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10. Religion, Environment, and Economy

Living in a Limited World

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Abstract

Lynn White, Jr., laid out an intellectual framework that continues to dominate the relationship between religion and environment. White's thesis that a religion's cosmology and worldview is decisive in the human treatment of the environment is evident in the work of scholars in the fields of Religion and Ecology and Bible and Ecology. This paper challenges this view by arguing that religion cannot solve the environmental crisis because, contrary to White, the crisis is not straightforwardly a religious problem, that the focus of much of religion's contribution to environmental concern has been inadequate, and that religion's relevance to the environmental crisis is tied to its influence in economic affairs.

Keywords: religion, ecology, environment, economy, limited world

Introduction

When Lynn White, Jr., in his seminal paper, “The Historical Roots of Our Ecologic Crisis,” laid the burden of the environmental crisis on Western Christianity and the biblical cosmology, he also suggested a solution to the crisis, which is, ironically, religion. For White, religion and religious cosmology is determinative of how humans understand their relationship to the natural world. The environmental crisis is rooted in an anthropocentric Western Christian worldview, inherited from Judaism through the biblical cosmology, in which nature is transformed from a subject to be revered to an object to be used. This Western Christian worldview destroyed pagan animism, separated humans from nature, enabling humans, in part, to share in God’s transcendence and to exploit the natural world with indifference to the feelings of natural objects. Because the roots of the environmental crisis are “largely religious,” White maintained that “the remedy must also be essentially religious, whether we call it that or not” (1207). According to White, “What people do about their ecology depends on what they think about themselves in relation to things around them. Human ecology is deeply conditioned by beliefs about your nature and destiny – that is, by religion” (1205).

White was not the first scholar to blame Western Christianity for creating the conditions for the environmental crisis (see Taylor 2016: 277-86), but White uniquely offered religion as also the solution. White’s charge that Western Christianity and its worldview bears a burden of guilt for the environmental crisis has been embraced by many environmental activists, especially by those for whom religion served as a convenient culprit, it has met with stiff criticism from other quarters: biblical scholars have challenged White’s reading of the Genesis creation stories (Trible; Barr; Anderson; Hiers; though cf. Harrelson); historians have questioned White’s argument linking the rise of modern science with the Western Christian worldview (Sessions; Whitney); and other scholars have noted that Western Christian civilizations are not unique in their abuse and exploitation of the environment (Tuan; Dubos; Hughes; cf. Glacken). Nevertheless, White’s thesis that religion is decisive in the human treatment of the environment largely has been accepted and influenced existing academic fields and has generated new fields of study.

Recently, religion scholars have begun to question White’s religious cosmology thesis – that what we think about the human–nature relationship really does matter, that religion is a sufficient agent of social change (see Taylor 2004; 2016: 296-97; Jenkins 2009, 2013). This essay is a contribution in that direction. In what follows, I will argue that religion cannot solve the environmental crisis because, contrary to White, the crisis is not straightforwardly a religious problem, the focus of much of religion’s contribution to environmental concern has been inadequate, and religion’s relevance to the environmental crisis is tied to its influence in economic affairs.

Religion and Environment

Building on the thesis of Lynn White, the interrelationship between religion and the environment seemed apparent and became the subject of much scholarly research, especially in the fields of religious studies and environmental studies, which share analogous investigative interests in patterns of thought and behavior. As noted by Jenkins and Chapple, these two academic fields “share research phenomena where human interaction with environmental

systems is influenced by religious systems and where religious traditions or forms of experience themselves change in relation to changing environments” (442). Numerous studies have been conducted to understand how religious affiliation, participation, and beliefs may affect environmental concern and activism (see Taylor, Van Wieren, and Zaleha; E. Berry: 457-59, and the literature cited therein), and religion scholars, especially, have sought to reform and leverage religious traditions in addressing the environmental crisis (see the 10 volumes edited by Tucker and Grim 1997-2004; Gottlieb 2010). The religious dimension of the environmental crisis has become the legacy of Lynn White.

In the field of religion and ecology, for example, the dominant voices of Mary Evelyn Tucker and John Grim build on Lynn White’s idea that religious worldviews shape environmental behavior. Along with many colleagues, they examine the world’s major religious traditions seeking to uncover traditional environmental knowledge, especially perspectives regarding human-nature relationships. They evaluate the teachings of the religious traditions with regard to their relevance for the environmental crisis, focusing on attitudes, practices, and orientations toward the world. Finally, they seek to reconstruct the religious traditions by suggesting ways that the traditions can adapt to the new circumstances posed by the environmental crisis (2017: 7-8). As with White’s critique, Tucker and Grim are critical of the anthropocentric orientation of the many of the world’s religious traditions, especially the Western religions, and of their dualism that separates humans from nature. Nevertheless, they believe that traditional environmental knowledge – how many premodern humans understood themselves to be embedded within the natural world – is symbolically encoded within the religious traditions and can be retrieved. They thus seek to identify the religious ecologies and cosmologies through which religion functioned in the past in relation to the natural world and can do so again today (2017: 8). For Tucker and Grim, the scholarly task of religion and ecology is to retrieve, evaluate, and adapt sustainable religious worldviews that can contribute to the ethical changes needed for the environmental crisis. Although they recognize issues of consumption, economic growth, and population, Tucker and Grim focus on religious worldviews because they understand that the environmental crisis represents a religious crisis, and so, like White, they seek a religious solution.

The academic field of Bible and ecology, though less prominent in the academy, similarly emphasizes the interface between religion and religious worldviews and the environment, building on the work of Lynn White. Biblical scholars were some of the first critics of White’s thesis, not for connecting religion to the environmental crisis, but rather for his blame of the biblical cosmology in Genesis. More recently, however, a group of biblical scholars and theologians associated with the Earth Bible Project have been “willing to accept the challenge of Lynn White, Jr. and entertain the suspicion that the Bible, too, may have contributed to the current crisis” (Habel: 30). For these scholars, the problem is not with the Bible per se, though they are not willing to acquit the Bible of all blame, but rather with the way that the Bible has been and continues to be read. Recognizing that the Bible has been read from a dualistic, anthropocentric perspective, they offer a new hermeneutic, rooted in ecojustice principles, that gives attention to Earth and the Earth community. Earth is treated as a subject; it has a voice in the biblical text. And the task of the reader “is to take up the cause of Earth and the non-human members of the Earth community by sensing their presence in the text – whether their presence is suppressed, oppressed or celebrated” (Habel: 35). In the end, the Earth Bible

scholars approach the biblical tradition in much the same way that Tucker and Grim treat diverse religious traditions: through retrieval, evaluation, and adapting the text to the new environmental context. The biblical tradition can transform our understanding of the human-nature relationship if the text is read in the right way.

There are, of course, many diverse voices in the fields of religion and ecology and Bible and ecology. Nevertheless, many scholars within these fields continue to work within the idealist framework set out by White: that the environmental crisis is rooted in an anthropocentric, dualistic religious cosmology and thus needs a religious solution. Ironically, White never argued this thesis in his essay. His argument begins in seventh century northern Europe with the introduction of a new plow. The earlier plows in the Near East and the Mediterranean simply scratched the surface, which was sufficient for their light, dry soils. But in northern Europe, with heavy, sticky soils, an entirely new kind of plow was needed, one “equipped with a vertical knife to cut the line of the furrow, a horizontal share to slice the sod, and a moldboard to turn it over” (1205). This new kind of plow, which required as many as eight oxen to pull, transformed agriculture. It could no longer be subsistence farming based on the needs of the family because no family could own eight oxen. Instead, farming became cooperative and was limited only by the new capacity to till the earth. “Man’s relation to the soil was profoundly changed. Formerly man had been part of nature; now he was the exploiter of nature” (1205). White notes that this conception is reflected in illustrated calendars. In older calendars, the months of the year were represented by passive personifications, but in the newer Frankish calendars, men are exploiting the natural world by plowing, harvesting, chopping trees, and butchering pigs.

White’s argument is coherent up to this point. Then he makes an idealist turn, connecting the “novelties” of the plow and calendar with “larger intellectual patterns” (1205), namely, the anthropocentric and dualist Western Christian worldview. His argument assumes that the Western Christian worldview, with its new understanding of the relationship between humans and nature, laid the foundation for the development of modern science and technology and the exploitation of the natural world. Putting aside White’s many historical claims, his argument assumes a causal relationship between a religious worldview and historical change with no evidence or justification. Moreover, he treats the religious worldview in isolation from economic, social, political, and other factors (see Whitney). White’s argument could have just as reasonably taken a materialist turn, explaining how medieval technological developments shaped and reinforced a particular theological strand within Christianity (see Santmire).

Although the correlation between religious beliefs and environmental concern has been well documented, with mixed results, the material impact of religion on the environment, both positively and negatively, remains an open question (see Taylor, Van Wieren, and Zaleha). Many material factors contribute to human interaction with the environment, including economic, social, and technological factors, so that benevolent environmental behavior and actions are not simply a matter of thinking and believing appropriately. Religious values may be frustrated by other concerns, and material issues may prevent the realization of idealist values. There is often a disjunction between belief and practice. White’s focus on religion as both the cause and solution to the environmental crisis has encouraged religious and biblical studies scholars to focus primarily on religious worldviews, with insufficient attention to how

economic, social, and political systems help create and reinforce such worldviews and provide the means for implementing the values generated by those worldviews (Whitney: 169).

Environment and Economy

Not all scholars in the field of religion and ecology work within Lynn White's religious worldview framework. In the late 1970s, Rosemary Radford Ruether published a short essay, summarizing much of her early thought, in which she critiqued the Western religious responses to the environmental crisis. She recognized two distinct responses: a romantic neoanimism, which sought to return to our primitive religious roots when humans were in harmony with nature, and a stewardship conservationism, which sought to conserve natural resources and be good stewards of the environment. For Ruether, both approaches were inadequate because "there was little recognition that [the environmental] crisis took place within a particular economic system" (1130). Ruether noted, for example, that the environmental movement was largely the product of First World industrialized nations, and religious environmental concern gave little or no attention to the other major religious social movements of the day – the liberation movements in the Third World and especially Latin America. Both types of religious responses regarded the environmental crisis primarily "as a crisis between 'man' and 'nature,' rather than as a crisis resulting from the way in which a particular exploitative relationship between classes, races and nations used natural resources" (1130). The destruction of the natural environment and the social and economic exploitation of people in society are part and parcel of the same reality.

Ruether recognized that the interaction of humans with the environment and with each other shared the same logic of domination, and thus she steered some segments of religion and ecology toward ecojustice, which emphasizes "the reordering of access to and use of natural resources within a just economy" (Ruether: 1131). Other scholars, in the field of ecological economics, recognize that ecosystems and economic systems are thoroughly integrated, but their work has had little impact on the fields of religion and ecology and Bible and ecology.

Ecological economics "views the socioeconomic system as part of the overall ecosphere, emphasizing carry capacity and scale issues in relation to the growth of the human population and its activities, and the development of a fair system of property rights and wealth distributions" (Costanza: 980). It emerged out of traditional neoclassical economics in the early 1990s due to the failure of modern economic theory to adequately address the environmental crisis. In particular, its practitioners argue that the traditional economic "vision of unlimited growth is in fundamental conflict with the ecological perspective, which sees scale and carrying capacity limits as central to the analysis of any biophysical process" (Harris: 18; see further Perrings; Gowdy). They are critical of notions of dematerialization, that the human economy can be decoupled from the natural environment (see Jackson: 67-86), and that the current economic system is sustainable.

One of the analytical tools that ecological economists use to illustrate the relationship between the ecosystem and the economy is the IPAT formula developed through a scientific exchange in the early 1970s (Ehrlich and Holdren 1971, 1972; Commoner). The formula states that the human impact on the environment (I) is equal to the population (P) times affluence (A), which includes both consumption and production, times the impact of the technology

(T). Although this formula is a mathematical identity and thus its evaluative function is limited, its heuristic value is nevertheless significant. The formula makes clear that there are multiple forces driving the environmental crisis, that these forces do not act independently, and that their relationship is multiplicative (see York, Rosa, and Dietz).

The rapidly growing human population, for example, is often singled out as the environmental problem (Ehrlich), but according to the IPAT formula it cannot be isolated from the effects of affluence and technology (see Jackson: 6-7). Population growth also cannot be ignored or dismissed (contra Francis: 50). The interdependence of these forces can be seen with fracking. Not only does fracking produce multiple forms of pollution, but the extraction of oil through fracking contributes to both production and consumption, increasing affluence. It is the multiplicative relationship of these forces, however, that is the most impactful on the environment. Using widely accepted figures, the environmental impact on the planet increased from 1900 to 1950 by almost 11-fold, even though the individual increase of each component was rather modest (ranging from 40% to 290%). From 1950 to 2011, however, the increase in the human impact on the environment was 134-fold. Population, affluence, and technology each experienced significant increases over the six decades (ranging from 280% for population to 1040% for affluence), but their multiplication results in an exponential increase in environmental impact. This “great acceleration” in environmental impact since 1950, which can be identified in many environmental and economic scales, contributes to the rationale of a new era, the Anthropocene (Steffen et al.).

Ecological economists have demonstrated the integral relationship between energy and economic growth, which is connected to affluence (Brown et al.; Sorrell). The economy – the totality of production and consumption – has a metabolism that is fueled by energy, much like the metabolism of the human body is fueled by food. Historically, new sources of energy, especially fossil fuels, have enabled economic growth, and the shortage of energy would directly limit economic activity. Given this relationship between energy and affluence, it is not possible “to increase socially desirable good and services substantially without concomitantly increasing the consumption of energy and other natural resources and without increasing environmental impacts that now include climate change, pollution, altered biogeochemical cycles, and reduced biodiversity” (Brown et al.: 22). As of 2011, with no economic growth in the U.S. and no increase in the global population, the global community would require a five-fold increase in the rate of energy consumption, which comes with at least a five-fold increase in environmental impacts, to raise the global population to the standard of living (or level of affluence) in the U.S. (Brown et al.: 22). Of course, economic growth in the U.S. and the global population have increased each year since 2011, and given the multiplicative relationships in the IPAT formula, the energy required to meet the U.S. standard of living increases exponentially.

Can technology offer a solution to the increasing need for more energy? Short of discovering a new, relatively pollution-free source of energy, such as a breakthrough in nuclear fusion, technology has best contributed to energy efficiency, squeezing more energy and productivity out of less natural resources (on the limits of renewable energy sources, see Trainer 2007, 2008, 2012; Zehner; contra Jacobsen and Delucchi 2011a, 2011b, see Clark et al.). But such efficiency does not result, paradoxically, in less energy consumption. Jevon’s paradox, as it has come to be known, is the recognition that increased efficiency generates

increased demand of a natural resource rather than decreased demand (Alcott; Foster et al.; cf. Saunders). More efficient gasoline engines, for example, have not resulted in less gasoline consumption but rather more miles driven, in bigger cars, and with more powerful engines. In other words, according to Jevon's paradox, gains in efficiency are offset by a rise in affluence, leading often to an even greater human impact on the environment. Because more efficient energy production results in greater economic growth, technology does not often reduce the demand for energy or the environmental impact of the economy.

Religion and Economy in a Limited World

According to most ecological economists, a continually growing economy is simply impossible; it cannot transgress the ecological limits of the planet. The economy is a subsystem of the biosphere. Consequently, ecological economists have proposed various combinations of limited growth, zero-growth, and de-growth to maintain a sustainable global economy (see Huetting), though they are largely ignored or dismissed by traditional economists. As Kenneth Boulding, an economist and social scientist of the mid-twentieth century, famously stated, "Anyone who believes exponential growth can go on forever in a finite world is either a madman or an economist."

Although the debate with traditional economists over limits cannot be addressed adequately in this context (see the preliminary remarks in Harris), it is sufficient simply to recognize that limited natural resources and finite planetary boundaries are incompatible with a continuously growing economy that is dependent on such resources and limited by such boundaries (Rockström et al. 2009a, 2009b; Steffen et al.). Given the significant and causal relationship between environment and economy, what role might religion have in environmental discussions?

As noted above, religion cannot solve the environmental crisis. Nevertheless, religion remains an important component because of what it can contribute to both environmental and economic discussions. First, and widely recognized, religion offers a language of moral seriousness within a value-oriented context that is helpful in shaping institutional and individual behavior, and it provides models for humane and compassionate engagement that are useful for environmental activism and economic reform (Gottlieb 2007, 2009). Religion places the environmental crisis and the necessary economic reform within a moral context. But religion also has another role. The historical nature of religions enables them to offer a rich tradition of alternative ways of living and being human. As Wendell Berry notes:

We are, after all, trying now to deal with the failure of scientists, technicians, and politicians to "think up" a version of human continuance that is economically probable and ecologically responsible, or perhaps even imaginable. If we go back into our tradition, we are going to find a concern with religion, which at a minimum shatters the selfish context of the individual life, and thus forces a consideration of what humans beings are and ought to be (39).

One specific way in which the biblical religions speak about living and being human is in the context of a limited or zero-growth economy.

Our current conception and experience of an unlimited growth economy, which is made possible through the exploitation of fossil fuels, is only a couple of hundred years old. The vast majority of human civilization, including ancient Israel which produced the Bible, has been lived out within the context of a zero-growth or very limited growth economy. Subsistence rather than surplus was largely the goal of production, and consumption was thus more closely tied to human need. There were, of course, notable historical exceptions, and history is filled with the rise and fall of individuals and regimes seeking to acquire more, but from the dawn of agriculture (roughly 10,000 years ago) until the 1800s, there was not any appreciable per capita economic growth. This is the economic world of the Bible, and the biblical scribes expected the Israelites to live their lives within such a limited world. Yet such a limited economy was not without its problems: selfishness, corruption, and exploitation are not unique to capitalism. Thus, the biblical scribes articulated within the Torah a vision of how the people can live justly in their social and economic relations. The Bible offers an alternative way of being human and living well in a limited world.

The reality of a limited world is incompatible with the current economic system, but it is not enough simply to slow or even halt the growth of the economy because growth is built into the system (Pirgmaier). The current economic understandings of property and natural resources, along with the structure of the monetary system, subordinate ecological and social considerations to the economic system's need for growth (Griethuysen; Sorrell: 1797-1801). The current economy needs growth to function, and thus a sustainable economy without growth cannot be achieved without rethinking the axioms and values of the current economic system and restructuring the monetary system. Religion and the Bible can contribute much in this regard, but space only permits two preliminary comments by way of example.

First, the use of natural resources is treated as a "free gift" in the current economic system. If the world were unlimited, as traditional economic theory treats it, then this might make sense, but the world is limited and the use of limited resources by some precludes the use of those resources by others and deprives them of the value that the limited quantity and scarcity of such resources would produce. The Bible suggests that the world and all its resources belong to God, who created the world and so has claim to all that is in it (Psalm 24:1). This becomes explicit in YHWH's relationship to Israel. YHWH promises an inheritance of land to all the Israelite families, apportioned by lot according to their size (Numbers 26:52-56), but YHWH also makes clear that the land belongs to him (Leviticus 25:23). The Israelites may use the land, but they do not own it. They may even sell the land, but only its usufruct is at stake, and then only for the years that remain until the next fifty-year-jubilee when everyone should return to their original inheritance (Leviticus 25:8-17). In the limited growth economy of the biblical world, everyone had a right to the use of land because no one owned the land and its resources except God, and those who did not possess land, such as Levites, resident aliens, widows and orphans, were to be supported by those who did (Deuteronomy 24:19-21, 28-29; 16:9-15; see Simkins). This biblical tradition challenges the current economic understanding of property by suggesting that the earth and all its natural resources belong to the people of the earth. Historically, ownership of all land and natural resources is ultimately the result of theft, plunder, and conquest, but theologically, the use of the land and its resources belongs to all people who inhabit the earth. To them is owed the value of the resources.

Second, the current monetary system, a fractional reserve banking system, is based on interest-bearing debt. Rather than national governments creating money interest-free, most money in circulation is created by commercial banks as credit entries in their customers' accounts in the form of interest-bearing loans. In other words, the circulation of money is dependent on debt, which must continually grow in aggregate to compensate for the money taken out circulation through taxes and as bank capital to reduce the risk of insolvency (Sorrell: 1797-1801). The structure of the monetary system requires economic growth. The problem with debt in the economy of the biblical world was the exorbitant interest rate charged on loans. Generally set at a fixed rate between 33% and 50% per year, loans were not often expected to be paid back. Instead, the creditor made loans to gain access to the collateral, which was usually either a portion of the usufruct of the debtor's land or the debtor's own labor. In fact, the lack of economic growth potentially kept the debtor in service to the creditor indefinitely (Boer: 156-63). The biblical scribes, however, sought to reform this system. The Deuteronomic scribes introduced a seven-year cycle of debt remission and manumission (Deuteronomy 15:1-17), whereas the Priestly scribes introduced a more complicated system of redemption by kin, hired labor, and remission of debts within a fifty-year cycle (Leviticus 25:25-55). Both scribal groups agreed that interest, which exploited the needs of the debtor by forcing him into the service of others, should not be charged on loans to fellow Israelites (Leviticus 25:36-37; Deuteronomy 23:19-20). Although current interest rates are not as exorbitant as those in the ancient world (with perhaps the exception of some credit cards and payday loan businesses), interest-bearing debt is not necessary for a monetary system. The government can create and distribute money interest-free. In a limited or zero growth economy, there is little rationale for interest.

The biblical tradition offers an alternative way of living and being human. From the perspective of a world of unlimited economic growth, these biblical ideas perhaps give the appearance of being utopian ideals. They are not. Rather, they are reforms that sought to ensure just economic relations in the ancient world. In his essay, "Faustian Economics: Hell Hath No Limits," Wendell Berry has argued that limits are essential to what it means to be human – this is a biblical idea. Humans have always lived in a limited world, though this is often forgotten. The environmental crisis has reminded us of our limits. It is not a question of when we will reach our limits, we have already begun to do so, but rather how we encounter our limits. This, according to Berry, is the character of our being human:

Whichever way we turn, from now on, we are going to find a limit beyond which there will be no more. To hit these limits at top speed is not a rational choice. To start slowing down, with the idea of avoiding catastrophe, *is* a rationale choice, and a viable one if we can recover the necessary political sanity. Of course it makes sense to consider alternative energy sources, provided *they* make sense. But also we will have to re-examine the economic structures of our lives, and conform them to the tolerances and limits of our earthly places. Where there is no more, our one choice is to make the most and the best of what we have" (42).

Bibliography

Alcott, Blake

2005 "Jevon's Paradox." *Ecological Economic* 54: 9-21.

Anderson, Bernhard W.

1975 "Human Dominion over Nature." Pp. 27-45 in *Biblical Studies in Contemporary Thought*. Edited by M. Ward. Somerville: Greeno, Hadden, and Co.

Barr, James

1972 "Man and Nature: The Ecological Controversy and the Old Testament." *Bulletin of the John Rylands Library* 51: 11-26.

Berry, Evan

2013 "Religious Environmentalism and Environmental Religion in America." *Religion Compass* 7, 10: 454-66.

Berry, Wendell

2008 "Faustian Economics: Hell Hath No Limits." *Harper's Magazine* 316, 1896: 35-42.

Boer, Roland

2015 *The Sacred Economy of Ancient Israel*. Library of Ancient Israel. Louisville: Westminster John Knox.

Brown, James H., William R. Burnside, Ana D. Davidson, John P. DeLong, William C. Dunn, Marcus J. Hamilton, Norman Mercado-Silva, Jeffrey C. Nekola, Jordan G. Okie, William H. Woodruff, and Wenyun Zuo

2011 "Energetic Limits to Economic Growth." *BioScience* 61: 19-26.

Clark, Christopher T. M., Staffan A. Qvist, Jay Apt, Morgan Bazilian, Adam R. Brandt, Ken Caldeira, Steven J. Davis, Victor Diakov, Mark A. Handschy, Paul D. H. Hines, Paulina Jaramillo, Daniel M. Kammen, Jane C. S. Long, M. Granger Morgan, Adam Reed, Varun Sivaram, James Sweeney, George R. Tynan, David G. Victor, John P. Weyant, and Jay F. Whitacre

2017 "Evaluation of a Proposal for Reliable Low-Cost Grid Power with 100% Wind, Water, and Solar." *Proceedings of the National Academy of Sciences* 114, 26: 6722-27. Available online at <http://www.pnas.org/content/114/26/6722>.

Commoner, Barry

1972 "A Bulletin Dialogue on 'The Closing Circle': Response." *Bulletin of the Atomic Scientists* 28, 5: 17, 42-56.

Costanza, Robert

1996 "Ecological Economics: Reintegrating the Study of Humans and Nature." *Ecological Applications* 6, 4: 978-90.

- Dubos, René
1972 *A God Within*. New York: Charles Scribner's Sons.
- Ehrlich, Paul R.
1970 *The Population Bomb: Population Control or Race to Oblivion*. New York: Ballantine Books.
- Ehrlich, Paul R. and John P. Holdren
1971 "Impact of Population Growth." *Science* 171, 3977: 1212-17.
1972 "A Bulletin Dialogue on 'The Closing Circle': Critique." *Bulletin of the Atomic Scientists* 28, 5: 16, 18-27.
- Foster, John Bellamy, Brett Clark, and Richard York
2010 *The Ecological Rift: Capitalism's War on the Earth*. New York: Monthly Review.
- Francis I, Pope
2015 *Laudato si*. Available online at http://w2.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html.
- Glacken, Clarence J.
1976 *Traces on the Rhodian Shore: Nature and Culture in Western Thought from Ancient Times to the End of the Eighteenth Century*. Berkeley: University of California Press.
- Gottlieb, Roger S.
2007 "Religious Environmentalism: What it is, Where it's Heading and Why We Should be Going in the Same Direction." *Journal for the Study of Religion, Nature and Culture* 1, 1: 81-91.
2009 *A Greener Faith: Religious Environmentalism and Our Planet's Future*. Oxford: Oxford University Press.
- Gottlieb, Roger S., editor
2010 *Religion and the Environment*. 4 Volumes. London: Routledge.
- Gowdy, John M.
2000 "Terms and Concepts of Ecological Economics." *Wildlife Society Bulletin* 28, 1: 26-33.
- Griethuysen, Pascal van
2010 "Why are We Growth-Addicted? The Hard Way Towards Degrowth in the Involuntary Western Development Path." *Journal of Cleaner Production* 18: 590-95.
- Habel, Norman
2000 "Introducing the Earth Bible." Pp. 25-37 in *Readings from the Perspective of Earth*. The Earth Bible, Volume 1. Sheffield: Sheffield Academic Press.

Harrelson, Walter

- 1975 "Of God's Care for the Earth: Psalm 104." *Currents in Theology and Mission* 2, 1: 19-22.

Harris, Jonathan M.

- 1995 "Ecological Economics: A New Perspective." *The Good Society* 5, 3: 18-21.

Hiers, Richard H.

- 1984 "Ecology, Biblical Theology, and Methodology: Biblical Perspectives on the Environment." *Zygon* 19: 43-59.

Huetting, Roefie

- 2010 "Why Environmental Sustainability Can Most Probably Not be Attained with Growing Production." *Journal of Cleaner Production* 18: 525-30.

Hughes, J. Donald

- 1975 *Ecology in Ancient Civilizations*. Albuquerque: University of New Mexico Press.

Jackson, Tim

- 2009 *Prosperity Without Growth: Economics for a Finite Planet*. London: Earthscan.

Jacobsen, Mark Z., and Mark A. Delucchi

- 2011a "Providing All Global Energy with Wind, Water, and Solar Power; Part I: Technologies, Energy Resources, Quantities and Areas of Infrastructure, and Materials." *Energy Policy* 39: 1154-69.

- 2011b "Providing All Global Energy with Wind, Water, and Solar Power; Part II: Reliability, System and Transmission Costs, and Policies." *Energy Policy* 39: 1170-90.

Jenkins, Willis

- 2009 "After Lynn White: Religious Ethics and Environmental Problems." *Journal of Religious Ethics* 37, 2: 283-309.

- 2013 *The Future of Ethics: Sustainability, Social Justice, and Religious Creativity*. Washington, D.C.: Georgetown University Press.

Jenkins, Willis, and Christopher Key Chapple

- 2011 "Religion and Environment." *Annual Review of Environment and Resources* 36: 441-63.

Perrings, Charles

- 1995 "Ecology, Economics and Ecological Economics." *Ambio* 24, 1: 60-64.

Pirgmaier, Elke

- 2017 "The Neoclassical Trojan Horse of Steady-State Economics." *Ecological Economics* 133: 52-61.

Rockström, Johan, Will Steffen, Kevin Noone, Åsa Persson, F. Stuart III Chapin, Eric Lambin, Timothy M. Lenton, Marten Scheffer, Carl Folke, Hans Joachim Schellnhuber,

Björn Nykvist, Cynthia A. de Wit, Terry Hughes, Sander van der Leeuw, Henning Rodhe, Sverker Sörlin, Peter K. Snyder, Robert Costanza, Uno Svedin, Malin Falkenmark, Louise Karlberg, Robert W. Corell, Victoria J. Fabry, James Hansen, Brian Walker, Diana Liverman, Katherine Richardson, Paul Crutzen, and Jonathan Foley

2009a "Planetary Boundaries: Exploring the Safe Operating Space for Humanity." *Ecology and Society* 14, 2: 411-43.

2009b "A Safe Operating Space for Humanity." *Nature* 461: 472-75.

Ruether, Rosemary Radford

1978 "The Biblical Vision of the Ecological Crisis." *Christian Century* 95, 38 (November 22): 1129-32.

Santmire, H. Paul

1985 *The Travail of Nature: The Ambiguous Ecological Promise of Christian Theology*. Philadelphia: Fortress.

Saunders, Harry D.

1992 "The Khazzoom-Brookes Postulate and Neoclassical Growth." *The Energy Journal* 13, 4: 131-48.

Sessions, George S.

1974 "Anthropocentrism and the Environmental Crisis." *Humboldt Journal of Social Relations* 2: 71-81.

Simkins, Ronald A.

2017 "Care for the Poor and Needy: The Bible's Contribution to an Economic and Social Safety Net." *Journal of Religion & Society* Supplement 14: 4-13. Available online at <http://moses.creighton.edu/JRS/toc/SS14.html>.

Sorrell, Steven

2010 "Energy, Economic Growth and Environmental Sustainability: Five Propositions." *Sustainability* 2: 1784-1890.

Steffen, Will, Asa Persson, Lisa Deutsch, Jan Zalasiewicz, Mark Williams, Katherine Richardson, Carole Crumley, Paul Crutzen, Carl Folke, Line Gordon, Mario Molina, Veerabhadran Ramanathan, Johan Rockström, Marten Scheffer, Hans Joachim Schellnhuber, and Uno Svedin

2011 "The Anthropocene: From Global Change to Planetary Stewardship." *Ambio* 40: 739-61.

Taylor, Bron

2004 "A Green Future for Religion?" *Futures* 36: 991-1008.

2016 "The Greening of Religion Hypothesis (Part One): From Lynn White, Jr and Claims That Religions Can Promote Environmentally Destructive Attitudes and Behaviors to Assertions They Are Becoming Environmentally Friendly." *Journal for the Study of Religion, Nature and Culture* 10, 3: 268-305.

- Taylor, Bron, Gretel Van Wieren, and Bernard Zaleha
2016 "The Greening of Religion Hypothesis (Part Two): Assessing the Data from Lynn White, Jr, to Pope Francis." *Journal for the Study of Religion, Nature and Culture* 10, 3: 306-78.
- Trainer, Ted
2007 *Renewable Energy Cannot Sustain a Consumer Society*. Dordrecht: Springer.
2008 "The Greenhouse Problem: The Refusal to Recognize the Situation." *International Journal of Inclusive Democracy* 4, 2: 1-5.
2012 "Can Renewable Energy Sustain Consumer Societies? A Negative Case." Simplicity Institute Report 12e. Simplicity Institute.
- Trible, Phyllis
1971 "Ancient Priests and Modern Polluters." *Andover Newton Quarterly* 12: 74-79.
- Tuan, Yi-Fu
1970 "Our Treatment of the Environment in Ideal and Actuality." *American Scientist* 58: 244-49.
- Tucker, Mary Evelyn, and John Grim
2017 "The Movement of Religion and Ecology." Pp. 3-12 in *Routledge Handbook of Religion and Ecology*. Edited by Willis Jenkins, Mary Evelyn Tucker, and John Grim. London: Routledge.
- Tucker, Mary Evelyn, and John Grim, editors
1997-2004 *Religions of the World and Ecology* series. Cambridge: Harvard University Press.
- White, Lynn, Jr.
1967 "The Historical Roots of our Ecologic Crisis." *Science* 155 (March 10): 1203-7.
- Whitney, Elspeth
1993 "Lynn White, Ecotheology, and History." *Environmental Ethics* 15: 151-69.
- York, Richard, Eugene A. Rosa, and Thomas Dietz
2003 "STIRPAT, IPAT, and ImPACT: Analytical Tools for Unpacking the Driving Forces of Environmental Impacts." *Ecological Economics* 46 (2003): 351-65.
- Zehner, Ozzie
2012 *Green Illusions: The Dirty Secrets of Clean Energy and the Future of Environmentalism*. Lincoln: University of Nebraska Press.