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BETWEEN THE SPECIES

On the Ethical Significance of Ecological Restoration: Domination or Collaboration?

ABSTRACT

Ecological restoration is essential both to a sustainable human culture and to the well-being of the more-than-human world. Yet some philosophers criticize enthusiasm for restoration as yet another manifestation of human domination and anthropocentric arrogance. The paper critiques this view as persistently presented by Eric Katz and offers an alternative view of restoration's ethical significance. Rather than seeing restoration as a unilateral human imposition on nature, restoration deserves defense as an expression of an interspecies etiquette, attentive to collaboration with the more-than-human world. But the full ethical significance of ecological restoration will not be realized without deep change in the surrounding culture.

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Although restoration projects of various types, at various scales, are underway around the world, the philosophical significance and appreciation of these projects remains a challenge. I shall sketch a framework for grappling with the ethical significance of restoration while also engaging arguments made by Eric Katz, one of its most persistent critics. In particular, I shall suggest an alternative, more contextual and collaborative way of approaching the significance of restoration projects.

As of February 1, 2019, The Society for Ecological Restoration's website defines restoration as the "process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed." From a practical point of view, this seems a nearly impossible mission. We are entering uncharted territory, or what Sabine Hofmeister calls a new wilderness, as climate change, agriculture, urban expansion, population growth, species extinctions, pollution, biotechnology, war, and other converging trends make it unlikely that we can restore landscapes to historical benchmarks, even if we knew enough to do so (2009). This may require restoration practitioners to refocus on future resilience rather than historical benchmarks, or to limit their goals to restoring particular species or natural capital, rather than entire systems (Hourdequin 2013).

But, in addition to practical concerns, the question of ecological restoration also raises philosophical questions about our relationship with the more-than-human world. Humans inevitably leave traces on the environment. How should we interpret the significance of these traces? Eric Katz has written extensively about the arrogance embedded in human interference with nature (1997b, 2015; 1997d, 2015). For him, interven-

tion only leaves marks of human domination and the effort to impose control on nature. Others, however, see human impacts on the landscape as integral to human identity and belonging. To wish them away is to erase what it has meant to be human in a particular place over time (Hourdequin and Wong 2015; Drenthen 2009; Thompson 2008).

I believe that Eric Katz's persistent criticism of restoration as a form of anthropocentric domination leads in the wrong direction. While much of his work has addressed the restoration of nature, he has also attacked geo-engineering using similar reasoning (Katz 2015). His argument also applies to discussions of assisted migration as a tactic for saving species threatened by climate change (Minteer and Collins 2010; Shirey and Lamberti 2010). Katz's objection to restoration—and by extension to geo-engineering and assisted migration—relies less on practical obstacles to success, and more on the supposed negative consequences of defending human efforts to control nature, however benign or altruistic these efforts might sometimes be. His argument depends on a conception of nature that excludes human influence; it asserts that efforts to restore nature reflect, or sustain, an attitude of domination that, it is argued, environmental philosophy should combat. It is what Karen Warren called "the logic of domination" that seems most fundamental (1996).

One pillar of Katz's critique of the restoration of nature is an explicit endorsement of human/nature dualism.

...my position reinforces both a conceptual and an ontological dualism between humanity and nature, or more precisely, between culture and nature. I believe the oft-quoted mantra of the environmental movement

that "humans are a part of nature" to be a prime example of fuzzy thinking. Of course, humans are biological beings, and thus, in some sense natural, but we humans have lived for the last ten thousand years as cultural beings, modifying natural processes to suit our needs and interests...we do not live in nature (Katz 2015, 489).

Katz segues here between two classical definitions of nature, as identified by J.S. Mill (1970). Nature is either everything that exists—in which case humans and their products are a part of nature—or the term nature is reserved for domains of existence untouched by human beings. While Katz feels compelled to note that humans are "in some sense natural," his argument against restoration relies on defining nature as the dualistic other to the human; to say humans are part of nature is "fuzzy thinking."

A second pillar of Katz's critique of restoration lies in his account of the difference between artifacts and natural objects (1997b; 1997d; 1997e).

The idea of artifacts as the product of human activity plays a pivotal role in my argument and my thinking on environmental issues generally... Artifacts are ontologically different from natural entities – they have a different essence, a different kind of being... Natural entities lack the presence of human intentionality that exists in human artifacts. A natural system that has been modified by human actions – however benign – is a system that has within it the effects of human design. But truly authentic natural entities and systems lack any conception of design... (Katz 2015, 489).

The posited difference between natural and artifactual objects reflects Katz's dualism. The processes of nature are "pure" to the degree that they "are not guided or altered by human plans and intentions" (Katz 2015, 489). Thus, human efforts to restore degraded ecosystems, or to geo-engineer the Earth to mitigate climate change, or to assist species migrations all transform nature into artifacts or designed things.

A consequence, for Katz, of the ontological divide between humans/culture/artifacts and nature is that transforming the natural into the artifactual undermines nature's autonomy. This transformation embodies human domination and control and should be resisted. Nature unaffected by humans remains wild and free, but imposing intentional human design undermines this wildness and freedom. Human intentional activity pursues goals and purposes, creates designs to achieve ends. Nature, however, does none of this; purpose, intentionality, and design are alien to its essence. Thus, restoration, as an intentional making with a goal, "is a continuation of the paradigm of human scientific and technological mastery over natural processes" (Katz 2015, 489).

Katz's ethical conclusion is that practices such as restoration, assisted migration, or various types of geo-engineering take us down a slippery slope. "Humans will manipulate and modify the environment in whatever ways please us. The natural world will have no value except for its usefulness to human projects of control and domination" (Katz 2015, 490). Katz wishes to hold the line against a globalized human domination of the Earth by critiquing the restoration of degraded ecosystems as an ontological colonization of nature.

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Katz's philosophical objection to restoration differs from empirical worries about whether restoration is practically possible. It is also different, I would add, from his position on actual restoration projects. While his philosophical position is hostile to environmentalist support for restoration as an appropriate response to degraded ecosystems, it is sometimes qualified with a *sotto voce* endorsement of concrete efforts to restore particular places. At one point he likens restorations to placing a sofa over a stain in the carpet; not necessarily a bad thing to do, but it would have been better not to stain the carpet in the first place (Katz 1997b, 106).

But restoration is not really like placing a sofa over a stained carpet. Carpet stains are problems only for humans who have to live with them. It is their subjective preference for not seeing stains that motivates the rearrangement of the furniture. It doesn't matter to the carpet, nor is it doing any harm to the carpet. In fact, the carpet has no point of view on this at all. But this is not analogous to the case of restoration, where other species do have points of view and interests that are affected.

Katz consistently attributes self-serving motives to those engaged in the making of artifacts of all kinds. We cover the stain in the carpet because we do not like to look at it; we restore a fish species because we want to improve the economics of a fishery. Human action, for Katz, tends to be unilateral, the act of a subject who imposes him- or herself on an object. While Katz describes nature as a subject with autonomy, he does not consider *nature's* take on restoration. A satisfactory position on the ethical significance of restoration must address the point of view of non-human beings that are implicated. This non-human perspective is not captured by the analogy.

Finally, in saying that there is something questionable about putting a sofa over a stain in the carpet, the analogy assumes an alternative to making stains, e.g., be more careful with your wine glass. But there is no analogous freedom in the environmental context. Human activities have consequences. There is no possibility of not "staining." Often it would have been better if people had not destroyed this or that particular ecosystem, since they could have done something different. But supposing that humans ought not to "stain" the environment with their interventions, ought not to leave any traces whatsoever, is unproductive. To see all human traces as stains is to see all of them as out of place, inappropriate, not belonging. While this existential homelessness follows from a dualist position, it leaves humans with no ethical options. No room is left for what Wendell Berry called "kindly use" or for becoming native to place (Berry 1986; Berry 2001; Drenthen 2009; Kimmerer 2013a). "Stain less, but don't promote a clean up when you do" doesn't seem sufficient. Katz has been quite voluble about the arrogance of the restorer, but has said little about the arrogance of artifact production in general which inevitable leaves "stains" in its wake.

The question of how to use nature responsibly cannot arise if every transformative use of nature is a "stain," a mode of degrading and dominating it. Agrarian thinkers, among others, have been particularly insistent on understanding humans as participants within landscapes, not relegated to a detached cultural world. Indeed, it is the industrial world's tendency to disengage from the particularities of specific landscapes that empowers it to impose abstract, generalized prescriptions that are insensitive to the needs of the land itself (Berry 2001). "Consult the genius of the place in all things" is not a guiding principle of industrial agriculture, but nor is it consistent with

Katz's human/nature dualism. Learning from particular landscapes in order to use them more carefully, caringly and sustainably is, for the dualist, just an arrogant cover for extending human domination. For the dualist, again, human impacts are always "stains," not legitimate accommodations and negotiations between worlds. Instead, I would suggest that restoration is integral to "kindly use" of the land and, as Carol Adams wrote, the work of "maintaining" the Earth on which we depend (1996). Indeed, it is emblematic of appropriate gratitude (Kimmerer 2013b).

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While notions of kindly use and maintenance hint at a participatory counterpoint to the separatist human/nature dualism undergirding Katz's objections to the restoration of nature, they do not yet directly address Katz's worries about artifacts. Katz writes:

...the idea that human technology and science can *restore* a natural environment is a perversion of the word restore: we cannot restore a natural environment; at best we can create a perfect substitute, but this substitute is an artifact created by human beings, not a naturally occurring entity or system (Katz, 2015, 488).

Katz denies the conceptual possibility of restoring *nature*, because the restoration as artifact is nothing but an anthropocentric product that substitutes for nature. Katz supposes there is a clear distinction between artifact and natural object and that this, combined with human/nature dualism, entails the negative ethical significance of restoration. I think that the artifact/nature distinction is fuzzier than Katz suggests and that it will not ground a defensible ethical outlook.

Katz expresses sympathy with Keeling's argument for dualism based on Wittgenstein's notion of a language-game. According to Keeling, the distinction between nature and culture is linguistic, a product of the proper use of words like "nature" or "culture" (Keeling 2008). When, for example, we take a picture of a bridge, we do not call this nature photography. When we take a picture of giant redwoods, we do. However, a language-game argument will not serve Katz's needs.

We talk about bridges and redwoods in different ways and for different purposes; they can belong to multiple discourses, not all of which deserve our allegiance. Treating bridges and redwoods as essentially different, the one as artifact and the other as natural, can be used to serve preservationist purposes. But at the same time, the builders construct the bridge only after extracting and reworking natural materials with fitting characteristics. For certain users, say commuters driving to work, the bridge is just a human artifact handy for crossing rivers. However, some people, such as engineers, must pay attention to the bridge's natural properties: the strength of its component materials, their ability to flex in response to locally prevalent temperature changes, and their ability to retain structural integrity in the face of weathering and use. The bridge is a collaboration between human builders and appropriate nonhuman materials. The bridge represents a boundary between nature and artifact that is more permeable than dualism suggests. It is both/and, not either/or. From the perspective of language-games, the bridge has no single essence, but exists both through its natural properties and for its artifactual purposes.

For Katz, however, the dualism between nature and the human is more than a matter of language. The moral outrage he expresses over ecological restoration rests on the dualistic

view that practices such as restoration or geo-engineering result in an ontological change, subjecting what was once free and ungoverned to the governing control of human design and intention. In other words, a restored ecosystem is a different kind of thing from a natural one. This dualism has problematic consequences, however, that Katz does not fully explore.

Katz acknowledges that some aspects of human life belong to nature, to human nature. He agrees that biological humans are "in some sense natural beings." We do not dominate, he says, if our actions accord with the evolutionary capacities of human nature. Katz uses the example of "natural childbirth" to illustrate how some human behavior, consistent with our evolutionary capacities, can fall within the domain of nature (Katz 1997b, 104). While this appears to meet an obvious objection to a rigid dualism between nature and the human or cultural sphere, the objection is not so easily answered. Practices such as caesarean section, which use advanced technology to facilitate the birthing process, are not "natural" as Katz characterizes it. In this case, biomedical technology dominates the mother, or the natural evolutionary capacities of the mother; indeed, providing patients with prosthetic limbs, heart transplants, or genetic therapy turns them into artifacts.

Katz may reply that these patients really are now hybrids of nature and artifact—although this is not how he describes restoration. But hybridity comes at a cost. Katz is compelled to describe such medical practices in the language of domination and arrogance, however beneficial they may be. He also attributes diminished value to artifacts, especially those made as restorations or substitutes for what is natural. Thus these patients would seem to possess less value than natural human beings who have not been so treated. Katz is more explicit

about how this logic applies to animals than he is about its application to people. Domesticated animals, he says, are no longer natural, but rather artifacts of human breeding programs. Their pain is not natural, and thus less important than the pain of natural wildlife (1997a, 85-86; 1997c, 28). Seeing less value in artifacts *per se* than in untouched nature has undesirable consequences for our valuation of human beings and animals, as well as for the valuation of restored landscapes.

At times, Katz backs away from a rigid boundary between the human/artifact and the natural, suggesting that there is really more of a continuum. According to Katz, both nuclear waste dumps and backyard compost piles are artifacts, but the second is more natural than the first (1997b, 104). But building compost heaps is still a form of domination that should be avoided, even if less threatening to humans than a nuclear waste dump. A restored landscape may be more natural and less dominated, on a continuum, than a paved city street, but both are still human artifacts and thus Katz must say they both manifest the ontological transformation consequent on human domination. Despite the concession to a continuum, dualism, and thus the charge of domination and arrogance, remains intact. There seem to be few alternatives to various degrees of dominating, and thus morally unacceptable, behavior. In fact, culture itself reduces to a portfolio of dominating practices aimed at controlling, modifying, cultivating, or eradicating natural human tendencies.

But suppose we define the natural in terms of evolutionary capacities. Katz does not say how to determine the evolutionary capacities of a person or a tree. The dualist draws a boundary between a person's natural capacities and their cultural capacities, and requires too that a tree's natural evolutionary capacities be distinct from capacities artifactually enabled by human beings and their technology. The dualist stipulation is that natural change is change that humans *qua* technology-using beings do not affect. Modern medicine's technological interventions create changes that exceed human natural capacities, and genetic engineering, for example, changes trees or salmon in ways that are alien to their natural capacities. The difficulty with this position is that it treats evolutionary capacities as inherent traits, rather than as relationally and contextually emergent ones.

The role of circumstances should not be neglected. When we talk of evolutionary capacities we should acknowledge both what a being can do in the present moment, and what it might potentially be able to do in the future, given enabling conditions. Evolutionary capacities emerge, that is, in contexts of interaction over time. The capacities of human beings come into existence in response to both cultural and environmental pressures and opportunities. Even so-called "natural" child-birth is a cultural practice enabled by and responsive to a cultural context, involving, in the West, such things as distrust of hospitals, special dietary and exercise regimens, prescriptions for pre-natal care, special training of midwives, and proper hygiene practices.

Surely the capacities of natural objects such as trees also emerge in response to pressures and opportunities. Natural conditions for revealing a tree's evolutionary capacities include temperature, pest insects, hydrological conditions, ice ages, carbon in the atmosphere, and many other circumstances. But human activities also create pressures and opportunities. The forestry practice of selective cutting, for example, opens up space for some trees to grow taller and larger. The growing

tree manifests its natural evolutionary capacities when it takes advantage of such anthropogenic opportunities. If we wish to attribute something like "subject-hood" to nature, then we should acknowledge the tree's "initiative" as being internal to its evolutionary capacities, not a forced, artifactual effect of human domination

If we follow Katz's revised definition of the natural as what lies within the evolutionary capacities of a being, human or non-human, then the natural is not limited to the way things are at any given time. Evolutionary capacities, as potentialities, emerge through interaction. One kind of relationship may undermine a particular potentiality, while opening up others at the same time. Certain potentialities resident in nature enable the emergence of new actualities. If this is the case, it is unreasonable to stipulate that impacts made by human beings cannot be part of nature. For better or worse, human actions are capable of revealing hidden potentialities inherent in the evolutionary capacities of all beings, including humans themselves.

But this just points to the interactive reality of humans in a more-than-human world. But perhaps artifacts do not have evolutionary capacities? If the natural is determined by a thing's evolutionary capacities, and restorations, as artifacts, have no evolutionary capacities, then the dualistic claim that restorations are artifacts, and thus not nature, may still seem intact. I think we should also say that artifacts do have something very like evolutionary capacities. To deny this is to be insufficiently contextual.

The essence of artifacts lies in the determinate intention of their designers, it might be said. But artifacts can slip the limits imposed by their human designers. A hammer, designed for hammering nails, can become a weapon, a drumstick, a work of art, or a burglar's tool. Artifacts regularly bring about transformations in the world that were not part of the intention or the design thinking behind them (Winner 1966). Inventors of cars and telephones could not foresee how their inventions would ramify. When artifacts merge into the stream of the world, they enter into different contexts and uses, participating in worlds different from what was intended. While they are not actors or choice makers, they are nonetheless not fixed and their future is not closed. Houses are not just human residences, but can be habitats for all manner of insects, bats, birds, squirrels, mice, rats, molds, and bacteria. Cars are not just transport, but fashion statements, vectors of pollution and climate change, pawns in the power plays of global conglomerates, causes of war and death, dividers of cities, catalysts of sprawl, terrorist weapons, and symbols of individual freedom. Human artifacts are even routinely re-appropriated by non-human beings; sunken ships that have become reefs or buildings adopted for nesting are two examples among many. Interactive contexts allow hidden potentialities in the artifact and in its users to emerge. What seemed fixed and self-contained is indeed more fluid and interactive than initially appeared. The essence of artifacts is molded and modified by their existence, a relational existence. There is a sense in which even artifacts have evolutionary capacities.

The claim that restorations are designed artifacts is not sufficient to justify dismissing them as anthropocentric domination. The restored landscape is inevitably a hybrid of natural wildness and human intentionality. The restoration may appear to have a fixed essence as a human product, and yet this fixity is compromised by the agency of other beings in relation to whom the restoration unfolds in time. Human beings may

have a point of view on the restored landscape, but so does the rest of nature.

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Suppose we contemplate a successful forest restoration. It's a fake, says Robert Elliot (1982). It's an arrogant, unnatural, anthropocentric artifact, says Katz. *We* did this, not nature. This, I think, is the moment of arrogance! The restored forest is actually a collaborative project. An alternative approach to the ethics of restoration requires that Katz's arm's length, detached, spectatorial respect for an abstract nature give way to a more complicated and messy picture of concrete forms of human-nature engagement within which restoration plays an important role as an expression of care.

Restoration is not a unilateral act of human beings, but a participatory engagement with multiple non-human actors. Already in *A Sand County Almanac*, Aldo Leopold noted that historians neglect how the biotic community itself plays a role in both enabling and limiting human accomplishments (1966, 241-243). If we pay attention only to the human actors, we lose sight of nature's agency, its collaborative part in their success or failure. If we think of restorations, or artifacts in general, solely in terms of the human intentions embodied in them, we lose sight of the natural materials and capacities out of which the artifact must be made, as well as the ways in which an artifact's surrounding environment and history can ramify those intentions and their use. The making and deploying of artifacts is a collaborative process.

The idea of collaboration highlights what Anthony Weston called a "multi-centric" universe (2009). Nature is neither passive nor a monolithic block. Katz remains too anthropocentric

in his fixation on the unilateral intentions and actions of humans. Restoration is not all about us, no matter what explanations and justifications project managers may offer to funding agencies or the public. Taking the natural world seriously does not mean adhering to a cold, distanced respect for nature's autonomy, but rather cultivating a more careful attentiveness to the needs, wellbeing, and interests of a multitude of non-human beings.

Katz sees restoration as a domination of nature that interferes with its autonomy as a subject. But what does it mean to think of nature as a subject? I want to use the concept in a broad sense. A subject has a point of view on the world; subjects organize their world around them in ways that reflect their interests and capacities; a subject makes waves in the sense that being a subject has consequences for others around them; a subject interacts with, that is, initiates and undergoes chains of events (Weston 2009). Using "subject" in this way it is clear that nature is after all not a subject; but it is a domain of subjects.

The idea that living subjects have a point of view coincides with Taylor's biocentric conception of living beings as "teleological centers of life" (1984, 119-120). Conditions can be favorable or unfavorable to living beings that do their best, subject to species limitations and capacities, to seek beneficial conditions and avoid harmful ones. We can make an effort to understand these points of view and take them into account in our own plans. Unquestionably, organisms are also responsive to the points of view embedded in other living beings around them, and make use of that information to seek food and avoid predation. As a predator actively hunts, it must be receptive to signs emanating from the environment and from its prey, just

as the prey is receptive to signs of the predator. Each subject, each center in a multi-centric world, organizes "a certain part of the world around" themselves (Weston 2009, 93). Living in the world, subjects move through the "multiple force fields" issuing from other centers. As they do so, they interact with these multiple centers, register and identify the character of these force fields, and orient themselves accordingly. This notion of nature as filled with multiple subjects, multiple centers of activity and receptivity opens the possibility of dialogue between beings. Some centers beckon to us, others repel; some impose themselves, while others simply make themselves available; some cooperate, and some resist. Multiple subjects enter into multiple lines of communication as they traverse a shared world.

Such a world requires human beings to cultivate an "etiquette" for negotiating life amongst multiple centers (Weston 2009, 94-95; Snyder 1990, 3-26; Young 2012, 64). It requires a kind of comportment informed by heightened awareness, attention, and a willingness to open up spaces for others to approach, interact, and enter into relationships. A world of multiple subjects is not a closed world, where respect only means non-interference; it is a world where possibilities exist for coaction, collaboration, mutual support and benefit, care, and, perhaps, shared purpose. Rather than a world divided into two ontological categories, the human and the natural, we have a chaotic, tangled, and interwoven world of overlapping force fields, ways of living, and points of view. Acknowledging the existence of other subjects requires us to recognize how the world of objects arranges itself around them as well. I am one center, looking out at the world, and I encounter other centers that are also looking out at the world and ordering it from their own points of view (Sartre 1965, 252-302). This geometry of multiple centers of perception defines a world of multiple subjects, both human and nonhuman.

Perception in such a world must seek to approximate "cubist" looking, rather than traditional perspective painting. "For the Cubists, the visible was no longer what confronted the single eye, but the totality of possible views taken from points all round the object (or person) being depicted" (Berger 1972, 18). Cultivating the appropriate etiquette requires abandoning the linear, imperialistic gaze of the isolated subject, to take on the more complex acknowledgment of how other subjects may be looking at the same thing. The meaning and moral desirability of a restoration project cannot be determined unilaterally by the human gaze alone, as Katz assumes by reducing restoration to human arrogance and domination. We must also consult the perspectives of nonhuman centers that are affected. Restoration projects are one type of interactive engagement between human and nonhuman centers, and they affect a multitude of "force fields".

From this perspective, ecological restoration is a form of collaboration that belongs to the etiquette of living in a multicentric world where human use and intervention are unavoidable modes of participation. This etiquette is essential for kindly use and caring maintenance that does not background the world on which we depend (Plumwood 1993). Following Andrew Durkin, I will distinguish between two different modes of collaboration: direct and contextual (2014). Writing about musical composition, Durkin addresses the significance of collaboration.

"We have become accustomed to focusing on the end result of musical production as if that's all there is to it. And when this distraction occurs, when the final stage of a creative arc is presented as the entire thing itself, something valuable in our experience of music is lost" (Durkin 2014, 3-4).

What is lost is an awareness of the "collaborative trajectories that led to [the musical piece], the mediation that makes it perceivable, and the fact that the end result is itself the starting point for a new flow of creativity that may or may not already be manifest" (Durkin 2014, 13).

A jazz performance, for example, emerges from direct collaboration between musicians, composer, sound technicians, and others. But indirectly or contextually, the performance would be impossible without collaboration with an antecedent musical culture, artisans who make the instruments, audioengineers who innovate new sound systems, composers whose work may be borrowed and elaborated, audiences who interpret and critique, performance venues, and so on.

The musical analogy helps, I think, to articulate the interactive character of a restoration project. It is a mistake to look at the finished product alone and focus exclusively on the human agency involved. It is true that people must deliberate and act in order to restore a degraded landscape. But it cannot be a unilateral endeavor. There must be people on the ground, including researchers with ecological knowledge and scientific experience, but also an existing pool of collaborating species, a climate that is sufficiently conducive, soils and waters and trophic relationships. And there will be critics to help assess the work, although not all these critics will be human.

Human and local species act, then, as direct collaborators, while both human and nonhuman actors supply additional contextual collaboration. Even legal designation of a wilderness preserve is a form of contextual collaboration with nature. It sets the background conditions for ensuring that humans do not engage in particular kinds of disruptive interaction. Collaboration points to conjoint action, participatory engagement, and multilateral adjustments. Collaboration highlights how permeable is the boundary between human beings and more-than-human nature. Indeed, nature and human culture are products of both direct and contextual, co-evolutionary, cross-border collaborations (Fiskio 2008).

One might object that it is taking the metaphor of collaboration too far to see all human activities as collaborative. If we say that nature becomes what it is through a collaboration with human beings, do not we open up the door to the Anthropocene and give license to its most interventionist and managerial desires? But this would be precisely the wrong conclusion. Paying attention to the collaborative nature of reality forbids a unilateral, anthropocentric design fantasy. Durkin uses collaboration to indicate the contextual ways in which performances come to be, requiring many types of causal support. Even a musical genius, a Mozart or Beethoven or Coltrane, requires an existing musical tradition, standards of performance, instruments, instrument makers, performers, and audiences for their genius to unfold. Their success is a collective achievement, as is the successful ecological restoration. But this does not mean that all collaborative works are successful or even positive for all concerned—Durkin's notion of collaboration applies even if the final work is poorly performed, panned by the critics, dismissed from the musical canon—it is just that collaborative works always emerge from contributions by a multiplicity of forces.

Restoration as a collaborative project now gains its ethical significance in a broader context. What matters is not just the direct collaboration between practitioners and the more-than-human world with which they work. Ethical significance also depends upon the presence or absence of the required *contextual collaboration* by the society at large. No matter how sophisticated the direct collaboration, it may be undermined by a failure of contextual collaboration. Indeed, some, like Paul Kingsnorth, see little evidence that technological society wishes to engage in such collaboration by reforming its addiction to technological and economic growth, consumerism, and anthropocentric self-aggrandizement (2017).

In the end, restoration finds its ethical significance in the context of the other steps human communities take to develop a caring, sustainable relationship with each other and with the natural world. If restoration is just a stopgap measure deployed sporadically to mitigate on-going degradation for parochial human purposes, then its significance will be limited. If, however, restoration projects accompany other strategies for addressing economy, culture, personal aspiration, and uses of natural resources that are constitutive elements of a sustainable society, then we may hope that restoration can accomplish something of real ethical value. Katz's focus on restorations as stand-alone artifacts is too narrow. To restore is not simply to put the jigsaw pieces back in their proper configurations. The puzzle solvers and their cultures are also a part of the jigsaw. Restorations are ultimately meaningful in conjunction with other activities and commitments, that is, in an interactive and relational context.

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Adopting a more contextual, collaborative conception of restoration in a multi-centric world does not provide the foundationalist support for the non-interventionist environmentalism that Katz thinks is required to combat anthropocentric arrogance. Katz is particularly concerned that abandoning dualism will remove all barriers to a fully humanized world, colonized and controlled for anthropocentric purposes: "without a clear distinction between natural entities and artifacts, we lose the ability to make normative decisions about what is a good environment – unless we succumb completely to a thoroughgoing anthropocentric world view" (Katz 2015, 495). The problem is that Katz's clear distinction between natural entities and artifacts is not clear after all, nor is human normativity the only deciding factor in what is valuable in a restoration.

The moral significance of ecological restoration requires treating restoration from a more relational perspective as a particular form of collaboration between two aspects of a whole, the human and the more-than-human—aspects that resolve into an interdependent multiplicity when properly understood. With the notion of collaboration and interdependence comes a sense of flux and impermanence. Rather than focus on the status purity of a nature unchanged by humans and a vision of cultural humanity untouched by nature—these are two sides of the same coin—we must embrace and take responsibility for the ways in which human culture and nature mutually constitute and transform each other.

This is, admittedly, a messier picture than Katz's dualism and it does not offer the kind of universal foundation for abstract judgments about the purity of "good nature" or the arrogance of artifacts. What we should condemn or praise cannot be read off the landscape quite so easily. But breaking away from the dualist separation of humans and nature can refocus our attention on the requirements of kindly use, maintenance, collaboration, gratitude, and interspecies etiquette in ways that Katz's critique of restoration leaves opaque.

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