Nature and Human Identity

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In opposition to modernist conceptions of the “self,” some environmental philosophers argue that human identity is first and foremost wild and natural because it is a product of an ontologically independent nature. They use evolutionary theory to create and maintain a division between our wild, natural human identity and our artificial culture. Their position is supported by a misunderstanding of both early hominid evolution and artifacts. Artifacts are not the neutral instruments of human will, but exist with us in “economies” that constantly create unintended consequences. In terms of recent work in the field of philosophical anthropology, a reexamination of the evolutionary evidence suggests that our identity is not natural but completely artificial. This artificial identity provides us with new ways of conceptualizing our present ecological problems.

The boundaries that separate humanity and nature have never seemed so stark as they are today. Wilderness areas are cordoned off from urban centers, farmland is abandoned for suburban living, and our technological gadgets are serving as substitutes for real experiences. For environmental philosophy, it is commonly accepted that the distance and separation from nature found in many aspects of modern life are only manifestations of a deeper problem created centuries ago by modern philosophy and science. Descartes, perhaps the most famous modernist, split the world in half when he separated mind from body. To the mind, he attributed all the positive qualities associated with personhood such as thought or consciousness. To body or matter, he attributed all the qualities that are associated with a mechanized universe, thereby defining nature in the most minimal of ways as mere extension. It is fair to say that nature did not benefit from his philosophizing. Nature lost the qualities of creativity and self-movement that had allowed it to retain its value. Under modernity, it became a collection of inert, accidentally connected material suitable only for human use. In effect, Descartes created a dualism between humanity and nature that influenced other modernists such as John Locke and modernist practices such as capitalism.

Predictably, many think the Cartesian dualism has had consequences for human identity. As many environmental philosophers have argued, an anthropocentric epistemology entails an anthropocentric ethic. If what is certain is the thinking “I” and the rest of the world is mere materiality, then the wants and needs of the “I” are given precedence over everything else—including other “I’s”. Thinking things have absolute dominion over the universe because they are the movers of matter. Separation from nature becomes understood as superiority to nature. This self-conception is at the root of most of our environmental problems. For example, we do not hesitate to destroy whole ecosystems because land (following Locke) only has value once we mix our labor with it. Animals endure horrific conditions in

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our experimental labs and slaughterhouses because we presume they do not think or feel as we do. Some may even think that our advanced technology will shield us from environmental collapse. In light of such dangerous attitudes, many philosophers attempt to rectify the Cartesian dualism. The details and solutions vary, but the strategy generally involves a reconstruction of both humanity and nature’s identity. Where the modernists sought difference and division, the environmental philosophers seek sameness and continuity. Humanity becomes embodied as our animal “natures” are rediscovered, and nature is reassigned the qualities of self-generation and creativity that it lost under modernity.

The environmental philosophers’ attempt to reconstruct human identity seems philosophically sound. After all, the Cartesian subject is a highly dubious character. It is a “mind in a vat” unconnected to the world around him or her. Given our understandings of biology and evolutionary theory, Descartes’s “thinking thing” is simply implausible. Putting biology aside for the moment, for many environmental philosophers, the problem with the Cartesian conception of human identity is that Descartes began in the wrong place. He began in the center and worked his way out. Deep ecologist George Sessions suggests that Cartesian methodology is “at best, arbitrary, and more likely . . . nonsense.” It is better, according to Sessions, to adopt what Spinoza scholar Wallace Matson refers to as the “outside-in” approach. A good environmental philosophy “begins with an account of the world and, at the end, or near the end, explains mind and its knowledge in terms developed in that account.” For the purposes of this paper, I argue that this strategy commits environmental philosophers to some questionable propositions about our evolutionary history and the importance of artifactual culture. First, however, we should examine their position.

For environmental philosophers such as Sessions, who follow Matson’s approach, there is more at stake than the simple desire to distance themselves from modernism. Not only does their account begin with nature, but more importantly, their starting point is nature’s ontological independence. Ontological independence means that nature’s identity, its properties, its origination and continuing existence do not depend on our existence. Nature is. What it is exists independently of our perceptions and claims. In traditional metaphysical terms, many environmental philosophers are realists. This stance does not make them anti-moderns, since many moderns were also realists. The realism thesis in the philosophies of George Sessions, Laura Westra, Eric Katz, and Keekok Lee, however, does support two other arguments that are distinctly anti-modern. One is that an ontologically independent nature provides the basis for overcoming the mind/matter dualism. Second, it establishes limits to human action.

As previously mentioned, those environmental philosophers who object to the

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Cartesian understanding of the subject often attempt to reconstruct human identity and *embody* our “brains in the vats.” Nature’s ontological independence is indispensable to their efforts. Why? It is a matter of human origins. We are the product of millions of years of evolution, and *those* evolutionary forces are considered to be part of a creative, objective reality that existed before us and will continue to exist long after the extinction of our species. For many environmental philosophers, our wild animal “nature” is our primary human identity. Particularities of culture, gender, and geographical location are secondary. They do not meaningfully condition our basic, biological selves. For example, Westra holds that good ecological thinking begins with “separating the inseparable; our purely biological existence from the rest of our human existence in all its complexity.”

Furthermore, emphasizing our evolutionary identity gives us little reason to maintain our privileged status over all of creation. We are merely another branch on the evolutionary tree and therefore nothing particularly special. Evolution, understood as a slow, gradual process taking place over millions of years cannot produce a creature (i.e., a thinking thing) that is radically different *in kind* from anything else. Any capacity that we may have as a species, say, tool making, is considered a bit more sophisticated or a bit more developed, but cannot be a singular trait that radically distinguishes our species from others. Furthermore, our close cousins in the animal kingdom have only less sophisticated versions of our traits and behaviors. *Homo sapiens* uses a stick to uproot nutritious rhizomes; a chimpanzee uses a stick to pull termites from a mound. *Homo sapiens* decorates the walls of a cave with paintings depicting a hunt; a weaver bird chooses brightly colored string to decorate the nest. Our sticks and paintings may have a greater variety of uses, whereas the brightly colored string and the termite lure are confined to attracting a mate and eating termites, but the observable behavior of animals leads to the conclusion that they engage in simpler versions of many if not most of our activities. Warwick Fox asserts that “we are not psychologically, socially, or culturally different *in kind* from all other animals.”

Lee shares the same view: “*Homo sapiens* is not so different *au fond* from an oak, a lion, or the water around us.”

Furthermore, an ontologically independent nature also serves as a final arbiter of human activity thereby denying humanity the role of master. Given that our primary human identity is our evolutionary identity, we are thus subject to the same natural laws and are just as dependent on a healthy functioning biosphere as any other animal. Westra’s books on integrity thoroughly develop this thesis. Any conflict between natural systems and humanity is resolved at the basic level of life-support, i.e., nature, because “we have no interests that are completely separate from those

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of all other life.”⁶ Our interests are congruent because our biological requirements are “neither markedly different from, nor in any way superior to those of the rest of the biota.”⁷ If we allow any kind of cultural or historical factors to condition our knowledge of nature, then we have to adjudicate among a troubling plurality of positions, none of which are guaranteed by absolute authority. None of them get at the truth of an ontologically independent nature. An ontologically independent nature is intended to solve and resolve, cleanly and fairly, all the various competing wants and needs of a pluralistic society. Every human being has that one important thing in common—a natural, dependent, biological identity.

Curiously, claims for ontological independence are often treated as undoubtable as Descartes’ cogito. Lee argues that a simple thought experiment is enough to establish the existence of an ontologically independent nature. We can unproblematically entertain the thought of a world without humans, but not humans without a world.⁸ It is interesting that she thinks a thought experiment will suffice despite the many sophisticated philosophical arguments of the past century that questioned the viability of realism. Why do Westra, Sessions, Drengson, Shepard, and Katz, for example, all also choose to skirt these debates? There are two interconnected reasons. First, their reliance on science leads them to unquestionably adopt the realist ontology held by many scientists who, second, object to social constructionist arguments. Philosopher Mick Smith notes that Sessions and Paul Shepard, in particular, have linked their arguments with the views of “natural scientists seeking to assert the accuracy of their own ontological, epistemological and ethical claims about nature.”⁹ Some natural scientists and the aforementioned philosophers have a common enemy—social constructionism. Deep ecologists maintain that nature is ontologically independent, in part, due to their fear that the denial of such independence provides a theoretical justification for further destruction. Scientist Michael Soulé expresses this thought: “Certain contemporary forms of intellectual and social relativism can be just as destructive to nature as bulldozers and chainsaws.”¹⁰ No independent reality means that there is no longer any limit to human action and that we will not be able to overcome anthropocentrism. “If Nature is a human social construction, then humans can ‘reinvent Nature’ (and ‘reinvent humans’ for that matter) in any way which suits our immediate interests and desires.”¹¹ If we do not value nature, then we will most likely destroy it. Nature’s value depends on nature’s ontological independence. According to Smith, “deep ecologists such

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⁷ Westra, Principle of Integrity, p. 191.
⁸ Lee, Natural and Artefactual, p. 93.
as Sessions have reacted to the relativizing effects of [social] constructivism by trying to fix value in the permanence of nature’s ontology. By linking ethical values to claims about this ontology, they hope to defend nature’s immutable value in and of itself.”

I suggest that, in part, the fear of social constructionism stems from a misguided understanding of artifacts. Because artifacts are understood by Katz and Lee as objects that fulfill human purposes, if nature is merely a construction like the other artifacts around us, then, presumably, we can use it like any other artifact. Nature’s ontological independence allows it to exist, safe and separate, in another category. So, human intentionality provides the dividing line between the natural and the artifactual. Katz claims that he cannot think of any artifact that is not intended for human use. Lee has a similar argument. The artifactual, Lee claims, exists in a different ontological category because it is “the material embodiment of human intentional structures.” In contrast, the natural (including biotic and abiotic nature) “owe neither their origins nor their continuing existence to humankind.”

Notice, then, how one dualism is created in order to solve another. Instead of humanity and nature occupying separate ontological realms, now the dualism is internalized within human identity. Our primary identity is natural. Our culture, our historical conditions, the particularities of language, and the artifactual environment around us, these are the secondary constructs. They are artifacts because they are the products of human intention. As mentioned, good environmental thinking is supposed to begin with recognizing this dualism within ourselves. In a sense, it has not traveled very far from Descartes who also split human identity. Giving primacy to our natural, evolutionary identity, however, is intended to maintain a continuity and connection with the natural world. We can understand ourselves not as an alien species destroying the Earth, but as misguided children who have chosen not to listen to (mother) nature. So, for those environmental philosophers who consider our primary identity as natural, our ecological problems are behavioral problems. If Katz’s understanding of artifacts as products of human intention is accepted, then the answer to our ecological problems is straightforward—we need better intentions. The issue of intentions sits squarely in the realm of environmental ethics. Ethics is the area where most environmental philosophers prefer to spend their energies having mainly settled the issues of human identity and the ontological status of artifacts amongst themselves.

Can we conceptualize a basic biological existence for our species and “separate the inseparable?” I do not think so. In their attempt to solve the dualism between humanity and nature by asserting nature’s ontological independence, the aforementioned environmental philosophers have simplified and mischaracterized both our evolutionary past and our relationship with artifacts. Our present ecological situation

13 Lee, Natural and Artefactual, p. 177.
14 Ibid.
requires us to resist the simplification of both. Why? I agree that our environmental problems are mainly behavioral problems. No other creature but Homo sapiens has caused such destruction of its surroundings. What we need is another way to think about the relationship between humanity and nature, one that does not strictly follow Descartes or Matson and yet incorporates the most useful elements from both methodologies.

Following Descartes, I suggest that we should begin with the subject in order to understand our intentions and actions. Our starting point, however, cannot be the Cartesian “thinking thing” because our present concern is human action in the environment. So, our subject must be embodied; he or she must be a living, breathing, acting subject. Here is where we must incorporate the “outside,” i.e., nature, into the analysis. I agree that our evolutionary past can reveal important insights about human identity. A proper consideration of our evolutionary heritage, however, leads us to very different conclusions about our relationship with artifacts. This does not mean that we gain mastery over the world once more—quite the opposite. I argue that artifacts play a primary role in human identity; yet we are never truly the masters of anything we make.

Westra maintains that “simply” humans, and not “techno-humans,” belong in ecosystems because “claims about an ecological niche can only be made about an animal in its natural state.” Here she seems to suggest that long ago we had an ecosystem niche but then displaced ourselves from it when we invented tools. Actually, Homo habilis, a hominid that predates our species by about two million years, is credited with tool invention. Our species was born into a world that was already populated with tool-using hominids who had tamed fire, engaged in ritual, and probably had some form of speech or protolanguage. This artifactual milieu predating our species had profound consequences for the evolution of our neurology. Before we can understand the importance of artifacts, we must resist the temptation to follow deep ecologists’ arguments about our genetic code. Wild nature, they claim, is written into our genes—and that is the basis of our natural identity. Evolution is responsible for our genetic code, and thus, we are programmed for wild environments. “Programmed” is a good choice of words because Shepard’s argument is similar to ones put forward by some developmental biologists. In essence, they hold that an organism’s phenotype is the outward manifestation of its genotype. The development of the organism is likened to running a computer program; every limb, hair, and cell is predetermined by its genes. The causal

15 Westra, Living in Integrity, p. 138.
chain originates in our protein sequences and from here it is a one-way bottom-up trip. Prominent molecular biologist Walter Gilbert summarized this point. Speaking before the completion of the human genome project, he said, “we will know what it is to be human.”

The scientific literature debating to what extent genes determine the abilities and traits of an organism is vast. I do not delve into all the arguments here since my concern is with the specific issue of the relationship between humans and artifacts, and the conclusions drawn from this relationship. Recall that these philosophers regard artifacts as secondary to the natural realm and define them in terms of intentional use. In contrast, the natural “comes into existence, continues to exist and goes out of existence entirely independent of human volition and manipulation.” In traditional philosophical terms, we refer to the natural realm as having its own “nature or principle of change.” Artifacts lack this original principle; thus, their status is secondary when compared to nature. Deep ecology implicitly supports this view, as it holds that our primary identity is natural because who we are has been decided by our genes, and our genetic code is the product of an ontologically independent nature.

There is more than this, however, to humanity’s evolution. In the early years of our species, our existence was tenuous and highly contingent as we competed with other hominids for resources. Mastering tools was necessary for our survival. Our evolutionary advantage, however, was not brain size or gene percentage but the amount of neural indeterminacy present at birth. Human brains are “plastic,” meaning, our synaptic connections are not determined by genes; they are organized through interactions with the external, local environment. That environment was (and still is) an artifactual environment. How did we evolve like this? Long ago, the creation of tools and other artifacts by our hominid ancestors began one of the most unique symbiotic relationships in evolutionary history. The more early hominids developed tools and other artifacts, the more they learned to depend on them. The more they depended on them, the less evolution selected for other traits such as reflexes or other kinetic abilities. Brains became more and more indeterminate because there was no longer a need for highly specialized, routine tasks that other species need for survival. Finally, evolution created the most “plastic” adaptable brain of them all—ours.

The upshot of our symbiotic relationship with artifacts is that culture, not wild nature, is literally written in our brains. Artifacts are more than the media by which

22 Lee, Natural and the Artefactual, p. 82.
23 Allen, Knowledge and Civilization, p. 63.
we realize our basic needs. Evolution left open our neural circuitry. We need artifacts to physically complete our synaptic circuits or else our neurology is simply not viable. It is through the interaction with the external artifactual environment that we complete these neural circuits and acquire a functional relationship with the environment.\(^{25}\)

This is one reason why “tool use” in chimpanzees is not properly analogous to tool use in our species. While indicating a certain degree of cleverness, the termite-fishing stick or the rock nutcracker is not essential for the chimp’s viability as an organism. Consider, for a minute, if we could magically whisk away all the chimpanzee “tools”—the species would still survive. Unlike us, little depends on their ability to make and use tools. According to Katz, however, the termite-fishing stick is indeed an artifact because it fulfills the purpose of finding and eating termites. Yet, there is a certain linearity about Katz’s definition. It implies that we form intentions, then pick up a tool and carry out those intentions. But considering that artifacts have existed in an evolutionary feedback loop with hominids for millions of years, can we really maintain Katz’s definition?

I do not think so. Considering that tools are generally given as a paradigmatic example of artifacts, I begin my argument with them. Tools (and other artifacts) are not singular; they always exist in economies. When *Homo habilis* created stone tools, the hominid picked up *two* rocks, and began to modify them against each other. Quite simply, it takes a tool to make a tool. This theory squares with the archeological evidence as tools are never found singularly. Rather, archeologists discover tools in tool “kits.”\(^{26}\)

By “economies” I mean more than monetary systems, but thinking about how economic systems work may help my point. On its own, money is worthless. It has value and it serves a purpose only within a dense network of reciprocal action and relations. Widespread agreement and other human practices create a system where money has value. In addition, the value of money changes when certain practices change. In this sense, economies are “ecological,” meaning, when one part of the economy is either removed, changed, or added to, the entire economy adjusts in response. If it is difficult to conceptualize a primitive Achulean hand-ax economy, then try a more contemporary example. As one of our most sophisticated tools (more than 4.5 million parts) the Boeing 747 passenger jet requires more than a pilot with an intention to fly its passengers over the Atlantic. Jets need highways, the petrochemical industry, engineering schools, the tourism industry, sophisticated meteorological and radar technology, and so on. The jet exists in a dense web of interdependency. Philosopher Bruno Latour calls these webs of interdependency “socio-technical networks.”\(^{27}\)

Action is not the consequence of a single actor with

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\(^{25}\) Allen, *Knowledge and Civilization*, p. 66.  
an intention; action is the property of the whole network. In addition, our intentions are always formed within a tool’s economy because tools always suggest new uses and new possibilities for action. They let us imagine things we could not imagine without them. True, planes are used to take travelers to their destinations. They can also be used as missiles. Katz’s understanding of our relationship with material artifacts is too simplistic. In short, if Katz were correct, i.e., artifacts are merely the neutral carriers of human will, the entire history of technics would have ground to a halt long ago. There is no straight line of intentionality that leads us from the Wright Brothers to 9/11.

This is another important reason why chimpanzee “tools” are not analogous to ours. Chimp tools do not exist in an economy of socially complementary actions. It takes care and the cultivation of technique to make something as simple as a hand-axe. In the very least, the cultivation of technique implies the existence of standards and pedagogy. Technique had to be taught from generation to generation because our survival depended on mastering the production of these tools. Standards had to be maintained because, again, survival depended on the tools’ effectiveness. No one person can invent and maintain a standard because standards are always created by group agreement and maintained by practices within that group. What exactly were those practices among the early hominids? We cannot say. We are extrapolating somewhat from modern examples. However, today’s hammers do have more in common with the tools in our ancestral tool kit than a stick used to eat termites. The point is that something as “simple” as a hand-ax engages more than just a single user with an intention. As far as we know, there is no such evidence for the care and cultivation of termite-fishing stick technique among chimpanzees, probably because their survival does not depend on it.

There is a final, but important, difference between our artifactual economies and the chimpanzees’ termite-fishing stick. Recall Katz’s definition of an artifact as an object that fulfills a user’s intention. His definition cannot account for the phenomenon of unintended consequences. Smog has no purpose, and neither does nuclear waste; yet, they are as artifactual as a hammer or a chainsaw. Artifactual economies always produce more than our intentions because in an economy, everything acts and reacts to everything else, thereby producing new artifacts and new possibilities for action. As far as we know, the termite-fishing stick does not open up new possibilities for chimpanzees. There are few, if any, unintended consequences associated with its use. In short, Katz’s definition is more suited to the termite-fishing stick than any human artifact. The tool fulfills the chimp’s intention; then it is discarded and nothing else happens.

Returning to Westra’s quote that good ecological thinking begins with “separating the inseparable,” we can see that it is impossible to separate us from our artifacts.

28 Allen, Knowledge and Civilization, p. 205.
Even at the neurological level, we need them. Conceptions of basic human identity cannot exclude them. In this light, it is difficult to understand Westra and Sessions, along with Shepard, Katz, and Lee’s picture of the human animal. For them, artifacts are an afterthought. Nature provided early humans with all that they needed. In her books on integrity, Westra refers to nature as a life-support system. Her definition conjures up an image of humanity, passive and comatose, hooked up to the natural world like a patient on a respirator. Good ecological living amounts to the minimal disturbance of the respirator. No one has to perform to survive.

I maintain that if we are to understand our ecological problems, then we have to take human artifactual performance as our starting point. There are two important reasons for doing so. The first is basic and almost trivially true: a human being who does not perform with artifacts is a dead human being. Our existence is thoroughly and completely dependent on our relationship with artifacts. The second reason is that our artifacts are destroying the natural world. The problems of nuclear waste, global warming, acid rain, deforestation, species extinction, and so on, are much too complex to chalk them up to poor intentions. Everyday our artifactual economies create new sets of unintended consequences. For example, when CFCs were introduced, they were a cost-effective way of ensuring fresh food for the masses. Only later did we discover the hole in the ozone layer. I am not suggesting that all of our ecological problems follow this pattern. We intentionally destroy whole ecosystems whether by draining a swamp, clear-cutting a forest, or hunting a species to extinction. My point, however, is that given the importance and prominence of artifacts for our species, we need a richer understanding of our relationship with them.

What, then, is an artifact? I use philosopher Barry Allen’s definition according to which artifacts are the effects (both intended and unintended) of human performance. Note that this definition does not distinguish between material and immaterial artifacts. There is no reason not to include language and concepts under this definition since they are also the effects of human performance. “Effect” should also not be understood in a linear sense. Artifacts always exist in economies with us; we do not stand outside an economy as a prime mover, or as a first cause to their existence. We share responsibilities with them for both action and existence. So, here lies our paradox: we must always perform; we must always construct a world around us; yet, we are never fully in control of the world which we make. These economies always produce unintended consequences because actions undertaken in an economy always produce new combinations of artifacts and thereby produce new effects that are essentially unpredictable. I do not think this is a controversial point, although it may be underappreciated. Those philosophers who hold that, as moderns, we are capable of creating a “designer reality” as some final victory of Homo faber, have a misplaced fear. The historical record shows that the high modernist projects such as modern agriculture and modernist city planning were

spectacular failures because of the plethora of unintended consequences that undermined the planners’ original intentions. These planners wanted to “rationalize” living and to submit life (both human and nonhuman) to a set of prescribed rules for the purpose of greater freedom. In a sense then, deep ecologist Westra is a high modernist. Her belief that our differences will be settled by scientific truth based on an ontologically independent nature is no different than Le Corbusier’s belief that he could achieve urban order with his rational plan.

What then, is the upshot of our interdependence with artifacts? It is, I suggest, that our world is fundamentally indeterminate.

Environmental philosophers defend the ontological independence of nature because they want to downplay or even eliminate the issue of indeterminacy in their theories. Indeterminacy may indeed be the issue that environmental philosophy must face if it is ever going to finally offer a helpful analysis of our present ecological problems. The concepts “indeterminacy” and “determinacy” have a long philosophical history, thus there are many definitions from which to choose. I prefer to borrow from mathematics and say that indeterminacy refers to the indefinite number of solutions to a given problem. Given that environmental philosophy is interested in seeking solutions to our environmental problems, this definition is a good starting point. But mathematical equations are not artifactual economies. The former are fixed. The number of solutions is indefinite, but they still exist. In contrast, artifactual economies are not fixed because they are constantly evolving and producing new artifacts and new relationships among artifacts. I suggest that the whole phenomenon of unintended consequences is just another way of saying “evolving environment.” The concept of indeterminacy, then, must be pushed further to accommodate this reality. For environmental philosophy, indeterminacy is the idea that environmental problems are fundamentally irresolvable. Any solution found will be strictly provisional because the solution will itself become part of another problem. In a sense, environmental problems are not problems at all but a fundamental aspect of our artifactual reality. This does not mean, however, that we have to live with global warming, acid rain, smog, and so on. To say that environmental problems are fundamentally irresolvable is not to condone those who refuse to make improvements. It suggests the opposite. The indeterminacy that we live with is the constant and never ending struggle our species has to endure in order to sustain its own environment. We are always caught between the responsibility for what we have made and the unintended consequences to which we must respond. This middle position is where we live. Humanity is pulled tight between these two poles.

Environmental philosophers seek to ease this tension by appealing to an ethical principle, natural laws, or an anticipated change in world view. These strategies only

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serve to make us strangers in our own world. They are concerned with changing our ethical or mental conceptual schemata and hoping that the rest of the material world will fall into line. We may be more aware of nature, but only at the cost of being more disconnected from the world.

From the beginning of our history, our actions have always produced more than our intentions. Why? Artifacts themselves do not exist singly; they always exist within an economy. So in any human performance, changes made to one artifact will always mean a subtle (or sometimes not so subtle) change in the entire economy. The economy itself, however, does not just undergo a rearrangement of existing relationships. If this were the case, then how could one account for the emergence of the “new” or the “surprising?” Rather, artifactual chains produce and at the same time react to new artifacts. Those who think that cause and effect are being jumbled must remember that there is no artifact that exists outside of an economy of other artifacts. Just as there is no first word or first order given, you cannot go looking for a cause that is itself impervious and unreceptive to its own effects. How the economy will react and what novel artifact it will produce is indeterminate. It is indeterminate because one cannot, in principle, set out a priori any criteria that could identify the new and the novel. New artifacts force us to accommodate them.

Previously I argued that the relationship between humanity and the natural world must be based on human performance and not passivity. Recall that Westra urges us to “separate the inseparable.” We must bracket culture, politics, technology—in other words, all human performances—and focus solely on our biological, animal selves. This narrow understanding of human identity turns into a passive understanding, given that we permit life-support concerns to supersede cultural concerns. The wild supports life, she argues, so how can we sanction actions that may undermine our basic biological needs? From this standpoint, basic biological needs determine which cultural interests are feasible and which ones are not. Splitting human identity in two like this is highly problematic, so there needs to be a powerful tool, i.e., the ontological independence of nature, to drive the wedge between our cultural and biological selves. Recall that these philosophers seek to heal the dualism between nature and humanity by combining a supposedly scientific appreciation of our natural human identity with the assumption of an ontologically independent nature. Their amalgamation creates a Supreme Court for humanity which is a compelling combination of philosophical realism and scientific certainty intended to silence debate and determine solutions to our ecological problems.

But there is no particular way that we have to be, and there is no particular way that the world has to be. The present can only be explained by a “quirky series of antecedent events.”32 This is what paleontologist Stephen Jay Gould calls “contingency.” “A historical explanation does not rest on direct deductions from laws

of nature, but on an unpredictable sequence of antecedent states, where any major change in any step of the sequence would have altered the final result."33 Paraphrasing Gould, rewind the tape of history and play it again, and nothing will be the same. There will be no Homo sapiens and its accompanying neurology. There will also be no forests, ecosystems, or ostriches. Rewind far enough and there will be no quarks or second Newtonian law of motion.

Previously I mentioned that environmental philosophers must face indeterminacy. What does doing so mean? It means we must accommodate it, accept it, and not try to whisk it away with a philosophical sleight of hand. We cannot ignore it because indeterminacy is an essential aspect of human performance. And concerted performances are an essential aspect of artifactual economies. “Reality” is another name for the sum of all these artifactual economies. In essence then, indeterminacy entails that reality itself is open-ended. This is the key idea of our evolutionary heritage: our open-ended, indeterminate world is created through concerted performances involving humans and nonhumans. Nature will not tell us how to shape the world because every day, we make ourselves and the world and the world, in turn, makes us and itself.

In conclusion, I can understand why environmental philosophers may be reluctant to give up their understanding of human identity. Science tells us that we are hurting the very life-support systems on which we depend. We are pushing the limits of ecological sustainability every time we convert a field into a parking lot. We are creating a toxic environment that will ultimately harm our bodies. To borrow a phrase from the title of a book by the Canadian geneticist and environmental activist David Suzuki, we are undoing the “sacred balance” created by millennia of biological and hominid evolution.34 However, we succeeded as a species not because we found an ecological niche in an independent reality. We owe our success to our ability to create artifactual economies. Artifacts stabilize our social realm. They are, however, capable of destabilizing it too. We are always engaging with artifacts. We are always performing with them. This is what we did thousands of years ago, and it is what we do now. We may think that the modern world of Homo sapiens bears little resemblance to that of our cave-dwelling ancestors, and it may, indeed, be a bigger and more complex world. However, it would beneficial to remind ourselves that nothing much has changed. The future is just as indeterminate and fragile as those early moments of our history.

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33 Ibid., p. 283.