The Aesthetic Enchantment Approach

From "Troubled" to "Engaged" Beauty

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Abstract: *Aestheticians routinely wrestle with the asymmetry between aesthetic appreciation and "natural" beauty. In these pages, I develop the Aesthetic Enchantment Approach (AEA), which avoids "aesthetic disillusionment" while augmenting aesthetic enchantment, even for degraded sites. AEA's main claim is that people, whether citizen scientists counting species or stakeholders working alongside scientists to reclaim environments, boost their wellbeing, while cultivating environmental melioration. AEA advances an "engaged" beauty grounded in wellbeing such that environments constantly permeate and shape human somas, which in turn penetrate and reshape environments. By urging people to protect* all *of nature, AEA greatly expands upon scientific cognitivism's territory.*

Keywords: *beauty, wellbeing, reclamation, degraded land, biodiversity.*

1. Introduction: "Troubled" Beauty

With every passing year, the very wildlife or unspoilt nature that people routinely describe as beautiful becomes rarer and rarer: tropical forests give way to palm plantations, wetlands become farmland, and farmers cultivate monocultures. Moreover, manmade disasters render land fruitless owing to desertification, flooding, deforestation, water contamination, soil erosion, drought, leaching and spills. Given such widespread devastation, there must be a way to inspire people both to avert manmade environmental catastrophes (at home and abroad) (Spaid, 2020) and to value such sites' unimaginable potential. Otherwise, degraded lands are readily dismissed as *ugly*, or worse still, beyond hope, leading to further degradation. That land degradation currently threatens the wellbeing of 3.2 billion people magnifies the urgency to amend both degraded sites and people's attitudes toward them (Leahy, 2018).

In 2019, the Nordic Society for Aesthetics issued a call for papers concerning "The Place of Beauty in the Contemporary World." Recognizing that 75% of Earth's terrain is substantially degraded (Leahy, 2018), I wondered how one could reflect upon these four points –place, beauty, contemporary, and world- in a manner that inspires people to protect nature, no matter how degraded. Underlying these terms are rather weighty philosophical notions such as space, judgment, time, and cognition, which have characterized aesthetical judgments since Immanuel Kant. If degraded lands could be appreciated for their beauty, inhabitants might feel determined

to resuscitate them, granting future generations greater access to natural beauty, rather than less, as is the current trend. I'm immediately reminded of artist Aviva Rahmani whose neighbor took her to court because he found her project to reclaim the local "town dump" suspect. He must have been pleasantly surprised when an "ecologically thriving salt marsh, surrounded by a successional forest, meadows, and uplands" sprouted up a decade later (Spaid, 2000, p. 115). The Aesthetic Enhancement Approach (AEA) developed in these pages aim to engage stakeholders in habitat regeneration on nature's behalf (Spaid, 2016).

People tend to appreciate their immediate environment, since it provides them habitat, as well as access to renewable resources that offer them sustenance and strengthen their capacity for *eudaimonia* (Spaid, 2019, p. 7). As Richard Shusterman has observed, "[T]he self's action, will, and thinking are governed by habit, and if habits necessarily incorporate environmental elements, then the self essentially relies on such environmental elements" (Shusterman, 2008, p. 214). Moreover, an environment's capacity to sustain inhabitants' wellbeing reflects "somatic efficacy," which blends "a desire to live better" with "pluralist individualism" (Shusterman, 2000b, p. 215). By contrast, people tend to flee lands that no longer support their livelihoods. Dislocation causes extreme stress and instability, rendering self-mastery a non-starter. Mass migrations due to environmental degradation, currently underway in sub-Saharan Africa, Southeast Asia and Central America, are expected to affect 50-700 million people by 2050.[1] The Harrison Studio's *Peninsula Europe IV* (sextych) (2017) anticipates droughts forcing 23 million Europeans to migrate by 2070 (Spaid, 2017, pp. 250-252).

Even people whose environments have yet to be directly impacted suffer the psychological harm/trauma known as "climate surprise," caused by unpredictable meteorological swings, and the concomitant dread/fear known as "ecological grief," afflicting scientists witnessing climate change (Glantz et al., 1998). Such stressful predicaments significantly diminish people's wellbeing, even if their lives remain physically unaffected. Finally, most conceptions of beauty are entirely human-centered, and are thus visually biased; better yet, visually impaired, since ecosystem features used by scientists to evaluate ecosystem functioning are not necessarily accessible to trained eyes, let alone the "naked eye." Ecosystem functioning refers to "'the joint effects of all processes (fluxes of energy and matter) that sustain an ecosystem' over time and space through biological activities" (Truchy et al., 2015).

To defeat "troubled" beauty, this paper offers eight frames for evaluating a site's beauty. I begin by reviewing statistics culled from EU environmental reports that paint a rather grim picture, and thus demonstrate that Europe's "natural" beauty is largely illusory. To my lights, this picture frustrates scientific cognitivists' characterization of nature as exhibiting "scenic or conventional beauty," especially since its adherents admit that "scientific" beauty fails to inspire people to protect "those parts of nature that are deemed ugly or unsightly" (Carlson and Lintott, 2008, p. 205). Building on science's current method for "gauging" ecosystem functioning, AEA advances "engaged" beauty, whose track record of mobilizing stakeholders to reclaim degraded sites has enhanced human and nonhuman wellbeing alike. I next offer four case studies that demonstrate the ramifications of "biodiverse" beauty. This sets the stage for a "values-oriented" beauty aimed at countering the way "cognitive states" distort "perceived" beauty, further jeopardizing scientific cognitivism's reliance on science. Lastly, I explore reasons to appreciate, and therefore protect urban wastelands; leaving "abandoned" beauty *as is*.

1 https://ipbes.net/news/media-release-worsening-worldwide-land-degradation-now-%E2%80%98critical%E2%80%99-undermining-well-being-32

2. The Buzz Kill: "Natural" Beauty

Let's return to that 2019 NSA conference. From the onset, I worried that this assembly of aestheticians decamped to the Hanaholmen Cultural Centre (on an idyllic island in Espoo, FI near Aalto University) and sustained by sumptuous seasonal buffets, might lack the requisite exposure to environmental precarity. Imagining that these participants inhabit similarly idyllic campuses, far from genuine environmental harm, I pestered listeners with EU statistics. I must admit, I felt a little guilty painting such a horrid scene, while astonishing harbor vistas loomed beneath Helsinki's stark sky. Most horrific was the statistic citing that European animal populations fell on average 60% between 1970 and 2014 (the latest data available).[2] Not surprisingly, the habitats suffering the greatest damage were rivers and lakes, where wildlife populations fell 83% owing to agriculture's enormous thirst and the large number of dams.[3]

Consider that in 2011 the EU estimated that sprinkled among its 39 member and co-operating countries there were potentially 2.5 million sites with contaminated soil. By 2019, 45% of these sites were identified, yet only 51,300 sites had been remediated.[4] Since 95% of identified sites remain, the beauty potential proves enormous. Regarding top soil erosion, 20% of Europe's land area [are] subject to wind and water erosion. "At EU level, soil erosion affects over 12 million hectares of land – about 7.2% of the total agricultural land – and leads to €1.25 billion loss in crop productivity."[5]

Only 43% of reported freshwater bodies have achieved a good ecological status, which was expected to rise to 53% by 2015.[6] Consider that 7% of groundwater stations report excessive levels of pesticides leached into the water,[7] while "toxic blue-green algal blooms in Europe [are] a growing problem."[8] Since implementing the Convention on Transboundary Pollution in 1979, "sulphur emissions across Europe have fallen significantly, but with the increase in vehicle traffic nitrogen oxides emissions have been reduced only slowly. Acid rain in Europe will therefore continue to be a problem in Europe until these emissions can be dramatically reduced."[9] In Spain, "practically all the mining leachates exceeded the maximum concentrations established by Directive 98/83/CE for Fe and Cd [and] almost 90% exceeded the limit for Mn and 82% for Al. Likewise, Fe, Cd, and Mn caused 'extremely high' degradation in most sampled leachates."[10]

The EU considers deforestation an "international" problem, since the production of logs and agriculture imported between 1990 and 2008 required non-EU nations to clear land masses the size of Portugal.[11] In 2018, the EU conducted a feasibility study to step up actions against international deforestation.[12] To drive home deforestation's impact, I reminded the audience that even though Finland is widely recognized as one of the world's most environment friendly countries, it too is an offender. In 2009, Finnish artists Sanni Seppo and Ritva Kovalainen

2 https://www.theguardian.com/environment/2018/oct/30/humanity-wiped-out-animals-since-1970-major-report-finds

3 https://www.theguardian.com/environment/2018/oct/30/humanity-wiped-out-animals-since-1970-major-report-finds

4 https://www.eea.europa.eu/data-and-maps/indicators/progress-in-management-of-contaminated-sites-3/assessment

5 https://ec.europa.eu/jrc/en/news/soil-erosion-costs-european-farmers-125-billion-year

6 https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52012DC0673

7 https://ec.europa.eu/eurostat/statistics-explained/index.php/Archive:Agri-environmental_indicator_-_pesticide_pollution_of_water

8 https://www.researchgate.net/publication/279889378_Toxic_blue-green_algal_blooms_in_Europe_a_growing_problem

9 http://www.enviropedia.org.uk/Acid_Rain/Europe.php

10 https://www.ncbi.nlm.nih.gov/pubmed/29448194

11 http://ec.europa.eu/environment/forests/studies_EUaction_deforestation_palm_oil.htm

12 http://ec.europa.eu/environment/forests/pdf/KH0418199ENN2.pdf

documented the widespread destruction of the Finnish forests thanks to the forestry industry. Their 2011 exhibition "Koltainen Metsä" (Golden Forest) at Helsinki's Taidemuseum Tennispalatsi made a lasting impression on me, since it cast Finnish forests as far less pristine than their reputations, framing "sights unseen" as utopia and "unsightly scenes" as dystopia.

3. Scientific Cognitivism: "Scientific" Beauty

In their introductory essay "Nature and Positive Aesthetics," Allen Carlson and Sheila Lintott note that "environmentalists find meeting the goal of protecting nature relatively straightforward for those parts of nature that traditionally have been seen as scenic or conventionally beautiful. On the other hand, they have difficulty with those parts of nature that are deemed ugly or unsightly" (Carlson and Lintott, 2008, p. 205). To solve this dilemma, they posit that since "all nature has positive aesthetic value," one will eventually acknowledge that nature is *essentially* beautiful, and therefore deserving of protection. Doing so requires an "appropriate appreciative stance," specifically one informed by scientific knowledge (p. 205).

Scientific cognitivists claim that greater scientific knowledge informs people's perception and opinions regarding nature, and thus stands to augment their appreciation for aspects of nature that are not obviously beautiful. Scientific cognitivism's primary beneficiaries include "pristine nature" (p. 205), such that species or places *ordinarily* considered loathsome such as insect populations (though not those framed as "pests"), lizards, swamps, mole hills, weeds, wastelands, wild flowers, compost, soil (dirt), spider webs, animal faeces, termite hills, wolves, bears, poison ivy/stinging nettles, scavengers/carrion, and lands ravaged by natural disasters, though not necessarily lands that spur people to flee.

I realize that scientific cognitivists can adapt their view to accommodate whatever science has to say about the potential of degraded lands, but doing so would require them to characterize degraded lands as having "positive aesthetic values," leaving one to wonder to which sites they would attribute "negative" aesthetic values. The position defended here denies the possibility of nature having negative aesthetic values, since whatever makes it negative is due to negligence. What's "negative" is ethical not aesthetic, but this is another paper altogether. Since nature provides habitat, it exhibits "positive somaesthetic values."

In light of the surfeit of environmental degradation, scientific cognitivists' premise that nature is "*essentially* beautiful" strikes me as misguided, especially since they admit that nature's deserving of protection hinges on human beings appreciating it. Homelands that people are fleeing in droves have failed to elicit the appropriate appreciative stance. With so many sites for human beings to deem "unsightly," I worry that scientific cognitivism justifies people's abandoning or neglecting degraded sites, should science lack the wherewithal to identify such sites' potential, let alone remedy them.

To be fair, I imagine Carlson and Lintott defining nature narrowly. That is, they view nature as primarily *wild*, if not free from human incursion, which spurs degradation. For my purposes here, I conceive of nature more broadly, such that nature refers to all living species, native or not, and their current habitats. Thus farms, urban green spaces, zoos, and pioneer plants are no less nature than the far reaches of Yosemite National Park, which incidentally hosts 275 invasive plant species. Since ecology is a particularly human occupation, and ecology is concerned with nature's conservation, human beings are in constant contact with nature, even when people opt for "benign neglect." As we shall see, "benign neglect" *is* still action, since it is both willful and routinely monitored.

Truth be told, *all* of nature, sightly or not, deserves human protection and/or reclamation, especially those swathes of land whose *essential* beauty has been lost to species depletion, deforestation, soil erosion, drought, salinity, desertification, flooding, dumping, wetland destruction, acid rain, and air pollution. If the "appropriate appreciative stance" is needed to compel protection, as Carlson and Lintott claim, what will motivate people to protect degraded sites? Even if scientific knowledge stands to inform people, science alone cannot motivate the appropriate appreciative stance, since greater knowledge rarely shifts people's values. This point has been proven time and again, every time evolution deniers capably explain the process of evolution. Something similar happens among climate change deniers and believers, who regularly demonstrate their knowledge and ignorance, respectively; regarding carbon dioxide's role in increasing Earth's atmospheric temperature (Kahan, 2015). Even when the former have their facts straight, their beliefs don't change since their underlying values remain the same. Beliefs about what counts as beautiful or a site's potential remain intact until some earth-shattering experience shifts people's values, which is ultimately what motivates the appropriate appreciative stance.

Most importantly, the strategies that people consider to reclaim a site are mostly hunches, lacking in scientific proof regarding their success. The question is, then: what inspires people to imagine some alternative environment, to believe change is possible, and to take actions previously not undertaken in order to reclaim degraded sites that others presumably deem unworthy of protection? I say *presumably* because human negligence causes degradation, yet it's not unusual for degradation to be the outcome of a power struggle between foreign (corporate) interests and local inhabitants, whose ancestors have carefully protected their environment for centuries, yet their progeny proved powerless in the struggle over land rights.

4. "Deemed Ugly or Unsightly": "Gauging" Beauty

Because somaesthetics cannot single-handedly tackle such issues that crucially constrain human flourishing, AEA advances a science-based, values-oriented approach for gauging the beauty of sites ordinarily deemed unworthy of protection. Appreciating degraded lands requires a heightened imagination, such that recognizing a site's beauty extends beyond sight to include one's "vision" for such sites. To evaluate ecosystem functioning, scientists measure biodiversity, entropy levels, soil fertility/organic life, sustainability/growth, and habitat/food. Scientists use the term biodiversity to describe variations "among taxa at multiple levels of ecological organization: between and within populations, species, phylogenies, functional groups, trophic levels, food web levels, food wed compartments, and even habitat patches that explain landscape diversity" (Hines et al., 2015).

So long as biologists, such as Michael Scherer-Lorenzen, correlate ecosystem functioning with biodiversity, biodiversity doubles as a bio-indicator of a place's beauty (Scherer-Lorenzen, 2005). As it turns out, this view is not so farfetched since even biodiversity's staunchest critics deride it as having greater aesthetic than scientific value, so long as it's just a feature for human beings to enumerate. Scientists who employ biodiversity to gauge ecosystem functioning typically tap citizen scientists to count species, an action that participants report makes them feel "connected to nature" and motivates them to "learn more about nature" (Ganzevoort et al., 2017). Thanks to regularly held Conference of the Parties to the Convention of Biological Diversity (15 meetings since 1994), UN member nations regularly report biodiversity figures, so species counts are conducted across the globe.

On its face, AEA appears to offer a functionalist account of beauty, since it frames beauty as ecosystem functioning. However, AEA not only "engages" stakeholders with nature, but species counts effectively track an environment's wellbeing. AEA thus expands somaesthetics' goal of human flourishing to include nonhuman flourishing. Most relevant for somaesthetics is the way biologists and policy makers explicitly link "biodiversity (i.e. genes, traits, species and other dimensions) and human wellbeing (HWB; i.e. health, wealth, security and other dimensions)" (Naeem et al., 2016). Since inhabitants tend to feel pride in species count results, counts used to assess degraded sites are also likely to attract stakeholders. Since sustainable environments enable people to foster self-cultivation, species counts not only hold the key to human wellbeing (Russell et al., 2013), but they unlock the "place of beauty in the contemporary world." Since scientists regularly refine their positions and change their recommendations, biodiversity is hardly some panacea. Even so, AEA's account of "engaged" beauty motivates inhabitants to "gauge" the beauty of sites historically dismissed as blights and to envision ways to boost their wellbeing.

5. The Aesthetic Enhancement Approach: "Engaged" Beauty

Since the millennium, ecologists have primarily focused on ecosystem services, whose human-centered approaches are designed to appeal to policy makers and thus provide ecologists greater resources to conduct research (Kremen, 2005). In contrast to ecosystems servicing, I prefer the stronger target of ecosystem functioning, which is nature-oriented.

Stakeholders willingly work on nature's behalf, because they view themselves in kinship relationships with nature, such that all lives are mutually-interdependent (Spaid, 2016). Stakeholders include eco-artists (like the Harrison Studio and Aviva Rahmani mentioned above), citizen scientists, community members, or environmental activists working alongside scientists to reclaim degraded sites that often double as open-air laboratories for testing novel reclamation strategies.

Terms like restore, conserve, preserve, remediate, and reclaim all have specific meanings. I rather employ reclamation more generally to cover strategies meant to improve ecosystem functioning and enhance human wellbeing without having to restore sites to their original conditions, which is rarely feasible and not necessarily desirable (O'Neill et al., 2008). Reclamation concerns an environment's meliorative cultivation, yet human actors simultaneously undergo melioration, both as participants with shared goals and future beneficiaries of said efforts.

When seeking to reclaim a site, I imagine stakeholders asking themselves: "Whose wellbeing takes priority here? Why? How can this be achieved?" And of course, there are probably numerous proposed solutions, but only some stand to optimize ecosystem functioning. Consider Aldo Leopold's oft-quoted "double" haiku- "A thing is right when it tends/ to preserve the integrity,/ stability, and beauty/ of the biotic/ community. It is wrong/ when it tends otherwise" (Leopold, 1966, p. 262). Here, the biotic community, not Leopold nor any stakeholder, is designated the beneficiary for whom "integrity, stability, and beauty" are optimized, if not maximized. One can easily recognize Leopold's vision of "integrity, stability, and beauty" as exemplary of a site's wellbeing. AEA thus shares his core value.

People who ask such questions might come to realize that the grandeur and magnificence of those spectacular sunsets that they admire are at odds with the underlying pollution facilitating vermilion swirls and rosy streaks (Ballantyne, 2007); or the other way around, "a Godforsaken mosquito-infested swamp shrouded in frozen darkness half the year" is likely to be teeming with

diversity, complexity, and habitat for myriad co-existing (some man-eating) species (Hettinger, 2008, p. 415). In other words, the "whose" of "Whose wellbeing?" rarely addresses those with the power to green light reclamation efforts, since individual preferences are likely to clash with strategies that improve ecosystem functioning. Once stakeholders agree upon "whose," they can delimit the ecosystem and identify appropriate strategies to make it "whole" (a term some scientists actually use) again.

Such an approach coheres with somaesthetics' notion of soma, the conscious body that "reaches so far 'beyond the conventional boundaries of the epidermis'" (Shusterman, 2008, p. 214) in its perpetual exchange of energies and substances with other somas as well as non-sentient bodies. As John Dewey recognized, we always live "as much in processes 'across', and 'through' skins as in processes 'within' skins" (214). According to Wojciech Małecki and Simon Schleusener, "human somas are 'transactional', that is, they are being constantly permeated and reshaped by their environment, which they in turn reshape and penetrate, something that happens both on the evolutionary scale and on the scale of the life of a single specimen of homo sapiens sapiens" (221).

It's difficult to compel people to clean up messes made by others. However, those who sue guilty parties for damages with the express goal to apply reparations toward reclamation are most likely to feel impelled to remake such sites to support their livelihoods. Problem is, envisioning a positive outcome first requires believing in plausible strategies, which takes imagination and sheer will to implement. Those stakeholders who are so disturbed by a site's degradation that they do everything in their power to reclaim it justify scientific cognitivists' impression of nature as "scenic or conventionally beautiful." However, one uses different tools to assess whether reclaimed nature is "scenic or conventionally beautiful." Since extreme restorations are rarely necessary or economically feasible, some reclaimed sites remain visibly "ugly," so people rely on "health stats" to determine "conventional beauty."

Even if scientific knowledge fails to alter people's beliefs, people who *believe* in its value rely upon it to identify salient signs of ecosystem malfunctioning, especially when degradation is suspected, though not yet obvious. Just as people exhibit signs of poor health, nature too exhibits ill-health such as species loss, hydric stress, thermal stress, biological colonization, etc.; salient symptoms that warrant human attention. Identifying an environment's beauty thus requires stakeholders who capably identify relevant symptoms, recognize those aspects of nature that are in distress, and enact proven or prospective strategies for alleviating said stress.

As Section 6 case studies demonstrate, when a site's problems are framed in terms that appeal to people's core values, they feel motivated to take actions that optimize the presence of life, even for unsightly sites that lack scenic appeal. Apparently, people's appreciation for either reclaimed or potentially reclaimable sites reflects their belief that ecosystem functioning matters more than optics, not their knowledge of what constitutes *normal* biological states as some scientific cognitivists claim. Consider Patricia Matthews' view, "Empirical knowledge does not tell us what is aesthetically valuable about an object, but by allowing us to perceive *normal states* [emphasis mine] of objects, empirical knowledge helps to reveal aesthetic properties and aesthetic value" (Matthews, 2002, pp. 38-39).

With degraded sites, not only is normal long gone, but scientists increasingly doubt that some "normal" ever existed. There is thus no "steady state" or equilibrium to serve as a benchmark against which one can compare an ecosystem's current entropy levels (Briske et al., 2017). Since even healthy ecosystems are dynamic, constantly changing; the idea of "normal" biological states proves more fiction than real. Absent handy benchmarks, scientists invite citizen scientists to

count species, which reveal species numbers whose total picture is imperceptible to the naked eye, since hundreds of counters are needed to generate it.

6. Four Case Studies: "Biodiverse" Beauty

Given the aforementioned relationships between biodiversity and human wellbeing, "biodiverse" beauty belongs more to somaesthetics than to environmental aesthetics. In fact, species counts are a kind of human action, a viable response to degradation whose results reflect inhabitants' real-time, lived experiential gains, rather than moral retribution (Ryan and Riordan, 2000). What's more, freely performed and self-concordant actions, such as counting species and reporting one's results have been shown to boost citizen scientists' feelings of "attachment to place" (Ganzevoort et al., 2017, p. 2824). Citizen scientists consider themselves custodians, rather than owners of the data they've collected (Ganzevoort et al., 2017, p. 2821). Such experiences positively impact wellbeing, since they enhance participants' capacities, as in skill sets, and engender access to the scientific community.

I even imagine that one's role in providing scientists crucial data sets could assuage the ecological grief that so many people seem to be suffering these days (Vince, 2020). If the stakeholder's wellbeing is improved, then counting and/or reclamation activities exemplify Shusterman's point, following Aristotle, that practical action (*praxis*) trumps poetic activity (*poiēsis*), since the former is "derive[d] from the agent's inner character and reciprocally helps shape it. While art's making has its end outside itself and its maker (its end and value being in the object made), action has its end both in itself and in its agent, who is affected by how he acts, though allegedly not by what he makes" (Shusterman, 2000a, pp. 53-54).

As briefly noted, ecologists tend to monitor biodiversity, because they consider it shorthand for ecosystem functioning (Scherer-Lorenzen, 2005). A tree-biologist, Scherer-Lorenzen offers the example of plotted forest data that captures growth rising rapidly (asymptotically) as the number of *different* trees in the canopy increase. Ecology-oriented biologists consider biodiversity an independent variable, whose inputs are greater resource exploitation and productivity, in contrast to theories that treat biodiversity as an input (dependent variable). Fortunately, data-collection knowhow is widely available, since 193 UN-member nations, as well as 114 cities, have submitted National Biodiversity Strategy and Action Plans to the UN Conference of the Parties to the Convention on Biological Diversity.

Moreover, Scherer-Lorenzen and others argue that ecosystem functioning depends on biodiversity, as opposed to biodiversity depending on some combination of climate, nutrient, and disturbance (Scherer-Lorenzen, 2005). Species depletion, however, is typically caused by some combination of reduced access to nutrients (such as water and light), competition from invasive species, and human contributions such as soil erosion, desertification, fertilizer runoff, and development (Spaid, 2015, p. 119). Finally, Scherer-Lorenzen and zoologist Shahid Naeem note that maximized productivity and resource exploitation not only improve biodiversity, but they hinder invasive species. Elsewhere, I've noted that biodiversity serves as a bio-indicator for human cultural engagement, making it relevant for both somaesthetics' focus on meliorative practices and even more classical notions of beauty (Spaid, 2015).

Although the ensuing case studies exemplify "biodiverse" beauty, AEA's success doesn't hinge on ecosystem functioning being linked to biodiversity, in *perpetuity*. For all I know, scientists will next tie ecosystem functioning to molecular energy diversity or polar wind patterns. It's difficult to know whether species counts are just another passing fad, no different than the

"invasive species wars" a generation ago. And since science endures leaps and reversals, it's safe to assume "fad status," such that scientists are already hard at work, hypothesizing even better tools for detecting salient symptoms of ecosystem malfunctioning.

As Jari-Pekka Naulapää points out, however, the "systems" part of an ecosystem is extremely difficult to define, making the identification of a particular system's boundaries, let alone the quantification of its inputs and outputs, nigh impossible (Spaid, 2017, p. 110). That said, I leave it to stakeholders to demarcate some particular ecosystem on whose behalf they aim to act. It could be as massive as a watershed, as large as a protective reserve, or as modest as a bird's nest. Since it is quite difficult to switch scales midstream, participants typically agree upon the territory's scale before thoroughly researching a particular strategy. The following case studies focus on biodiversity and demonstrate a range of approaches, several of which yield counter-intuitive outcomes. One could say that complexity itself produces a "ripple of direct and indirect consequences throughout the ecosystem" (Farquhar, 2019).

Área Conservación de Guanacaste. Novelist Jonathan Franzen actually despises the term biodiversity, yet he also credits its distinct role in inspiring Costa Ricans to protect 4% of the world's species, even though their country covers only .03% of the Earth's land surface. As I have shown elsewhere, when biodiversity becomes a shared value, it galvanizes community members (Spaid, 2016). As Franzen explains:

> *Biodiversity is an abstraction, but the hundreds of drawers of pinned and named Guanacastean moth specimens, in an air-conditioned room at Santa Rosa National Park, are not. …If you spent a week in the dry forest as a child, examining chrysalides and ocelot droppings, you might, as an adult, see the forest as something other than a purely economic resource. Finally, and perhaps most important, the parataxonomists create a sense of local* ownership [emphasis mine]. *Some of them are husband-and-wife teams, and many live at the research stations that dot the [Área Conservación de Guanacaste](A.C.G.), where they exert a* more powerful protective influence [emphasis mine] *than armed guards ever could, because their neighbors are their friends and family* (Franzen, 2015).

When used as a tool for gauging environmental wellbeing, biodiversity offers stakeholders quantifiable factors that signal ecosystem changes, numbers that heretofore went unnoticed until it was way too late, that is, until people started feeling the effects of entropy upticks (Spaid, 2016, p. 82). Since 1985, tropical ecologists Daniel Janzen and Winnie Hallwachs have been running A.C.G., which Franzen considers the "most audacious and successful conservation project in the New World tropics" (Franzen, 2015).

> *Janzen and some farsighted Costa Rican policymakers recognized that, in a country where economic opportunities were limited, the amount of protected land enormous, and funding for protection strictly finite, defending parks filled with timber and game and minerals was like defending mansions in a ghetto. The A.C.G. experimented with a new approach: the national parks and the reserves within it were exempted from the park administration's policy of rotation, which allowed their personnel to put down roots and develop allegiance to the land and the conservation concept, and all employees, including the police, were expected to do meaningful conservation or scientific work* (Franzen, 2015).

During the first years, the biggest issue was managing wildfires. "Janzen experimented with planting seedlings of native tree species, but he quickly concluded that natural reforestation, with seeds carried by wind and animal droppings, worked better. Once the new forest took hold, and the fire risk diminished, he developed a more ambitious mission for the A.C.G.'s employees: creating a complete inventory of the estimated three hundred and seventy-five thousand plant and animal species that occur within its boundaries (Franzen, 2015)." As one can see, A.C.G. privileges ownership and a conservation allegiance grounded in maximizing biodiversity.

Yellowstone National Park. In 1995, YNP reintroduced gray wolves, which had disappeared in the 1920s due to hunting. With the wolves gone, the elk population initially exploded, leading to over-grazing, far fewer beavers, increased erosion risks, and eventually fewer elks. Twenty-five years later, the elk population has shrunk, which disappoints hunters; but it is still three times what it was in 1968, because the park itself is healthier. Wildlife biologist Doug Smith remarks, "It is like kicking a pebble down a mountain slope where conditions were right that a falling pebble could trigger an avalanche of change" (Farquhar). Apparently, wolves' predatory nature keeps elks on the move, thus reducing the over-grazing of willow, used by beavers to build dams. The reintroduction of wolves spawned a "trophic cascade," whereby nine beaver colonies (up from one in 1995) led to: increased songbird and amphibian habitat, recharged water tables, and cold, shaded water for fish. Exemplary of scientists treating biodiversity as indicative of environmental wellbeing, wolves have enabled YNP to host larger populations of many more species.

Bavarian Forest National Park. Since the 1990s, European spruce forests have been ravaged by bark beetles. While most government experts think the solution is to fell and remove infested trees, scientists who conducted research in the BFNP found that "benign neglect" resulted in more biodiverse forests, whose greater genetic diversity is more likely to resist future infestations, making it increasingly healthier. Although benign neglect sounds like "doing nothing," it is rather teams deciding not to intervene the way they've done before, though of course scientists closely monitor outcomes. Exemplary of another trophic cascade, Bässler et al. remark: "The most obvious and ecologically meaningful habitat feature changed after [beetle bark] disturbance was the rapid enrichment of dead wood along with the openness of the canopy (Moning & Müller, 2008)….The availability of resources subsequently led to the restoration of species communities, which has been shown for saproxylic beetles (Müller et al., 2010), wood-inhabiting fungi (Bässler et al., 2010b), bryophytes (Raabe et al., 2010), lichens (Moning et al., 2009), and birds (Moning & Müller, 2008)" (Bässler et al., 2015). Letting dead trees serve as nurse logs that attract woodworms (beetle larvae), fungi, mosses, lichens, birds, and eventually seeds has not only helped to regenerate BFNP, but its greater biodiversity improves ecosystem functioning, since tree species' diversity boosts immunity against future infestations.

Halikonlahti Bird Pools. Given the abundance of migrating birds flying over Finland's Salo Municipal Sewage plant, the community decided to transform several of its former sewage lagoons into a wildlife park known now as Halikonlahti Bird Pools. To provide waterfowl habitat, artist Jackie Brookner worked with the local community to construct three "fake" islands from scratch; two to clean the spoiled lagoon using phytoremediation and a third to provide bird-nesting sites. Being an experimental approach to wastewater reclamation, Brookner engaged scientists to develop, measure, and test the impact of her *ecovention* ("artist-initiated practical action with ecological intent") on this ecosystem. "To figure out 'how, what, where', [Brookner] relied on local hydrologists, ecologists, and limnologists (lake specialists). Most important, the

work is being monitored so that its successes/failures are quantifiable" (Spaid, 2017, p. 157).

Even though scientists use this data to grasp ecosystem functioning (and malfunctioning), this data never produces black and white outcomes, since "bad news" tends to spur protection, while "good news" ensures progress. People's appreciation for such sites hinges more on their recognizing the value of ecosystem functioning than on their knowledge of what constitutes normal biological states as Matthews claims. Moreover, once a site's health is assessed, I imagine many more stakeholders feeling inspired to "engage" it. Ongoing "works in process," stakeholders' actions taken to enhance a site's health need not be perfect, conclusive, or fixed. These case studies are exemplary of AEA, since they are science-based, values-oriented approaches that inspire *contemporaries* to envision *world*, including degraded sites, as befitting *beauty*, thus guiding stakeholders to safeguard *place*. As one can see, "engaged" beauty entails far more than scientific knowledge and perception.

7. The Cognitive States Problem: "Perceived" Beauty

As briefly noted, scientific cognitivists claim that "a serious, appropriate… aesthetic appreciation of nature requires a knowledge of natural history: the knowledge provided by the natural sciences, especially geology, biology, and ecology. To appreciate nature 'as nature' or 'on its own terms', therefore, is to appreciate it as it is characterized by natural science" (Carlson and Lintott, 2008, p. 9). Carlson and Lintott note, however, that *other* "cognitive approaches emphasize different kinds of knowledge and information, claiming that appreciating nature 'on its own terms' may involve experiencing it in light of various local, folk or historical traditions. Thus, for appropriate aesthetic appreciation, local narratives and folkloric, or even mythological stories about nature are endorsed as either complementary or alternative to scientific understanding" (Carlson and Lintott, 2008, p. 9). Those who uphold scientific cognitivism argue that it is the preferred approach since it supports neither a "disrespectful attitude toward nature" nor a "utilitarian application of scientific knowledge" (Saito, 1998, p. 157). As already noted, the numerous reclamation examples thus far provided serve as scientific evidence, but they weren't initially scientifically-based strategies.

Moreover, scientific cognitivism fails to account for cognitive penetration, whereby cognitive states such as beliefs, desires, and emotions, and by extension values tend to influence cognition, and thus routinely impair perception (Raftopoulos and Zeimbekus, 2015). In fact, the availability of scientific evidence itself is driven by whatever questions scientists have felt motivated to ask (and found funding to study), which largely reflects researchers' personal attitudes toward nature and beliefs about its propensities. For example, scientists keen to research what animals learn and teach one another are likely motivated by animal experiences that resemble "instruction." Scientists seeking to understand whether birds learn to fly or do so instinctively carried out one such experiment. They restrained young birds from flying until they reached a certain age. The birds flew "immediately and normally," which scientists attributed to neuromuscular maturation, rather than learning or sheer instinct (Campbell and Reece, 2002, p. 1166).

Even a reclaimed site's success, expressed scientifically as ecosystem functioning, is hardly immune to errors, especially since ecologists risk erring on the side of overstating biodiversity's positive impact. In fact, biodiversity's critics likely consider the above case studies flawed, since they paint such rosy pictures of biodiversity as facile success stories. And no doubt, more research regarding biodiversity as a shorthand for ecosystem functioning must be undertaken. Even so, these cases demonstrate stakeholders intervening on nature's behalf, not because they

appreciate nature "on its own terms," terms that they may or may not one day adopt *as their own*; but because they *value* a site's health and are eager to do what they can to make it whole again.

I imagine stakeholders appreciating degraded sites even more once they are reclaimed, but this is simply a bonus, otherwise human beings could justify reclaiming sites in ways that primarily serve their own interests, such as planting lawns instead of protecting wastelands. When stakeholders privilege environmental wellbeing over what they normally find aesthetically pleasing, they not only take responsibility for nature suffering neglect, but they take actions whose impending outcomes are unlikely to match their ordinary preferences. Stakeholders who value environmental wellbeing may even end up appreciating signs of wellbeing that they once deemed ugly or unsightly. Fires in pine forests that foresters let burn because they avail seeds are one common example.

To demonstrate how the debate concerning the cognitive penetrability hypothesis intersects scientific cognitivism, I turn to Susanna Siegel's discussion of "pine-tree seeing" in her 2010 book *The Contents of Visual Experience*. She juxtaposes 1) the case of seeing a pine tree, but not recognizing it as a pine tree because one is unable to discriminate between different trees, and 2) seeing a pine tree because one has the requisite skill. Using a strategy familiar to scientific cognitivists, she claims that one sees the pine tree because one "sees (and therefore represents) the property of being a pine tree" (Siegel, 2010, p. 115). She effectively describes "perceiving under a concept." Absent pine-tree concepts, none are seen. And the more one knows about pine trees, the more one notices, and thus appreciates. Siegel's view that knowledge enhances cognition proves central to scientific cognitivism, yet scientific cognitivists fail to account for cognitive penetrability such that beliefs, desires and values typically skew cognition, and therefore aesthetic judgments.

This distinction creates an asymmetry between people's conceptions of "conventional" beauty and their assessment of nature's wellbeing, such that how people perceive the former tends to alter their awareness of the latter. For example, viewers who find nature pleasing often overlook its health, while those focused on nature's health have difficulties finding it pleasing. Moreover, scientific cognitivists claim that "even the devastation caused by floods and earthquakes or the ravages of disease and death can have positive aesthetic value if they are approached appropriately (Carlson, 2008, p. viii)." But as we have seen, this rosy view not only renders a distorted picture, but it hardly paints a traumatic scene requiring urgent action.

If the Cognitive Penetrability Hypothesis is true, then scientific cognitivism actually faces a far higher hurdle than previously acknowledged. I term this the "Cognitive States Problem." How can we expect those who neither share our beliefs nor care about our values to recognize, let alone admit that symptoms we find salient are material? The only way to change people's minds is to expose them to strategies that have succeeded elsewhere. In the most experimental cases, artists implementing ecoventions could not appeal to scientific knowledge, since none was extant (Spaid 2002, Spaid 2017). Even so, they have proven especially successful at motivating naysayers not only to view degraded sites as deserving of protection, but to do something to reclaim them.

8. Shifting Values: "Values-Oriented" Beauty

Recall Matthews' claim that "empirical knowledge helps to reveal aesthetic properties and aesthetic values" (Matthews, 2002, p. 39). Empirical knowledge rather helps stakeholders determine which aesthetic properties, whether biodiversity or other scientifically measurable

features, best capture nature's wellbeing. I worry that her use of "reveal" smacks of Platonism, as if aesthetic properties are *constitutive properties*. If I correctly understand her view, she denies a connection between "normal states of objects" and "aesthetic properties and values" in order to avoid the "fact/value problem," such that values are improved by (and thus derived from) scientific facts, as J. Baird Callicott claims. Aesthetic properties and values are not only dynamic, but they are situated, or perspectival, requiring one to select the appropriate perspective, the "whose wellbeing?" asked above.

My main reason for rejecting Matthews' appeal to empirical knowledge is that when nature is degraded, there really are no "normal states of objects," but this doesn't mean that scientific knowledge is unhelpful. As noted above, teams engaged in reclamation work alongside scientists to evaluate nature's health and assess its wellbeing in order to monitor ecosystem functioning. Although we expect relevant information to alter people's values, people tend to hold on to core values for as long as possible, even when they admit to irrationality. This is known as the "illusory truth effect," such that people believe things in line with their existing understanding of the world (Duffy, 2019, p. 132).

As long as appeals to scientific knowledge prove insufficiently persuasive, as the above evolution and climate denier cases demonstrate, nature's advocates must frame tactics that maximize ecosystem wellbeing such that they appeal to people's core values (values that shape their identities). For example, passersby who only ever notice "pathetic" weeds when scanning prairies from car windows must be persuaded that "weed values" are also "passersby values," since weeds not only reduce human maintenance (require less watering, seeding, mulching, and fertilizer), but they improve the environment's health (enriches soil, attracts pollinators, provides critter habitat, and absorbs excess nitrates), which is why scientists deem them "sustainable." Scientific facts repackaged to appeal to passersby's preferences (convenience, healthy soil, less costly water bills, etc.) are more likely to impress naysayers.

More recently, Lintott and Carlson reframed their view to account for the way values influence values. To do so, they emphasize how "scientific cognitivism embeds, as it were, ecological knowledge within appropriate aesthetic appreciation, resulting in a judgment of aesthetic value from which there is…a clear link to a judgment concerning the imperative of preservation" (Lintott and Carlson, 2014, p. 133). Contrary to Callicott's view that scientific facts correct false values, Lintott and Carlson derive "the imperative of preservation" from a "judgment of aesthetic value." They continue, "The link here is between two judgments of value, the judgment that something has aesthetic value and the judgment that it should be preserved, in other words, the judgment that we have certain obligations regarding it. We move from aesthetic value to another evaluation of worth" (Lintott and Carlson, 2014, p. 127). It's not clear, however, how aesthetic values alone prompt people to opine, "We now have certain obligations." Moreover, their newer view fails for sites lacking obvious aesthetic value, which AEA amends by tying aesthetic value to "biodiverse" beauty.

Lintott and Carlson's reframing of scientific cognitivism in terms of aesthetic values addresses one of my concerns regarding their position, since it prioritizes values, but their claim fails to explain how this chain of events transpires. Regarding the aforementioned "weed values," they take it at face value that publicizing weeds' advantages in terms of aesthetic values (maintenance free, enriches soil, attracts pollinators, provides habitat, etc.) will sufficiently inspire people to protect prairies from becoming gardens. Although they rightly view aesthetic values as more compelling than scientific facts, I don't imagine aesthetic values alone persuading people to prize prairies, let alone wastelands, over gardens. What is needed are witnesses, those

people who themselves have been transformed as a result of registering thriving ecosystems. Finally, Carlson and Callicott credit the "good" (both ecologically and ethically) to scientific cognitivism's being rooted in science (Lintott and Carlson, 2011, p. 101). AEA credits the "good" to "engaged" beauty, whereby stakeholders boost their wellbeing, while defending, protecting, or reclaiming sites whose aesthetic values are not widely valued.

9. *Tier Paysages*: "Abandoned" Beauty

I now turn to the most controversial of sites, what French landscape architect Gilles Clément calls *tier paysages* (wastelands), those overgrown, abandoned sites that flourish when buildings are raised or brownfields arise following factory closures. Real estate developers hate them, decrying them as "ugly" when they threaten lucrative deals. The higher the land value, the more buyers deride such sites as "ugly" so as to push prices down. As already noted, scientific cognitivism cannot motivate people to protect sites suffering environmental *illbeing*. Since people tend not to appreciate *tier paysages* "as nature" or "on its own terms," they are routinely considered "blights." Unfortunately, deriding *tier paysages* as unsightly tends to encourage their becoming a dumpsite. Just as boarded-up buildings unwittingly hasten graffiti, undervaluing *tier paysages* invites unwelcomed human incursions. Even if scientific knowledge enables people to appreciate aspects of nature that they ordinarily dismiss as "ugly," wastelands are not known to have aesthetic value. In fact, there's nothing to prevent scientific cognitivists from siding with real estate developers' generous offers to replace abandoned lots with pocket parks, whose flowers and lawns are likely to become entropic madhouses.

Frankly, it's difficult to discern offhand whether a *tier paysage* is fine as is or requires reclamation. Once again, I imagine stakeholders, such as some Neighborhood Beautification Committee (NBC) and scientists equipped to evaluate ecosystem functioning coming in handy. More potently, NBC members who value animal habitat, urban bees, biodiversity, low entropy, butterfly food, shade, transpiration, and minimal maintenance (no water required) sometimes opt to buy *tier paysages* in order to preserve them *as is* (habitat for birds, insects, and urban wildlife) or go to court to prevent such sites from becoming pretty pocket parks.

Most controversial of all, there may be good reasons for preventing *tier paysages* from becoming pocket parks (*tier paysage* values=people values), which NBC members apparently recognize. It turns out that the average front yard offers wildlife hardly any habitat, let alone food. Imported ornamentals support only 3% the number of species that indigenous trees support. Some trees support up to 500 different caterpillar species and 40 different bird species. When contrasted with pocket parks admired by drivers whizzing by, biodiverse hotspots remain largely invisible to the naked eye, yet they *sound* amazing, even to untrained ears. Not surprisingly, degraded sites discourage human encroachment, enabling myriad plants and animals to thrive, so long as the public grasps its value in terms of "biodiverse" beauty and protects it from becoming a dumpsite.

Oftentimes, a little reclamation goes a long way. Most important is the presence of clean water sources, so a brownfield that is an abandoned mine, whose metals/chemicals continue to leach into surface and groundwater, must be properly reclaimed to stabilize this problem. Even if such sites need a boost (reclamation), they are hardly "ugly," so long as they provide habitat for many more species than ordinary gardens, something that is not the case for a drain pipe or hole, leaching chemicals that kill or maim spawning species.

One positive benefit of sprinkling *tier paysages* (a.k.a. "habitat corridors") around towns

is that they provide vivid alternatives to ordinary front yards, enabling people to quickly grasp their greater attraction for animals. I imagine that once people recognize the greater biodiversity present in *tier paysages*, they will become witnesses to the way "biodiverse" beauty signals an environment's wellbeing. If their values change, they will start to act differently, acquiring new habits, preferences, and beliefs. Cheryl Foster terms "aesthetic disillusionment" the way an object or event diminishes in value once one recognizes how it "militates against the peaceful continuance of planetary life" (Foster, 1992, p. 206). As more people realize how little habitat manicured lawns provide, they will value wilder front yards.

To my lights, the above discussion not only characterizes the "appropriate appreciative stance" for evaluating degraded lands, but it proposes numerous reasons why degraded land must be protected, if not reclaimed. In addition to offering stakeholders strategies for working on nature's behalf, gauging a site's health, assessing the situation's urgency, and imagining *what* must be done, AEA substantially transforms stakeholders and inhabitants along the way.

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