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What is the value of historical fidelity in restoration?



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ABSTRACT

The following considers the role of historical fidelity in habitat reconstruction efforts. To what extent should habitat reconstruction be guided by the goal of recreating some past state of a damaged ecosystem? I consider Sarkar's "replacement argument," which holds that, in most habitat reconstruction efforts, there is little justification for appealing to historical fidelity. I argue that Sarkar does not provide adequate grounds for deprecating historical fidelity relative to other natural values such as biodiversity or wild nature.

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1. Introduction

For over a decade, Sahotra Sarkar has been instrumental in shaping and promoting the field of environmental philosophy. Environmental philosophy encompasses traditional environmental ethics, but places it within a more comprehensive framework for thinking philosophically about the environment. Two distinctive aspects of Sarkar's approach to philosophical problems of the environment deserve notice. The first, and most obvious to a casual reader, is the way he carries into his discussions the kind of rich, empirically-informed, conceptual and methodological analyses that one associates with the philosophy of science. The second is the way he consistently incorporates the perspective of the global South into his environmental concerns. In the following, I'll focus primarily on the chapter devoted to ecological restoration, as Sarkar's position here is highly original and challenging, and it evaded close scrutiny by the other symposiasts.

A canonical way of distinguishing conservation (or, perhaps in more traditional parlance, "preservation") and restoration is as follows. Conservation merely seeks to protect relatively undisturbed landscapes from damage or harm (this harm need not be anthropogenic, though in many discussions it is taken for granted that it is). Restoration seeks to modify landscapes in the aftermath of disturbance or harm. It seeks to undo the damage and re-create an opportunity for certain natural values to flourish. The justification for restoration practices is that there are precious

few undisturbed places left on earth. If we wish to promote natural values such as biodiversity, wild places, or the continuation of crucial ecosystem services—such as the provision of clean air and water—we have to actively modify damaged landscapes for those ends. Although terminology in this area is fluid, I will use "conservation biology" to signify the discipline devoted to the practice of conserving landscapes, and "restoration ecology" to signify the discipline devoted to the practice of restoring them, where conservation biology and restoration ecology are two species of environmental management (this taxonomy is similar to that given by Higgs, 2003, p. 97). "Ecological restoration" will signify either the practice of restoring landscapes, or the outcome of such practices. I will use "ecological restoration" and "environmental restoration" interchangeably.

How broadly, or narrowly, should we define this crucial concept of ecological restoration? Obviously, the practice of ecological restoration, by definition, requires something like active habitat modification in response to perceived damage (of course, people may differ on what counts as "damage"). Moreover, this habitat modification must be construed as beneficial, in the sense of somehow promoting natural values such as biodiversity, wild nature, or ecosystem services. But aside from these obvious definitional constraints, should we place any additional conditions on what is to count as "ecological restoration"?

One prominent environmental theorist, Eric Higgs, has argued at length (e.g., Higgs, 1997, 2003) that we should impose additional

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conditions on what is to count as “ecological restoration.” Higgs’ explication of the concept of restoration has four aspects. The first two, less important, conditions, are the concepts of “focal practice” and “wild design.” These entail, respectively, that the practice of restoration should encourage community participation and its design should respect the autonomy of natural processes. Somewhat more important is the idea that restored ecosystems should exhibit “ecological integrity,” which alludes to the ecosystem’s ability to adjust to environmental change (Higgs, 2003, p. 214; though he acknowledges that the concept is “intuitive and metaphorical;” also see Sarkar, 2012, pp. 150–152, for discussion). Finally, and most important to this discussion, is the idea that ecological restorations should exhibit *historical fidelity*.

Historical fidelity is the idea that the practice of restoration should attempt to approximate, within reasonable bounds, some past state of the damaged ecosystem. Crucially, historical fidelity requires not simply the attempt to re-create, in very general terms, some global functional capacity of the past ecosystem. For example, it goes beyond the mere demand that the ecosystem provide wildlife habitat, or that it exhibit a measure of resilience in the face of future perturbation. What is crucial is that this function be performed by the same kinds of components, or entities, that did so in the past. Historical fidelity is a constraint on what Sarkar calls the “reference state” rather than the “reference dynamic” of the ecosystem (Sarkar, 2012, p. 133). Of course, this raises the question of how similar the components of the restored ecosystem must be to those of the reference state; restoration ecologists have wrestled with this question (e.g., Palmer, Falk, & Zedler, 2006) but I suspect there is no answer that is both general and principled.

Consider a simple example: there are commonly several ways of ensuring the persistence of some desirable ecosystem function. If a wolf population is locally extirpated, and as a consequence, the deer population spirals out of control, there are several conceivable mechanisms that could perform the function of population regulation. One would be to increase hunting permits; another would be to release a deer-specific virus or parasite that would keep the population to a manageable size. Historical fidelity, however, would typically demand that we achieve this objective specifically by *reintroducing wolves* (assuming that wolves were present during the particular historical era to which we want to restore). Obviously, historical fidelity can be a fairly demanding and information-intensive requirement, depending on how seriously we pursue it.

Higgs develops two kinds of claims in his book, a conceptual claim and a normative one. The conceptual claim is that ecological restoration, by definition, requires historical fidelity. The normative claim is that historical fidelity is highly valuable. That is, habitat reconstruction efforts should typically be restorations (in the sense that involves historical fidelity). Sarkar is critical of both of these claims. First, Sarkar resists Higgs’ attempt to impose historical fidelity as a definitional criterion for ecological restoration. Secondly, Sarkar questions the normative justification for pursuing restorations in the narrow sense that requires historical fidelity. In the next two sections, I’ll discuss each of these points in turn.

2. “Ecological restoration” in theory and practice

Sarkar begins this chapter by providing an overview of the traditional use of “restoration.” (In the following, I will draw freely not only from Sarkar’s book, but also from an article published around the same time on the topic—see Sarkar, 2011.) Sarkar’s overview, however, does not merely serve to provide a historical backdrop. Additionally, it serves to frame his main argument that the current use of “restoration” among many environmental theorists (as well as certain practitioners primarily associated with the

Society for Ecological Restoration [SER]) is overly narrow and potentially counterproductive. Specifically, Sarkar claims that neither traditional use of “restoration,” nor its current use in the field, is wedded to historical fidelity (Sarkar, 2011, p. 337; 2012, p. 139).

I want to be cautious, however, about ceding too quickly Sarkar’s claim that environmental theorists such as Higgs use the term in a way that substantially differs from the historical pattern of usage or its use in the field. Of course, Higgs could accept the divergence and argue that this is a minor point; after all, regardless of whether practitioners do or do not use the term “restoration” in the sense that requires historical fidelity, the important question is how one *ought* to use the term. But I do not think the importance of the definitional question can be dismissed that easily. At least in philosophy of science there is a presumption that if one purports to explicate a certain term that is in wide circulation amongst scientists, then that explication, all things being equal, should be highly similar to the way scientists actually use it. If Higgs’ explication is substantially at odds with the way that scientists use the term then he would seem to be under a special burden to justify this revisionary usage. This is why I do not want to cede too quickly Sarkar’s claim that there is any deep discrepancy.

The problem is that it is often difficult to assess what, precisely, scientists “mean” by a certain term. Often, scientists do not explicitly define important terms; even when they do, there is no guarantee that these explicit definitions necessarily capture what they have in mind when they use it. Another problem with using practice to extract the meaning of a term is the phenomenon of environmental “buzzwords.” Occasionally a certain term, such as “sustainability,” or “integrity,” becomes a kind of catchword that generates enthusiasm among environmental planners and, more importantly, generates research funding. This creates a natural incentive for planners to utilize certain terms in ways that they may acknowledge, upon reflection, to be inappropriately expansive. Ideally, to identify how scientists use a term, one would compile a sizable number of examples in which scientists use the term, and a number of examples in which scientists do not use the term (but which are in other respects comparable), and one would try to formulate the rule that seems invoked in the majority of cases. It seems to me that there is no guarantee that the results of such an analysis would confirm Sarkar’s claim of discrepancy.

For example, one interesting reconstruction project is the phased transformation of Governors Island, a small island directly south of Manhattan. Around the turn of the century, Governors Island became used as a landfill for debris produced in the construction of the subway system. In the 1960s it was given to the Coast Guard as a residential base. Currently, it does not fulfill any meaningful conservation or socio-cultural purposes. But, if we accept the premonitions of the Governors Island Trust, a city-funded non-profit organization that oversees the island, that is all about to change. The flat, barren landscape will be replaced by a series of rolling grassy hills. The demolished materials from the Coast Guard buildings will provide the infrastructure for those hills. In many other places the elevation will be raised; salt-resistant, non-native trees and shrubs will be planted along portions of the perimeter to compensate for projected, climate change induced sea-level rises. Other plants were selected in a manner to promote marine and avian biodiversity. A network of thin, paved pathways will traverse the island; these, in addition to baseball fields, free bike rentals, and a view of the Statue of Liberty, will provide socio-cultural opportunities for harried and over-stressed city dwellers.

The transformation of Governors Island is a paradigmatic example of what Sarkar calls “habitat reconstruction.” In my view, it responsibly integrates concerns for long-term sustainability, biodiversity protection, and cultural opportunities. But, in all of the documentation I have examined, including internal Governors Island Trust memoranda, project overviews drafted by West 8 (the design

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