

Michael Charles Tobias
Jane Gray Morrison

Anthrozoology

Embracing Co-Existence
in the Anthropocene



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Preface

Ecological Bifurcations

Ethical and philosophical activism now confronts a multitude of ecological bifurcations—the sum total of current crisis points—the Anthropogenic, or Sixth Spasm of Extinctions in the annals of biology. What might have been characterized as a theoretical cusp has now brought to a converging panic a multitude of scientific and natural history disciplines all scrounging to wrap their minds around the accelerated truth of what the Anthropocene actually entails. The very planet is on the verge. Of what? Intuitively, many of us fear the answer, but also harbor enormous hopes for what may be possible in the days and nights to come.

In this treatise, the authors are proposing a veritable revolution in comparative sentience, sapience, qualia, and biosemiospheric studies that might lend insight into what will be required to help stave off the worst of biological calamities that have been predicted and, daily, are being tabulated.

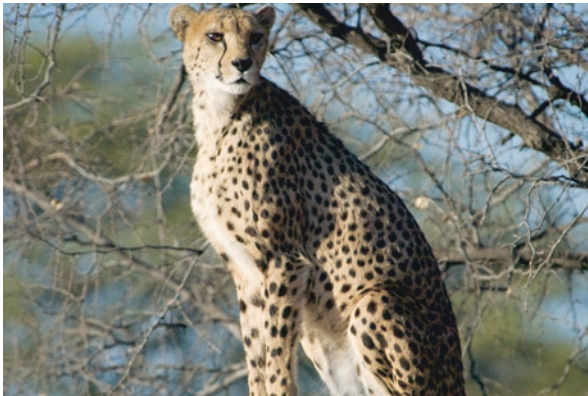
It is our goal to merge interdisciplinary theoretical prospects with personal experience by offering a preliminary sketch for an overview of ethical anthrozoological studies that seeks to expand the boundaries of what is thought of as “consciousness,” “intelligence,” “interspecies communications,” and the adaptive evolutionary boundlessness of “feelings in all species.” We view this juxtaposition as a cornerstone, generally speaking, of what has been characterized by several authors as the *biosemiosphere*.¹

¹*See for example, **Comparative Literature—Sharing Knowledges for Preserving Cultural Diversity, Encyclopedia of Life Support Systems**, Volume II, Edited by Lisa Block de Behar, Paola Mildonian, Jean-Michel Dijian, Djelal Kadir, Alfons Knauth, Dolores Romero Lopez, Marcio Seligmann Silva, Published by UNESCO In partnership with EOLSS, Encyclopedia of Life Support Systems, Eolss Publishers Co. Ltd., Oxford, United Kingdom, 2009, p. 59; See also **Culture and Explosion** by Juri Lotman, Edited by Marina Grishakova, Translated by Wilma Clark, from the Foreword by Peeter Torop. xxxi, Walter de Gruyter Publishers, Berlin, 2009. See also: Susan Petrilli’s recent book **Victoria Welby and the Science of Signs—Significs, Semiotics, Philosophy of Language**, Transaction Publishers, New Brunswick New Jersey, 2015; and her earlier **Sign Crossroads in Global Perspective—Semiotics and Responsibility**, by Susan Petrilli, Editor John Deely, Transaction Publishers, New Brunswick New Jersey 2010, p. 139.

Fig. P.1 “Critically Endangered Arabian Leopard, *Panthera pardus nimr*, Northwestern Saudi Arabia,” Photo © M. C. Tobias



Fig. P.2 “Namibian Cheetah, *Acinonyx jubatus jubatus*,” Photo © M. C. Tobias

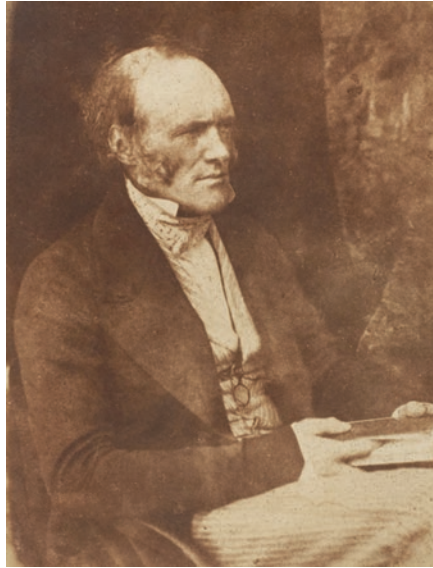


It is our view that, not evolution, but our noninvasive participation in the ongoing and primordial communication pathways between species, is what holds a sane and salubrious clue to our future.

By examining aspects of past and present currents in ecological anthropology, art history, animal protection and legislation towards that end, comparative ethics, literature, spirituality, ethology, and biocultural heritage contexts from every continent, as well as a deeply metaphysical set of perspectives, our aim is to set forth an argument that the human connection to nature is waning, self-destructive, and globally oppressive, but that our best intentions as a species—the celebration and reverence of nature—holds the only true promise for the survival of the biosphere, a word first employed by the Austrian geologist Eduard Suess in 1875 and later used as the title of a book by the Russian geochemist Vladimir Ivanovich Vernadsky (1863–1945) in 1926.

Vernadsky’s use of the term is at great variance with our beliefs and propositions throughout this book, a general orientation that is mostly a product of our era versus that of the early Soviet reality, which deemed humanity’s role in evolution to be

Fig. P.3 “Charles Lyell,” Photo © <https://goo.gl/images/HZ6u5X>



some monumental and unique journey. An adventure that was teleological, a melding of mind and matter into an ontological noösphere. By that juxtaposition of ego into superego, the entire history of our species has advocated for its own superiority, writ as large as some ongoing, planetary geological machination, as first hinted in the early extinction-related insights of the Frenchman Georges Cuvier (1769–1832) and meditations on stratigraphy by the tenacious Scottish geologist, Charles Lyell (1797–1871); our destiny in essence managed by the stars, preordained by atoms, and ceaselessly working, like some Communist 5 year plan in perpetuity to achieve a massive harnessing of Earth.²

The Vernadsky Presumption

The strange conceptual implications for other species, our imagination presuming to out-compete their own, were most apparent, not in Cuvier, who acknowledged the vulnerability to extinction from certain catastrophes, as with such creatures as the mastodon at his speech to the French Institute in 1796,³ or Lyell, who simply believed that the entire past could be gleaned from observations upon a present

²Stafford, Robert A. **Scientist of Empire**. Cambridge, UK. Cambridge University Press, 1989.

³Academy of Natural Sciences, “Fossils and Extinction” <http://www.ansp.org/museum/jefferson/otherPages/extinction.php>, Accessed April 22, 2016.

moment in time—Charles Darwin (1809–1882) mediating in the center of these two giants of biology and Earth sciences. But in Vernadsky’s essay, “The Transition from the Biosphere to the Noösphere,”⁴ there is no proximate reality that would delimit a belief in extreme human exceptionalism, the notion that we are superior and destined to mentally become one with the Cosmos.

Our deep-seated concerns with such belief systems suggesting that humans are superior to other species will become increasingly meaningful as we endeavor to enquire into their minds and feelings. We believe that that multitude of Others experience an endless array of unique circumstances, harboring their own myriad of thoughts, intentions and sensory signals we humans do not remotely understand, except by our focusing upon a crude biological relativity, and an even more reckless presumptuousness.

In Sections 115 and 116 of his “Biosphere to the Noösphere” essay, Vernadsky wrote, “There is a growing understanding that this increase has no insurmountable limits, that it is an elemental geological process... The question of a planned unified activity for the mastery of nature and a just distribution of wealth associated with a consciousness of the unity and equality of all peoples, the unity of the noösphere, became the order of the day. It is not possible to reverse this process, but it bears the character of a ruthless struggle, which, however, is grounded on the deep roots of an elemental geological process...” Color images from October 2009 of phytoplankton growth off the coast of New Zealand, nuclear reactors in Cattenom France, as well as NASA images from 1987, 1991, 2000, and 2012 entitled “The energy of human culture. The greening of the desert near the city of Tubarjal in Saudi Arabia,” all added to William Jones’ fascinating introduction to his translation of Vladimir Vernadsky and might, at first glance, lend vigor to the Russian’s embrace of Einstein’s relativity, atomic energy, and a conception of our species “taking a tremendous leap forward in the development of the noösphere, putting him on the verge of extending his reach into the surrounding universe.”⁵

We mention Vernadsky because of the fact he is largely credited with titling the first book to use the work biosphere: **The Biosphere (1926)**⁶ written during a Soviet context that clearly elicits all of the Marxist obsession with human toil working towards some collective achievement that merits an infatuation with our species over all others, as enshrined in Marx’s **Economic and Philosophical Manuscripts of 1844** (also known as the “**Paris Manuscripts**”)⁷. In that volatile and contentious work, Marx argued that the environment must be subverted into the body of man himself through human labor. In other words, he did not distinguish between nature and human nature, but replaced what we would, in today’s terms think of as natural

⁴Excerpts from “Scientific Thought as a Planetary Phenomenon, Chapter VII,” 1938. Translated by William Jones, 21st Century, Spring/Summer, 2012, pp. 29–30, https://www.21stcenturysciencetech.com/Articles_2012/Spring-Summer_2012/04_Biospere_Noosphere.pdf, Accessed March 5, 2016.

⁵ *ibid.*, p. 14.

⁶**Biosfera**, by V. I. Vernadskiĭ Leningrad: Nauch. khimiko-tekhn. izd-vo Nauch. tekhn. otdel V.S.N. Kh., 1926.

⁷Ökonomisch-philosophische Manuskripte aus dem Jahre 1844 or **Pariser Manuskripte**.

history, with human history. In light of our species' rapaciousness, it is a disingenuous, indeed ill-informed commentary. The Vernadsky-Marx connection is logical within the Russia of the 1920s, where human survival and economic class warfare would effect one of the worst genocidal sprees in human history, namely, the Stalinist regime, replete with its species-supremacist fantasies and the Gulag. But in the geochemist/geologist that was Vernadsky, this species self-importance is an intellectual conceit striving to apotheosize the Greek *noos*, or "mind."

Vernadsky was a product of his times, his well-meaning intellectual goals merged within a brief outline of our materialist endeavors over thousands of years; all those struggles to invent fire, machines, efficient agriculture and the subordination of domesticized animals for traction and food, and so on. Moreover, this line of linear thinking (so symptomatic of much of Western history) is spiced with a quasi-spiritualism. It echoes the wide-ranging Jesuit, Teilhard de Chardin (1881–1955) who studied from Vernadsky early on in his own career and clearly drew upon Vernadsky's noosphere to advance the cause of his own Omega Point, comparable to that imagined zenith of human consciousness not undifferentiated from the Logos of Christ, or of God himself, and all of this essentially Platonic metaphysics (as translated by Origen and then Plotinus)⁸ underlying the physical sciences, and a predestination delusionally inherent to humanity's assiduous reach out into the Cosmos. Terraforming Mars is only decades away, should our species determine that that is a worthy goal; at the very moment we are virtually destroying every vertebrate and an unknown number of invertebrates on Earth.

Such contradictions are only too familiar, akin to philosophical tyranny that sprouts from every disguised self-interest devoted to advancing the sole cause of that agent of the Anthropocene we tragically know only too well. By holding in esteem our dominion over the rest of nature, naming it a transitional phase towards some God-like omniscience that is the very throne of an emulated and incipient consciousness amid celestial spheres, such philosophy and neo-science undermines its modest claims even to the purest forms of introspection. By doing so, such narcissism in the name of science helps lay the groundwork for further biological ruin and surreal indifference to the realities of life on Earth. We see its consequences in the myriad abnegations of ethical research and goodness in general, across the stage of today's political rhetoric, as well as throughout the rising statistics indicating widespread ecological illiteracy, indifference and callousness towards other humans, not to mention those other species, and the rise of violence inflicted across the planet by *Homo sapiens sapiens*.

⁸ See "Towards the Noosphere Futures Singular and Plural," John M Dillon, Stephen RL Clarke, The Prometheus Trust, London, 2013; <http://www.drb.ie/new-books/towards-the-noosphere#sthash.w0Lmvabb.dpuf>. Accessed March 6, 2016; See also Vernadsky's diaries in the "Works" section, summarized in Sergei Glebov. "Russian and East European Books and Manuscripts in the United States" in **Russian and East European Books and Manuscripts in the United States: Proceedings of a Conference in Honor of the Fiftieth Anniversary of the Bakhmeteff Archive of Russian and East European History and Culture (Slavic and East European Information Resources**, Volume 4, Number 4 2003), eds. Jared S. Ingersoll and Tanya Chebotarev, The Haworth Press, 2003.

Fig. P.4 “One of the last remaining tigers killed in Old Singapore,” Photo © M. C. Tobias



It is wonderful to see Democrats have a strike in the House of Representatives regarding gun violence in America (June 21, 2016, Washington DC—“No Bill, No Break”). Now let’s see them strike over the violence towards animals, towards the entire planet. Let us see them become vegans, shut down all slaughterhouses. Stop killing animals. That would be a truly memorable strike on the House Floor. That is more than civil disobedience. That is true rationality. “No Kill, No Break.”

This syndrome of denials is a hindrance of such proportions as to draw into doubt the ability of our kind to rise above so massive a shadow that, by many different names and abiding characteristics, we denominate the syndrome as the Anthropocene.

Quite conversely, our perspective on the biosphere presupposes that life in all her infinite diversity has both subjective and objective Will-Power and Intentionality that is altogether separate from, and probably well beyond, our own severely limited physical and mental grasps; that these innate Qualities of Being, of Soul and Psyche, of Mind and Feeling, are communicated to both Observers, Non-observers, as well as to all Others, whether there is an overt awareness of a message or messages being conveyed or not. Direct objects, so to speak, in terms of communication minutia, do not impress us. We are but one idea, morphed over time into matter, amid a dizzying numerical concept, in our minds, of the numbers representative of wildly varied life forms: Greater in extant, for example, than Planck’s volumes, which connote subatomic scale constants that involve Planck’s length cubed, and many other factors, and might collectively be as vast as 10-to-the-185th. Even that inconceivable magnitude evidently falls short of what is known as Graham’s number, and other mathematical obscurities like “Kruskal’s tree theorem,” or the “Robertson-Seymour” and “Paris-Harrington” theorems. These are alleged to

Fig. P.5 “Chandni Chowk, Old Delhi, India,” Photo © M. C. Tobias



be the biggest numbers thus far conceived in the abstruse, vastly esoteric realms of a field comprising post-googolplexes: Skewes' and Moser's numbers. When equated with biological organisms, our faint conceptualization of a life form takes on the invisibility of what the Jains have called *nigoda*, subatomic life particles, or *jiva*—souls, as remote as a single molecule of moisture in a hurricane encompassing the entire planet, or smaller still, an unknown portion of the smallest subatomic corner of an atom within that unknowable molecule.⁹

Think of all this as the scientific grasping after straws beneath and within the purity of an ideal: The substance of that which we call convictions, beliefs, ethics, and faith. We can't see it or prove it (or not in everyday life sitting around a coffee shop), but we know it is there. On a stele from what is today Dhiban, Jordan, dating to 840 BC, the Moabite Mesha stone, recovered in 1868, bears witness to one of the earliest references to Yahweh, God. The inscribed basalt, with its 34 lines, sits by itself in the Louvre, a source of fascination to those hulking figures, all of us, who go about our lives wondering: are we alone?

⁹See Friedman, Harvey M. (2002), "Internal finite tree embeddings." *Reflections on the foundations of mathematics* (Stanford, CA, 1998), Lect. Notes Log. 15, Urbana, IL: Assoc. Symbol. Logic, pp. 60–91, MR 1943303; Gallier, Jean H. (1991), "What's So Special About Kruskal's Theorem and the Ordinal Γ_0 ? A Survey of Some Results in Proof Theory," *Annals of Pure and Applied Logic* 53(3): 199–260, doi:[10.1016/0168-0072\(91\)90022-E](https://doi.org/10.1016/0168-0072(91)90022-E), MR 1129778; and Kruskal, J. B. (May 1960), "Well-quasi-ordering, the tree theorem, and Vazsonyi's conjecture," *Transactions of the American Mathematical Society* (American Mathematical Society) 95(2):210–225, doi:[10.2307/1993287](https://doi.org/10.2307/1993287), JSTOR 1993287, MR 0111704.

Biological Proliferations

Homo sapiens may lack, at a fundamentally practical level, the evolutionary self-confidence, or, stated in terms of basic physics and chemistry, the very coherence that is abundantly demonstrated by the Others, as the authors refer to them. By that spectrum of Beings we include all other biomes, micro-climes, Domains, Kingdoms, Phyla, Classes, Orders, Families, Genera, Species, Sub-Species (trimonina), and all of the so-called hyponyms, from subphylum, infraphylum, and superclass; to suborder, infraorder, subclass, infraclass, supercohort, cohort, magnorder, and superorder; to tribes, clades, nonclades, the unknown number of individuals, novel beings, biomes, ecosystems, habitat links both linear and nonlinear, breeds, cultivated plants, hybrids, cells, genes, molecules, atoms, as well as an abundance of other habitat and organism-related designations—known and/or inferred under various Code proposals (e.g., that of the International Committee on Bionomenclature, and other phylogenetic characterizations regarding populations) everywhere around us. We reject “race” as a biological category.

All of these concentrations of the life force accumulate into a challenge for human beings: a purpose, if in no other realm than ethics, then self-preservation as a direct function of our inseparability from, and interdependency upon, all of the above biochemical quanta that is Earth. It’s all we know, and we scarcely know what we don’t know. This is a tautological and practical dilemma. A biological double bind, as Gregory Bateson and colleagues first conceived of it.¹⁰ And as the great Greek littérateur Kimon Friar (1911–1993)—best remembered by the public for his translation into English of Nikos Kazantzakis’ indescribably abundant *The Odyssey: A Modern Sequel*¹¹—declared, humanity must aspire to view the human condition “from the vantage of an eagle.”¹²

In the exhilarating work *Totalité et Infini: essai sur l’extériorité*¹³ by the Lithuanian/French existentialist, Emmanuel Levinas (1906–1995), this biological proliferation, in which we are so awkwardly lodged, helps us to recognize not only the Other, by signs and by traces, but also to acknowledge the essence of ethics, as a precondition of all philosophy, science, and information. Imagine our finest predictions translating into action, restraint inhibiting our ungainliness and cruelties. Hope winning out, in evolutionary terms, over destruction.

In a book many years ago, we examined the concept of “traces” (*A Vision of Nature: Traces of the Original World*)¹⁴, in which we suggested that our love of nature is the secret to our success as a species, if indeed we are to survive. Writes Levinas, “To approach the other in conversation is to welcome his expression, in

¹⁰ Bateson, G., Jackson, D. D., Haley, J. & Weakland, J. (1956), Towards a Theory of Schizophrenia. in *Behavioral Science*, Vol 1, 251–264. Accessed April 23, 2016.

¹¹ Simon & Schuster, New York, 1958, London: Secker and Warburg, 1958.

¹² See Kimon Friar’s appearances in the PBS film, “Kazantzakis,” by M. C. Tobias, 1984.

¹³ *Totality and Infinity: An Essay on Exteriority*, Published by Martinus Nijhoff, The Hague, Netherlands, 1961.

¹⁴ Kent State University Press, 1995, <http://www.kentstateuniversitypress.com/2011/a-vision-of-nature/>

Fig. P.6 “Endangered Egyptian Vulture, *Neophron percnopterus*, Socotra, Yemen,” Photo © M. C. Tobias



which at each instant he overflows the idea a thought would carry away from it. It is therefore to receive from the Other beyond the capacity of the I, which means exactly: to have the idea of infinity.”¹⁵

By the sheer enigmatic scope of this evocation we mean as well to imply an essence which is the very codex of our hearts, a subjectivity that confers an ethical obligation on each of us to embrace fellowship at every conceivable level. And it is fundamental to that fantastic recognition, and then embrace, however unnamable or vague, of a God, a god in whatever utterance, far-flung intimation, or softly communing prayer, fairly and equally distributed, if you will, throughout all of Nature.¹⁶

The prayer is a simile, of course, that we tend inordinately to outweigh with our species’ own concerns; preoccupations that have piled up in one vast edifice of self-importance within the conventionally perceived “Great Tree of Life,” as Darwin thought of it, and which more recently has, by some, been renamed the “universal tree of life,” based upon a research renaissance in heretofore unknown microbial studies.¹⁷ But humanity has persistently placed itself atop this tree and that cultural artifact now works perilously against life. This near universally human belief system constitutes nothing less than a deeply flawed and pernicious bias predicated on the brink of our species’ self-destruction. The continuing insistence upon ourselves as the ultimate agents of knowledge has only given escalating pall to a most devious, indeed ruinous proposition. We either recognize the miracle of sentient, sapient, self-reflective, and intentional morality all around us—an infinity of feelings, sophistication, and genius in Others (all other species and individuals of those species)—or risk enshrining the shortest-lived epitaph of most likely any known vertebrate species in Earth’s history.

¹⁵ op.cit., **Totalité et Infini**, p. 51.

¹⁶ See, French: “Aborder Autrui [...] c’est donc recevoir d’Autrui au-delà de la capacité du Moi: ce qui signifie exactement: avoir l’idée de l’infini.” in *Totalité et Infini*, Martinus Nijhoff, La Haye, 1991, p. 22; See also, Alan D. Schrift (2006), **Twentieth-Century French Philosophy: Key Themes And Thinkers**, Blackwell Publishing, p. 159.

¹⁷ “A new view of the tree of life,” by Laura A. Hug, Brett J. Baker, et al., *Nature Microbiology* Article number: 16048 (2016) doi:[10.1038/microbial.2016.48](https://doi.org/10.1038/microbial.2016.48), published online 11 April 2016, Accessed April 13, 2016.

Our fate is psychological and twisted. We call the Egyptian vulture (*Neophron percnopterus ginginianus*)—with whom we have wonderfully communed at their important breeding sites on the Island of Socotra in that portion of the northern Indian Ocean proprietary to Yemen, and who might number between 20,000 and 61,000 individuals worldwide¹⁸—officially endangered, according to the IUCN. The reasons for their extreme peril are multiple: ingestion of secondary toxins in the form of nonsteroidal anti-inflammatory drugs fed to cattle, particularly in India, where the Egyptian vulture populations have plummeted (most raptors—including owls—as well as storks and cranes are equally at risk to these drugs); poaching; and habitat destruction. But there are countless other species who number in the few thousands, in some cases fewer than a thousand, yet we still debate whether they should be categorized as endangered. Politics, economics, and primordial reflexes easily obscure our natural history lenses, which must be why the majority of our kind collectively think nothing of slaughtering trillions of animals each year. We are diabolically at odds with our definitions, sensibilities, and mindsets yet somehow or other manage to recognize at least rudimentary interdependencies in nature when it comes to one of our oldest pastimes, talking about the weather. We have since 1884 classified weather patterns and zones according to the elegant system worked out by Russian climatologist and botanist Wladimir Peter Köppen (1846–1940), a system that defines specific climate types by the indigenous vegetation it nurtures. Because the fluctuations in weather can be sustained or short-lived, it has never been uncommon for plant specialists to rediscover species growing right in front of them. Every gardener in early spring knows something of this sensation.

But it is a vastly less frequent occurrence amongst animals, particularly vertebrates. When it does rarely happen, our worst fears put to rest, we call those creatures “Lazarus Species,” organisms that have managed to defy the odds of humanity wiping them out.

Two cases of such Lazarus Species come to mind: the enchanting Oliguino (*Bassaricyon neblina*) of the raccoon family, rediscovered in surprisingly higher numbers than ever imagined by Smithsonian scientists led by mammalogist Kris Helgen in expeditions throughout the highlands of Ecuador and Columbia in 2013¹⁹; and the presidential Takahe (*Porphyrio hochstetteri*) rediscovered in November 1948 by Geoffrey Orbell, “tramper” and MD, in the bush behind a remote shore of Lake Te Anau on the South Island of New Zealand. This gloriously large purple/blue ground-dwelling member of the Rallidae family, today hovering around 300 individuals, had been thought extinct since 1898 and had even been depicted in Lord Walter Baron Rothschild’s (1868–1937) momentous work,

¹⁸ See http://www.birdlife.org/datazone/speciesfactsheet.php?id=3371#http://www.aerc.eu/DOCS/Bird_taxa_of%20the_WP15.xls#, Accessed July 11, 2016.

¹⁹ See “Oliguino: ‘Overlooked’ mammal carnivore is major discovery,” by Jane O’Brien BBC News, Washington DC, August 15, 2013, <http://www.bbc.com/news/science-environment-23701151>; See also, <http://www.smithsonianmag.com/science-nature/for-the-first-time-in-35-years-a-new-carnivorous-mammal-species-is-discovered-in-the-americas-48047/?no-ist>, Accessed April 23, 2016.

Fig. P.7 “Critically Endangered Takahe, *Porphyrio hochstetteri*, South Island, New Zealand,” Photo © M. C. Tobias



Extinct Birds, in 1907²⁰ as painted by the illustrious Dutch born British ornithological illustrator, John Gerrard Keulemans (1842–1912).

But such rediscoveries (the former predicated upon an examination of dead specimens—from the more than 600,000 such mammalian specimens at the Smithsonian, as of April 2016, 601,512²¹ and to which genetic research was applied) are rare. Most urgently, it must be recognized that the destructive human catalysts by nearly all accounts are undeniably underway in a ferocious and seemingly unstoppable manner.

Is there time to halt this seemingly run-away train of destructiveness? We think there are two important antidotes. They include (1) a combination of vastly expanded protected corridors and animal liberation/conservation biology convergences and (2) active engagement by individuals in ethically informed interspecies contacts and communications, the immediate (but patient) goal of which is to lead, by any number of curious and relational intimacies, towards a much deeper acquaintance with the Others, and subsequently, to a far more sincere appreciation and outright love of our fellow co-habitants on Earth than our species has ever collectively demonstrated.

Ecological Failure or Amelioration

At this book’s core is a singular proposition, not easily digested: *Homo sapiens* are a species that is failing, in contrast with nearly all those Others on Earth. But our biological redemption is still possible. It will require unstinting kindness, personal humility and sacrifice, and the awakening of the collective conscience in both ideal as well as pragmatic ways that can work to safeguard remaining biomes and individuals—the ultimate drivers of ecological success—in whatever near infinite time

²⁰ Hutchinson & Co., London.

²¹ 19*<http://collections.nmnh.si.edu/search/>, Accessed April 23, 2016.

frames are plausible (recognizing that every species has its own unique temporal reality). The bioremediative impulses may well be preconscious, subconscious, but must be coaxed outward without fail to meet this unprecedented ecological Apocalypse we are collectively up against.

Much paleoecological data exists from Australia, New Guinea, Tonga, Cyprus, California and the southeastern United States, Western Europe, and the Caribbean, among numerous other locations to indicate that we have been reshaping the environment for our own ends, driving species to extinction, traveling between otherwise isolated islands with bioinvasives for at least 23,000 years, and that “altering the planet is something very close to fundamental to the human condition.”²² And for those who believe this argument only applies to vertebrates—the majority of species at least some *H. sapiens* seem more adept at relating to (the family dog, for example)—think again: with “invertebrate catches [that] have increased six-fold since the 1950s”²³ a first of its kind study has released shattering data indicating (not-counterintuitively) that the trophic cascade of damage resulting from such human predation is having enormous impacts on other marine creatures. “Twelve ecosystem models from different areas of the world that included 73 groups of invertebrates”²⁴ showed demonstrative “ecosystem effect[s],” a measurement that is calculated “as the percentage of other trophic groups that had a 40% biomass change at a given level of large invertebrate depletion.”²⁵

If biological success connotes kindness, altruism, and gentle observation, all of which we take as the evolutionary and future *prima facie* preconditions for interspecies relations, then it is our belief that the antidote to a continuing epoch of human destruction is the apotheosis of those relations; conversations at some primeval but accessible level with all who we, for purposes of pellucid concision, call, the Others; the other individuals of other species within populations throughout the biosphere whose lives matter to them, from inside; and to us, with an equal share in, and hopes for, the greater moral community of life.

That is deep ethology: a rewilding of psycholinguistics at the heart of this bioseiosphere, this extraordinary world of communication going on at every conceivable level between each and every living organism. It is truly a symphony, and if we are to become musicians worthy of such music and co-creative participation, we need to be informed, observant, and loving. Wrote Albert Schweitzer, “A man [and woman] is ethical only when life, as such, is sacred to him, and that of plants and

²²“The First Hints of the Anthropocene Appeared Far Earlier Than You Think,” see Sarah DeWeerd, *Conservation Magazine*, June 21, 2016, conservationmagazine.org. Accessed June 21, 2016, the Source for the essay, Bolvin N. L. et al. “Ecological consequences of human niche construction: Examining long-term anthropogenic shaping of global species destructions.” *Proceedings of the National Academy of Sciences*. doi:[10.1073/pnas.1525200113](https://doi.org/10.1073/pnas.1525200113).

²³See “The Ripple Effects of Shellfish Fisheries,” by Catherine Elton, Sourced from Eddy, T.D., et al. (2016). Ecosystem effects of invertebrate fisheries. *Fish and fisheries*, doi:[10.1111/afaf.12165](https://doi.org/10.1111/afaf.12165) © John Wiley & Sons Ltd. onlinelibrary.wiley.com, 30 June 2016, Findings republished, July 15, 2016, conservationmagazine.org. Accessed July 19, 2016.

²⁴ *ibid.*

²⁵ *ibid.*

Fig. P.8 “Marieta van der Merwe, Founder of Harnas Wildlife Foundation, Namibia, With Young Lion, *Panthera leo bleyenberghi*,” Photo © M. C. Tobias



animals as that of his fellow men, and when he devotes himself helpfully to all life that is in need of help. Only the universal ethic of the feeling of responsibility in an ever-widening sphere for all that lives—only that ethic can be founded in thought. ... The ethic of Reverence for Life, therefore, comprehends within itself everything that can be described as love, devotion, and sympathy whether in suffering, joy, or effort.”²⁶

Los Angeles, CA

Michael Charles Tobias
Jane Gray Morrison

²⁶ **Out of My Life and Thought: An Autobiography**, translated by C. T. Campion, Henry Holt & Company, New York, Chapter 13, p. 188, 1933.

Contents

1 The Making of the Anthropocene.....	1
Relational Values and Vicissitudes	1
Rewilding.....	3
The Others.....	6
Pain and Pleasure	9
Gray Tonalities	11
Some Aspects of Due Diligence	12
Data Sets and Dialectic Ontologies.....	15
Melancholic Deliberations	20
Mind in the Forest.....	22
Ecological Enigma Codes	26
Sentience and Accelerated Evolution.....	28
Primate Biometrics and Other Biological Dualisms	32
The Response Conundrum.....	34
Quantum Sapience	38
Darwin’s Umbrella.....	39
Differential Equivalencies.....	41
The Ontology of Mutualism.....	42
2 Our Conquest of Coevolution?	49
Counter-Collaborative Intuitions	49
The Zoological Gaze.....	51
Biorealism, Species Extinctions, and Carrying Capacity	54
The Sorites “Paradox of the Heap” in a World of Fuzzy Logic.....	57
Contradictory Breaking Points.....	61
The Metabolic Truths of Biological De-Constructions.....	63
The Blue Whale Question?.....	64
Post-Holocene Histories.....	66
3 The Metaphysics of Extinction	69
An Overview of Ceballos, Ehrlich, and Ehrlich	69

Existential Animals/Plants at Ground Zero
and the Rewilding Movement..... 74

Resolving Paradox? 85

510 Billion Square Meters of the Earth’s Surface 88

Reproachable Pathways 92

The Genus *Sus* 95

What Constitutes Being Intelligent and Is That Even
a Relevant Word?..... 96

Intelligence Versus Sustainability and Compassion..... 97

Everything That Is a Person..... 98

Living Ghosts from the Middle Miocene: Cohabitation
with the Most Iconic Carnivores in North America..... 99

Bio-Etymologies 109

4 The Conative Spectrum of Other Species..... 113

Fagan Bonds..... 113

Quantum Anthrozoology..... 119

The Many Glitches of Fairyland Zoology 120

Flawed Algorithms and Interpolations..... 121

Epiphanies at the Boundary Level..... 122

Imagination That Translates into Biological Success 124

The Pigeon Test..... 128

Animal Intelligence That Challenges Our Own..... 132

The Semiosphere..... 136

The Disambiguation of Ethics 140

Ecological Communion 146

Comparative Sentience and Sapience 150

A Menage à Trois in the Sea of Cortez 155

5 Arcadian Connections..... 157

Jungles on an Existential Planet..... 157

Art as Interspecies Immanence 160

Of Birds and Dreams and Flannery O’Connor 166

6 The “Other Minds” Challenge..... 171

Jain Bioinformatics 171

Himsā, Violence Towards the Others..... 173

Conflicted Advocacy: When Poetry and Song Fail to Impress..... 175

State Sanctioned Torture of the Innocents 179

Variable Data Sets..... 180

DNA and BioCommunications 183

Ignoring or Embracing the BioCommunicative Challenges?..... 185

7 A Prolegomena of Human Conscience..... 189

Bambi and Beyond..... 189

Reverence for the Individual..... 191

Small-World-Ness..... 192

Combinative Linguistic Capacities	193
Research Dialectics and Triage During Real-Time Crises.....	195
“Qualia” Beneath Seemingly Scientific Chaos	198
The Logic Trap.....	199
The Relativity of Neurons.....	201
Measuring Survival Within the Context of Intelligence	204
8 Experiential, Empirical, and Disturbing Anthrozoologies.....	209
Interspecies Altruisms.....	209
Ecological Dichotomies	219
9 Epiphanies of the Biosphere	225
Our Embrace of Life	225
10 Evolutionary Biographies and the Enigma of the “Other”.....	233
Beyond Solitude.....	233
An Overview of “Readings in Zoosemiotics”	235
11 A North American Family: The Ecologies of Translation.....	245
Redressing the Anthropocene Through Interspecies Communication.....	245
The Brilliance of Songbirds	253
The Parrots	257
A Brief History of Biophilia	260
A California Fanfare: And Josie at the Heart of It All	269
Josie’s Story	271
<i>Gallus gallus</i> and <i>Meleagris gallopavo</i>	272
Conversations with Josie.....	273
Post-Scientific Josie	274
Hominid and Psittacine Semiospheres.....	276
Of Dinosaurs and Other Memories	282
Expanding Contexts to Comport with Reality	285
Feathers Fashioned of Hope.....	291
A Personal Genealogy.....	299
The Fool’s Paradise.....	304
Josie’s Final Narrative.....	313
The Futility of Comparisons	314
The Crisis of One Plus One	318
Josie’s Final Act of Heroism	322
12 Coda	325
The Silence of Järvenpää	325

Chapter 1

The Making of the Anthropocene

Relational Values and Vicissitudes

Throughout the humanities, economics, geopolitical and scientific literature, film and photography, art and anecdotal social media, and other environmental-impact related materials¹ there is now a convergence of enthusiasm, enquiry, and openness to a remarkable new avalanche of human reflection, observation, data, and activism. This confluence is engaged in numerous collaborative avenues of thought, feeling, and endeavor that encompass philosophy, comparative ethology, animal liberation ideologies and commensurate activism, the history of ideas concerning nature, liberation linguistics, linguistics and translations beyond borders, conservation synecology, biosemiotics, the so-called “zoological gaze,” and applied ethological ethics. Of course, there are countless other descriptive disciplines and subsets of disciplines to capture the spirit of this collective impetus, what is little removed from those Copernican-like revolutions punctuating the history of our species’ lense-craft; our re-shifting perceptions and conceptualizations of the Earth we cohabit. The world is not flat and animals and plants think, feel, conceptualize, contextualize, and—at least according to most probability theories in math and cosmology—far outweigh us by dint of their prolonged residency and corresponding meditations here on Earth.

¹For example, see http://davidjwagnerllc.com/Environmental_Impact.html

Fig. 1.1 “Near Threatened White-Crowned Hornbill, *Berenicornis comatus*, Behind Bars in Malaysia,” Photo © M. C. Tobias



This consortium of inquisitive presupposition, hypothesis, dialectic, theory, experience, anecdote, and detail emerges in a context that is saliently at the vortex of anthrozoology. The strangeness of this revolution is that the subjects of our concern are individuals within our immediate neighborhoods, not far off in this or other galaxies—rather, directly inside us, all around us, in our backyards, in our front yards, and on the dinner plates of most humans—and in the clothes we wear and a vast majority of the products we consume and discard, at extremely prevalent and global environmental loss.

In this book, the authors will set forth some of the highlights, history, and current scientific and psychological contexts for what has been an all-out form of combat between our species and all others. We then hope to convey the many rubrics, practical remediations, as well as the ideals for reconciling that war, what, previously, we have termed World War III,² namely, the war humanity has knowingly waged against Earth, our home, for thousands of years. That war has most aggressively been waged during the past millennium, although it was not until the year 2000 that the word Anthropocene was first coined, by chemists Paul Crutzen and Eugene Stoermer.³

By encompassing anthrozoology—the role of humans amid a remarkable profusion of other species—within the Anthropocene, we want to intimate an enormous range of representative data sets, and the crucial philosophical and practical hurdles of which these bode. Our species is at a place where the poignancy and primacy of our own vulnerability and humanity is coming to light at the very moment we are finally owning up—in a deeply psychological and emotional manner—to all those other species who share this vulnerable Earth with us; conferring upon them a level of celebration, dignity, and respect that has long been absent from the working vocabulary, scientific and philosophical stability of our own kind. Who have we been to have shown such indifference, as a matter of policy? Who, what might we yet become?

² **World War III—Population and the Biosphere at the End of the Millennium**, by Michael Charles Tobias, Edited by Jane Gray Morrison, Bear & Co., Santa Fe, NM, 1994.

³ See <http://quaternary.stratigraphy.org/workinggroups/anthropocene/>, Accessed April 4, 2016.

It comes as a relief that someone as eminent as Richard Dawkins should declare, “It is surely thanks to Dr. Dolittle that I still bridle whenever I read (as I do almost daily) someone scorning concern for animal suffering, on the grounds that humans automatically and self-evidently take precedence . . . As with Darwin, the contemplation of slavery transforms Dr. Dolittle’s normal gentleness to passionate anger . . .”⁴

Rewilding

By restabilizing our ecological relationships to this extraordinarily small planet; rewilding our hearts (as our close colleague and friend, Dr. Marc Bekoff, among a few others) has long called for;⁵ and, most important, opening up our minds to the myriad of new paradigms that have utterly shaken the roots of all previous conceptions of other organisms, and behaving accordingly, we are thus able to envision a true communion with other species. That implies a mature new nature that pervades studies of organismic biology and population dynamics. It hopefully will rally consumer restraints beholden to the conscience. In that crystal ball of a new human nature the eco-sciences should easily see an open door, a pathway that both beckons and enables sea change; reliving our earliest enchantments with the natural world, without fear, apathy, or procrastination.

Of course, rewilding connotes in some minds, eco-restoration, a field replete with contradictions and challenges. For example, as author Paddy Woodworth delineates different philosophical approaches by restoration scientist/philosophers, Bill Jordan and James Aronson, there emerges a clear and pressing difference, somewhere between the ideal and the practical, the “metaphorical” and the “mathematical.”⁶ At what timeframe in the humanly perceived and judged ideal landscapes, or ecosystems of the past do we aspire to concretize and fixate some sort of preordained condition, especially noting that humans, almost from the beginning of our speciation, have focused exclusively upon ecosystem disruption with an easily deciphered forensic and archaeological narrative: self-motives? What are the very conditionals of our blind, but supposed supremacy?

To address this underlying pillar of human potency, we must note that our views of nature have been divided. There is the idea of nature; the daily entrenchment synonymous with survival within nature; and then there is a realm of spiritual and ethical ideals that are often united in some manner with nature. But at a brutal coun-

⁴Independent, n.a., “The book that changed me: Richard Dawkins, Doctor Dolittle’s Post Office by Hugh Lofting,” Saturday 27 February 1999, <http://www.independent.co.uk/arts-entertainment/the-book-that-changed-me-richard-dawkins-doctor-dolittles-post-office-by-hugh-lofting-1073782.html>, Accessed April 4, 2016.

⁵See http://www.huffingtonpost.com/marc-bekoff/rewilding-our-hearts-ecoc_b_5959948.html. Accessed January 18, 2016; See also, **Rewilding Our Hearts: Building Pathways of Compassion and Coexistence**, by Marc Bekoff, New World Library, 2014.

⁶See Chapter 14, of **Our Once And Future Planet—Restoring The World In the Climate Change Century**, by Paddy Woodworth, The University of Chicago Press, Chicago, Ill, 2003, p. 408.

ter-distinguishing level, most people are aware of nature as a quantum of biological flux, always changing, evolving, reallocating in a constant trending towards climax (as in a forest biome). Often, that flux is made of magma, or floodwaters, conflagrations, or sudden and enormous seismic change. In the human context Aristotle juxtaposed nature with humanity's ultimate satisfaction, or *eudaimonia* (εὐδαιμονία), also connoting ethical as well as practical wisdom.⁷ Gautama Buddha, conversely, thought of human existence as “suffering,” and chose to proselytize a vision of redemption, holding up Nirvana as a goal to achieve but also to reject, in order to remain in this realm, helping the Other.

Fig. 1.2 “Nirvana Buddha, Ladakh, 16th century,” Private Collection, Photo © M. C. Tobias



Humanity's myriad orientations to Nature were believed by the pre-Socratics to be an intimate and pressing human emotional drive—a language necessarily held in common by all people and the Others, and an intrinsically philosophical language that mirrors our hopes and expectations. But the writings of ancient historians show a very different world—of Peloponnesian wars, angry Gods, of famines and plagues. By the time of the Industrial Revolution, human history had revealed a world stage of frustration, anger, melancholy, ecological illiteracy, and disappointment. While the arts and literature had peered directly into the chasms of all those glaring perturbations between the Self and the Environment—lightning rods of an ethical coup, from Senate floor to dinner plate—scientific discoveries as well were providing glimpses into ages of extinction; a hemorrhaging Earth and, within just the past half-century or so, levels of entropy that could easily spell doom for the human species.

⁷ See Aristotle, also David Ross, Lesley Brown (1980). *The Nicomachean Ethics*, Oxford University Press.

With such histories in mind, where do rewilding methodologies have the best likelihood of finding a stable, relatively unaffected realm of biomes upon which to settle their hoped-for ecological renaissance and to measure their chances of efficacy?

At which point do ecosystems themselves engage in some manner of re-vivification according to often countering geological and biochemical conditions in the greater environment, and not all that far to the side and in spite of human historical and contemporary intrusiveness? Ecosystems, we contend, have their inner thoughts and emotions. After all, what is an “ecosystem”? Sir Arthur George Tansley (1871–1955) is believed to have been the first scientist to have employed the term.⁸ Lest anyone doubt Tansley’s impact on the importance of ecosystem recognition—holistic systems of life—it was Tansley who created the British Ecological Society, and was the first Chairman of the Nature Conservancy, the world’s largest environmental organization for actual protection (although protection with a huge variety of internal contradictions, particularly in regard to animal rights).⁹ He was the first British citizen to be Knighted by the Queen for his conservation work (more than two decades prior to Sir Peter Scott) and probably the first scientist of the twentieth century to be deeply troubled by the question: Is man part of nature or not? He merged psychoanalysis with environmentalism, deeply burdened by all the necessarily juxtaposed considerations, from Freud, to the evolution of ferns, and concluded that a hands-off approach to preservation was fundamental to maintaining ecosystem integrity, the word “ecosystem” actually having been suggested to him by a friend at Oxford, the botanist Arthur Roy Clapham (1904–1990).¹⁰ While ecopsychology is clearly inherent at a multiple of levels, in every nuance and color commencing at least from the time of the earliest documented works of art—long before Lascaux and the Chauvet-Pont-d’Arc Cave—the field’s most relevant revival in conservation biological terms correlates to Tansley’s passion for the notion of “plant communities” and their codification under the British Empire Vegetation Committee, of which he became chairperson in 1924.

Writes Woodworth, quoting Aronson, “If we wait to restore a system until all its structural and functional equations had been demonstrated, it will very likely have crossed several more thresholds of degradation, perhaps irreversibly, before we even begin to restore it.”¹¹

⁸ See Tansley, AG (1935). “The use and abuse of vegetational terms and concepts”. *Ecology* 16 (3): 284–307. doi:[10.2307/1930070](https://doi.org/10.2307/1930070). JSTOR 1930070; See also, Tansley, A. G. (1947). “The Early History of Modern Plant Ecology in Britain”. *Journal of Ecology* 35 (1): 130–137. doi:[10.2307/2256503](https://doi.org/10.2307/2256503). See also, Godwin, H. (1957). “Arthur George Tansley. 1871–1955”. *Biographical Memoirs of Fellows of the Royal Society* 3: 227–226. doi:[10.1098/rsbm.1957.0016](https://doi.org/10.1098/rsbm.1957.0016). JSTOR 769363.

⁹ Cooper, W. S. (1957). “Sir Arthur Tansley and the Science of Ecology”. *Ecology* 38 (4): 658–659. doi:[10.2307/1943136](https://doi.org/10.2307/1943136).

¹⁰ See “The Use and Abuse of Vegetational Concepts and Terms.” *Ecology* 16, no. 3 (1935): 284–307.

¹¹ *ibid.*, quoted from Aronson et al., “Restoration and Rehabilitation of Degraded Ecosystems in Arid and Semi-Arid Lands. II. Case Studies in Southern Tunisia, Central Chile and Northern Cameroon.” *Restoration Ecology* 1, no. 3 (1993): 168–87.

In order to truly change the way we see and act in the company of others, all those trillions of other individuals, we must recognize their needs, wants, dreams, ideals, every possibility for imaginative thrusts out into the Universe. An equal province of enterprise and of hope. To deny that reality is to deny ourselves. This reciprocity is the only true underpinning of the sum of all natural sciences; at the heart of meaningful biophilia.

Those Others, as we have now been inferencing, were formally institutionalized in the 10th edition (1758) of Carol Linnaeus' **Systema naturæ per regna tria naturæ, secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis**, "**System of nature through the three kingdoms of nature, according to classes, orders, genera and species, with characters, differences, synonyms, places**": A recognized 4400 animal species (564 of them birds) and 7700 plant species. But the "formalities" of binomial nomenclature should not obfuscate the dramatic etymologies attendant upon every single naming of genera and species. Each denomination holds the power of countless linguistic connotations that are emotional, in the end; that impinge upon psychological nuance as readily as upon logic. As with the word, "bioreverie."¹² This is a key point, wherein taxonomy and drama work towards resolving any and all "two culture" conflicts.¹³

The Others

Our relationships with these Others are fraught with an order of complexity we should have become accustomed to during our past 200,000 years. But most of the social integuments linking our kind have been severed even though we remain biologically interdependent upon every last one of them, whether the majority of people acknowledge that or not. Failing to make salient intersections with other species does not lessen our emotional ties to them. We simply have hardened our arteries of perception and have ignored, or chosen to ignore those links with disastrous consequences for the biosphere.

Nonetheless, millions of people do celebrate other species. An estimated 250 million dogs on Earth are deemed to be "companion animals."

¹² See <http://www.thefreedictionary.com/reverie>, Accessed, April 23, 2016.

¹³ An Update on C. P. Snow's "Two Cultures," A new column that examines the intersection between science and society provides an update on the historic essay, By Lawrence M. Krauss on September 1, 2009, Scientific American, <http://www.scientificamerican.com/article/an-update-on-cp-snows-two-cultures/>, Accessed April 23, 2016.

Fig. 1.3 “Himalayan Dog the Local Monks Believe Was A Reincarnated Sage,” Photo © M. C. Tobias



Canines comprise the most successful carnivore on the planet, excepting humans.¹⁴ In addition, in the USA there are as many as 98 million pet cats.¹⁵

Fig. 1.4 “French-Speaking Cat, Dijon, France,” Photo © M. C. Tobias



But this barely scratches surfaces. Artists struggle to illuminate the depth of our vast connections. Consider the painter George Stubbs who put forth four versions of his “Tygers at Play” beginning in 1767, having read carefully Oliver Goldsmith’s celebrated **An History of the Earth and Animated Nature** (1771).¹⁶ Stubbs sought to convey every detail of the great cats and did so with a love of the leopards (until

¹⁴See “Don’t Call Them Strays,” by James Gorman, ScienceTimes, The New York Times, April 19, 2016, pp. D1 and D6.

¹⁵<http://www.asPCA.org/animal-homelessness/shelter-intake-and-surrender/pet-statistics>, Accessed April 24, 2016.

¹⁶George Stubbs, Painter, By Judy Egerton, Tate Publishing, London, 1996, p. 306.

about 1750 any spotted or striped felid, historian Judy Egerton points out, was called a tiger [sic] that gave viewers continual pleasure. What is that pleasure? How do we measure it, versus the pain we are inflicting on big cats throughout the world?¹⁷ One of Stubb's Tyger paintings sold for 7.7 million pounds in July 2014 at auction at Sotheby's.¹⁸ Other instances of aesthetic impact are too multitudinous to even begin to elaborate, but a few instances are worth noting (and in later chapters we will explore somewhat more in-depth). When Frederick Church's masterpiece "Heart of the Andes," (excited by the very itineraries of Alexander von Humboldt) debuted for 3 weeks commencing in late April of 1859 at New York's Lyric Hall, 756 Broadway, before being transferred to the West 10th Street Studio Building, approximately 12,000 people each paid a quarter to view it (approximately \$7.00 in today's economy). There were mobs all the way around the corners waiting to see this unveiled miracle of a painting.¹⁹ Moreover, the New York manufacturer, William Blodgett would purchase the work at the highest price ever handed out in American history for any living artist, \$10,000. In 1909, the work was bequeathed by the estate of Margaret E. Dows, to the Metropolitan Museum of Art, of which Church had been one of its founders.²⁰

The late Eliot Porter's coffee table book, **In Wildness is the Preservation of the World**²¹ the quotation from Thoreau's essay, "Walking," has sold well over one million copies.²² Hundreds of millions of visitors have flocked to landscape exhibitions over the years, from Paris, to London to New York; from Tokyo to Taipei to Amsterdam. And when a Wal-Mart heiress purchased one of the outstanding Hudson River School paintings by Asher B. Durand, "Kindred Spirits", depicting Thomas Cole and William Cullen Bryant on a rock together overlooking the 260-ft high double waterfalls of the Kaaterskill and spirited it out of the state of New York to Arkansas (prior to lending it back for some time to the Met),²³ there was an outcry,

¹⁷ See "George Stubbs' Leopard Cubs to go to Auction," By Ashitha Nagesh | March 28, 2014,— See more at: <http://uk.blouinartinfo.com/news/story/1020721/george-stubbs-leopard-cubs-to-go-to-auction#sthash.Rgo0Ft8y.dpuf>; <http://uk.blouinartinfo.com/news/story/1020721/george-stubbs-leopard-cubs-to-go-to-auction>; See also the news release on June 23rd of the Ontario zoo keeper caught on tape "mercilessly whipping a tiger and boasting about the pleasure that he derives from intimidating and dominating animals." "Bowmanville Zoo to close this year," by Noor Javed and Brennan Doherty, <https://www.thestar.com/news/gta/2016/06/23/bowmanville-zoo-to-close-this-year.html>, Personal Communication from Ingrid Newkirk at PETA, June 23, 2016.

¹⁸ <https://www.georgeglazer.com/prints/nathist/mammals/stubbstygers.html>, Accessed April 24, 2016.

¹⁹ <http://www.metmuseum.org/toah/works-of-art/09.95/>, Accessed April 24, 2016.

²⁰ *The Art-Makers: An Informal History of Painting, Sculpture, and Architecture in Nineteenth Century America*, by Russell Lynes, Dover Publications, New York, 1970, p. 225.

²¹ See <http://www.cartermuseum.org/press/releases/eliot-porter-the-color-of-wildness-reveals-art-ists-groundbreaking-contribution-to-medium-of-color-photography>, Accessed April 24, 2016.

²² Sierra Club Publishers, San Francisco, 1962.

²³ "A Billionaire's Eye for Art Shapes Her Singular Museum," By Carol Vogel, June 16, 2011, *The New York Times*, http://www.nytimes.com/2011/06/17/arts/design/alice-walton-on-her-crystal-bridges-museum-of-american-art.html?_r=0, Accessed April 24, 2016.

one critic describing the \$35 million dollar purchase as “a lowpoint for New York’s artistic patrimony.”²⁴ Of the ten highest paid-for paintings ever, nearly all of them have two things in common: the portrait of a human, or of human events, and aspects of a landscape. Two Klimts and two Picasso’s are bedecked in landscape elements; Jaspas John’s \$110 million American “Flag” (1958) is an entire landscape, as present; Edvard Munch’s \$119.9 million “The Scream” (1895) is manifested as a mental terror precisely because of the ghostly wisps of a tormenting sunset (or, arguably, sunrise), and Jackson Pollock’s “Number 5, 1948” (which sold for an alleged \$140 million) is entirely a landscape; indeed, it could be an incarnation of the very Anthropocene as perceived by one man. Whereas the \$135,000,000. Klimt “Portrait of Adele Bloch-Bauer I” is the ultimate merging of an evocative woman with her luscious surroundings.²⁵

All of these prices are vastly higher than the Vincent van Gogh’s “Sunflowers” sold to an anonymous buyer in March 1987 for \$39.85 million, which at the time was said to be “three times the highest price ever paid for a painting at auction.”²⁶

Pain and Pleasure

Nature inculcates within our every cell by remote or local recognition an unmistakable pleasure, as we sojourn along the Oconee River in Milledgeville, Georgia, named in the now extinct language of the Hitchiti-Creek peoples, where the Eastern Woodland Bison (*Bison bison pennsylvanicus*)²⁷ once roamed, prior to the last herd being slaughtered in the Winter of 1799—a taxon not to be confused with the 100 individual Canadian Wood Bison (*Bison bison athabascae*) recently reintroduced into Alaska’s wilds.²⁸ On this same day we come upon a dead member of the largest

²⁴“Hudson River Schooled, by Hudson River Schooled by James Panero, This article originally appeared in The New Criterion, Volume 27 Number 1, on page 50, Copyright © 2016 The New Criterion <http://www.newcriterion.com/articles.cfm/Hudson-River-Schooled-3894>, Accessed April 24, 2016.

²⁵<http://www.whudat.de/top-20-most-expensive-paintings-in-the-world/>, Accessed April 24, 2016.

²⁶http://articles.latimes.com/1987-03-30/news/mn-628_1_london-auction, Accessed April 24, 2016.

²⁷“The Validity of *Bison bison pennsylvanicus*,” A. W. Schorger, doi:<http://dx.doi.org/10.1093/jmammal/25.3.313a> 313–315 First published online: 8 September 1944, Journal of Mammalogy, Editor-in-Chief, Joseph F. Merritt, Accessed April 24, 2016.

²⁸“Alaska prepares for wood bison return after a century—Bison disappeared from the state in the 1800s or early 1900s,” by Dan Joling, The Associated Press Posted: Mar 20, 2015, <https://www.accessgenealogy.com/native/native-american-history-of-oconee-county-georgia.htm>; <http://www.cbc.ca/news/canada/north/alaska-prepares-for-wood-bison-return-after-a-century-1.3003762>, Accessed April 24, 2016; See also, Discover, “Wood Bison Roam the U.S. for First Time in a Century,” By Carl Engelking | March 23, 2015, <http://blogs.discovermagazine.com/d-brief/2015/03/23/wood-bison-u-s-return/>, Accessed April 23, 2016; See also, http://www.fws.gov/alaska/fisheries/endangered/pdf/wood_bison/factsheet.pdf, Accessed April 24, 2016.

native snake species in America, the shy and docile Eastern Indigo (*Drymarchon couperi*). It has been killed, the head severed and removed, the body chopped in half and left amid a swarm of flies. So much for that perennial Barbizon picnic in a happily-ever-after landscape painting from Fontainebleau's forests; George Inness' Montclair, New Jersey; the astonishing, revelations that consumed Impressionist Ralph Albert Blakelock, or that jubilation of all things Georgia written by John Muir (1838–1914) in his journeys of 1897 published in book form, **A Thousand Mile Walk to the Gulf**.²⁹

Our revulsion at the reality of a gentle and endangered (indeed, nonvenomous) snake slaughtered for no reason; of bison herds famously and assiduously driven to extinction, strikes a chord in us as powerful as its reverse: pleasure and pain compete in our immediate presence, our very collective and psychological future hinging on the balance of which way our species chooses to go: A visit to the “Heart of the Andes,” or the decision most recently by the government of Ecuador to proceed with the aggressive construction of an estimated 300 oil wells within Yasuní National Park,³⁰ as well as the equally insidious forestry plans by the Polish government for Bialowieza National Park.³¹

Fig. 1.5 “Rare Bracket Fungus in Bialowieza National Park,” Photo © M. C. Tobias



Madness and outright desecration or ahimsa, non-violence.³² These are polarities about which we must forthrightly teach our children.

²⁹ Edited by William Frederic Badè, Houghton, Mifflin Company, Boston, MA, 1916.

³⁰ “Oil Drilling Underway Inside the Yasuni National Park of Amazonian Ecuador, April 22, 2016. Antonia Juhasz says that the Ecuadorian government is planning another 300 wells inside the ITT area and are partnering with several Chinese companies to drill in the region to pay off debt to the Chinese government,” The Real News Network, http://therealnews.com/t2/index.php?option=com_content&task=view&id=31&Itemid=74&jumival=16140=, Accessed April 24, 2016.

³¹ “Poland approves large-scale logging in Europe’s last primeval forest—Greenpeace accuses government of ignoring scientists over fate of Białowieża woodland, home to 20,000 animal species and Europe’s tallest trees,” Agence France-Presse, Friday 25 March 2016, <http://www.theguardian.com/environment/2016/mar/26/poland-approves-large-scale-logging-in-europes-last-primeval-forest>, Accessed April 24, 2016.

³² See *An Ahimsa Crisis: You Decide*, by Suhlek C. Jain, Prakriti Bharati Academy, Jaipur, India, 2016.