpose, and there are no moral choices, because there are no real choices at all. And even if we had free will to make choices, without the *spiritual* man or a purposeful universe, there is no objective morality and no objective basis for evaluating these choices. Ultimately, then, under physicalism and determinism (strict or broad)

19. The term *ecology* refers either to the actual relationships and interactions between *individual* organisms, and between individual organisms and their environment, or to the *study* of these relationships and interactions. In either case, if there are no *individual* organisms to interact and interrelate, then there is no ecology.

there is no moral imperative to choose to care *for* or care *about* other creatures. That is so because:

1. There are *no morals*;
2. There are *no choices*; and
3. There are *no others*.

The claim that under physicalism there are no real, existing individuals may be the most important and also the least obvious, and thus it requires the most explanation. To put it in full and as clearly as possible, the claim is this: according to strict naturalism, there is no meaningful distinction between selves; there is no real individual. We may all have a *sense* of self, and we may have a conscious awareness of what we *think* of as ourselves as individuals. In Kurzweil's terms, we have something we call *consciousness*. But this, we are told, is just an illusion and not a meaningful insight into any deeper reality. What we call consciousness is part of our programming, and computers can be programmed with the same experience as embodied humans. The idea of the individual is based on the old-fashioned notion of free will and autonomy, from which ardent naturalists like B. F. Skinner are trying to free us (as we saw in the previous chapter). We are taught to say goodbye to the autonomous or homunculus man.

Indeed, much of Skinner's *Beyond Freedom and Dignity* is designed precisely to explain away the notion of individual persons. He complains that human behavior "is still attributed to human nature," and about an "extensive 'psychology of individual differences' in which people are compared and described in terms of traits of character, capacities, and abilities."[20] He argues that we should do away with these notions. And a few pages later, he again complains: "Unable to understand how or why the person we see behaves as he does, we attribute his behavior to a person we cannot see, whose behavior we cannot explain either but about whom we are not inclined to ask questions." In arguing for a shift in our thinking, he then states more clearly:

> Autonomous man serves to explain only the things we are not yet able to explain in other ways. His existence depends upon our ignorance, and he naturally loses status as we come to know more about behavior. The task of a scientific analysis is to explain how the behavior of a person as a physical system is related

20. Skinner, *Beyond Freedom and Dignity*, 9.

> to the conditions under which the human species evolved and the conditions under which the individual lives.[21]

So Skinner acknowledges some concept of an individual—that is to say, he uses the word *individual*—but in the same breath he denies that this individual is really in any sense an actual individual, one who can behave as an autonomous self with any self-will. Rather, the so-called individual is no more than a "physical system." In particular, the behavior of a person *must*, Skinner argues, be understood entirely in terms of that system.

But now we take the next step. Under physicalism, not only are humans simply complex biochemical computers, or physical systems, but *the entire universe* is nothing more than one large, complex computer system. Consider what this means. A computer is composed of *hardware* and *software*. The software is divided into data (information) and instructions (the program). The hardware deterministically carries out its instructions based on its data. The hardware of the universal computer system is the physical universe itself—which, we are told, is all that exists. The universal computer system's *data* are the current state of all its physical particles. The program of this big computer system that is universe is the laws of physics, which determine what each and every particle of the hardware will do next, based on its current state. The "each and every particle" part is the key notion, here. In this thinking, we, as humans, must be understood to be not only physical systems, but actually *part of* the big physical system.

B. F. Skinner argues for all of these details separately, though it is not clear that he consistently combines them to their conclusion. He writes,

> Behavior which operates upon the environment to produce consequences ("operant" behavior) can be studied by arranging environments in which specific consequences are contingent upon it. The contingencies under investigation have become steadily more complex, and one by one they are taking over the explanatory functions previously assigned to personalities, states of mind, feelings, traits of character, purposes, and intentions.[22]

Our behaviors are determined by our environment (or the system), Skinner argues repeatedly. All the things we might have thought of as who we are as *selves* or *autonomous individuals*—personalities, states of

21. Ibid., 14.
22. Ibid., 18.

mind, feelings, traits, etc.—are slowly being replaced; they are no longer explanations of who we are. But Skinner also calls upon us to engage in behaviors to change the environment (or the system). That, indeed, is the primary point of his book. Thus, our behaviors collectively determine the environment, or program the system, while the environment determines or programs us. So, in fact, our behaviors *are* the environment. If Skinner is right, then we are inseparable from the system. Individuals are illusions. There is simply one, large, complex physical system, or environment, composed of many particles (some of which happened to be clumped together in bunches called humans).

Consider all of your activities in a given day, especially your interactions with other living creatures. You get up in the morning and feed a pet. You meet somebody coming into or going out of the bathroom. You make a pot of coffee and serve a cup to your partner, or perhaps he or she pours your cup, while you watch birds on your feeder. You get up to chase a squirrel off your feeder. You commute to work and interact with other commuters and then colleagues. You use electricity that was generated in some far-off place, and your transportation consumes gasoline drilled and refined in another far-off place, both with all sorts of (unknown to you) ramifications to other living creatures, and thus you interact indirectly but perhaps significantly. The coffee you drank earlier, as well as the second cup you buy at the gas station, was grown by people you will never meet but who are impacted by your purchase, on a piece of land with creatures impacted by the coffee plants. But what if we are simply components in one cohesive central system, all following one computer program that governs us all? Then these interactions are all simply the motions of molecules, or at a lower level of atoms, or at a lower level still of electrons and subatomic particles, all following physical laws with no purpose or intent. Everything you think of as your own purpose or intent—doing your job, finding a new job, getting a raise, getting a date, recycling, or consuming—is reducible to purposeless molecules following laws. If this is the true view of the universe, then the concept of individual is an illusion: I don't really interact in any meaningful way with my children, or my wife, or my colleagues, or the stranger at the local café where I stop for an espresso, *as real separate entities*. All of these interactions are simply controlled components of a single computer carrying out its program.

Here is perhaps a clearer way of thinking about it. Consider all the physical particles in some volume of atmosphere with roughly the same

number of particles as my body. Like my body, these particles all follow the laws of physics. They may be proximate to each other for a few seconds, minutes, months, or perhaps even years—some small fraction of history. But in what sense does that collection of particles form a "self" or "individual"? Now ask, under physicalism in what way is a human "self" different? A bunch of particles have clustered together for some finite moment of history. But all of their behaviors are determined by the laws of physics, and by the system as a whole, and not by their decisions or will as human persons.

Of course if there is no individual *self*—if the idea of self, at least as an autonomous entity, is an illusion, as B. F. Skinner suggests and as I have argued is the case if physicalism is true—then it also immediately follows that there are no individual *others*. An other is simply a different autonomous self. And here is where the ecological implications begin to emerge. A strong argument can be made that healthy environmental practices, at their core, stem from caring *for* and caring *about* other creatures. I understand a polar bear to be something other than myself. It is not simply a part of the system, but it is a distinct individual. And so, while I have no ethical obligation to a purposeless system that doesn't even have any goals in mind, I may have an ethical obligation to an individual if any individuals actually exist. To view the bear as *other*, and as an individual, is a first step in my wanting to preserve its habitat so that it can, as an individual and as something other than me, survive and prosper. The very notion of bio*diversity* is based on the concepts of real individuals that differ from one another. As philosopher David O'Hara wrote in one of his sections of a book we coauthored, "we feel our difference from one another and from our world, and that feeling is instructive. We are different, and in that difference our ethical obligations to one another are exposed."[23]

To see this in another light, consider a computer system. It may be important for a computer system as a whole to have all its parts functioning. So somebody *outside* the system is motivated to replace or repair any malfunctioning components. If the graphics card goes bad, the user of the computer needs to get a new card—or a new computer. But it is important only for a computer system to function for the user who exists outside the system, for whom the computer has a purpose. It is not important to a computer itself whether it functions in any way that is useful.

23. Dickerson and O'Hara, *Narnia and the Fields of Arbol*, 192.

But under the tenets of naturalism, there is nothing outside the system. The system has no purpose and no real meaning or concept of *mal*functioning; however it functions is how it *must* function. Likewise, there is no concept of a broken component, because everything is functioning exactly as it *must* function.

Now, here the physicalist might chime in with a counterargument. It may be that the notion of an autonomous individual is an illusion: that all we have and all we are is a bunch of particles following the laws of physics, which clump themselves together in various ways because of those laws. But even if all we have is one big universal system, we still should care about that system and want it to be healthy. In fact, we might want it to be healthy precisely because we are a part of it. And caring about that system may require us to care about components within that system that we call "individuals." Thus, biodiversity is still a useful system-level concept to describe the idea that the system as a whole is healthy if its particles choose very diverse ways to clump themselves together.

I grant this argument. And I sincerely hope people follow it. But we then need to ask, what is meant by healthy? The health of a system is judged in terms of some ideal: either how the system *ought* to function or what its goals and objectives are. But a computer system as a whole has no internal goal; its goal is determined by a user outside the system. A CPU simply carries out its instructions based on its state. It has no objective to accomplish. If there are real individuals—say, the polar bear—then we might act in a way that acknowledges their value. But if there is only a system, then the value of an individual is determined only by some system-wide goal. What is that goal? And when it comes to humans, how should we act to meet that goal? Ultimately, we are left with trying to engineer the environment—or trying to define health—in a way most beneficial to us as a species.

Of course, this whole problem assumes that we are free to make choices and struggle to determine what the best choices are: do we act for some individuals or for the system? If there are no significant individuals, then we act for the system, which means we act for some arbitrary goals that *we* make *for* the system. And under physicalism, not only is there no ultimate purpose for the system, but we don't even make any choices. We do only what we are programmed to do. Thus, on several grounds, there is no moral imperative to choose to care for or about other creatures, because there are no morals, no choices, and no others.

Before closing this chapter, one important point must be made. I have explored what I argue are logical ecological conclusions of a certain world view. I believe these ecological conclusions, if really followed, would be disastrous. In fact, it would seem that we are living in a world already experiencing many of the ecological consequences of a world view that affirms only the material and denies human spirit or human free will. But I am not saying, in any way, that all of those who hold this world view of physicalism are responsible for environmental degradation. In fact, many leading environmental activists do hold to this world view and yet continue to write, speak, and act in ways that we agree promote ecological health, not only for "the universal system," but for individuals (of many species) within that system. For this, we can be glad, because my argument is that if naturalism really were followed consistently, it would be far more destructive.

C. S. Lewis, who studied and then taught philosophy at Oxford before he became a famous literary scholar and writer, and who himself held strongly to a world view of naturalism until he was about thirty years old, makes a similar point about aspects of naturalism in his essay "On Living in an Atomic Age." Addressing the possibility that the universe might be both ultimately meaningless and also destined by the inexorable force of entropy eventually to wind down, and that all life is to come to an end, he gives three possible responses. The first is despair, the second is decadent hedonism, and the third is to say, "Let [the universe] be merciless, I will have mercy. . . . I know the universe will win in the end, but what is that to me? I will go down fighting. Amid all this wastefulness I will persevere; amid all this competition, I will make sacrifices."[24] Thankfully, many who hold the assumption of naturalism have taken this third approach, however much it flies in the face of naturalism itself.

24. Lewis, "Living in an Atomic Age," 76–77.