

AT THE TIPPING POINT: DEFINING AN EARTH JURISPRUDENCE FOR SOCIAL AND ECOLOGICAL JUSTICE

*Judith E. Koons**

*The land, and how we treat it, is what determines our human-ness. Because land is sacred and must be looked after, the relation between people and land becomes the template for society and social relations. Therefore all meaning comes from land.*¹

I. INTRODUCTION

The early twenty-first century has been marked by momentous shifts. Protests for political and economic justice have gripped the globe.² Aligned with contemporary movements for social justice are those claiming ecological equity for future generations and rights of nature.³

* Professor of Law, Barry University School of Law, Orlando, Florida, and faculty advisor for the Center for Earth Jurisprudence, www.earthjuris.org. B.A., J.D., University of Florida, M.T.S., Harvard Divinity School, Copyright, Judith E. Koons, 2012. I am grateful to Barry University and Barry University School of Law for a sabbatical leave that supported the preparation of this article, to all of the teachers who inform my scholarship, and to the Earth community in which we are embedded.

1. Mary Graham, *Some Thoughts About the Philosophical Underpinnings of Aboriginal Worldviews*, 45 AUSTL. HUMAN. REV. 181, 182 (2008).

2. *E.g.*, Kurt Andersen, *The Protester*, TIME MAG., Dec. 26, 2011, at 54-89, available at

http://www.time.com/time/specials/packages/article/0,28804,2101745_2102132_2102373-8,00.html (chronicling protests from Tunisia to Wall Street in naming the protester as Time Magazine's 2011 "Person of the Year"); see also EDITORS OF TIME MAG., WHAT IS OCCUPY?: INSIDE THE GLOBAL MOVEMENT (2011).

3. See CORMAC CULLINAN, WILD LAW: A MANIFESTO FOR EARTH JUSTICE 179, 183-91 (2d ed. 2011) (discussing the international movement for rights of nature); "[a] wild consciousness is swelling rebellious growth all over the world." *Id.*; PAUL HAWKEN, BLESSED UNREST: HOW THE LARGEST SOCIAL MOVEMENT IN HISTORY IS RESTORING GRACE, JUSTICE, AND BEAUTY TO THE WORLD 2, 4, 12 (2007) (observing three roots to the "largest social movement in all of human history": "environmental activism, social justice initiatives, and indigenous cultures' resistance to

Earth systems are also shifting.⁴ Human patterns of production and consumption are exerting massive pressure on planetary processes.⁵ Anthropogenic production of carbon dioxide has crossed into the danger zone, ensuring a surface warming of Earth of at least two degrees Celsius by the year 2100.⁶ Anticipated consequences of global warming at this level include the irreversible melting of the Greenland ice cap and threatened extinction of 15-40% of species.⁷

A group of twenty-eight internationally renowned scientists recently projected that human activities have transgressed biophysical boundaries not only in the area of climate change, but also in two other key areas—anthropogenic interference with nitrogen cycles and species extinction.⁸ The scientists warn that a continued overload on Earth systems will “trigger abrupt or irreversible environmental changes that would be deleterious or even catastrophic for human well-being.”⁹ The effects of ever-expanding economic activity on Earth processes can no longer be ignored, as the future of humanity—and a hospitable Earth as we know it—are at stake.¹⁰

globalization, all of which have become intertwined.”).

4. J.W. Rockström et al., *Planetary Boundaries: Exploring the Safe Operating Space for Humanity*, 14 *ECOLOGY & SOCIETY* 32, 33, 51, 54 (2009), available at <http://www.ecologyandsociety.org/vol14/iss2/art32>.

5. *Id.* at 33; see also Earth Charter Commission, *The Earth Charter*, at pmb1. (2000), reprinted in ELISABETH M. FERRERO & JOE HOLLAND, “THE EARTH CHARTER”: A STUDY BOOK OF REFLECTION FOR ACTION 169, 170 (2005) [hereinafter *Earth Charter*].

6. LENNY BERNSTEIN ET AL., CLIMATE CHANGE 2007: SYNTHESIS REPORT, SUMMARY FOR POLICYMAKERS 8 (2007), available at http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_spm.pdf [hereinafter IPCC SYNTHESIS REPORT] (projecting temperature changes for six scenarios of greenhouse gas emissions).

7. NICHOLAS STERN, HM TREASURY, STERN REVIEW: THE ECONOMICS OF CLIMATE CHANGE, EXECUTIVE SUMMARY, at vi (2006), available at http://www.hm-treasury.gov.uk/d/Executive_Summary.pdf [hereinafter Stern].

8. Rockström, *supra* note 4, at 51, 54; see also *Scientists Outline “Safe Operating Space” for Humanity*, SCIENCE DAILY (Sept. 24, 2009), <http://www.sciencedaily.com/releases/2009/09/090923143339.htm> (reporting the research by the Stockholm Resilience Centre at Stockholm University and the National Center for Ecological Analysis and Synthesis at University of California, Santa Barbara).

9. Rockström, *supra* note 4, at 33.

10. *E.g.*, BILL MCKIBBEN, *EARTH: MAKING LIFE ON A TOUGH NEW PLANET* 25 (2010); E.F. SCHUMACHER, *SMALL IS BEAUTIFUL: ECONOMICS AS IF PEOPLE MATTERED* 3-10 (Hartley & Marks ed., 1999) (1973).

What is the responsibility of the world's systems of law and governance to meet these challenges? Clearly, a "business-as-usual" approach will yield more of the same: calamitous oil wars and oil spills, spiraling poverty and civil strife, mounting global warming, and the extinction of an immeasurable number of species.¹¹ A meaningful response to the ecological and social challenges of this era requires a shift of thinking at the jurisprudential level. Tinkering with our present legal systems will not change the direction of the world as it advances toward the collapse of countries and the planet's major ecosystems.¹² Instead, the transition to a just and sustainable future also requires the transformation of the jurisprudence underlying systems of law and governance. Because the relationship between people and land is "the template for society and social relations," the starting point for jurisprudence should be principles governing the functioning of Earth.¹³

Consequently, this Article offers a vision and definition of jurisprudence—an "Earth Jurisprudence"—to guide the transformation of law and governance for the well-being of humanity and the Earth community. Earth Jurisprudence is a developing field that rethinks law and governance from an Earth-centered perspective.¹⁴ To make the shift from the present

11. Stern, *supra* note 7, at iii-v (proposing that a business-as-usual path for greenhouse gas emissions could lead to global warming at a level that would "transform the physical geography of the world"); U.S. JOINT FORCES COMMAND, THE JOINT OPERATING ENVIRONMENT (JOE) 28 (2010), available at <http://www.fas.org/man/eprint/joe2010.pdf> (discussing the inevitability of a "severe energy crunch" that could "push fragile and failing states further down the path toward collapse"); see also Tim Appenzeller, *End of Cheap Oil*, NAT'L GEOGRAPHIC MAG., June 2004, at 88, available at <http://ngm.nationalgeographic.com/ngm/0406/feature5/fulltext.html> (reporting the devastating consequences of oil extraction in Nigeria).

12. JARED DIAMOND, COLLAPSE: HOW SOCIETIES CHOOSE TO FAIL OR SUCCEED 486-94 (2005); CULLINAN, *supra* note 3, at 29 (reasoning that legislative reform is inadequate without reconceiving our idea of law); see also MILLENNIUM ECOSYSTEM ASSESSMENT BOARD, ECOSYSTEMS AND HUMAN WELL-BEING: GENERAL SYNTHESIS 1, 6 (2005) available at <http://www.maweb.org/en/Synthesis.aspx> [hereinafter MILLENNIUM SYNTHESIS] (reporting that 60% of ecosystem services "are being degraded or used unsustainably").

13. Graham, *supra* note 1, at 182; CULLINAN, *supra* note 3, at 27-30; see also ERIC T. FREYFOGLE, BOUNDED PEOPLE, BOUNDLESS LANDS: ENVISIONING A NEW LAND ETHIC 48-54 (1998) (discussing the goal and ethic of "land health").

14. THOMAS BERRY, THE GREAT WORK 56 (1999) [hereinafter BERRY, GREAT WORK]; Judith E. Koons, *What is Earth Jurisprudence?: Key Principles to Transform Law for the Health of the Planet*, 18 PENN ST. ENVTL. L. REV. 47, 48 (2009)

systems of law and governance that shelter wealthy individuals and corporations, Earth Jurisprudence draws from approaches both within and beyond existing law.¹⁵ In this transition, humankind takes its place as a respectful member of the Earth community and exercises its proper role to establish legal systems that are just and sustainable for all members of the Earth community.¹⁶ In the process, humanity and human institutions will be transformed.¹⁷

To begin this jurisprudential endeavor, Part II of this Article presents key environmental reasons that compel a new approach to jurisprudence. By engaging the question, what is true?, Part III offers a definition of jurisprudence that inquires into the structure, purpose, assumptions, and values of law and governance. To consider the shifting of human consciousness into social and ecological justice, Part IV discusses reinventing what it means to be human through the search for individual and collective wisdom. Part V offers a brief conclusion.

II. WHY A NEW JURISPRUDENCE?

*[T]he change that is taking place in the present is not simply another historical transition or another cultural transformation. Its order of magnitude is immensely more significant in its nature and in its consequences. We are indeed closing down the major life systems of the planet.*¹⁸

A. THE NEED FOR A NEW JURISPRUDENCE

Ecosystems are nonlinear systems that do not gradually decline, but instead reach “triggering thresholds, ecological heart attacks, where they suddenly collapse and die.”¹⁹ In the United

[hereinafter Koons, *Key Principles*]; see also Judith E. Koons, *Earth Jurisprudence: The Moral Value of Nature*, 25 PACE ENVTL. L. REV. 263, 263-64 (2008) [hereinafter Koons, *Moral Value*].

15. Judith E. Koons, *Earth Jurisprudence and the Story of Oil: Intergenerational Justice for the Post-Petroleum Period*, 46 U.S.F. L. REV. 93, 107-14 (2011) [hereinafter Koons, *Intergenerational*].

16. Aldo Leopold, *The Land Ethic*, in A SAND COUNTY ALMANAC AND SKETCHES HERE AND THERE 204 (spec. commemorative ed., Oxford Univ. Press 1989) (1949); CULLINAN, *supra* note 3, at 29.

17. BERRY, *GREAT WORK*, *supra* note 14, at 159-60.

18. THOMAS BERRY, *THE DREAM OF THE EARTH* 206 (1988) [hereinafter BERRY, *DREAM*].

19. HAWKEN, *supra* note 3, at 173; see also MALCOLM GLADWELL, *THE TIPPING POINT: HOW LITTLE THINGS CAN MAKE A BIG DIFFERENCE* 19-29 (Little, Brown & Co.

Nations Millennium Ecosystem Assessment, scientists warned that widespread human-induced changes in ecosystems are “increasing the likelihood of nonlinear changes in ecosystems (including accelerating, abrupt, and potentially irreversible changes) that have important consequences for human well-being.”²⁰

A consortium of respected scientists recently focused on the biophysical boundaries of Earth and found that human activities are pressing these boundaries in three significant areas: climate change, interference with nitrogen cycles, and species extinction.²¹ First, regarding climate change, several noteworthy studies have established that global warming is not only “unequivocal,” but also human-induced.²² The accumulation of carbon dioxide in the atmosphere is now nearly 390 parts per million, eclipsing the “safe” level by 40 parts per million.²³

2000).

20. MILLENNIUM SYNTHESIS, *supra* note 12, at 1; *see also* JANET RANGANATHAN ET AL., WORLD RESOURCES INSTITUTE, ECOSYSTEM SERVICES: A GUIDE FOR DECISION MAKERS, at iv (2008), *available at* http://pdf.wri.org/ecosystem_services_guide_for_decisionmakers.pdf (responding to the findings of the Millennium Ecosystem Assessment, “a four-year global effort involving more than 1,300 experts.”). *Id.*

21. Mickström, *supra* note 4, at 54. Scientists recognize “thresholds” as “non-linear transitions in the functioning of coupled human-environmental systems,” which, if crossed, may trigger changes in the functioning of Earth systems and disrupt social and ecological resilience at regional to global scales. *Id.* at 34, 36 (citing as an example the abrupt retreat of Arctic sea ice prompted by global warming). In contrast, “boundaries” are “human-determined values of the control variable set at a ‘safe’ distance” from global thresholds. *Id.* at 34, 39 (identifying, for example, a boundary of 350 ppm for atmospheric concentration of carbon dioxide). Planetary boundaries focus on the biophysical processes of Earth systems, based on their self-regulating capacities, and “define the ‘planetary playing field’ for the human enterprise.” *Id.* at 36.

22. IPCC SYNTHESIS REPORT, *supra* note 6, at 2, 5; *see also* Pete Spotts, *Climate Study Confirms What Skeptics Scoffed At: Global Warming is Real*, CHRISTIAN SCI. MONITOR (Oct. 22, 2011), <http://www.msnbc.msn.com/id/44996377/> (reporting results of a recent study by the Berkeley National Laboratory, funded in part by the Charles Koch Charitable Foundation, “widely seen as a source of money for conservative organizations and initiatives that have fought efforts to curb greenhouse-gas emissions.”).

23. MCKIBBEN, *supra* note 10, at 15 (advising of nearly 390 parts per million of carbon dioxide in the atmosphere); *see also* Earth’s CO₂ Home Page, CO₂NOW.ORG, <http://co2now.org/> (last visited Aug. 2, 2012) (relaying 395.77 ppm as the concentration of carbon dioxide in the atmosphere for June 2012, based on data from the Mauna Loa Observatory, and tracking the elevation in carbon dioxide since 1955).

If governments fail to implement emission reduction initiatives, the surface temperature of Earth is likely to increase 5.2 degrees Celsius (9 degrees Fahrenheit) by the end of the century.²⁴ Warming of five degrees Celsius will produce significant extinctions of plant and animal species, massive crop declines, and a rise in sea levels that will threaten coastal cities around the world, “including London, Shanghai, New York, Tokyo and Hong Kong.”²⁵

Second, the consortium of scientists also found that the ongoing anthropogenic interference with the nitrogen cycle is “profound.”²⁶ Human activities are converting nitrogen from the atmosphere into reactive forms that accumulate in the land and biosphere, pollute the waterways and coastal zones, and add to the pollution in the atmosphere.²⁷ In the past fifty years, the influx of reactive nitrogen into terrestrial ecosystems has doubled.²⁸ Eutrophication caused by the human-induced increase in the flow of nitrogen and phosphorous has created 150 dead zones in the world’s oceans, ranging up to 45,000 square miles.²⁹

24. A.P. Sokolov et al., *Probabilistic Forecast for Twenty-First-Century Climate Based on Uncertainties in Emissions (Without Policy) and Climate Parameters*, 22 *J. CLIMATE* 5175 (2009). The forecast, in a study conducted by scientists at Massachusetts Institute of Technology, is based on “no policy” scenarios, in which governments have not adopted policies to require reductions in greenhouse gases. *Id.* See also David Chandler, *Climate Change Odds Much Worse Than Thought*, MIT JOINT PROGRAM ON SCI. & POL’Y OF GLOBAL CHANGE (May 19, 2009), <http://globalchange.mit.edu/news/news-item.php?id=76> [hereinafter MIT Press Release] (summarizing findings of a 90% probability range of warming of 3.5 to 7.4 degrees Celsius); RICHARD B. ALLEY ET AL., A REPORT OF WORKING GROUP I OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE: SUMMARY FOR POLICYMAKERS 18 (2007) [hereinafter IPCC WORKING GROUP I], available at <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf> (identifying the emission scenarios of the IPCC Special Report on Emission Scenarios (SRES) that do not include “additional climate change initiatives” such as implementation of the United Nations Framework Convention on Climate Change or the emission targets of the Kyoto Protocol).

25. Stern, *supra* note 7, at v; see also NEIL ADGER ET AL., INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, FOURTH ASSESSMENT REPORT, CLIMATE CHANGE 2007: IMPACTS, ADAPTATION AND VULNERABILITY, SUMMARY FOR POLICYMAKERS 13 (2007) [hereinafter IPCC WORKING GROUP II], available at <http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4-wg2-spm.pdf>.

26. Rockström, *supra* note 4, at 44.

27. *Id.* at 43-45.

28. MILLENNIUM SYNTHESIS, *supra* note 12, at 2 (noting also that the flow of phosphorous has tripled).

29. Press Release, U.N. Environment Programme, Dead Zones Emerging as Big Threat to Twenty-First Century Fish Stocks, U.N. Doc. Env/Dev/758, UNEP/213

Amplified nitrogen and phosphorous act as “slow driver[s] influencing anthropogenic climate change at the planetary level.”³⁰

The conversion of nitrogen into reactive forms takes place through industrial and agricultural activities, as well as through fossil fuel combustion.³¹ Most reactive nitrogen is traced to the expanded use of fertilizer in modern agriculture.³² The chemical intensity of agribusiness is contaminating soil, water, and air, with disruptive effects on habitats that in turn spurs the extinction of species.³³ Human interference with the nitrogen cycle has resulted in crossing this biophysical boundary at the planetary level.³⁴

Third, the current phenomenon of species extinction is the sixth major event of extinction in the history of Earth but the first to be triggered by human activities.³⁵ Scientists estimate that the upper end of the natural rate of mammalian extinction was, for each millennium, one species becoming extinct for every one thousand species of mammals.³⁶ Human activities have

(Mar. 29, 2004), *available at*

<http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=388&ArticleID=4458&l=en> (referring to findings in the Global Environment Outlook Year Book (2004), which noted some of the earliest recorded dead zones in the Chesapeake Bay, the Baltic Sea, Scandinavia’s Kattegat Strait, the Black Sea, and the northern Adriatic Sea, and the best known zone in the Gulf of Mexico, where the Mississippi River dumps fertilizer runoff). United Nations Environment Program Executive Director Klaus Toepfer noted that 146 dead zones—most in Europe and the U.S. East Coast—range from under a square mile to up to 45,000 square miles. *Id.*

30. Rockström, *supra* note 4, at 44.

31. *Id.*

32. *Id.* at 44, 51.

33. MILLENNIUM ECOSYSTEM ASSESSMENT, CURRENT STATE & TRENDS: ECOSYSTEM CONDITIONS AND HUMAN WELL-BEING 834 (2005), *available at* <http://www.millenniumassessment.org> [hereinafter MILLENNIUM ASSESSMENT]; MILLENNIUM ECOSYSTEM ASSESSMENT, ECOSYSTEMS AND HUMAN WELL-BEING: BIODIVERSITY SYNTHESIS 4-5 (2005), *available at* <http://www.millenniumassessment.org> [hereinafter BIODIVERSITY SYNTHESIS]; *see also* THOMAS BERRY, EVENING THOUGHTS 98-99 (2006) [hereinafter BERRY, EVENING].

34. Rockström, *supra* note 4, at 51.

35. *Id.* at 45; *see also* CULLINAN, *supra* note 3, at 35 (discussing the last mass extinction event, approximately 65 million years ago, that was likely prompted by an asteroid that slammed into the Yucatan Peninsula, triggering the extinction of the dinosaurs and most organisms).

36. MILLENNIUM SYNTHESIS, *supra* note 12, at 5 (denoting an extinction rate in the distant past of 0.1-1 extinctions per 1000 species per 1000 years).

increased the extinction rate by 100 to 1,000 times the background rate.³⁷ An estimated 25% of species in taxonomic groups that have been studied are threatened with extinction.³⁸ In the “Red List of Threatened Species,” the International Union for the Conservation of Nature and Natural Resources has identified 19,817 species of plants and animals as threatened species.³⁹ The planetary effect of biodiversity loss of this scale is unimaginable. Biodiversity of species is directly related to functioning of ecosystems, preventing ecosystems from tipping into disturbed states.⁴⁰ The current and projected rate of threatened loss of species takes humanity “deep into a danger zone,” affecting biodiversity throughout the planet.⁴¹

While the foregoing biophysical boundaries have already been crossed, human activities are nearing three other planetary boundaries—freshwater use, land-system change, and ocean acidification.⁴² In addition, interactions between and among the different boundaries may result in destabilizing other boundaries to have wider planetary effects.⁴³ For example, the changes in land use in the Amazon rainforest, when coupled with climate change, could create a “tipping point where the Amazon forest is replaced by savanna-like vegetation by the end of the 21st century.”⁴⁴ The feedback loop could have planetary consequences, affecting surface temperatures across the globe, including remote regions such as Tibet.⁴⁵ A climate change in Tibet, with 15,000

37. Rockström, *supra* note 4, at 46 (noting background extinction rates for marine organisms and mammals of 0.1 to 1 extinction per million species per year). Arguing that we have increased the extinction rate “by at least 1,000 times,” Harvard biologist Edward O. Wilson linked that increase to humanity’s elimination of the natural habitat of other species. Elizabeth Kolbert, *The Human Factor*, ONE EARTH (Nov. 24, 2010), <http://www.oneearth.org/print/7935>.

38. Rockström, *supra* note 4, at 46 (“ranging from 12% for birds to 52% for cycads”).

39. IUCN *Red List version 2012.1*, INTERNATIONAL UNION FOR THE CONSERVATION OF NATURE AND NATURAL RESOURCES, http://www.iucnredlist.org/documents/summarystatistics/2012_1_RL_Stats_Table_1.pdf (last visited July 22, 2012).

40. Rockström, *supra* note 4, at 45-46.

41. *Id.* at 46.

42. Rockström, *supra* note 4, at 48, 51; *see also* Rachel E. Salcido, *Offshore Federalism and Ocean Industrialization*, 82 TUL. L. REV. 1355 (2008) (discussing a “modern ocean industrial revolution”).

43. Rockström, *supra* note 4, at 50-51.

44. *Id.* at 51.

45. *Id.*

glaciers in the Himalaya-Hindu Kush region, would also affect water resources for 750 million people in Asia.⁴⁶ Thus, the ripple effects of encroaching on one geophysical boundary are far-reaching.

Earth is at the tipping point in several significant areas. Corporate-dominated economic activity has driven the planet to this place of potentially cascading catastrophe.⁴⁷ The next section addresses the role that systems of law and governance play in the causes and outcomes of Earth at the tipping point.

B. THE ROLE OF LAW AND GOVERNANCE

Human institutions, including our systems of law and governance, bear responsibility for the rapidly approaching environmental calamities. The present peril of the world is the result of unrestrained economic growth, which has been supported by Western legal systems.⁴⁸ To support this argument, this section of the Article highlights three periods in the development of Western law: the mid-sixteenth century Enlightenment in Europe, the nineteenth century Industrial Revolution in the United States, and the twentieth century rise of the corporation and onset of the environmental movement in the United States. First, Euro-American law and philosophy were shaped by Enlightenment thinking, which ushered in the dawn of modernity in Europe in the mid-sixteenth century.⁴⁹ Enlightenment philosophy reflected a massive shift of thinking that privileged reason and rejected the dogma of religious world views.⁵⁰ In celebrating human reason, Enlightenment thinkers also structured philosophy in ways that subordinated nature and objectified groups of people.⁵¹ For example, Rene Descartes

46. Rockström, *supra* note 4, at 51.

47. *Id.* at 33; *Earth Charter*, *supra* note 5, at pmb1; BERRY, GREAT WORK, *supra* note 14, at 142.

48. *E.g.*, CULLINAN, *supra* note 3, at 67 (“Our legal and political establishments perpetuate, protect and legitimize the continued degradation of Earth by design, not by accident.”); SCHUMACHER, *supra* note 10, at 9, 17 (questioning unlimited economic growth).

49. CULLINAN, *supra* note 3, at 44-46.

50. ELISABETH SCHÜSSLER FIORENZA, RHETORIC AND ETHIC 35 (1999) [hereinafter SCHÜSSLER FIORENZA, RHETORIC] (defining modernity in terms of procedural rationality which privileges objective knowledge, moral practical insight, and aesthetic judgment).

51. “[T]he combination of Enlightenment philosophy and reductionist science . . . transformed the human relationship with the natural world into a tyranny of

asserted that animals were simply insensible machines that lacked minds and could feel no pain.⁵² Francis Bacon, a lawyer and philosopher of the scientific method, rendered nature as female, who should be pursued with ardor, brought to service, and enslaved.⁵³

This kind of thinking is representative of Enlightenment philosophy, which is dominated by hierarchical dualisms such as reason and passion, culture and nature, subject and object, public and private, mind and body.⁵⁴ Subject and object, in particular, is a key dualism that structures Western thought.⁵⁵ Subjects are those who are assigned value; everything and everyone else are considered to be “others.”⁵⁶ Western philosophy recognizes elite white men as subjects.⁵⁷ Nature is considered to be a collection of objects.⁵⁸

In the philosophical stew that shaped Western culture beginning in the sixteenth century, human beings became

exploitation where nature is simply regarded as a resource for the satisfaction of human ends.” Ian Mason, *One in All: Principles and Characteristics of Earth Jurisprudence*, in *EXPLORING WILD LAW: THE PHILOSOPHY OF EARTH JURISPRUDENCE* 36 (Peter Burdon ed., 2011); Judith E. Koons, *Gunsmoke and Legal Mirrors: Women Surviving Intimate Battery and Deadly Legal Doctrines*, 14 *J.L. & POL'Y* 617, 683-85 (2006) (noting the basis in Western philosophy for objectifying and “othering” on the basis of race, class, and sex).

52. RODERICK FRAZIER NASH, *THE RIGHTS OF NATURE: A HISTORY OF ENVIRONMENTAL ETHICS* 17-18 (1989).

53. Francis Bacon, *The Masculine Birth of Time*, in *THE PHILOSOPHY OF FRANCIS BACON* 62 (B. Farrington trans., Liverpool Univ. Press 1964) (1653) (relaying the narrator's offer to bind Nature “to your service and make her your slave”).

54. *E.g.*, MARY FIELD BELENKY ET AL., *A TRADITION THAT HAS NO NAME: NURTURING THE DEVELOPMENT OF PEOPLE, FAMILIES, AND COMMUNITIES* 19-22 (1997); *see also* GENEVIEVE LLOYD, *THE MAN OF REASON: “MALE” AND “FEMALE” IN WESTERN PHILOSOPHY*, at viii, xviii (2d ed. 1993) (discussing the maleness of reason, as a metaphor that “lies at the very heart of our philosophical heritage”).

55. IRIS MARION YOUNG, *JUSTICE AND THE POLITICS OF DIFFERENCE* 99 (1990).

56. *Id.* at 58-60, 96-99; *see also* SIMONE DE BEAUVOIR, *THE SECOND SEX* 48-49 (Howard M. Parshley trans., Vintage Books 1989) (developing the notion of the “[o]ther” as the metaphor by which women have been set aside and subordinated).

57. *See* Judith E. Koons, *Making Peace with Difference: A Hermeneutic of Inclusive Conversation*, 12 *TEX. J. WOMEN & L.* 1, 36 (2002) [hereinafter Koons, *Difference*] (exposing the normative center of the law, which “emanates from and protects the perspectives, experiences, and interests of White, Euro-American, heterosexual men of privilege”); *see also* Lucinda M. Finley, *Breaking Women's Silence in Law: The Dilemma of the Gendered Nature of Legal Reasoning*, 64 *NOTRE DAME L. REV.* 886, 893 (1989) (arguing that “[p]rivileged white men” are the norm for law); *see generally* Lloyd, *supra* note 54, *passim*.

58. BERRY, *GREAT WORK*, *supra* note 14, at 16.

separate from nature.⁵⁹ During this time, the image of nature shifted “from that of a nurturing mother to that of a machine.”⁶⁰ For example, Galileo viewed the book of nature as written in mathematical formulas, to be measured and quantified.⁶¹ Other Enlightenment scientists viewed nature as a complex machine, to be deconstructed and studied in pieces.⁶² The mechanistic and dualistic anthropocentrism of Enlightenment philosophy resulted in constructing nature as an object to be used (and destroyed) for human benefit.⁶³ That structure is part of our current collective thinking and continues to underlie Western systems of law and philosophy in the early twenty-first century.⁶⁴

The second period illustrating the subordination of people and nature to economic growth is the nineteenth century in the United States, during which the legal framework shifted to support industrial development.⁶⁵ Private law, as it existed during the time of the American Revolution, had been “protective, regulative, paternalistic and, above all, a paramount expression of the moral sense of the community.”⁶⁶ The core legal principle governing pre-industrial property law was the common law maxim *sic utere tuo ut alienum non laedas* (use your own so as not to injure another).⁶⁷

59. CULLINAN, *supra* note 3, at 44; *see also* Liz Hosken, *Reflections on an Intercultural Journey into Earth Jurisprudence*, in *EXPLORING WILD LAW: THE PHILOSOPHY OF EARTH JURISPRUDENCE* 24 (Peter Burdon ed., 2011) (referring to the experience of separation).

60. CULLINAN, *supra* note 3, at 44.

61. *Id.* at 44-45.

62. *Id.* at 46.

63. *Id.*; Mason, *supra* note 51, at 36; MATTHEW SCULLY, *DOMINION: THE POWER OF MAN, THE SUFFERING OF ANIMALS, AND THE CALL TO MERCY*, at x (2002) (“[N]o age has ever inflicted upon animals such massive punishments with complete disregard, as witness scenes to be found on any given day at any modern industrial farm.”); *see also* FREYFOGLE, *supra* note 13, at 102 (summarizing the “core rights” of the traditional view of ownership of private property, including the right to “ruin the soil, strip the trees, or destroy wildlife habitat” as long as the adverse effects do not cross the owner’s boundary).

64. CULLINAN, *supra* note 3, at 46.

65. Joseph H. Guth, *Law for the Ecological Age*, 9 VT. J. ENVT. L. 450-58 (2008) [hereinafter Guth, *Ecological*]; Morton Horwitz, *The Rise of Legal Formalism*, 19 AM. J. LEGAL HIST. 251, 251 (1975) (arguing that the U.S. legal system was transformed in the mid-1800s to support “men of commerce and industry”).

66. Horwitz, *supra* note 65, at 251.

67. Guth, *Ecological*, *supra* note 65, at 447-48 (demonstrating that the principle “imposed a rule of strict liability without regard to the social utility of the interfering activity or whether the actor was somehow at fault.”).

After the American Revolution, economic power was assumed by merchants and industrial barons, who created an alliance with the rising legal profession.⁶⁸ To promote the Industrial Revolution, an instrumentalist view of common law replaced pre-industrial values.⁶⁹ A new structure of property and tort law was developed on the core premise that industrial growth was good for society, despite ensuing damage that would not have been tolerated under the pre-industrial system.⁷⁰ Under the newly transformed system of private law in America, courts tolerated damage to the environment unless a plaintiff could demonstrate that it was “unreasonable” in light of the utility of economic growth.⁷¹ The cost-benefit analysis, allowing some damage to persons and property as a trade-off for economic utility, became part of the structure of common law analysis.⁷² The utility analysis persists today, with its silent preference for economic growth and its consequential incapacity to guard against human injury and environmental degradation.⁷³

The third period reflecting the economic dominance of nature is the twentieth century in the United States, marked by the ascendancy of the modern corporation and the environmental movement. In 1962, just as the environmental movement was about to be launched, economist Milton Friedman articulated the widely held view that the corporation is an economic entity with a purpose of maximizing shareholder wealth.⁷⁴ Holding sway in the United States today, the dominant perspective affirms that

68. Horwitz, *supra* note 65, at 251.

69. Guth, *Ecological*, *supra* note 65, at 434; Horwitz, *supra* note 65, at 252 (discussing the bifurcation of legal thought: instrumentalist until around 1850 “to capture and transform the system of private law that existed in 1776” and formalist in public law to limit the ability of the legislature “to bring about redistributions of wealth” after 1850); *see also* R. Randall Bridwell, *Theme v. Reality in American Legal History*, 53 IND. L.J. 450 (1978) (critiquing Horwitz’s thesis).

70. Guth, *Ecological*, *supra* note 65, at 434-35.

71. *Id.*

72. *Id.* at 454-57 (reviewing the development of fault-based liability in negligence and nuisance).

73. *Id.* at 457; *see also* Joseph H. Guth, *Cumulative Impacts: Death-Knell for Cost Benefit Analysis in Environmental Decisions*, 11 BARRY L. REV. 23 (2008) [hereinafter Guth, *Cumulative*] (analyzing the inability of the American legal system to constrain cumulative environmental impacts).

74. MILTON FRIEDMAN, CAPITALISM AND FREEDOM 133 (1962); *see also* Claire Moore Dickerson, *Human Rights: The Emerging Norm of Corporate Social Responsibility*, 76 TUL. L. REV. 1431, 1434 (2002) (discussing the normative articulation of corporate social responsibility, beginning with Milton Friedman’s views of the role of the corporation).

corporations have no social responsibility beyond maximizing profit for the benefit of shareholders within the confines of the law.⁷⁵ An implicit assumption of the traditional view is that a corporation meets social and environmental responsibilities by operating within the constraints of development-friendly law and private contractual arrangements.⁷⁶

Beginning in the 1960s, the environmental movement propelled Congress to adopt a host of legislation.⁷⁷ To a great degree, the nation's environmental legislation is patterned after the common law.⁷⁸ Many of the environmental statutes are built around the same core structure that privileges economic growth.⁷⁹ The statutes envision a balancing of interests, with a presumption that economic development provides a net benefit.⁸⁰ To challenge an activity's environmental impact under many statutes, the burden rests with the plaintiff to demonstrate that damage to persons or property by an economic actor is unreasonable and with the environmental agency to show that proposed regulation of development is reasonable (*i.e.*, cost-justified).⁸¹ By incorporating the premise that economic activity provides a net benefit to society, the law of environmental "protection" allows for the degradation of nature.⁸²

During the Industrial Revolution, the wheels of law and the economy turned against people and nature.⁸³ Corporations that were guided solely by the pursuit of profit (and protected by utility-oriented legal doctrine) began to assume control of the human community and to intrude into the functioning of Earth.⁸⁴

75. *E.g.*, Cynthia A. Williams, *Corporate Social Responsibility in an Era of Economic Globalization*, 35 U.C. DAVIS L. REV. 705, 717 (2002).

76. *Id.* at 718-19.

77. FREYFOGLE, *supra* note 13, at 39-48; *see also* JAMES SALZMAN & BARTON H. THOMPSON, JR., ENVIRONMENTAL LAW AND POLICY 8 (3d ed. 2010).

78. Guth, *Ecological*, *supra* note 65, at 435, 457, 469-71.

79. *Id.* at 470.

80. *Id.*

81. *Id.* at 435, 470-71 (providing the example of Exec. Order No. 12,866, 58 Fed. Reg. 51,735 (Sept. 30, 1993), which requires all federal agencies to promulgate a regulation only where the benefits of the regulation justify the costs imposed, unless specific statutory language provides otherwise).

82. *Id.* at 472.

83. Wendell Berry, *Two Economies*, in ON MORAL BUSINESS: CLASSICAL AND CONTEMPORARY RESOURCES FOR ETHICS IN ECONOMIC LIFE 827, 834 (Max L. Stackhouse et al. eds., 1995) [hereinafter Wendell Berry].

84. BERRY, GREAT WORK, *supra* note 14, at 142-46.

As law and society were transformed in the twentieth century, the common good became equated with the good of corporations, to be supported without interference from the government.⁸⁵ Elite white men and multinational corporations came to dominate economics and to occupy the preferred center of global law and governance.⁸⁶

The peril of Earth and humanity in the twenty-first century is directly related to the short-sighted economic objectives of law and governance. Western systems of law and governance have not safeguarded Earth or people but have allowed corporations to exploit nature and subaltern groups for economic purposes.⁸⁷ This Article advances another vision of law.⁸⁸

III. DEFINING A NEW JURISPRUDENCE: THE THREAD OF TRUTH

*The exclusion of wisdom from economics, science, and technology was something which we could perhaps get away with for a little while, as long as we were relatively unsuccessful; but now that we have become very successful, the problem of spiritual and moral truth moves into the central position.*⁸⁹

In this Article, a new vision of legal philosophy begins with this definition of jurisprudence: a search for wisdom through the study and evaluation of the structure, purpose, assumptions, and values of law.⁹⁰ A jurisprudence that meets the necessities of our

85. BERRY, GREAT WORK, *supra* note 14, at 143; CULLINAN, *supra* note 3, at 64.

86. Koons, *Difference*, *supra* note 57, at 35-36; BERRY, GREAT WORK, *supra* note 14, at 141-46; *cf.* Citizens United v. Fed. Election Comm'n, 558 U.S. ___, 130 S. Ct. 876, 913 (2010) (lifting restrictions on corporations' independent expenditures on political speech).

87. CULLINAN, *supra* note 3, at 29, 66; BERRY, GREAT WORK, *supra* note 14, at 142; *see also* VANDANA SHIVA, EARTH DEMOCRACY: JUSTICE, SUSTAINABILITY, AND PEACE 75 (2005) [hereinafter SHIVA, DEMOCRACY] ("Economic democracy requires reversing some of the most inhuman aspects of economic globalization, which are securing corporate profits by pushing peasants to suicide, the poor to hunger and thirst, and the youth to unemployment.").

88. *Cf.* HAWKEN, *supra* note 3, at 191-94 (discussing the burgeoning of civil society, with at least one million groups dedicated to a world that is just and sustainable).

89. SCHUMACHER, *supra* note 10, at 19.

90. Koons, *Intergenerational*, *supra* note 15, at 96 n.16; *see also* ROBERT L. HAYMAN ET AL., JURISPRUDENCE: CLASSICAL AND CONTEMPORARY, at ix (2d ed.,

time should offer government, business, and civil society a functional interpretive framework with both critical and constructive edges.⁹¹ As reflected in the foregoing section, key components of law and governance to be critiqued and constructed should include the structure, purpose, assumptions, and values of law. The evaluative inquiry at the center of this critical and constructive endeavor is, what is true?⁹² Following a normative thread of truth, this Article compares components of Western systems of law and governance with a system based on a vision of Earth Jurisprudence.

A. THE STRUCTURE OF LAW AND GOVERNANCE: FROM HUMAN-CENTERED TO EARTH-CENTERED

In studying the functioning of our systems of law and governance, a threshold jurisprudential inquiry is the structural center of the law.⁹³ Without doubt, the current systems of law and governance in the West are anthropocentric: human needs, rights, concerns, interests, and appetites determine the substance of law and policy.⁹⁴ While some laws express eco-centric

2002) (articulating a perspective of jurisprudence that considers the ideas and underlying premises of law, which relate to “different conceptions of truth, knowing and meaning, and, perhaps, of values or moral principles.”).

91. Cf. Elisabeth Schüssler Fiorenza, *Feminist Hermeneutics*, in THE ANCHOR BIBLE DICTIONARY 783 (David Noel Freedman ed., 1992) [hereinafter Schüssler Fiorenza, ANCHOR] (proposing the necessity of a “doubled vision” of critique and constructive imagination to accomplish the transformative goals of critical feminist hermeneutics).

92. E.g., SCHUMACHER, *supra* note 10, at 19 (asserting the centrality of truth to the restoration of wisdom). The identity theory of truth rests in large part on the belief that “only a world-sized whole can really be true.” SIMON BLACKBURN, THE OXFORD DICTIONARY OF PHILOSOPHY 185 (1994); see also Stewart Candlish & Nic Damjanovic, *The Identity Theory of Truth*, STAN. ENCY. OF PHIL. (Jan. 13, 2011), available at <http://plato.stanford.edu/entries/truth-identity/> (surveying views of the identity theory of truth). From a perspective of Earth Jurisprudence, truth-seeking is guided by Earth as the central reality and normative referent. BERRY, GREAT WORK, *supra* note 14, at 58, 162; see also Koons, *Moral Value*, *supra* note 14, at 265 (examining the moral status of nature through four moral languages that ask: what is good?; what is fitting?; what is right?; and what is true?). The question of “the true” plumbs depths of meaning and “asks what counts, what can be affirmed as knowledge, and what qualities and things warrant moral consideration.” Koons, *Moral Value*, *supra* note 14, at 265.

93. Guth, *Cumulative*, *supra* note 73, at 25-30 (identifying the flawed legal structure of environmental decision-making that allows cumulative effects, resulting in “ecological overshoot”).

94. NASH, *supra* note 52, at 17-18 (1989) (discussing anthropocentrism in Western ethics).

concerns, they are often stated in introductory or precatory language, not at the enforceable substantive center of the enactments.⁹⁵ By placing other-than-human species and ecosystems outside the legal and moral community, the anthropocentric structure of law and governance is inherently flawed.⁹⁶

The failure of anthropocentricity is apparent in an oil-based global economy in which humans consume oil 100,000 times faster than it was created.⁹⁷ To feed humanity's insatiable appetite for oil, energy extracting companies push for large deposits of fossil fuels past the edge of technology.⁹⁸ As a consequence, oil spills harm people and the natural world, and greenhouse gases from industrial processes pollute the atmosphere.⁹⁹

The flawed nature of human-centered systems of law and governance is most visible in developing countries that are forced into a Western paradigm that serves the global oil economy. In Africa, for example, the primacy of oil has resulted in crushing poverty and the erosion of democratic institutions. In addition, the influx of oil money has fostered widespread official corruption and unleashed civil wars.¹⁰⁰ In Nigeria, a major site of oil extraction, the ecological impacts are devastating; hundreds of oil spills have occurred since 1969.¹⁰¹ Each year, the amount of spillage in Nigeria is equal to the Exxon Valdez spill, which devastated Alaskan waters in 1989.¹⁰²

95. FREYFOGLE, *supra* note 13, at 43.

96. Koons, *Moral Value*, *supra* note 14, at 264-65.

97. Sonia Shah, *A Brief History of Oil*, SUPERCONSCIOUSNESS MAG., July 2008, available at <http://www.superconsciousness.com/topics/environment/brief-history-oil>.

98. Randy Lee Loftis, *Deeper Wells in Gulf of Mexico Pose Heightened Risks*, DALLAS MORNING NEWS (June 27, 2010), <http://www.dallasnews.com/news/local-news/20100627-Deeper-wells-in-Gulf-of-Mexico-1289.ece>; David Greising, *Troubles Run Deep on Gulf Oil Platform*, CHI. TRIBUNE (May 28, 2007), http://articles.chicagotribune.com/2007-05-28/news/0705280090_1_oil-platform-bp-plc-thunder-horse/4.

99. Koons, *Intergenerational*, *supra* note 15, at 117.

100. Appenzeller, *supra* note 11, at 88. For the Niger delta, the "[l]ife expectancy in its rural communities, half of which have no access to clean water, has fallen to little more than 40 years over the past two generations." John Vidal, *Nigeria's Agony Dwarfs the Gulf Oil Spill*, THE OBSERVER (U.K.), May 29, 2010, at 20, available at <http://www.guardian.co.uk/world/2010/may/30/oil-spills-nigeria-niger-delta-shell>.

101. Vidal, *supra* note 100, at 20 (reporting 300 spills a year and 7,000 spills between 1970 and 2000 in "the world capital of oil pollution").

102. *Id.*; Lisa Margonelli, *A Spill of Our Own*, N.Y. TIMES, May 2, 2010, at WK12,

Another example is India, where car manufacturers have descended due to cheap land and labor. As a result, India has become the fastest-growing automobile manufacturer in the world.¹⁰³ Supporting this phenomenon is the global explosion of back-office outsourcing to India, which has created multitudes of call-center workers to be shuttled back and forth from residential areas to the newly burgeoning corporate suburbs.¹⁰⁴ Environmental activist Vandana Shiva asserts that the investment of \$6.6 billion in new factories by leading car manufacturers means one thing: “India has to be made over for the car.”¹⁰⁵

The advancing avalanche of cars is eating into the social and ecological space of Indian cities, wiping out transportation paths, creating traffic jams and pollution, causing thousands of traffic deaths and injuries every day, and consuming vast quantities of oil, steel, and land.¹⁰⁶ Land that is necessary for subsistence farming is being used instead for production of biofuels and highways.¹⁰⁷ India is expanding her highway network with over \$2 billion in funding and loan conditions from the World Bank and the Asian Development Bank.¹⁰⁸ Politicians are staking their futures not only on the emergence of India as the world’s new automobile manufacturing giant, but also on the development of a massive highway system to market India internationally.¹⁰⁹ Super highways are envisioned as the “line of destiny” connecting cities in India “like lines on the palm.”¹¹⁰

This Article envisions a different destiny, based on systems of law and governance that recognize humanity’s relationship with Earth and the sacred rivers, not highways, that have shaped

available at <http://www.nytimes.com/2010/05/02/opinion/02margonelli.html>.

103. VANDANA SHIVA, SOIL NOT OIL: ENVIRONMENTAL JUSTICE IN AN AGE OF CLIMATE CRISIS 50 (2008) [hereinafter SHIVA, SOIL].

104. *Id.* at 51.

105. *Id.* at 50.

106. *Id.* at 50, 55, 68 (referring to traffic accident statistics from the Institute of Road Traffic Education that 230 people are killed and approximately 3,500 are seriously injured in India every day).

107. *Id.* at 52.

108. *Id.* at 66.

109. SHIVA, SOIL, *supra* note 103, at 54, 57.

110. *Id.* at 57. In contrast, Shiva asserts that the “lines on the palm” in India are the mountains and rivers: “[t]hey are an intrinsic part of the ecology and geography of our motherland. . . . The earth has shaped our destiny.” *Id.* at 58.

the contours of the land for eons.¹¹¹ Consequently, this Article supports the development of legal systems that focus on the health of people and the rivers of the biosphere, not the traffic of the roadways of the homosphere.¹¹² A preliminary step in this direction is to recognize that the “human” at the normative center of the law reflects the interests of elite white men and powerful corporations and to re-center law and governance in the Earth community.¹¹³ An Earth-centered structure of law and governance rings true because humankind is not the center of the Earth community, but simply one part of the whole.¹¹⁴ The time has come when humanity must take its appropriate place as one member of a community that is teeming with other life and natural processes.¹¹⁵

To effect this structural shift, ecosystems should be at the heart of law and governance. Across the United States, groups have begun to recognize watersheds such as the Chesapeake Bay and the Everglades as the focal point for governance.¹¹⁶ Ecosystem governance invites collaborative, intergovernmental approaches that privilege local knowledge of ecosystems instead of hierarchical, command and control systems of governance.¹¹⁷ A

111. SHIVA, SOIL, *supra* note 103, at 58. “Substituting sacred rivers with highways, substituting our connection to the sacred earth, her mountains and forests, with connection to automobiles, cement, and coal tar, is rewriting India’s ecology, culture, and history.” *Id.*

112. CULLINAN, *supra* note 3, at 63 (describing “the homosphere” in the context of “the arrogant and obsessively anthropocentric worldview of dominant societies”).

113. *See, e.g.*, Finley, *supra* note 57, at 893 (asserting that white men “are the norm for assessing the reasonable person in tort law; the way men would react is the norm for self-defense law; and the male worker is the prototype for labor law”); BERRY, GREAT WORK, *supra* note 14, at 141-46; SHIVA, DEMOCRACY, *supra* note 87, at 27-31; *see also* Koons, *Difference*, *supra* note 57, at 36 (presenting an interpretive framework interrogating the normative center of the law which protects the perspectives, experiences, and interests of White, Euro-American, heterosexual men of privilege).

114. CULLINAN, *supra* note 3, at 81, 100; Mason, *supra* note 51, at 36-37. The notion of Earth-centeredness may be considered a hermeneutical metaphor that also includes the idea of poly-centeredness, or that the center of the law exists throughout the universe. Conversations with Cormac Cullinan, Author, in Australia (Sept. 19-20, 22-23, 2011).

115. Aldo Leopold, *The Land Ethic*, in A SAND COUNTY ALMANAC 204 (1949).

116. *See, e.g.*, SOCIETY FOR ECOLOGICAL RESTORATION INTERNATIONAL, LARGE-SCALE ECOSYSTEM RESTORATION: FIVE CASE STUDIES FOR THE UNITED STATES (Mary Doyle & Cynthia A. Drew eds., 2008) (reviewing restoration efforts for the Chesapeake Bay, the Everglades, the California Bay-Delta, the Platte River Basin, and the Upper Mississippi River System).

117. Bradley C. Karkkainen, *Collaborative Ecosystem Governance: Scale,*

system of ecosystem governance challenges many assumptions of law and governance, crossing artificial governance boundaries to enable competent and collaborative management of human activities.¹¹⁸ Ecosystem governance invites participants to widen notions of democracy so that other species and Earth processes are included within the moral and political community.¹¹⁹ To consider the Earth community as the normative basis of the law raises the question of the purpose of law and governance.

B. THE PURPOSE OF LAW AND GOVERNANCE: FROM HUMAN GOOD TO EARTH WELL-BEING

From the perspective of liberal political theory, the traditional answer to the question of the purpose of law and governance is “to protect citizens from harm by others (including the government and its agents), so that individuals can be free to pursue their own plans in free agreement with others.”¹²⁰ This formulation facilitates voluntary contractual exchange, which is the mechanism for people to obtain “the basic human goods that are necessary for a good life.”¹²¹ The primary error in the traditional conception of the purpose of law is to limit “the good” to human economic welfare, directing our system of law and governance toward short-sighted and shallow purposes.¹²² This inadequate conception of the good reflects the disconnection of

Complexity, and Dynamism, 21 VA. ENVTL. L.J. 189, 207, 212, 217-19 (2002).

118. Karkkainen, *supra* note 117, at 205, 222-24.

119. *Id.* at 239, 242; Koons, *Moral Value*, *supra* note 14, *passim*.

120. Douglas E. Litowitz, *Some Critical Thoughts on Critical Race Theory*, 72 NOTRE DAME L. REV. 503, 512 (1997) (articulating the classical liberal position of John Stuart Mill, John Rawls, and Ronald Dworkin). The professed purpose of environmental law is protection of human health and the environment. John Dernbach, *Citizen Suits and Sustainability*, 10 WIDENER L. REV. 503, 517 (2004) (listing nine purposes of environmental law). However, when considering the actual purpose of environmental law, the concerns of human beings predominate. *Id.*

121. Henry Mather, *Searching for the Moral Foundations of Contract Law*, 47 AM. J. JURIS. 71, 73 (2002); Litowitz, *supra* note 120, at 512; *see also* JOHN FINNIS, *NATURAL LAW AND NATURAL RIGHTS* 85-90 (1980) (identifying seven forms of human good: life, knowledge, play, aesthetic experience, sociability, practical reasonableness, and religion); MICHAEL J. SANDEL, *LIBERALISM AND THE LIMITS OF JUSTICE* 1 (1982) (arguing that the core thesis of liberalism does not endorse a particular idea of the good but conforms to the “concept of right” that is prior to and independent of the good).

122. *E.g.*, Wendell Berry, *supra* note 83, at 827; FREYFOGLE, *supra* note 13, at 43. Another error is to affix the purpose of law to contractual exchange, transforming “the good” into commodified goods. *E.g.*, Fr. John Kavanaugh, *Challenging a Commodity Culture*, COMMONWEAL, Nov. 2-16, 1984, at 606 (proposing five ways of alternative living to consumerist culture).

humanity from Earth.¹²³ The consequences of that inadequacy are manifest in the environmental and social distress of this era.

From a perspective of Earth Jurisprudence, an overriding purpose of law is to support a mutually beneficial relationship between humanity and the community of life on Earth.¹²⁴ The proper role of humanity is to relate to the planet in ways that benefit all beings and ecosystems.¹²⁵ Furthermore, the proper role of systems of law and governance is not to regulate the environment, but for humanity to regulate itself for the good of the Earth community.¹²⁶ Harmonizing a new conception of law and governance with planetary functions is one way to ensure that this purpose comes to fruition.¹²⁷ The natural world is the source of inspiration for a host of human endeavors and professional disciplines, including architecture and medicine.¹²⁸ Nature also has the potential to bring animating purpose and direction to our systems of law and governance.¹²⁹

The Universe Story is a source of guidance for redefining the purpose of law and governance.¹³⁰ Key principles governing the universe are subjectivity, diversity, and communion.¹³¹ If a system of law and governance were to embrace the principle of subjectivity, the intrinsic value of all components of the Earth

123. See, e.g., BERRY, EVENING, *supra* note 33, at 93.

124. CULLINAN, *supra* note 3, at 29, 68; Mason, *supra* note 51, at 36.

125. BERRY, GREAT WORK, *supra* note 14, at 3, 201.

126. Koons, *Intergenerational*, *supra* note 15, at 103; Karkkainen, *supra* note 117, at 210 n.47, 238-39.

127. CULLINAN, *supra* note 3, at 27-30.

128. *Id.* at 29-30; MAHLON HOAGLAND & BERT DODSON, THE WAY LIFE WORKS 2 (1995) (identifying sixteen qualities of living organisms, many of which apply to social movements); Andrew Pollack, *Patenting Life: A Special Report*, N.Y. TIMES, Nov. 26, 1999, at A1 (discussing the use of plants in the development of drugs such as Mevacor that originated from a fungus found in Japan); see also Norbert Misch-Kunert, *Moments: Bionics*, MOMENTUM, Jan. 2007, at 16-18 (describing the manifold ways nature has contributed to inventions, such as da Vinci's flying machines being inspired by birds, distant regulators in Volvos being adapted from ultrasound in bats, and automobile tires mimicking the paws of cats).

129. CULLINAN, *supra* note 3, at 27-30.

130. *Id.* at 28, 79; BRIAN SWIMME & THOMAS BERRY, THE UNIVERSE STORY (1992) [hereinafter SWIMME & BERRY]; BRIAN THOMAS SWIMME & MARY EVELYN TUCKER, JOURNEY OF THE UNIVERSE (2011); see also Herman F. Greene, *Where is the Universe in the Universe Story?*, in THE ECOZOIC, REFLECTIONS ON LIFE IN AN ECOLOGICAL AGE 57, 70 (2008) (characterizing the Universe Story as both epic narrative and scientific account, in which meaning is constructed with story-telling and scientific theory).

131. SWIMME & BERRY, *supra* note 130, at 71-79.

community would be recognized.¹³² One of the chief dynamics of the universe is to support “the tendency in all things toward fulfillment of their inner nature.”¹³³ The cosmological principle of subjectivity may be translated into the legal principle of standing of other-than-human species and Earth processes.¹³⁴ This concept of standing would then reflect the value of all beings and ecosystems, independent of the narrow interests of human beings.¹³⁵

If a system of law and governance were to honor differentiation, the principle of sustainability would be given primacy to safeguard the diversity of life for present and future generations.¹³⁶ Reflected in a number of international agreements since 1972, sustainability encompasses both an integral operating principle of natural systems, as well as an ecological management tool.¹³⁷ Sustainability could be given legal expression through the doctrine of intergenerational equity, ensuring that each generation preserves biodiversity, cultural diversity, and the qualitative state of the planet “so that it is passed on in no worse condition than the present generation received it.”¹³⁸ Intergenerational justice would embrace not only present and remote communities of humans, but also other-than-human species and Earth processes.¹³⁹

132. SHIVA, DEMOCRACY, *supra* note 87, at 9; Koons, *Intergenerational*, *supra* note 15, at 100.

133. SWIMME & BERRY, *supra* note 130, at 53 (“Each acorn has layered into it the future possible destinies of the oak tree.”).

134. Koons, *Key Principles*, *supra* note 14, at 60.

135. *Id.*

136. Koons, *Intergenerational*, *supra* note 15, at 101.

137. Robert L. Glicksman, *Sustainable Federal Land Management: Protecting Ecological Integrity and Preserving Environmental Principal*, 44 TULSA L. REV. 147, 148-49, 152-54 (2008) (discussing INT’L UNION FOR CONSERVATION OF NATURE AND NATURAL RES., WORLD CONSERVATION STRATEGY (1980), available at data.iucn.org/dbtw-wpd/edocs/WCS-004.pdf; WORLD COMM’N ON ENV’T AND DEV., OUR COMMON FUTURE (1987), available at <http://www.un-documents.net/wced-ocf.htm>; Rio Declaration on Env’t and Dev., 31 I.L.M. 874, 879 (June 1992), available at <http://www.unep.org/Documents.Multilingual/Default.asp?documentid=78&articleid=1163>).

138. EDITH BROWN WEISS, IN FAIRNESS TO FUTURE GENERATIONS: INTERNATIONAL LAW, COMMON PATRIMONY, AND INTERGENERATIONAL EQUITY 37-38 (1989) (proposing the responsibility of succeeding generations to repair damage to the planet, despite the cost).

139. Koons, *Intergenerational*, *supra* note 15, at 124-38.

A system of law and governance that followed the cosmological principle of communion would find its jurisprudential analogue in the cradle of inclusive justice.¹⁴⁰ No one and nothing are outside the web of connections of the universe.¹⁴¹ A vision of a world based on inclusive Earth-centered justice may be found in the Earth Charter, which emphasizes the links between social and environmental justice.¹⁴² For example, the Earth Charter affirms building “democratic societies that are just, participatory, sustainable, and peaceful.”¹⁴³ The Earth Charter joins meaningful and secure livelihood for all humans with ecological responsibility.¹⁴⁴ Eradication of poverty, for instance, is not only a social imperative, but also an ethical and environmental necessity.¹⁴⁵

To discard false divisions between social and environmental justice would also recognize that the “environment” includes not only Earth, but also human bodies.¹⁴⁶ Water and other parts of Earth have been commodified, as have human labor, sexuality, youth, and bodily organs.¹⁴⁷ People who are poor are sometimes as polluted as urban rivers.¹⁴⁸ The planet that we are in danger of creating is a “planet of slums,” as well as degraded ecosystems.¹⁴⁹ The next section considers the assumptions of law and governance that support the pollution of land and people.

140. Koons, *Intergenerational*, *supra* note 15, at 102-03 (considering communion through the lenses of interdependence and ecosystem governance); *see also* Koons, *Difference*, *supra* note 57, at 46 n.243 (discussing a constructive hermeneutic of inclusive mutuality).

141. SWIMME & BERRY, *supra* note 130, at 77-78. At the same time, violence is a necessary part of the creative and destructive cycles of the universe. *Id.* at 51. From the perspective of the Universe Story, destruction calls forth a relation of intimacy, including the relation between predator and prey in this world in which beings serve as food for others. *Id.* at 105; *see also* BERRY, EVENING, *supra* note 33, at 150 (noting that “[n]o living being nourishes itself.”).

142. *See Earth Charter*, *supra* note 5, at 170 (stating that “[o]ur environmental, economic, political, social, and spiritual challenges are interconnected, and together we can forge inclusive solutions.”).

143. *Earth Charter*, *supra* note 5, at 172.

144. *Id.*

145. *Id.* at 175.

146. HAWKEN, *supra* note 3, at 51.

147. *See generally*, MAUDE BARLOW, BLUE COVENANT: THE GLOBAL WATER CRISIS AND THE COMING BATTLE FOR THE RIGHT TO WATER (2007); DOROTHEE SÖLLE & SHIRLEY A. CLOYES, TO WORK AND TO LOVE: A THEOLOGY OF CREATION (1984).

148. HAWKEN, *supra* note 3, at 51.

149. *Id.* at 136 (referring to MIKE DAVIS, PLANET OF SLUMS (2006)).

C. THE ASSUMPTIONS OF LAW AND GOVERNANCE: FROM PERMITTING POLLUTION TO THE PRECAUTIONARY PRINCIPLE

Inaccurate and disturbing assumptions about the natural world, human health, and acceptable economic activities undergird the American system of law and governance. For example, in American environmental law and policy, pollution is an activity that is “permitted.”¹⁵⁰ Pollution is also an activity that is more permissible in low-income communities of color.¹⁵¹ The invisible racial, economic, and ecological injustice of this practice is allowed to persist by a legal system that evaluates applications to disperse toxic materials on a case-by-case, industry-by-industry, and chemical-by-chemical basis.¹⁵²

One assumption of this approach is that just a bit of hazardous chemicals in the water, air, or soil is “safe,” or at least, acceptable.¹⁵³ This assumption allows products and development to move ahead on the unexamined proposition that where there is scientific uncertainty about the environmental or health effects of a proposed activity or substance, it should be allowed to go forward.¹⁵⁴ Moreover, legal relief is often premised on the permissibility of letting an injury take place and sorting out the remedies after the fact.¹⁵⁵

For example, the disastrous effects of these kinds of

150. FREYFOGLE, *supra* note 13, at 43; *see also* E. Donald Elliott, *Environmental Law at a Crossroad*, 20 N. KY. L. REV. 1, 14 (1992) (proposing that “a necessary implication of the economic concept of pollution [is] . . . that you can have too little pollution.”).

151. *See, e.g.*, ENVIRONMENTAL PROTECTION AGENCY, ENVIRONMENTAL EQUITY, at i (June 1992) (finding that “racial minority and low-income populations are disproportionately exposed to lead, selected air pollutants, hazardous waste facilities, contaminated fish tissue and agricultural pesticides in the workplace”).

152. Guth, *Ecological*, *supra* note 65, at 473; Thomas Lundmark, *Systematizing Environmental Law on a German Model*, 7 DICK. J. ENVTL. L. & POL’Y 1, 2, 5 (1998); *see also* Judith E. Koons, *Locational Justice: Race, Class, and the Grassroots Protests of Property Takings*, 46 SANTA CLARA L. REV. 811, 831-32 (2006) (focusing on zoning and land use practices that draw polluting and noxious uses into communities of low-income people and people of color).

153. FREYFOGLE, *supra* note 13, at 43; *see also* Bradford C. Mank, *A Scrivener’s Error or Greater Protection of the Public*, 24 VA. ENVTL. L.J. 75 (2005) (discussing the EPA’s implementing “an ample margin of safety” and delisting “low-risk” sources of carcinogens).

154. Nancy J. Myers, *Introduction*, in PRECAUTIONARY TOOLS FOR RESHAPING ENVIRONMENTAL POLICY 1, 10 (Nancy J. Myers & Carolyn Raffensperger eds., 2006) [hereinafter Myers, *Introduction*].

155. *Id.* at 9 (referring to the primacy of “end of pipe” remedies).

assumptions are demonstrated by the history of dichloro-diphenyl-trichloroethane (DDT). This synthetic chemical was developed by a German chemist in 1874.¹⁵⁶ A Swiss chemist discovered that it could be used as an insecticide in 1939.¹⁵⁷ The first broad use of DDT occurred in 1942 when it was “liberally dusted on troops in Italy during a louse-borne typhus epidemic.”¹⁵⁸ The chemical was so successful at limiting deaths from typhus that it was hailed as a marvel of technology that helped to win the war.¹⁵⁹

After World War II, the next stage in the widening use of DDT was to deploy it to assault “enemy insects.”¹⁶⁰ Americans were promised an insect-free postwar dream; “Mrs. Postwar American” was advised that she could make her house a deathtrap for bugs by spraying walls, screens, and clothes with a DDT solution.¹⁶¹ In 1958, an article in *Popular Mechanics* listed the twenty insects viewed as most destructive, for which the most frequently recommended insecticide was DDT, followed by chlordane.¹⁶² Since DDT was assumed to have little toxic effect in humans, it was widely used for mosquito control in the 1950s.¹⁶³ When the trucks spraying DDT came through neighborhoods, children would often run outside to play in the cloudy and

156. Ted Schettler, *Early Warnings: The History of DDT*, in PRECAUTIONARY TOOLS FOR RESHAPING ENVIRONMENTAL POLICY 1, 198 (Nancy J. Myers & Carolyn Raffensperger eds., 2006); CHRISTOPHER LLOYD, WHAT ON EARTH HAPPENED?: THE COMPLETE STORY OF THE PLANET, LIFE, AND PEOPLE FROM THE BIG BANG TO THE PRESENT DAY 341 (2008) (noting that German chemist Othmar Zeidler originally synthesized DDT).

157. Schettler, *supra* note 156, at 198 (advising that the scientist, Paul Müller, was awarded the Nobel Prize for the discovery).

158. *Id.*

159. *Id.*; see also Arthur Bartlett, *Chemical Marvels Take the “Bugs” Out of Living*, POPULAR SCI., May 1945, at 150, available at

<http://books.google.com/books?id=ACEDAAAAMBAJ&pg=PA150&lpg=PA150&dq=chemical+marvels+take+the+%22bugs%22+out+of+living&source=bl&ots=yWOA0UIkKH&sig=Ck3TmegO5iaAcnVfOTEJpJ4xsGw&hl=en&sa=X&ei=Gk8yUJiNAYH68gTPs4CgDw&ved=0CEUQ6AEwAw#v=onepage&q=chemical%20marvels%20take%20the%20%22bugs%22%20out%20of%20living&f=false> (calling DDT “the sensational new insecticidal agent”).

160. GEORGES TEYSSOT, THE AMERICAN LAWN 141 (1999).

161. Bartlett, *supra* note 159, at 151.

162. Kenneth Anderson, *Your Insect Enemies and How to Fight Them*, POPULAR MECHANICS, May 1958, at 129-132; see also CENTERS FOR DISEASE CONTROL AND PREVENTION, FOURTH NAT’L REP. ON HUM. EXPOSURE TO ENVTL. CHEMICALS (2009) (providing information on chlordane and other organochlorine pesticides).

163. Schettler, *supra* note 156, at 199.

pungent mist.¹⁶⁴

A post-war article also noted that there was some danger of DDT's killing beneficial insects, fish, and birds.¹⁶⁵ However, a study showed that "only" one out of three dogs had signs of poisoning after breathing relatively high concentrations of DDT for eighteen days.¹⁶⁶ Due to the laudatory effects of DDT's efficient killing of pests, the article assured readers that safe methods for its use "will almost surely be worked out by the time it is ready for the civilian market."¹⁶⁷

In 1962, Rachel Carson published *Silent Spring*, which exposed the errors of the assumptions regarding DDT and other pesticides. Trained as a biologist, Carson synthesized a wide body of scientific literature to link the use of synthetic chemicals with contamination of the soil, air, and water.¹⁶⁸ Told in a compelling story, *Silent Spring* advised that the indiscriminate spraying of "pests" not only led to the killing of insects, but also fish, wildlife, and microbial organisms in the soil.¹⁶⁹

Presenting the escalating use of pesticide as part of humanity's "goal of the conquest of nature,"¹⁷⁰ Carson told the story in terms of ecology:

We poison the caddis flies in a stream and the salmon runs dwindle and die. We poison the gnats in a lake and the poison travels from link to link of the food chain and soon the birds of the lake margins become its victims. We spray our elms and the following springs are silent of robin song, not because we sprayed the robins directly but because the poison traveled, step by step, through the now familiar elm leaf-earthworm-robin cycle. These are matters of record, observable, part of the visible world around us. They reflect the web of life—or death—that scientists know as ecology.¹⁷¹

164. Schettler, *supra* note 156, at 199.

165. Bartlett, *supra* note 159, at 152.

166. *Id.* at 153.

167. *Id.* at 152.

168. *See generally*, RACHEL CARSON, *SILENT SPRING* (1962); *see also* Schettler, *supra* note 156, at 200; NASH, *supra* note 52, at 78.

169. CARSON, *supra* note 168, at 7, 56, 91-93. Carson wrote: "As crude a weapon as the cave man's club, the chemical barrage has been hurled against the fabric of life . . ." *Id.* at 297.

170. *Id.* at 85.

171. *Id.* at 189.

Carson also took the “novel step” of including human beings in the web of life and captured wide public attention due to the connection made between the use of biocides and threats to human health.¹⁷² As explained by Carson, the “new environmental health problems” of greatest concern to human beings will arise out of “the delayed effects of absorbing small amounts of pesticides that invisibly contaminate our world.”¹⁷³ Carson cautioned that pollution by synthetic chemicals lingers long in the biosphere with “irreversible” effects that will plague future generations and carry the possibility of the extinction of humankind.¹⁷⁴

Carson’s findings of the links between pesticides and human health made headline news.¹⁷⁵ In response, citizen groups mobilized legal and political efforts to ban the use of DDT.¹⁷⁶ The chemical industry reacted to vilify Carson and *Silent Spring*, asserting that the book was “more poisonous than the pesticides.”¹⁷⁷ Monsanto produced a pamphlet called “Desolate Spring,” featuring a small town that was overrun by insects.¹⁷⁸ The “real threat,” according to American Cyanamid, was “not chemical but biological, in the shape of hordes of insects.”¹⁷⁹

Public pressure forced a series of regulatory actions that culminated in the issuance of a cancellation order in 1972 by the Environmental Protection Agency (EPA).¹⁸⁰ The basis for banning DDT was its persistence, mobility, biomagnification, adverse effects on wildlife, and potential adverse effects on

172. CARSON, *supra* note 168, at 8, 188-89 (also referring to insecticides as biocides).

173. *Id.* at 188.

174. *Id.* at 6, 8, 13.

175. NASH, *supra* note 52, at 79.

176. Schettler, *supra* note 156, at 200-01; *see also* Alexandra Klass, *Bees, Trees, Preemption, and Nuisance: A New Path to Resolving Pesticide Land Use Disputes*, 32 *ECOLOGY L.Q.* 763, 764, 770 (2005).

177. HAWKEN, *supra* note 3, at 55 (quoting a brochure disseminated by the National Agricultural Chemicals Association).

178. *Id.* at 54.

179. *Id.*

180. Consolidated DDT Hearings, 37 Fed. Reg. 13,369 (1972); Schettler, *supra* note 156, at 201-07 (reviewing state and federal proceedings on DDT); *see also* *DDT—A Brief History and Status*, U.S. ENVIRONMENTAL PROTECTION AGENCY, <http://www.epa.gov/pesticides/factsheets/chemicals/ddt-brief-history-status.htm> (last updated May 9, 2012).

humans.¹⁸¹ However, companies continue to produce synthetic industrial chemicals with many of the same qualities.¹⁸²

On a global scale, over 5 billion pounds of insecticides, herbicides, and other biocides are added to the biosphere each year.¹⁸³ As a consequence, each human body on Earth harbors detectible levels of numerous persistent organic pollutants and other toxic substances.¹⁸⁴ For example, samples of blood and urine from one Toronto mother contained twenty-seven carcinogens, thirty-eight toxins that affect reproduction and respiration, and nineteen hormone-disrupting chemicals.¹⁸⁵ Toxic chemicals have so contaminated remote regions of the world that levels of polychlorinated biphenyls in the breast milk of Inuit mothers “fall in a range high enough to classify the milk as ‘hazardous waste.’”¹⁸⁶ Endocrine disruptors, which have “gender-bending” effects, persist in the biosphere, creating populations of Potomac River bass that have both male and female characteristics.¹⁸⁷ Even exposure to pesticides at “safe” levels has created significant percentages of tadpoles that become hermaphroditic and sterile adults.¹⁸⁸

181. Schettler, *supra* note 156, at 204-07, 209; *see also* Lisa Heinzerling, *Reductionist Regulatory Reform*, 8 *FORDHAM ENVTL. L.J.* 459, 481-82 (1997) (discussing uncertainty about the effects of DDT on humans and the debate about risk tradeoffs with substitute chemicals).

182. Schettler, *supra* note 156, at 210. The EPA currently lists in its inventory approximately 80,000 chemicals, of which 3,000 are produced in quantities exceeding one million pounds each year in the United States. *Id.*

183. ARTHUR GRUBE ET AL., EPA, PESTICIDE INDUSTRY SALES AND USAGE: 2006 AND 2007 MARKET ESTIMATES 4, 8 (2004), *available at* http://www.epa.gov/pesticides/pestsales/07pestsales/market_estimates2007.pdf (noting world expenditures of \$39.4 billion and U.S. expenditures of \$12.5 billion in 2007 for pesticides); *see also* JAMES GUSTAVE SPETH, *THE BRIDGE AT THE EDGE OF THE WORLD* 76-77 (2008) (discussing the release of hazardous chemicals and noting that, in 2005, 4.34 billion pounds of 650 chemicals were disposed of in the environment, without being treated or recycled, according to the EPA).

184. SPETH, *supra* note 183, at 35; *see also* Schettler, *supra* note 156, at 196.

185. SPETH, *supra* note 183, at 35. Canadian volunteers were found to contain an average of forty-four of eighty-eight harmful chemicals. *Id.*

186. DIAMOND, *supra* note 12, at 518 (advising that the highest levels of blood toxicity are for Siberia’s Inuit and Eastern Greenland’s First Nations people, both remote from sites of the manufacture and use of chemicals).

187. SPETH, *supra* note 183, at 77.

188. HAWKEN, *supra* note 3, at 33 (discussing the exposure of tadpoles to the pesticide Atrazine at 1/30,000th of “safe” levels and stating “[i]nfinitesimal chemical exposure during development can have a drastically different effect from that at maturity.”).

Despite sixty years of knowledge of the bioaccumulative nature of synthetic chemicals—and their destructive effects on the fabric of life—the assumptions of environmental law and policy support a disjointed, non-aggregative, individualized, “single chemical” analysis.¹⁸⁹ These assumptions are not easily discarded, having become part of the accretions of our legal system since the Industrial Revolution. For example, the narrow focus on individual rights and individualized fault arose in a common law context in which the world was seen as “empty.”¹⁹⁰ In the eighteenth century, colonists viewed North America as a resource-filled, but dangerous, wilderness that awaited transformation by human labor into a peaceful garden.¹⁹¹ Over time, the operative premise that justified transforming raw land into “useful” property became individual rights to private property.¹⁹²

In the realm of products liability, courts have given effect to these assumptions by adopting a pro-development risk-assessment approach that frames the issue as whether a product or technology is *not* unreasonably dangerous.¹⁹³ Industrial and commercial parties have been able to successfully defend against opponents of a product or technology by forcing them to prove with scientific certainty that the product or technology is harmful to stop its development.¹⁹⁴ With a heavy burden on those seeking to prevent the possibility of harm, development has often been approved despite early indications of adverse effects.¹⁹⁵

189. Schettler, *supra* note 156, at 195, 209; Myers, *Introduction*, *supra* note 154, at 12; Guth, *Ecological*, *supra* note 65, at 473; Lundmark, *supra* note 152, at 2; *see also* J.B. Ruhl, *Thinking of Environmental Law as a Complex Adaptive System: How to Clean Up the Environment by Making a Mess of Environmental Law*, 34 HOUS. L. REV. 933, 967 (proposing that “Environmental Law Acts as if Its Subject Matter Is Reducible, Linear, and Predictable”).

190. Guth, *Ecological*, *supra* note 65, at 450-51, 466, 474 (arguing that the legal structure of federal environmental law “was created when the world seemed empty and scale seemed not to matter[.]” but is deeply problematic “under conditions of ecological overshoot”); *see also* FREYFOGLE, *supra* note 13, at 63-65.

191. FREYFOGLE, *supra* note 13, at 93-95.

192. *Id.* at 91-95, 101-02.

193. Myers, *Introduction*, *supra* note 154, at 10.

194. *Id.*; *see also* Carolyn Raffensperger & Nancy J. Myers, *Shifting Burdens: A Proposal for Tort Reform*, in PRECAUTIONARY TOOLS FOR RESHAPING ENVIRONMENTAL POLICY 299, 303 (Nancy J. Myers & Carolyn Raffensperger eds., 2006) [hereinafter Raffensperger, *Shifting*] (advising that scientific certainty is usually considered to be at the 95% level).

195. Myers, *Introduction*, *supra* note 154, at 10-11; *see also* Raffensperger, *Shifting*, *supra* note 194, at 302-04, 309.

Quantitative risk assessment, supported by common law tort concepts and evidentiary rules, has structured the key question as “*how much harm is acceptable?*,” not whether any harm can be prevented or whether there are preferable alternatives.¹⁹⁶ By requiring scientific certainty to justify preventive action and by placing the burden on those who have been injured to produce evidence of lack of product safety, the law has provided perverse industry incentives to hide product information, develop misinformation, and avoid pre-market testing that can generate adverse data.¹⁹⁷ Lack of information about adverse impacts also has allowed companies to be able to continue to sell products and to “hang out in perpetual limbo—a happy limbo for the chemical industry.”¹⁹⁸

That harm to human health and the natural world is an acceptable and necessary consequence of human economic activity is an invalid and dangerous assumption.¹⁹⁹ The case-by-case, cause-by-cause approach of environmental law magnifies this danger by disallowing consideration of the cumulative effects of ecological harm that is being done to Earth.²⁰⁰ The narrow analysis of common law and environmental statutory law “allows the Earth to die a death of a thousand cuts, ignoring the cumulative impacts while we busily justify each cut as if it alone was inflicted.”²⁰¹

The precautionary principle points the way to transforming the destructive premises that are layered throughout environmental law. As a standard of domestic and international law, the essence of the precautionary principle is taking early action to prevent as much harm as possible, despite the level of certainty of knowledge.²⁰² One articulation of the precautionary

196. Guth, *Ecological*, *supra* note 65, at 450-51.

197. Raffensperger, *Shifting*, *supra* note 194, at 313-15; Schettler, *supra* note 156, at 211-12.

198. Liz Buckley, *Report: TSCA Reform Could Save \$5 Billion on Healthcare Costs Annually*, 38 CHEMICAL NEWS 14 (Jan. 25, 2010) (quoting Andy Igrejas, campaign director of Safer Chemicals, Healthy Families, a coalition of 120 advocacy, environmental, and public health organizations).

199. Guth, *Ecological*, *supra* note 65, at 435, 466; Myers, *Introduction*, *supra* note 154, at 10-11.

200. Guth, *Ecological*, *supra* note 65, at 462, 466, 473.

201. *Id.* at 474.

202. Myers, *Introduction*, *supra* note 154, at 8; ZYGMUNT J.B. PLATER ET AL., ENVIRONMENTAL LAW AND POLICY: NATURE, LAW, AND SOCIETY 101 (2004); *see also* Stephen G. Wood et al., *Whither the Precautionary Principle? An American*

principle is expressed in Principle 15 of the 1992 Rio Declaration on Environment and Development: “[i]n order to protect the environment, the precautionary approach shall be widely applied by states according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.”²⁰³

The 1998 Wingspread Consensus Statement provides another, even stronger, version of the precautionary principle: “[w]hen an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically.”²⁰⁴ The stronger version promotes preventive action where there is a possible risk to health or the environment, despite uncertainties of cause and effect.²⁰⁵ Furthermore, the

Assessment from an Administrative Law Perspective, 54 AM. J. COMP. L. 581, 596-97 (2006) (discussing critiques of and alternatives to the precautionary principle); Nancy Myers & Peter Montague, *Answering the Critics*, in PRECAUTIONARY TOOLS FOR RESHAPING ENVIRONMENTAL POLICY 119-29 (Nancy J. Myers & Carolyn Raffensperger eds., 2006) [hereinafter Myers, *Answering*].

203. Rio Declaration on Env't and Dev., 31 I.L.M. 874, 879 (June 1992); see also Myers, *Introduction*, *supra* note 154, at 5-6, 13 (offering articulations of the precautionary principle in U.S. and international law). The Rio Declaration is considered a “weak” version of the precautionary approach; it is framed in the negative and incorporates cost-benefit language. See e.g., Wood, *supra* note 202, at 593-94 (noting triple negative in the second sentence of Principle 15); compare Lesley K. McAllister, *Judging GMOs: Judicial Application of the Precautionary Principle in Brazil*, 32 ECOLOGY L.Q. 149, 157 (2005) (noting that the Rio Declaration “explicitly refers to the use of cost-benefit analysis when it speaks of ‘cost-effective’ measures”), with Markus G. Puder, *The Rise of Regional Integration Law (RIL): Good News for International Environment Law (IEL)?*, 23 GEO. INT'L ENVTL. L. REV. 165 (2011) (advising that the Rio Declaration “does not speak of cost-benefit analysis, but more narrowly refers to ‘cost-effective measures’” focusing on the “efficacy of possible options”).

204. *The Wingspread Consensus Statement on the Precautionary Principle*, SCIENCE & ENVIRONMENTAL HEALTH NETWORK (Jan. 26, 1998), <http://www.sehn.org/wing.htm> [hereinafter *Wingspread Statement*]; Myers, *Introduction*, *supra* note 154, at 11-14; see also Wood, *supra* note 202, at 594.

205. *Wingspread Statement*, *supra* note 204, at 1; Myers, *Introduction*, *supra* note 154, at 14 (identifying four key elements of the Wingspread Statement: “acting on early evidence of harm, shifting the burden of proof, exercising democracy and transparency, and assessing alternatives”); Nancy J. Myers, *Precautionary Procedures: Tools of Analysis and Intention*, in PRECAUTIONARY TOOLS FOR RESHAPING ENVIRONMENTAL POLICY 38-39 (Nancy J. Myers & Carolyn Raffensperger eds., 2006) [hereinafter Myers, *Tools*]; compare Wood, *supra* note 202, at 589-607 (discussing five sets of critiques of the precautionary principle, focusing on the “strong” version), with Myers, *Answering*, *supra* note 202, at 127.

stronger approach places the burden of proof on the proponent of a product or development activity.²⁰⁶ This feature, along with a broadly construed precept of avoiding any harm, provides a promising way to prevent environmental damage that is incremental and accumulative.²⁰⁷

The precautionary principle first arose in Germany out of efforts to save the Black Forest from power plant emissions that were producing acid rain.²⁰⁸ Germans embraced the principle as *Vorsorgeprinzip*, translated as the “forecaring principle.”²⁰⁹ Forecaring, or prior care for the future, raises important questions about the values underlying law and governance, the next jurisprudential consideration.²¹⁰

D. THE VALUES OF LAW AND GOVERNANCE: FROM THE SMALL ECONOMY TO THE GREAT ECONOMY

The industrial and corporate economy has been the engine that fueled and shaped law and governance in the United States, to the detriment of subordinated people and the Earth itself.²¹¹ Extending that argument to the final question regarding the overriding values of law, this Article will consider Wendell Berry’s notions of the Great Economy and the little economy.²¹² The Great Economy includes everything in the universe to which everything is joined: “It is . . . the ultimate condition of our experience and of the practical questions arising from our experience.”²¹³ All parts of nature—the lilies of the field and the birds of the air—are fellow members of the Great Economy.²¹⁴ In

206. *Wingspread Statement*, *supra* note 204, at 1; Myers, *Introduction*, *supra* note 154, at 14.

207. Myers, *Tools*, *supra* note 205, at 39 (advising that emerging precautionary theory is focusing on “developing nuanced and precise ways of analyzing harm, uncertainty, and appropriate responses”); Nancy Myers, *The Precautionary Principle Puts Values First*, 22 BULL. OF SCI., TECH. & SOC’Y 210 (June 2002), available at <http://www.sehn.org/pdf/putvaluesfirst.pdf> [hereinafter Myers, *Values*] (considering the ethical underpinnings of the precautionary principle).

208. Myers, *Values*, *supra* note 207, at 211.

209. *Id.* at 215-16.

210. *Id.*

211. *See supra* Part II.B.

212. Wendell Berry, *supra* note 83, at 827-36.

213. *Id.* at 827-28 (referring to the Great Economy as “a more culturally neutral term for the economy that I have been calling the kingdom of God”); *see also* SHIVA, DEMOCRACY, *supra* note 87, at 14 (discussing three economies: the dominant economy, nature’s economy, and the people’s sustenance economy).

214. Wendell Berry, *supra* note 83, at 829, 835.

the Great Economy, all transactions count; nothing is wasted.²¹⁵ Because human beings cannot understand the whole of the Great Economy, attempts to transcend limitations bring certain penalty.²¹⁶

Just as humankind is completely dependent on the Great Economy, human beings also need a little economy, which is the narrow circle within which humans manage limited affairs.²¹⁷ If it is a good economy, the human economy fits within and corresponds to the Great Economy.²¹⁸ In defining and valuing human good, a good human economy is premised on conserving and protecting its goods.²¹⁹

The industrial economy is not a good human economy because it sees itself as the only economy and does not recognize limitations.²²⁰ The field of economics has been long understood to cross boundaries. For example, in 1825, professors at Oxford were debating whether to establish a professorship for political economy.²²¹ The Provost of Oriel College, Edward Copleston, did not want to open the curriculum to a science “so prone to usurp the rest.”²²² In endowing the professorship, Henry Drummond sought to ensure that the new subject area would remain “in its proper place.”²²³ After nearly two hundred years, the industrial economy pervades all spheres, propelling law, politics, nation-building, and environment-destruction.²²⁴

At the heart of the problem of the industrial economy is that it neither recognizes nor lives within the Great Economy.²²⁵ Fueling this impairment is the pretense that it is making value.²²⁶ Although a human economy can add secondary value to nature as, for example, transforming trees and boards into

215. Wendell Berry, *supra* note 83, at 835. Even as topsoil is eroded from the Midwest and forms in the Gulf of Mexico, the Great Economy demonstrates that what seems to be lost in one place turns up somewhere else. *Id.* at 829.

216. *Id.* at 827.

217. *Id.* at 828.

218. *Id.* at 829.

219. *Id.*

220. *Id.* at 832, 834; *see also* SCHUMACHER, *supra* note 10, at 16-17.

221. SCHUMACHER, *supra* note 10, at 26.

222. *Id.*

223. *Id.*

224. *Id.* at 30-31; Wendell Berry, *supra* note 83, at 834.

225. Wendell Berry, *supra* note 83, at 832, 834-35.

226. *Id.* at 830.

furniture, it cannot make primary value.²²⁷ True value originates only in the Great Economy.²²⁸ Presuming to create value, the industrial economy makes abstract (monetary) value, which does not represent the true value of necessary things, and becomes false, driving, and destructive.²²⁹

Because the highest value of the industrial economy is economic growth, its ideal is to pursue “maximum profit with minimum responsibility.”²³⁰ Consequently, the industrial economy excludes “free goods” such as nature, which is viewed as a fund of resources to mine and exhaust.²³¹ Valuing only what it uses, the industrial economy makes deserts and mountains “useful” by activities such as strip mining.²³² Earth is close to being used up by a global industrial economy that is based on pillage of the Great Economy.²³³

To live in good conscience in an industrial economy can be conflict-provoking. In the 1930s, Lord John Maynard Keynes understood that, when it came to imagining future economic prosperity, assuaging our conscience would require extended rationalization.²³⁴ Keynes dreamed of a time in the future when everyone would be rich and when we shall “once more value ends above means and prefer the good to the useful.”²³⁵ But until then, he warned:

For at least another hundred years we must pretend to ourselves and to everyone that fair is foul and foul is fair; for foul is useful and fair is not. Avarice and usury and precaution must be our gods for a little longer still. For only they can lead us out of the tunnel of economic necessity into daylight.²³⁶

227. Wendell Berry, *supra* note 83, at 830-31 (noting that “primary values all originate in the Great Economy” and giving the example of topsoil, which we cannot make and which is “the foundation of that household of living creatures and their non-living supports that we now call an ecosystem”).

228. *Id.* at 830.

229. *Id.*; see also SCHUMACHER, *supra* note 10, at 4.

230. Wendell Berry, *supra* note 83, at 835; SCHUMACHER, *supra* note 10, at 12;.

231. SCHUMACHER, *supra* note 10, at 29; Wendell Berry, *supra* note 83, at 833.

232. Wendell Berry, *supra* note 83, at 832.

233. *Id.*

234. SCHUMACHER, *supra* note 10, at 12.

235. *Id.*

236. See also John Maynard Keynes, *Economic Possibilities for our Grandchildren*, in *ESSAYS IN PERSUASION* 371-72 (W.W. Norton & Company ed., 1963) (1930).

Eighty years into the Keynesian future, the industrial economy continues to value means above ends.²³⁷ A “monster economy” is destroying the world: luxuries have become needs, wealthy corporations are gutting people and the planet for short-term profits, and many human beings are not aware that they are pretending that “fair is foul and foul is fair.”²³⁸

In contrast, the Great Economy is based on the ideal of maximum well-being with minimum consumption.²³⁹ The primary values of the Great Economy are supported by secondary values of trusteeship and husbandry of the little economy.²⁴⁰ One of the primary values highlighted by Wendell Berry is topsoil.²⁴¹ Human beings cannot make topsoil, which performs the miracle of making life out of death.²⁴² Topsoil receives life that dies into it and makes new life.²⁴³ It is at once “a graveyard, a place of resurrection, and a community of living creatures.”²⁴⁴ Topsoil is the foundation of life and death of ecosystems that human beings may better relate to as neighborhoods.²⁴⁵ The Great Economy is based on the ideal of neighborly love, in which people consider themselves as neighbors to the other members of the Earth community.²⁴⁶

The cogs of the industrial economy work against the Great Economy, greased by the legitimacy of law and governance.²⁴⁷ Just as a good human economy fits within and is harmonious with the Great Economy, a good system of law and governance

237. SCHUMACHER, *supra* note 10, at 18-19, 36.

238. *Id.* at 15, 20; *see also* DR. SEUSS, *THE LORAX* (1971) (recounting the tale of the destruction of the forest of Truffula trees to make Thneeds, things that everyone “needs”).

239. Wendell Berry, *supra* note 83, at 835; SCHUMACHER, *supra* note 10, at 41.

240. Wendell Berry, *supra* note 83, at 830.

241. *Id.*

242. *Id.*; *see also* ELISABET SAHTOURIS, *EARTH DANCE: LIVING SYSTEMS IN EVOLUTION* 117-18 (2000) (referring to the work of VLADMIR I. VERNADSKY, *THE BIOSPHERE* 25 (David B. Langmuir trans., Peter N. Nevraumont ed., 1998) (1926) (defining life as the dispersal of rock in which the crust of Earth is a dynamic system that transforms inorganic minerals into living matter and back into inorganic form).

243. Wendell Berry, *supra* note 83, at 831, 833.

244. *Id.* at 832.

245. *Id.* at 831.

246. *Id.* at 835 (proposing that we “consider the lilies of the field” because we are fellow members of the Great Economy, with “parts inextricably joined to each other, indebted to each other, receiving significance and worth from each other and from the whole.”).

247. *Id.* at 834.

based on Earth Jurisprudence is embedded in the Great Jurisprudence.²⁴⁸ Recognizing the Great Jurisprudence as “written into’ every aspect of the universe,” Cormac Cullinan explains:

Everything about our species, from the size of our brain, the shape of each tooth, and our sense of beauty and colour has been shaped by our interaction with the universe and the plants, animals and microbes with which we have danced in the intimacy of co-evolution. Had anything been different—gravity perhaps—we would have been different. Therefore in a sense the Great Jurisprudence is also written in the bones, muscles, sinews and thought patterns of our own bodies.²⁴⁹

The values of a good system of law and governance are consistent with an Earth Jurisprudence, which nests within and gives expression to the Great Jurisprudence.²⁵⁰ In the Great Jurisprudence, humanity is centered in and part of the whole Earth community, which is centered in the Universe.²⁵¹ Societies of human beings find their right relationship to each other and to Earth by adapting qualities such as subjectivity, diversity, and communion to human institutions of law, economy, education, and religion.²⁵² In the transformation of human institutions, humanity will also reinvent itself.²⁵³

IV. HUMANITY AT THE TIPPING POINT: FROM DESTRUCTION TO SUSTAINABILITY

It is axiomatic that we are at a threshold in human existence, a fundamental change in understanding about our relationship to nature and each other. We are moving from a world created by privilege to a world created by community. The current thrust of history is too supple to be labeled, but global themes are emerging in response to cascading

248. CULLINAN, *supra* note 3, at 78.

249. *Id.* at 79.

250. *Id.* at 78, 82-83; *see also* THOMAS AQUINAS, THE SUMMA THEOLOGICA QQ. 90-91, *reprinted in* GEORGE C. CHRISTIE & PATRICK H. MARTIN, JURISPRUDENCE: TEXT AND READINGS ON THE PHILOSOPHY OF LAW 132-44 (2d ed. 1995) (1266-1273) (discussing the essence of and various kinds of law and their relationship to each other).

251. BERRY, GREAT WORK, *supra* note 14, at 57.

252. *Id.* at 72-77; CULLINAN, *supra* note 3, at 28, 79.

253. BERRY, GREAT WORK, *supra* note 14, at 159.

*ecological crises and human suffering.*²⁵⁴

This Article began with the premise that several planetary systems are reaching the tipping point, and humanity must respond to preserve and restore those systems.²⁵⁵ As a corollary, humankind is also at a tipping point, on the threshold of forming global alliances to safeguard Earth and one another or of destroying humanity and the diversity of life.²⁵⁶ A radical shift in thinking and behavior is necessary because in order to “save the Earth,” humankind must change in ways that reconstitute what it means to be a human being.²⁵⁷

In reality, Earth does not need saving.²⁵⁸ Earth systems will adapt and persist, hospitable or not to human life.²⁵⁹ However, to live in a world that welcomes life as we know it, the human heart needs to be transformed.²⁶⁰ People need to be centered in justice and ecology so as to be present to Earth and all her inhabitants—human and other-than-human—in mutually beneficial ways.²⁶¹ To move in this direction is also to engage the search for wisdom. The work of jurisprudence is animated by the light of wisdom.²⁶² After all, philosophy is the “love of wisdom.”²⁶³ However, for hundreds of years, *homo sapiens* have not lived up to being the “wise species” denoted in our taxonomic unit.²⁶⁴ Thomas Berry

254. HAWKEN, *supra* note 3, at 194.

255. *Id.* at 172-73; Rockström, *supra* note 4, at 33-34, 51-52.

256. HAWKEN, *supra* note 3, at 23, 172-75, 185-90.

257. *Id.* at 185 (quoting KAREN ARMSTRONG, *THE GREAT TRANSFORMATION: THE BEGINNING OF OUR RELIGIOUS TRADITIONS*, at xiv (2006)).

258. *E.g.*, Gavin Mowat, *The Earth Doesn't Need Saving, But Humanity Does*, GLOBAL TIMES, Dec. 9, 2009, <http://www.globaltimes.cn/opinion/editor-picks/2009-12/490623.html>.

259. *Id.*; MCKIBBEN, *supra* note 10, at 2, 27.

260. HAWKEN, *supra* note 3, at 188; *see also Earth Charter*, *supra* note 5, at 180.

261. BERRY, *GREAT WORK*, *supra* note 14, at 3, 201; CULLINAN, *supra* note 3, at 29, 68; Mason, *supra* note 51, at 36; HAWKEN, *supra* note 3, at 189; SHIVA, *DEMOCRACY*, *supra* note 87, at 9-11 (relaying principles of Earth Democracy).

262. *E.g.*, ISAAK I. DORE, *THE EPISTEMOLOGICAL FOUNDATIONS OF LAW* 186, 221 (2007) (discussing Aristotle's philosophy of wisdom as “the highest form of knowledge because it is concerned with eternal and necessary things”).

263. DONALD K. MCKIM, *WESTMINSTER DICTIONARY OF THEOLOGICAL TERMS* 209 (1996); *see also* J.M. Balkin, *Tradition, Betrayal, and the Politics of Deconstruction*, 11 *CARDOZO L. REV.* 1613 (1990) (illustrating deconstructive methodology and critique of logocentrism).

264. *Homo sapiens*, OXFORDDICTIONARIES.COM, <http://oxforddictionaries.com/definition/english/Homo%2Bsapiens> (last visited August 6, 2012) (noting the Latin origin as wise man); Donald E. Watson, *Is Homo Sapiens*

notes that we abandoned our relation with the planet and must find our way back to Earth.²⁶⁵

Humanity's way back to the Earth community is through individual and collective wisdom.²⁶⁶ Fortunately, "something mysterious is stirring in the world," with ecological and social consciousness rapidly transforming the thinking and actions of individuals, civil society, and governments around the globe.²⁶⁷ Some corporations even seem to have gotten bitten by the "green bug."²⁶⁸ One to two million organizations dedicated to social justice and ecological sustainability have formed across the globe.²⁶⁹ There is an "intertwining" of groups with harmonious purposes that is creating a complex web of relationships.²⁷⁰ People, in the form of civil society, are rising to address human and planetary suffering.²⁷¹

To address the ills of humanity and nature, this "complex coalition" of groups is linking up in ways that are reminiscent of biological chains, the building blocks of life.²⁷² The groups are

Sapiens a Wise Species?, 12 TELICOM 11 (May/June 1997), available at [http://hilgart.org/enformy/\\$homosap.html](http://hilgart.org/enformy/$homosap.html).

265. BERRY, GREAT WORK, *supra* note 14, at 147 (advising that "[o]ur Western culture long ago abandoned its integral relation with the planet on which we live").

266. *Id.* at 158; SCHUMACHER, *supra* note 10, at 19; ELISABETH SCHÜSSLER FIORENZA, WISDOM WAYS: INTRODUCING FEMINIST BIBLICAL INTERPRETATION 23 (2001) [hereinafter SCHÜSSLER FIORENZA, WISDOM] (discussing dimensions of wisdom as "a state of the human mind and spirit characterized by deep understanding and profound insight" and as a "figuration of the Divine").

267. CULLINAN, *supra* note 3, at 9; HAWKEN, *supra* note 3, at 5-6, 29, 193-94; SHIVA, DEMOCRACY, *supra* note 87, at 185 (discussing our "ecological and social connectedness").

268. *See e.g.*, RAY C. ANDERSON, CONFESSIONS OF A RADICAL INDUSTRIALIST 10-18 (2009) (recounting the sudden shift of a chief executive officer to "industrial ecology" so that the business would become a "restorative enterprise"); Fiona Harvey, *Scientific Argument Settled Climate Change*, FIN. TIMES (London), Jan. 24, 2007, at 8 (reporting the decision of General Electric to sell products that are environmentally sound and the success of its "Ecoimagination" brand); *see also* Judd Sneirson, *Green is Good: Sustainability, Profitability, and a New Paradigm for Corporate Governance*, 94 IOWA L. REV. 987 (2009) (presenting models for voluntary sustainability practices for corporations).

269. HAWKEN, *supra* note 3, at 2, 4, 12.

270. *Id.* at 5-6; CULLINAN, *supra* note 3, at 178-91 (discussing Earth Jurisprudence and the emerging social movement).

271. HAWKEN, *supra* note 3, at 5-6, 176-77 (noting the role of the Internet and communication technologies in revolutionizing possibilities for small groups and changing sites of power); *see also* Andersen, *supra* note 2, at 54-89 (featuring the protester as "maker of history").

272. HAWKEN, *supra* note 3, at 163, 175 (referring to the work of molecular

functioning organically—honoring the intrinsic value of cultures and Earth, advancing sustainable ideas and practices, and supporting inclusive justice.²⁷³ The movement-without-a-name functions horizontally, encircling the globe as it creates new local knowledge.²⁷⁴ In effect, humanity is in the midst of a profound cultural and ecological revolution in which hearts and minds are being changed in ways that cannot be reversed.²⁷⁵ The Industrial Revolution was a cultural revolution, as were the civil rights, environmental, and feminist movements.²⁷⁶ In the United States, Earth Jurisprudence is the natural forward trajectory of those movements, and like them, people are discovering (after the fact) the creation of new ideas and a new order.²⁷⁷ The predominant values in this Ecozoic Era are social justice, based on inclusion, and ecological sustainability, based on an ethic of responsibility.²⁷⁸

However, this global-local movement will not be sustained without the internal work of its members.²⁷⁹ For individuals seeking wisdom the guiding question is, how ought one live into this new era?²⁸⁰ A beginning point is to recognize that a “commodity culture has formed us in the image and likeness of

biologists MAHLON HOAGLAND & BERT DODSON, *THE WAY LIFE WORKS* (1995)).

273. HAWKEN, *supra* note 3, at 175-83, 187-90.

274. *Id.* at 178, 190; *see also* BELENKY, *supra* note 54, at 63 (advising that “knowledge is always in the making and is always situated” in time, place, and personal standpoint).

275. For instance, in 2005, General Electric decided it would sell products that are environmentally sound and, in 2006, it announced that revenues from its “Ecoimagination” products and services had increased from \$6.2 billion in 2004 to \$10.1 billion in 2005, with a backlog of advance orders of \$17 billion. Fiona Harvey, *Scientific Argument Settled Climate Change*, *FIN. TIMES (LONDON)*, Jan. 24, 2007, at 8; *see also* RAY C. ANDERSON, *CONFESSIONS OF A RADICAL INDUSTRIALIST* 13-17 (2009) (recounting a CEO’s story of turning his carpet manufacturing business away from an extractive industry toward a restorative enterprise); Janet E. Kerr, *The Creative Capitalism Spectrum: Evaluating Corporate Social Responsibility Through a Legal Lens*, 81 *TEMP. L. REV.* 831, 846-52 (2008) (discussing “greenwashing” and “sustainability meets profitability”).

276. PATRICIA SMITH, *FEMINIST JURISPRUDENCE* 11(1993).

277. *Id.*

278. BERRY, *GREAT WORK*, *supra* note 14, at 7-8, 201; HAWKEN, *supra* note 3, at 189-90.

279. HENRI J. M. NOUWEN, *REACHING OUT: THREE MOVEMENTS OF THE SPIRITUAL LIFE* 49-62 (1975) [hereinafter NOUWEN, *REACHING*]; Cormac Cullinan, *Earth Rights: An Idea Whose Time Has Come*, *YOUTUBE* (Sept. 20, 2011), <http://www.youtube.com/watch?v=3UrvU5a8DII>.

280. *See generally* Ralph B. Potter, *Qualms of a Believer*, 69 *SOUNDINGS* 111 (1986).

things.”²⁸¹ In the industrial economy that is driven by corporations and supported by law, politics, education, and media, everything is commodified—work, love, appearance, education, relationships, home, health, water, and Earth.²⁸² Father John Kavanaugh argues that, because the commodity culture drives all levels of life, to live a different way requires an approach that is also comprehensive, systemic, and dialectical.²⁸³

Kavanaugh suggests five interrelated ways to challenge the pervasive commodification of our culture. The first is to develop interiority.²⁸⁴ To transform and recreate humanity’s relationship with members of the Earth community requires wisdom often found in spirituality.²⁸⁵ For Kavanaugh, prayer is “an act of economic resistance, a radical alternative to the commercial imperatives of culture.”²⁸⁶ Many faith traditions and humanism recognize the pervading power of the human heart, which possesses nothing but the power of belief.²⁸⁷ This sacred inner space is a place of formation and connection with the mystery, meaning, and sanctity of Earth.²⁸⁸

The second area is development of community.²⁸⁹ A commodity culture grips people in a “passion for possessions” that masks a “dread of relationships.”²⁹⁰ Consequently, the daily acts of forming and being in community express counter-values to consumerism.²⁹¹ In these relationships, truth can be known and expressed as part of the fabric of living.²⁹² To be in community is also to recognize that human communities are embedded in Earth communities.²⁹³ The practice of community should include

281. Kavanaugh, *supra* note 122, at 608.

282. *Id.* at 606; SCHUMACHER, *supra* note 10, at 30-31, 34-35; SÖLLE & CLOYES, *supra* note 147, at 62-63; SHIVA, DEMOCRACY, *supra* note 87, at 170; BERRY, GREAT WORK, *supra* note 14, at 145.

283. Kavanaugh, *supra* note 122, at 606.

284. *Id.* at 607.

285. BERRY, GREAT WORK, *supra* note 14, at 48-55, 82, 158, 163; HAWKEN, *supra* note 3, at 184.

286. Kavanaugh, *supra* note 122, at 607.

287. *Id.* at 607-08.

288. BERRY, GREAT WORK, *supra* note 14, at 48-55, 82, 163; *see also* DAVID ABRAM, THE SPELL OF THE SENSUOUS (1996).

289. Kavanaugh, *supra* note 122, at 608.

290. *Id.*

291. *Id.*

292. *Id.*

293. BERRY, GREAT WORK, *supra* note 14, at 57; CULLINAN, *supra* note 3, at 81,

practices that honor and celebrate Earth in all her dimensions.²⁹⁴

The third aspect of an ethical way to live into the new era is to develop a commitment to justice, in which ecological sustainability is necessarily linked with social justice.²⁹⁵ With a commitment to environmental and social justice, humanity and all components of the Earth community are understood as holy.²⁹⁶ Kavanaugh advises that the commitment to justice must be given embodied specificity—we must “do something”: “We picket. We inform. We gather information. We protest. We undergo the threat of arrest. We look foolish . . . for [Earth and] the millions in misery.”²⁹⁷

The fourth way to challenge the commodification of humanity and Earth is to simplify ways of living.²⁹⁸ To live in simplicity does not mean to buy bean sprouts and live in a lean-to, but to value persons over things, labor over capital, Earth over “property.”²⁹⁹ A simplified way of being may invite a greater sense of grounding, deeper relationships, and more leftover income to put into service of the world.³⁰⁰

The final dimension of a living alternative to what seem to be cultural imperatives is to open ourselves to the suffering of the world through compassion and personal presence.³⁰¹ To be present to people, species, and ecosystems that are vulnerable and suffering also requires an encounter with our own fragility.³⁰² In this encounter, we may discover that “it is the human heart and hand which, no matter what the conditions of our woundedness, is most subversive and healing in a world of commodity consciousness.”³⁰³ This encounter with the world also allows the healing capacities of Earth to enter into human

100; Mason, *supra* note 51, at 36-37.

294. CULLINAN, *supra* note 3, at 174-75.

295. Kavanaugh, *supra* note 122, at 608-09; *Earth Charter*, *supra* note 5, at 170.

296. Kavanaugh, *supra* note 122, at 609.

297. *Id.*

298. *Id.* at 609-11.

299. *Id.* at 609; FREYFOGLE, *supra* note 13, at 136 (arguing that property law should be “guided by nature”).

300. Kavanaugh, *supra* note 122, at 611; *see also* DUANE ELGIN, VOLUNTARY SIMPLICITY: TOWARD A WAY OF LIFE THAT IS OUTWARDLY SIMPLE, INWARDLY RICH (rev. ed. 1993).

301. Kavanaugh, *supra* note 122, at 612.

302. *Id.*

303. *Id.*

brokenness.³⁰⁴

These five areas are interrelated. To avoid burn-out and a sense of cynical hopelessness, for example, social and environmental activism should be supported by the truth of interiority, community praxis, a detached simplicity, and a present compassion.³⁰⁵ The reinvention of humanity requires each of us to become more human, to embrace our human condition through *inscendence*, not through transcendence, and in this way to intentionally reshape the forces that seek to commodify us and everything around us.³⁰⁶

V. CONCLUSION

*Wisdom demands a new orientation of science and technology towards the organic, the gentle, the non-violent, the elegant and beautiful.*³⁰⁷

This Article defines jurisprudence as a search for wisdom that is informed by following the thread of what is true.³⁰⁸ A structure of law and governance that is oriented toward what is true would recognize the disastrous folly of anthropocentrism and find its center in the Earth community.³⁰⁹ An Earth-based purpose of law and governance would not endorse short-term economic gain, but would regulate human activities to support mutually-beneficial relations among humanity, other-than-human species, and Earth processes.³¹⁰ Assumptions of law and governance that are grounded in Earth would seek to prevent harm to human health and the natural world by embracing precaution where the individual and cumulative impacts of development are uncertain.³¹¹ Finally, Earth-centered values of

304. *E.g.*, HENRI J. M. NOUWEN, LIFE OF THE BELOVED: SPIRITUAL LIVING IN A SECULAR WORLD 69-83 (1992).

305. Kavanaugh, *supra* note 122, at 607.

306. BERRY, DREAM, *supra* note 18, at 207-08 (proposing that “[w]e must invent, or reinvent, a sustainable human culture by a descent into our pre-rational, our instinctive resources. Our cultural resources have lost their integrity.”).

307. SCHUMACHER, *supra* note 10, at 20.

308. *Id.* at 19 (noting the significance of spiritual and moral truth to the restoration of wisdom); BERRY, GREAT WORK, *supra* note 14, at 58; BERRY, EVENING, *supra* note 33, at 81, 84; *see also* EDWARD YOUNG, 2 THE WORKS OF THE REV. DR. EDWARD YOUNG 226 (C.W.S. & H. Spear ed., 1811).

309. *See supra* Part III.A.

310. *See supra* Part III.B.

311. *See supra* Part II.C.

law and governance would not promote maximum profit with minimum responsibility, but would express the Great Jurisprudence based on values of maximum well-being with minimum consumption.³¹² Through an Earth-focus, humanity would no longer be *homo economicus* who is devouring Earth for corporate welfare, but would be grounded in wise ways of living.³¹³

312. See *supra* Part II.D.

313. See generally Edward J. O'Boyle, *The Origins of Homo Economicus: A Note* (April 11, 2008), available at <http://www.mayoresearch.org/files/ORIGINSap112008.pdf> (discussing early uses of the term *homo economicus*); BERRY, GREAT WORK, *supra* note 14, at 142-43; cf. SCHÜSSLER FIORENZA, WISDOM, *supra* note 266, at 23 (relaying that the root meaning of wisdom “comes to the fore in the Latin word *sapientia*, which is derived from the verb *sapere* = to taste and savor something.”).