

Chapter 16

On the Efficacy of Cultivating Environmental Reverence for Forests



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Abstract In this piece, I develop a philosophical account of environmental reverence, as induced by more-than-human entities and environments. Utilizing a relational ethical framework, I conceive of environmental reverence as a moral emotion, which—through habituation and cultivation—carries the potential to grow into a fully-fledged environmental virtue. By reference to the empirical, psychological literature, I show that environmental reverence is positively affective (i.e., induces subjective wellbeing), inherently motivating, and promotes efficacious conservation behaviors. So conceived, reverence is constrained by a set of both internal and external success conditions; its proper implementation thus requires on-the-ground relationship building between communities and the local, biodiverse spaces near which they dwell. I focus on the important role that reverence plays in motivating the efficacious conservation of sylvan ecosystems, drawing on eco-anthropological research into the high concentrations of biodiversity found in residentially managed ‘sacred groves’. Altogether, I recommend a few first-order, ethical prescriptions: first, mass environmental discourse ought to highlight the motivational efficacy of cultivating cultural narratives that center environmental reverence and the key, carbon-sequestering role that forests play in climate-change mitigation. Finally, it is imperative for environmental ethicists to elevate the epistemic status afforded to traditional ecological and residential land managers.

16.1 Introduction

Imagine being immersed in an old-growth, redwood grove, wherein 800-year-old living giants tower overhead. Those who come into perceptual contact with trees of this magnitude and age often experience a range of emotions—from wonder and respite to awe and reverence. A variety of environmental ethicists—including ecofeminists (Shiva 1988; 2013), some proponents of Traditional Ecological Ways

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225

26 of Knowing (Atleo 2005; Kimmerer 2013), global grassroots movements, and biore-
 27 gionalists¹—implicitly or explicitly emphasize that the cultivation of other-centered,
 28 *relational* emotions like these over time often effectively motivates and sustains
 29 fruitful conservation and restoration efforts at the local level.

30 This piece serves as a robust analysis of one moral emotion—reverence—, which
 31 is emphasized by environmental ethical theories that are either relational (Plumwood
 32 1993; Hourdequin & Wong 2005), virtue ethical (Kawall 2003), or which conceive of
 33 moral emotions as integral to their prescriptive framework (Callicott 1989; McShane
 34 2007; Leopold 1949). Environmental reverence warrants a deeper and more unified
 35 investigation due to its unique status amongst moral emotions—conferred by its
 36 psycho-physiologically restorative effects and its capacity to motivate efficacious
 37 conservation behaviors. I frame this discussion of environmental reverence through
 38 an interdisciplinary lens, which spans philosophical, ecological, and psycholog-
 39 ical literatures, respectively. Ultimately, I claim that there is a unifying thread that
 40 runs throughout the outlined accounts: namely, the full realization of environmental
 41 reverence requires that subjects satisfy some set of internal and external success
 42 conditions, measured by reference to changes in motivational states (belief, desire,
 43 intention) and behavior (via e.g., their positive, environmental impact). Accounts
 44 that centralize its cultivation therefore prescribe on-the-ground relationship building
 45 between communities and the local ecosystems near which they dwell.

46 Narrowing the scope, I then apply this analysis to the conservation and restoration
 47 of local, forested ecosystems. More specifically, the ecological and anthropological
 48 literature demonstrates that residential communities with cultures that emphasize
 49 environmental reverence boast disproportionately high levels of biodiversity in the
 50 forested groves that they revere as ‘sacred’. At the global scale, this is important
 51 to bookmark, for the successful conservation and restoration of plant-, fungi-, and
 52 nutrient-rich forests constitutes one viable form of carbon sequestration that addi-
 53 tively combats climate change and its detrimental effects. Forests (particularly old
 54 growth groves), more specifically,

55 [...] continue to accumulate carbon at a much greater rate than was previously thought,
 56 making them important carbon sinks which researchers say must be factored into global
 57 climate models. (Gilhen-Baker et al. 2022)

58 Conversely, the degradation of forested ecosystems that are rich in carbon seques-
 59 tering organisms—e.g., the trees, shrubs, flowering plants, fungi, and bacteria-rich
 60 soil that dwell therein—releases large quantities of CO² into the atmosphere, further
 61 contributing to rising global temperatures (Gilhen-Baker et al. 2022). Altogether,
 62 this suggests that the cultivation of cultural narratives that centralize environmental
 63 reverence for forests is one efficacious (if surprising) method, which—when fully real-
 64 ized and implemented—sparks and mobilizes conservation, restoration, and climate
 65 change mitigation efforts at the local level.

¹ e.g., Alianza Internacional de Reforestación and The Greenbelt Movement.

66 16.2 Environmental Reverence

67 16.2.1 Norms for Feeling

68 Following McShane (2007), I maintain that some attitudes are “incompatible with
69 thinking that [an entity or environment’s] value is entirely dependent on the satisfac-
70 tion of our interests” (2007, 175). There are, in other words, certain moral emotions—
71 e.g., love and *reverence*—which are not merely felt, phenomenological excitations.
72 Instead, emotions in this vein maintain a degree of “fittingness” (Anscombe 1957).
73 It is, more specifically, reasonable to feel them, as they are induced by entities and
74 environments that warrant them as an appropriate response. In this sense, they are
75 other-centered (2007, 175), for they track and are induced by an entity or environ-
76 ment’s intrinsic (or—as I will later claim—*relational*) value. Though McShane does
77 not focus on reverence in particular, her illustrative analysis of *love* for more-than-
78 human landscapes and beings emphasizes the importance of moral emotions and the
79 norms for feeling that constrain them more generally. It will thus be illuminating to
80 briefly focus on her analysis of ecological love, with an eye toward comparatively
81 elucidating the specific contours of environmental reverence.

82 To justify the claim that love is genuinely instantiated if and only if a lover
83 attributes intrinsic value to their beloved, McShane considers the (affective and moti-
84 vating) case of friendship. More precisely, if one (call them *S*) is privy to a subjective
85 feeling of love for another (call them *F*), then this feeling, McShane argues, is not
86 exhaustively contingent on whether *F* can satisfy *S*’s interests. In other words, *S*
87 does not love *F* only in virtue of *F*’s perceived instrumental value—that is, whether
88 *F* satisfies (or fails to satisfy) *S*’s interests. If this *were* the case, then one could
89 properly charge *S* with a sort of relational inauthenticity and, by extension, a failure
90 to act in accordance with moral norms for feeling (McShane 2007, 174). After all,
91 *S*’s emotions, though *resembling* love, respect, or adoration, would be entirely self-
92 interested. For this reason, the set of emotions that *S* feels would be more properly
93 characterized as (something like) narcissistic adoration or codependent attachment.

94 16.2.2 Relationalism

95 According to McShane, authentic love requires that *S* properly acknowledges and
96 attributes value to their beloved, which is independent of the mere satisfaction of *S*’s
97 own interests. This, I think, is rather insightful, though warrants the following, theo-
98 retical modification: I urge that a *degree* of self-interest is necessary for the cultivation
99 of healthy (e.g., loving or reverential) relationships. After all, relationships that are
100 constituted by *S*’s self-abnegation for the sole sake of their counterpart’s wellbeing
101 are inherently self-destructive. With some radical exceptions (e.g., the sacrifices
102 afforded by a parent for the sake of their child under extreme conditions), self-
103 neglect therefore *also* constitutes a kind of relational failure. With this consideration

104 in mind, moral emotions—whether they are induced by and between two members
 105 of our species, *Homo sapiens*, or between *Homo sapiens* and the more-than-human
 106 world of plants and fungi-rich soil—motivate the cultivation of relationships that are
 107 healthful, interdependent, and reciprocal (that is, mutually-beneficial) in nature.

108 This view—*relationalism*—has been implicitly or explicitly introduced into the
 109 environmental ethics literature by a variety of authors, traditions, and theorists,
 110 including (but not limited to) Aldo Leopold’s Land Ethic (1949), Arne Naess’s Deep
 111 Ecology (1973), Daoism (Chinn 2013), Confucianism (Hourdequin and Wong 2005),
 112 and a variety of indigenous philosophical systems. For example, the ever-insightful
 113 Anishinaabe environmental scientist, activist, and writer, Robin Wall Kimmerer
 114 (2013) suggests that healthy relationships are best understood and defined by refer-
 115 ence to the degree of *reciprocity* that they exhibit. In other words, a relationship
 116 qualifies as genuinely loving or reverential if both *relata* mutually contribute in
 117 some way to each other’s flourishing. When one *relatum* in an overarching pair fails
 118 to flourish as a direct, relational result of e.g., emotional or physical depletion, then
 119 the relational value—and, by extension, integrity of the overarching relationship—
 120 dwindles. As Kimmerer so beautifully writes, “all flourishing is [thus] mutual” (2013,
 121 15).

122 One key, unifying feature of these diverse worldviews is their common commit-
 123 ment to the ontological intertwinement of *Homo sapiens* with both members of our
 124 own species and more-than-human entities, processes, and systems.² As a result of
 125 this ontological inextricability,

126 The most ethically valuable aspect of an identity tied to particular people and to particular
 127 places in the world—with their animals, plants, neighborhoods, rivers, playgrounds, and
 128 shops—is experiencing oneself as accountable to others and as an agent with an active role
 129 in the world. In relationships, one learns that one’s actions matter. Relationships allow us
 130 to call one another to account, and connections to family and community at the local scale
 131 may be the first and best place to gain this understanding (Hourdequin and Wong 2005, 29)

132 On this view, self-identity, and thus self-interest, are also conceived of relationally;
 133 that is, an individual or culture is inherently entangled with the larger-than-human
 134 (plant, animal, fungi, and bacteria-rich) world in which they find themselves situated.³

135 By conceiving of self-interest in this broadened way, relationalism circumvents
 136 some of the deeply entrenched philosophical debates—so ubiquitous in contempo-
 137 rary environmental ethics—between intrinsic and instrumental value theories. More
 138 specifically, it proposes that environmental actions are justified or warranted by
 139 reference to the degree of relational value that they either preserve, maximize, or

² Within the United States, the bioregionalism movement is a precise and practical articulation of this commitment, which makes salient a logical entailment: that is, if one’s self-identity and interests are contextualized within one’s local environment, then it is in one’s self-interest to work in ways that improve the wellbeing of (at a minimum) those local environmental entities that constitute one’s immediate sense of extended selfhood (Hourdequin and Wong 2005).

³ Consider, for example, the deeply-rooted relationship between the Dai people of China’s Yunnan Province and *Camellia sinensis*—tea. Indeed, *Camellia sinensis* plays an important cultural-ecological role throughout mainland China, which is evidenced through the ubiquity of ceremonial and social *Gong Fu Cha* (skillful tea serving) practices (d’Abbs 2019).

140 serve to instantiate; and this relational value is interdependently determined by the
 141 degree to which both the agent and the other being-in-question mutually flourish—
 142 whether synchronically (at-a-time) or diachronically (over time).⁴ By centering
 143 *eudaimonistic* flourishing in this way, relational value theories synthetically inte-
 144 grate the insights articulated in both intrinsic and instrumental value frameworks,
 145 while simultaneously making sense of the claim that relationships bear a unique
 146 kind of value-in-themselves.⁵

147 **16.2.3 Toward a Taxonomy of Moral Emotions**

148 Despite their deep and rich similarities, it is worth noting that love and reverence
 149 may be conceived of and characterized differently. More specifically, each has a
 150 unique—though admittedly overlapping—phenomenological texture and a diverse
 151 set of representational and motivational contents. So, for example, love represents
 152 one’s beloved as intrinsically (not merely instrumentally) valuable and recommends
 153 changes in one’s behavior that will contribute to the flourishing of the loving rela-
 154 tionship. To return to our earlier case, if *S* genuinely loves *F*, then *S* will be motivated
 155 to invest in their relationship with *F* by e.g., communicatively acquiring knowledge
 156 about *F*’s likes and dislikes to appropriately satisfy their needs. When reciprocal,
 157 this loving process effectively and fruitfully contributes to the flourishing of *both*
 158 *S* and *F*, in addition to their overarching, loving relationship. Similarly, reverence
 159 attributes intrinsic (not merely instrumental) value to the revered (*R*), is reciprocally
 160 beneficial, and recommends modifications in *S*’s behavior that will contribute to *R*’s
 161 flourishing. Reverence is, however, distinct from love, for its phenomenological char-
 162 acter uniquely elicits or facilitates (epistemic or personal) transformation (Paul 2016;
 163 Sarkar 2012) by inducing peak experiences (Maslow 1943), psycho-physiological
 164 restoration, humility, and a felt expansion of one’s sense of self in the presence of
 165 the revered.

166 Admittedly, a precise taxonomy of these diverse moral emotions is difficult. For
 167 example, genuine love, like reverence, involves a deep and abiding sense of mutual
 168 respect, while at times eliciting humility or a phenomenological sense of ego disso-
 169 lution in the lover. Nevertheless, the absence of precise taxonomical joints should not
 170 be troubling, for the psychological literature indicates that emotions more generally
 171 are likewise often nested and vague.⁶ In any case, we can pragmatically distinguish

⁴ Inspired by Aristotelian *eudaimonia*, flourishing should be understood contextually; more precisely, it is indexed to the kind of being that each *relatum* is. After all, actions that contribute to the flourishing of redwood trees (*Sequoia sempervirens*) will look markedly different from those which contribute to the flourishing of fairy castle cacti (*Acanthocereus tetragonus*).

⁵ On this view, relationships are metaphysically emergent and unique: they contain yet supersede their constituent *relata* and, by extension, bear a unique kind of value-in-their-relational-selves.

⁶ Even more broadly, a sharply delineated taxonomy of emotions is, at times, difficult. For example, chronic anger may obfuscate a deeper, unprocessed grief (Goleman 2005), creating what Daniel Goleman has termed an ‘Anger Iceberg’.

172 between reverence and love by positing that subjects often attribute a high degree of
 173 *transcendence* or *sacredness* to those beings whom they revere—a point to which I
 174 will shortly return (Woodruff 2001, 65).

175 Love (for either land or specific organisms) has typically been prioritized in the
 176 environmental ethics literature as the prime moral emotion that motivates care for
 177 more-than-human beings and ecosystems (Leopold 1949; McShane 2007; Kimmerer
 178 2013: 122–123). My project here, however, is to recommend a deeper investigation
 179 into and sharper focus on the efficacious and unique role that environmental rever-
 180 ence plays in conservation and restoration contexts. Reverence, more precisely, is
 181 properly characterized as a relational moral emotion (that, with proper cultivation,
 182 carries the potential to blossom into a virtue), for it motivates a set of reciprocally
 183 beneficial behaviors in the subjects whom it transforms. Its practical efficacy is,
 184 moreover, evidenced by the modified—e.g., caring or conservation-oriented—behav-
 185 iors that human individuals and communities exhibit in relation to those beings and
 186 ecosystems which they revere.

187 **16.2.4 The Psychology and Phenomenology of Reverence**

188 Before diving more deeply into our discussion on the applied efficacy of cultivating
 189 environmental reverence for biodiverse forests, it is important to a bit more general
 190 philosophical book-keeping. Psychologically, I endorse a cognitivist conception of
 191 reverence. This means that reverence has both affective (i.e., felt) and intentional (i.e.,
 192 representational) components. More specifically, reverence is induced by striking
 193 phenomenological experiences (as of, say, grand or very old environmental entities)
 194 and is often bolstered by knowledge pertaining to an entity’s historical origins or
 195 its broader ecological context. So, for example, an individual who beholds an old-
 196 growth coast redwood experiences reverence partially due to the redwood’s great
 197 size (an unmediated perceptual experience), its great age (an experience conditioned
 198 by eco-historical knowledge), and knowledge of facts pertaining to the beneficial
 199 role that it plays in its broader ecosystem (through, say, water capture and carbon
 200 sequestration).

201 Affectively, reverence is positively valenced in the sense that it contributes to feel-
 202 ings of subjective wellbeing, is aesthetically enjoyable, and is inherently motivating;
 203 that is, individuals who experience reverence are thereby motivated to conserve or
 204 care for the entities or environments that they revere. This feature distinguishes rever-
 205 ence from experiences of awe or the sublime, which (when induced by e.g., starry
 206 night skies or the striking vistas displayed by the Grand Canyon) can also be quite
 207 terrifying (Burke 1757; Woodruff 2001) and, by extension, immobilizing in nature.
 208 Experiences of awe, the sublime, and reverence do nevertheless share an important

209 commonality.⁷ As noted by Elkins et al. (1998), all three involve some sense of *self-*
 210 *transcendence*. Phenomenologically, self-transcendence consists in a felt sense of
 211 expansive unity with or connection to something beyond the bounds of this self—
 212 including, for example, the more-than-human world.⁸ Finally, Haidt (2003) and other
 213 positive psychologists emphasize reverence’s transformative potential, which is integral
 214 to the psychophysiological health, functioning, and wellbeing of members of
 215 our species, *Homo sapiens*. The important transformations induced by experiences of
 216 reverence include changes in one’s felt preferences (Sarkar 2012), self-conception,
 217 motivation, and the resulting behaviors that flow from these.

218 There are a variety of empirical studies that investigate the psychophysiological
 219 mechanisms that may best explain reverence’s restorative effects. Ai et al. (2009),
 220 for example, studied patients who underwent coronary artery bypass graft surgeries.
 221 The results of their study indicate that those patients who regularly experienced and
 222 exhibited reverence (measured both attitudinally and by reference to their modified
 223 behaviors) suffered fewer postoperative complications and enjoyed a shortened
 224 hospital stay (Ai et al. 2009). These positive psycho-physiological benefits obtained
 225 whether subjects were religious or non-religious, confirming that reverence can be
 226 construed as an interfaith, spiritual, or secular feeling and attitude, which is stimulated
 227 by a variety of entities, objects, persons, and environments. Similarly, Powell
 228 et al. (2003) showed that experiences of reverence produce (or correspond to) a “quieting
 229 effect,” understood in terms of increased emotional regulation and its biological
 230 analogues (e.g., decreased cortisol) (Ai et al. 2009; Powell et al. 2003). Fredrickson
 231 (2001; Fredrickson et al. 2003) likewise linked experiences of reverence with quickened
 232 recovery rates (measured by reference to cardiovascular activity) after subjects
 233 were exposed to anxiety-inducing scenarios. Altogether, these studies justify (and
 234 to a high degree) the claim that reverence is psycho-physiologically restorative. It
 235 is, in other words, healing, regulative, and is thus conducive to human wellbeing or
 236 flourishing.

237 16.2.5 Reverence as a Moral Emotion and Potential Virtue

238 Ai et al. (2009) define reverence as a “cross-faith indicator [of] a feeling or attitude
 239 of ‘deep respect, love, and awe, as for something sacred: veneration’ (Guralnick
 240 1978; Woodruff 2001, 8, 117)” (Ai et al. 2009). For the purposes of this piece, I
 241 endorse a pluralistic understanding of the ‘sacred’, granting that reverence can be
 242 induced in either secular or religious individuals and contexts. Indeed, articulating

⁷ The conception of reverence that I here endorse shares some similarities with that proposed by Fromm (1950), who conceives of reverence as being one emotion in an overarching set of “peak experiences,” which include awe, the transcendental, and wonder (Elkins et al. 1998).

⁸ I do grant that feelings of self-transcendence can and often are achieved with other human individuals, groups of people, and even the species *Homo sapiens*, conceived of as one. Consider, for example, the moments of self-transcendence experienced by concert goers who experience a felt sense of at-oneness with both the crowd and the music (that, I am stipulating, they enjoy).

243 a precise definition of the sacred is tricky, for ‘sacredness’ is typically understood
 244 as tracking a feature or property that, when perceived, is never wholly articulable in
 245 conceptual or linguistic terms. Nevertheless, I posit that entities may be conceived
 246 of as sacred if they bear a transformative (e.g., restorative) power, elicit a profound
 247 sense of felt connectedness, exhibit features of or induce transcendence (in and of
 248 the singular self), bear intrinsic or relational value, and warrant reverence as an
 249 appropriate response.

250 It is worth noting that this definition does not—as Durkheim (1915), by contrast,
 251 posits—assume a sharp dichotomy between the sacred and profane and is not contin-
 252 gent on one’s subscription to some stripe of theism. In this sense, reverence can
 253 be induced in naturalists by more-than-human, biodiverse environments and their
 254 constituents, great works of art and other aesthetic objects, and abiotic environ-
 255 mental features (including mountains and starry night skies). Reverence may also, of
 256 course, be induced in those who identify as either religious or spiritual. Moreover, the
 257 distinction between these two ways of being oriented toward the world—naturalism
 258 and spiritualism, respectively—does, at times, blur. As astronomer Carl Sagan so
 259 eloquently notes,

260 Science [i.e., naturalism] is not only compatible with spirituality; it is a profound source of
 261 spirituality. When we recognize our place in an immensity of light-years and in the passage
 262 of ages, when we grasp the intricacy, beauty, and subtlety of life, then that soaring feeling,
 263 that sense of elation and humility combined, is surely spiritual. (Sagan 1996, 32)

264 He further writes that,

265 In its encounter with Nature, science invariably elicits a sense of reverence and awe. The
 266 very act of understanding is a celebration of joining, merging, even if on a very modest scale,
 267 with the magnificence of the Cosmos. (Sagan 1996, 32)

268 Indeed, a direct translation of *anima* from the Latin—soul or spirit, the root of
 269 ‘spirituality’—yields the English terms, ‘breath, air, and life’. That which is spiritual
 270 is, in its most basic sense, that which either gives or honors the animate—those
 271 beings who live or that which makes life possible.

272 Drawing more explicitly on Schweitzer’s conception of ‘reverence for life’ is
 273 informative here. Inspired by Buddhist and Jain conceptions of non-harm or *ahimsa*,
 274 Schweitzer’s moving articulation of biotic reverence is broadly pluralistic; it is, in
 275 other words, a philosophical and conceptual tool that can be in principle integrated
 276 into purely naturalistic, theistic, or agnostic ethical systems. The crux of reverence,
 277 importantly, lies in its life- and world-affirming capacity. Reverence, for Schweitzer,
 278 is a broadly,

279 Spiritual act in which a man begins to live reflectively and begins to give himself to his
 280 life with reverence in order to realize its true value. [...] The fundamental fact of human
 281 awareness is this: “I am life that wants to live in the midst of other life that wants to live.”
 282 A thinking man feels compelled to approach all life with the same reverence he has for his
 283 own. Thus, all life becomes part of his own experience. From such a point of view, ‘good’
 284 means to maintain life, to further life, to bring developing life into its highest value. A man
 285 is ethical only when life, as such, is sacred to him, that of plants and animals as that of his
 286 fellow men, and when he devotes himself helpfully to all life that is in need of help. (James
 287 2005, 30)

288 Similarly to Schweitzer, I endorse the claim that reverence is best conceived of
 289 as a relational moral emotion, which is psycho-physiologically transformative *and*
 290 efficaciously motivates ethical behaviors that contribute to the flourishing of the biotic
 291 *relatum* whom one reveres. However, and like patience, it is also clear that instances
 292 of reverence can be felt only fleetingly (when, say, one briefly visits the gorgeous and
 293 spectacular Sequoia National Park for one weekend). Even so, part of reverence’s
 294 unique power lies its capacity to *transform* those who experience it. Accordingly,
 295 and following Woodruff (2001) and Kawall (2003), it thus makes sense to posit that
 296 the cultivation of a disposition toward reverence may be appropriately conceived of
 297 as a kind of environmental virtue. Like all virtues, reverence thus requires continual
 298 practice through habituation (i.e., through the ongoing satisfaction of a set of internal
 299 and external success conditions), which ultimately results in the cultivation of a
 300 reverential character—and ideally larger culture—over time.

301 16.3 The Efficacy of Cultivating Environmental Reverence 302 for Forests

303 16.3.1 Reverence for Sacred Groves

304 There are plenty of anthropological case studies that demonstrate the reciprocal effi-
 305 cacy of cultivating actual-world, cultural reverence for biotic entities and biodiverse
 306 environments. For the sake of brevity, I’ll restrict the scope of my applied analysis
 307 to reverence for sacred groves—forested areas, consisting of plants, fungi, animals,
 308 and bacteria-rich soil, that are preserved due to the important cultural significance
 309 that they bear for local populations (Kandari et al. 2014, 1–2; Chandran and Hughes
 310 1997). Broadly speaking, sacred groves,

311 [...] around the world are community conserved areas that often have associated
 312 limitations on activities within the forest; these traditional rules can serve a conservation
 313 role. Sacred groves or forests are conserved by local residents for a variety of reasons, ranging
 314 from belief in a forest deity to protection of a spring or as a sacred space where ancestors
 315 are buried. (Archarya and Ormsby 2017)

316 There are a wide variety of residential and local communities that have engaged in
 317 the conservation of sacred groves, in locations “including Ethiopia, Japan, Morocco,
 318 India, and Ghana” (Kandari et al. 2014: 4). At over 100,000 sacred groves, India
 319 boasts the highest number of preserved forests globally (Malhotra et al. 2007; Kandari
 320 et al. 2014). This fact should perhaps be unsurprising, for India’s history is rich in a
 321 Vedic commitment to *Aranyana Samskriti*—that is, a ‘Culture of the Forest’ (Shiva
 322 1988). Importantly, local populations do not conserve sacred groves solely for the
 323 purposes of instrumental resource-management. Instead, these biodiverse spaces are
 324 conceived of relationally, blending the boundaries between the human and more-
 325 than-human realms. Forests—which encompass entangled networks of the plants,

fungi, animals, and bacteria-rich soil that comprise them—are, more specifically, conceived of as material manifestations of divinities or complex webs of emergent intelligence or sentience. Intimate human–more-than-human relationships between revered groves and the people who honor and devote themselves to them are thus forged through a variety of ritualistic, management, and subsistence practices.

For example, the Lepcha people in the Dzongu Valley of North Sikkim⁹ forge strong relationships with the forests they revere—rich in *Ficus*, *Rhododendron arboretum*, *Oxalis corniculata*, and *Litsea cubeba*—through a variety of practical, care-taking and knowledge-gathering behaviors. Through cultivating forest-based reverence as a societal virtue and practice, the inseparability between “[c]ulture, politics, and ecology [given their] strong place-based identities” (Arora 2006, 104) has become firmly and enduringly established in Sikkim. To further illustrate, consider the sacred grove which surrounds the Tholung Buddhist Monastery, located within Khangchendzonga National Park. Tholung, “comprises an uninhabited human tract of mountainous forests adjacent to the wish-fulfilling pilgrimage site of the Thong temple [...]” (Arora 2006, 65). Revered and protected by Lepcha communities, Tholung is considered inseparable from its people. Indeed, many Lepcha self-identify as “guardians of their sacred grove” (Arora 2006, 65) and follow a variety of rules of propriety, which govern and sharply restrict the kinds of activities that are considered permissible for them to perform therein. More specifically, Arora (2006) reports that, “the chief injunction to all Tholung pilgrims” [conveyed by Lepcha community member, Chumsay Nangpa] is “not to disturb the vegetation and cause harm to the animal life in this sacred forest” (67). These behavioral norms—extensive codes of ecological conduct and accountability—encode and demonstrate the culture of reverence that the people experience, cultivate, participate in, and express for these groves (Acharya and Ormsby 2017). Forests like Tholung, therefore,

[encompass] diverse meanings: a forest, the residence of the guardian deities of the area, a place of Buddhist pilgrimage, a fount of customary wisdom, a repository of Sikkimese national treasures, [...] a place affirming ancestral connections with the landscape and expressing indigeneity in land, a forest where society rejuvenates itself, members cement alliances. (Arora 2006, 71–72).

Furthermore, and through their reverential engagement with sacred groves, the Lepcha people have acquired an extensive body of Traditional Ecological Knowledge (TEK) pertaining to the flora and fauna that dwell therein. Reverence, for the Lepcha people, is thereby also epistemically motivating. As, O’Neill et al. (2017) observes,

[...] Sikkim has a rich biocultural heritage that includes knowledge pertaining to over 1100 species of animals, fungi, and plants. Local people not only know about the useful properties of these species, but also the community ecology and life histories of diverse organisms. These aspects of ethnobiological knowledge, which encompass abundance, distribution, and phenology, significantly influence community management practices and can therefore benefit conservation planning in Sikkim. For instance [...] Lepcha communities were engaged by government researchers to understand the population status of under-surveyed bird species; local communities were found to provide “data” at the accuracy needed to make

⁹ The Dzongu Valley constitutes a reserve for the Lepcha people.

369 management decisions. Our reviewed records also implied that faith traditions and commu-
370 nity taboos sustain many ethnobiological relationships in Sikkim, and cultivate a sense of
371 stewardship toward critical habitat. (O'Neill et al. 2017)

372 So, the Traditional Ecological Knowledge of the Lepcha people (and other
373 populations who revere and manage forests more generally) includes an in-depth
374 understanding of the interdependent, ecological relationships that obtain between a
375 variety of biodiverse species, including an array of tree populations, medicinal herbs,
376 flowering plants, wild foods, fungi, and more-than-human animals. This extensive
377 body of knowledge is passed down inter-generationally via word-of-mouth (through
378 e.g., storytelling) and is further cultivated via extensive observation and pragmatic
379 engagement (e.g., the responsible harvesting of medicinal foods). There is thus, to
380 quote Whyte, a robust “connection between [a people’s, including, for example,
381 the Lepcha’s] spirituality and science,” which “reveals [...] how spiritually oriented
382 processes of empirical inquiry promote accountability within societies and respect
383 for our interdependence with nonhumans and the environment” (Whyte 2018).

384 More broadly, Singh et al. (2017) have collected extensive data from two sacred
385 groves (Hariyali Devi and Tungnath) in Uttarakhand (located in the Western
386 Himalayas) to study the role of sacred groves in the conservation of local biodiver-
387 sity, concluding that, “[sacred] groves, in general, are a valuable tool of biodiversity
388 conservation.” (2017, 10). Indeed, and through engaging in a global and compar-
389 ative meta-analysis of 35 studies across 17 countries, Sullivan et al. (2024) likewise
390 found that higher levels of plant biodiversity are preserved in sacred, as opposed
391 to adjacent, forested groves. However and worryingly, “people’s changing attitudes,
392 erosion of traditional beliefs, and human impact have caused [the] degradation of
393 sacred groves over the years” (Singh et al. 2017, 10). Nevertheless, the inlayed spir-
394 itual, cultural, and ecological practices of the global peoples who revere and restrict
395 activities within their sacred groves provide empirical evidence in favor of the claim
396 that fully-fledged and habitual reverential practices are both ecologically motivating
397 and generally effective.

398 Altogether, the intricate, varied, and multiplicitous cultural tapestries of the people
399 who revere and conserve forests—threaded on the warp and weft of reverential codes
400 of conduct—are inextricably interwoven with the flourishing of biodiverse systems.
401 Sacred groves therefore serve as living libraries that preserve both cultural *and*
402 ecological histories. Tragically, however, both such histories are now under threat, as
403 contemporary increases in outside pressures to obtain resources from sacred groves in
404 e.g., Sikkim contribute to sharp declines in biodiversity and the erasure of residential
405 cultural practices and life-ways.

406 ***16.3.2 Local Forest Conservation Mitigates Climate Change***

407 Forest conservation and restoration are integral to effectively mitigate the increasing
408 dangers posed by global climate change. Generally, forests stabilize ecosystems

409 and serve as carbon sinks, for they are largely comprised of carbon-sequestering
 410 organisms (e.g., flowering plants, fungi, shrubs, and trees), which effectively remove
 411 carbon dioxide from the atmosphere. Spectacularly, forest biomass absorbs approx-
 412 imately 7.6 billion metric tonnes of carbon dioxide per year, pulling two-thirds of
 413 global CO² fossil fuel emissions from the atmosphere (IUCN 2015; Harris and Gibbs
 414 2021). Furthermore, as deforestation—the product of over-logging and preventable
 415 wildfires¹⁰—produces 20% of overall, global greenhouse gas emissions, climate
 416 change mitigation pressingly requires the widespread prevention of deforestation
 417 (Rizvi et al. 2015, 14). Altogether, the collective conservation of existent forests,
 418 restoration of depleted groves, and prevention of further deforestation is impera-
 419 tive to combat rising global temperatures and their deleterious social and ecological
 420 effects (e.g., displaced climate refugees and the loss of global biodiversity). Indeed,
 421 the restoration and conservation of forests could,

422 contribute over one-third of the total climate change mitigation scientists say is required by
 423 2030. [Restoring] 350 million hectares of degraded land in line with the Bonn Challenge
 424 could requester up to 1.7 gigatonnes of carbon dioxide equivalent annually. (International
 425 Union for the Conservation of Nature)¹¹

426 At this point, it is imperative, I contend, to broadly re-emphasize the efficacy
 427 of Traditional Ecological bodies of Knowledge in forest management and restora-
 428 tion contexts. As Vandana Shiva (1988) has rigorously argued, local, residential
 429 populations in e.g., India have *already* inherited a rich tradition of effective forest
 430 management. Within the current discourse, the traditional ecological practices of
 431 the Lepcha People provide an alternative set of climate change mitigation proposals,
 432 which centralize reverential practices through the social, cultural, and physical struc-
 433 turing of local communities (by e.g., cordoning off local groves and conditioning the
 434 salient relationships that visitors forge when visiting through epistemically informa-
 435 tive interpretation). Furthermore, the ecological model recommended by *Aranyana*
 436 *Samskriti* (trans., the “Culture of the Forest”) has demonstrably and successfully
 437 enacted the preservation of biodiversity, with the added benefit of simultaneously
 438 contributing to the sovereignty of local, residential communities, the empower-
 439 ment of women, and cultural preservation. More specifically, local populations
 440 flourish through the reverential cultivation and maintenance of their sacred groves,
 441 which reciprocally satisfy their basic needs via “integrated ecosystem” manage-
 442 ment that involves “multipurpose utilization” and cultural rejuvenation (Shiva 1988,
 443 61). Indeed, traditional ecological knowledge systems of this sort have set the histor-
 444 ical precedent for effective environmental movements globally: *Aranyana Samskriti*,
 445 exemplified by the Chipko Movement of 1970s in Uttarakhand, has inspired (and
 446 continues to inspire) a variety of non-violent ‘tree-hugging’ forest conservation
 447 movements since.

448 In short, Traditional Ecological Systems that centralize environmental reverence
 449 are effective. Unlike models that incentivize conservation via purely economic or

¹⁰ The direct result of e.g., historical fire suppression initiatives in the United States and Australia.

¹¹ <https://www.iucn.org/resources/issues-briefs/forests-and-climate-change>.

450 financial means (which carry a potentially colonial and paternalistic tone), reveren-
 451 tial conservation strategies promote community sovereignty and adaptive resilience
 452 to changing environmental conditions. It would thus behoove our environmental
 453 discourse to emphasize the import of cultivating environmental reverence in local
 454 communities throughout the Global South *and* North, while simultaneously working
 455 to uplift, preserve, and rejuvenate those cultural systems that have come under threat
 456 (via e.g., colonial or capitalistic encroachment).¹²

457 **16.3.3 Cultivating Pluralistic Cultures of Reverence**

458 Emphasizing the cultural rejuvenation—or first-time-implementation—of reveren-
 459 tial emotions, virtues, and practices in communities where they have no deeply-rooted
 460 history is no simple or seamless feat. As noted by e.g., Erin McKenna (2021), our
 461 ecological attitudes and proclivities are largely shaped by the cultural narratives that
 462 we inherit—via e.g., the literary, religious, filmic, or other mythic representations of
 463 human interactions with the more-than-human world that we consume. The above
 464 arguments in favor of relationalism and the efficacy of cultivating ecological rever-
 465 ence should then encourage, at a more basic level, the adoption of stories, myths,
 466 narratives, and philosophical theories which decenter human beings as sole ecolog-
 467 ical protagonists or bearers of value. For those in the global North, cultivating and
 468 actively engaging in some set of efficacious and reverential practices will require
 469 a cultural shift: to mindfully re-craft the tales we tell, the ways in which we build,
 470 and how we engage with local, biodiverse environments. In any case, it behooves
 471 human communities in general to work toward the cultivation of reverence (*qua* moral
 472 emotion and enduring virtue) and reverential practices (via their pragmatic imple-
 473 mentation). After all, and as suggested above, the regular stimulation of reverence in
 474 *Homo sapiens* is valuable insofar as it is psycho-physiologically transformative and
 475 restorative; through e.g., inducing a phenomenological sense of self-transcendence
 476 and ecological interconnectedness, reverence inherently motivates care for (say)
 477 more-than-human entities and ecosystems—including forests.

¹² This proposal shouldn't seem so far-fetched to those dwelling in the United States, for a secular form of this recommended strategy is already implemented in the spectacular Cathedral Grove of Muir Woods National Monument (California, USA). In this "silent preserve [which is] home to the tallest, oldest redwoods at Muir Woods," visitors are explicitly encouraged to "[consider] quiet contemplation as you make your way through this part of the woods" (National Park Service). Walking quietly and attentively through these dappled, golden halls of emerald and rust elicits, quite powerfully, a sense of humility and reverence for the mighty *Sequoia sempervirens* who dwell therein. See <https://www.nps.gov/places/000/cathedral-grove.htm>.

478 16.4 Conclusions

479 Throughout this piece, I have shown that an array of indigenous philosophers,
 480 residential populations, and proponents of Traditional Ecological Knowledge hail
 481 from and represent traditions historically rich in environmentally reverential narra-
 482 tives. This strongly encourages centering and elevating the epistemic authority and
 483 status (Dotson 2018) of Traditional Ecological land managers (including e.g., the
 484 Lepcha people who successfully steward Sikkim’s sacred groves) in conservation,
 485 restoration, and other environmental contexts.

486 Toward this end, it is worth noting that the legal efficacy of eco-reverential world-
 487 views has already, and most impressively, been demonstrated. Consider, for example,
 488 the precedent set by the Maori people of New Zealand, who successfully afforded
 489 protections to the Whanganui River in 2017. Revered as sacred by its people, the
 490 Whanganui River plays a complex role in Maori self-determination, cosmology,
 491 and personal identity. More specifically, the term *Te Awa Tupua* is used to denote
 492 the river’s personhood, marking its status as an ancestral Maori elder. Reverence is
 493 afforded to the Whanganui in reciprocal gratitude for the material, psychological, and
 494 spiritual sustenance that the river provides to its people (Whanganui River Claims
 495 Settlement Act 2017). In the Crown’s Court of New Zealand, *Kaitiakitanga* (trans.,
 496 River Guardians who are appointed as intermediaries to speak on behalf of the river)
 497 were able to afford legal protections to *Te Awa Tupua* by utilizing a characteristically
 498 relationalist argument. Their goal was achieved by (for example) attributing a high
 499 degree of relational kinship and even *personhood* to the Whanganui River, which
 500 warrants its reverential treatment.

501 There are deep questions about whether communities more broadly (in, say, the
 502 global North) must adopt an animistic worldview, which attributes high degrees
 503 of complex consciousness or personhood to forests, rivers, or more-than-human
 504 animals, before they can feel genuine reverence for them. Nevertheless, I have
 505 suggested that reverence *qua* moral emotion and virtue can be stimulated in *either*
 506 secular or spiritual contexts, leaving open the possibility of a compatibility between
 507 its cultivation and a multiplicity of metaphysical worldviews (e.g., animism, panpsy-
 508 chism, naturalistic materialism, etc.). Before concluding, I’d thus like to re-emphasize
 509 the psycho-physiological and material efficacy of reverence in conservation and
 510 restoration contexts, which (by reference to the empirical data) seems to obtain
 511 regardless of variations in deeper philosophical and ontological commitments. After
 512 all, the historical and contemporary tapestry of relationalism is rich, varied, diverse,
 513 textured, and vast.

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