

LET THEM HAVE DOMINION OVER ALL THE EARTH: ARE CHRISTIANS ANTI-ENVIRONMENTAL?

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ABSTRACT: *A common assumption is that the Christian religion is an obstacle to the environmental cause, and Christians have been seen as unsympathetic to environmental issues. This may be due in part to Lynn White's now-famous article, "The Historical Roots of Our Ecological Crisis," published in Science magazine in 1967. White's paper posits that the Western paradigm, heavily influenced by traditional Christian theology, sets humans apart as masters of nature. Thus Christianity, from its injunction in Genesis to dominate all the earth, must be responsible for a large share of the extensive ecological destruction that began with the Industrial Revolution. A number of researchers have attempted to test White's hypothesis through survey data, comparing numerous measures of environmental sensitivity between Christians and non-Christians. This paper analyzes the findings of 14 such studies conducted between 1984 and 2007. It concludes that while these studies provide valuable insights into the environmental attitudes of different religious traditions, they do not achieve a consensus, nor do they adequately test White's thesis.*

Keywords: *Religion, Christianity, Environment*

INTRODUCTION

In 1967, *Science* magazine published Lynn White's now-famous article, "The Historical Roots of Our Ecological Crisis." A historian of the medieval period, White traced the development of modern science back to the appearance of exploitative attitudes towards nature first introduced with advances in European agriculture. These attitudes, he argued, were heavily influenced by Judeo-Christian theology, which represents time as linear and nonrepetitive, and which presents a creation story that legitimizes and encourages the dominance of humans over the natural world. According to this view, Western science and technology, which since the 19th century have enabled humans to dramatically alter natural systems for the worse, are inextricably tied to these Christian conceptions of the separation of humans from nature. Islam and Marxism, both described as Judeo-Christian heresies by White, must likewise share this perspective. White posited that the Christian religion, therefore, "bears a huge burden of guilt" for the modern world's environmental problems because it sets humans apart from and above nature.

White's position has been extensively debated, and a number of studies have attempted to empirically test his thesis using survey data and statistical methods. This paper analyzes 14 such studies to determine whether a consensus exists on the validity of White's claims.

METHODS

This study selected and analyzed 14 survey-based studies dating from 1984 to 2007 which attempted to associate religion with environmental attitudes and behaviors. These studies were selected based on three criteria. First, each study either explicitly tested White's thesis or placed itself within the context of the debate over White's thesis through its literature review. Second, each study tested a sample which included both Christians and non-Christians for correlations between religious and environmental variables. This excluded studies which drew their samples from exclusively Christian populations. Third, the full text of each study was available through the U.S. Military Academy's library.

The studies varied in the populations from which their samples were drawn: 11 drew their samples exclusively from the United States; one focused solely on Great Britain; one examined attitudes and behaviors in the U.S., Canada, Great Britain, and New Zealand; and one collected responses from 14 countries in the Western Hemisphere. Of the samples drawn from the United States, seven were national samples, while four were confined to particular states. Five studies used the General Social Survey as a data set, and one study drew its sample entirely from college graduates. Significantly, no study included respondents from non-Western cultures.

Table 1. Summary of Studies

Study Authors	Sample	Religious Measures	Environmental Measures
Boyd 1999	U.S. (1993 General Social Survey)	Belief in God, Biblical literalism, Fundamentalism, Graceful image of God, Frequency of prayer, Religious service attendance	Willingness to spend money on environment, Perceived danger to environment, Behaviors
Eckberg & Blocker 1989	U.S. (Tulsa, OK)	Religious tradition, Importance of religion, Belief in Bible	Economy vs. environment, Protection of environment, Local concerns
Eckberg & Blocker 1996	U.S. (1993 General Social Survey)	Sectarianism, Common religiosity, Participation	Behaviors, Willingness to bear financial costs, Government regulation, Human impacts on nature, Relative importance of humans & environment, Fear of pollution, Animal rights, Sacredness of nature
Greeley 1993	U.S. (1988 General Social Survey)	Biblical literalism, Belief in God, Church attendance, Gracious image of God, Religious tradition	Public spending on environment
Hand & Van Liere 1984	U.S. (Washington State)	Religious tradition, Commitment, Mastery-over-nature orientation	Pollution control, Population control, Resource conservation, Environmental spending, Environmental regulation
Hayes and Marangudakis 2000	U.S., Canada, Great Britain, New Zealand	Religious tradition	Willingness to spend money on environment, Negative impact of humans, Behavior
Hayes and Marangudakis 2001	Great Britain	Religious tradition, Theological conviction	Attitude towards nature
Kanagy & Nelsen 1995	U.S.	Frequency of worship, Religious tradition, Personal religious experience	Federal spending, Economy vs. environment, Self-identification as environmentalist
Kanagy & Willits 1993	U.S. (Pennsylvania)	Religious tradition, Frequency of worship	Balance of nature, Economy vs. environment, Human relationship to nature, Behavior
Schultz et al 2000	14 countries in Western Hemisphere (college undergraduates only)	Biblical literalism, Importance of religion	Behavior, Anthropocentric vs. ecocentric attitudes
Sherkat & Ellison 2007	U.S. (1993 General Social Survey)	Church attendance, Biblical inerrancy, Conservative protestant affiliation, Stewardship	Private environmental behaviors, Political environmental activism, Willingness to sacrifice, Beliefs in problem seriousness
Wolkomir et al 1997a	U.S.	Religious salience, Biblical literalism, Dominion belief	Environmental concern, Behavior
Woodrum & Hoban 1994	U.S. (North Carolina)	Religious salience, Worship frequency, Biblical literalism, Creationism, Dominion belief	Environmental information, Environmental concern, Support for environmental programs
Woodrum & Wolkomir 1997	U.S. (1993 General Social Survey)	Church attendance, Affiliation strength, Fundamentalism	Environmental concern, Willingness to pay higher taxes, Behavior

Measures of religion and environmentalism varied by study (Table 1), with answers to questions generally being yes/no or measured on a sliding scale. The number of survey items testing religion varied between 1 and 17, and included questions for variables such as theological conservatism (often measured by Biblical literalism), frequency of worship, religious tradition, and religious salience in everyday life. Likewise, a variety of measures of environmentalism were also used, again generally quantified by yes/no answers or a sliding scale, with the number of survey items ranging from 1 to 41. Some studies attempted to discern only environmental attitudes, while others made a distinction between attitudes and behaviors. Environmental questions addressed issues such as level of general environmental concern; adherence to the new environmental paradigm (NEP); the negative impact of humans on the environment; and anthropocentric versus ecocentric world views. Other measures of environmental sensitivity included willingness to increase federal spending on the environment, the priority of the economy versus the priority of the environment, and concern over environmental hazards. Other variables generally included items such as political ideology, geography, age, education, and income.

RESULTS

A summary of findings is given in Tables 2 through 4. Of the studies analyzed, three found primarily negative effects of Christianity on environmentalism; six found little or no effect of Christianity on environmentalism; and five studies found a mix of both positive and negative effects.

The studies that found primarily negative effects of Christianity did not find uniform support for White's thesis. Hand and Van Liere (1984), for example, found considerable differences between denominations, with conservative groups being more likely to emphasize dominion doctrines, while more liberal denominations showed a weak positive association between church attendance and environmental concern. Eckberg and Blocker (1989) found that the only religious variable that influenced environmental concern was belief in the Bible. Schultz et al. (2000) discovered a strong relationship between Christian beliefs and anthropocentric bases for environmental concern, but they did not interpret this as evidence that Christians are anti-environmental. While these studies all found a statistically significant negative relationship between religious and environmental variables, this relationship was often weak. Hand and Van Liere (1984) found only weak associations, and regression

analysis indicated that religion variables accounted for between 2% and 12% of the variation. Likewise, Eckberg and Blocker concede that while greater belief in the Bible consistently produced negative effects on environmental attitudes, the effects were relatively weak. In Schultz et al. (2000), mean environmental scores of Christians and non-Christians generally differed by a fraction of a point on a five-point sliding scale. While it is difficult to say what level of difference would be required to support White's thesis, it seems that differences between Christians and non-Christians in these studies are small, even if statistically significant. This is not necessarily an indictment of White's thesis, however, as he argues that even "post-Christians" are heavily influenced by Judeo-Christian thought. The slight gap between Christian and non-Christian attitudes may be interpreted as the beginning of a secular drift away from anthropocentric views of the environment, though this interpretation may be countered by the findings of Hayes and Marangudakis (2001), who find that atheists in Great Britain are more likely to exhibit dominion attitudes than those who follow Abrahamic religions (the effect is mitigated, however, when controlled for scientific knowledge).

Where negative correlations between religion and environmentalism existed, the most significant religious variable was usually some aspect of fundamentalism. In fact, at least seven of the studies found a correlation between some measure of fundamentalism and reduced concern for the environment. Fundamentalism (also referred to as theological conservatism and Biblical literalism) was variously measured by literal belief in the Bible, preoccupation with eschatology, denominational association, political ideology, and a variety of behavioral indicators, such as personal religious experiences and listening to gospel music. This finding is also supported by other studies which focus on denominational differences rather than differences between Christians and non-Christians (Guth et al., 1993; Guth et al., 1995; Tarakeshwar et al., 2001). Denominational differences may be seen as consistent with White's analysis, as he points out that "Christianity is a complex faith, and its consequences differ in differing contexts," although he is referring to differences between the Latin and Greek Christian churches and not between Western denominations. While the reasons for this relationship between fundamentalism and lessened environmental concern are unclear, possible explanations include a literal interpretation of God's exhortation in Genesis 1 to "have dominion over all the earth"; a belief that conservation is unnecessary because Christ's return is imminent; and a suspicion of political and theological

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liberalism and “New Age” philosophy. Others, however, have found no support for denominational differences or for a negative influence of fundamentalism (Woodrum and Hoban, 1994; Kanagy and Nelsen, 1995; Wolkomir et al., 1997b), or have explained the correlation as the result of other factors, such as sterner images of God, more conservative political views, and a rigid approach to

religion and morality (Greeley, 1993). Woodrum and Hoban (1994) have argued that measures like Biblical literalism are poor stand-ins for dominion belief, and that dominion belief is not correlated with conventional indicators of religiosity. Sherkat and Ellison (2007) attempted to reconcile these divergent findings by examining the competing values which

Table 2. Studies Finding a Primarily Negative Effect of Christianity on Environmentalism

Study	Summary of Findings
Hand & Van Liere 1984	“Judeo-Christians are generally more committed to the mastery-over-nature orientation than non-Judeo-Christians, but . . . this commitment varies considerably among denominations.” Conservative denominations “are more likely to emphasize the dominance of nature doctrine.”
Eckberg & Blocker 1989	“. . . belief in the Bible, and only belief in the Bible, predicted scores on all four indexes of environmental concern and did so in the direction expected by White's thesis.”
Schultz et al 2000	"Our results provide strong evidence for an association between Christian beliefs and an anthropocentric basis for environmental concern . . . However, we do not interpret these findings as evidence that Judeo-Christian beliefs are antienvironmental."

Table 3. Studies Finding Little to No Effect of Christianity on Environmentalism

Study	Summary of Findings
Greeley 1993	“Low levels of environmental concern correlate with biblical literalism . . . , being Christian, and with confidence in the existence of God.” When other variables are controlled, however, “correlations between religion and environmental attitudes seem to be spurious.”
Woodrum & Hoban 1994	“. . . dominion beliefs . . . are not significantly associated with conventional religiosity on the individual level. On the institutional level this study finds no empirical basis for singling out churches as culpable for environmental problems.”
Kanagy & Nelsen 1995	Christians are found to be less environmentally supportive in some measures, but effects diminish with the addition of controls. “Overall, our interpretation of these findings challenges the dominant view that those in Judeo-Christian traditions - particularly religiously conservative individuals in these traditions - are less concerned about environmental issues than are other individuals.”
Boyd 1999	"Overall, religion variables appear to be weak predictors of environmentalism in America."
Hayes & Marangudakis 2000	“. . . in general, Christians and non-Christians do not significantly differ regarding their concern for the environment . . . overall, religious identification is an [sic] relatively weak and inconsistent predictor of environmental attitudes and behavior across nations."
Hayes & Marangudakis 2001	"there is no significant difference between Christians and non-Christians concerning environmental attitudes"

Table 4. Studies Finding Mixed Effects of Christianity on Environmentalism

Study	Summary of Findings
Kanagy & Willits 1993	"Church attendance was negatively related to environmental attitudes. When controlled, however, there was a net positive relationship between church attendance and environmental behaviors."
Eckberg & Blocker 1996	"Our findings give some support to the thesis of Lynn White," albeit with complications. "We do find evidence of a 'pro-environmental' effect of religious participation," while "the negative effect of Christian 'theology' seems to be largely an effect of fundamentalism or sectarianism."
Woodrum & Wolkomir 1997	"Religious fundamentalism . . . negatively predicted individual environmentalism," but "religious affiliation strength has positive effects on individual environmental concern, and worship attendance has positive effects on individual environment behaviors, when fundamentalism and political variables are controlled."
Wolkomir et al 1997a	"Neither biblical literalism nor religious salience have independent effects on environmental concern. As hypothesized, alleged negative religious effects are spurious; however, religious salience is found to be positively associated with environmentally responsible behavior."
Sherkat & Ellison 2007	"Our analyses showed that church participation spurred nonpolitical pro-environmental actions. Yet, because religious participation also influences political conservatism, attendance has a negative impact on political environmental activism."

drive environmental belief and action, showing that participation in conservative denominations can encourage nonpolitical pro-environmental actions, while at the same time discouraging political environmental activism because of its association with political liberalism.

Of the eight studies that separated environmental concern from environmental behavior, five found that while measures of religion had a negative effect on concern, they paradoxically had a positive effect on behaviors. In fact, four of the studies in Table 4 find a positive association between church attendance and environmental behaviors, even when indicators of religion were negatively associated with environmental attitudes. Woodrum and Wolkomir (1997) suggest that the negative correlations between religious variables and environmental concern may be a result of conservative distaste for "the politically charged origins of modern environmentalism in the ecology movement and the counterculture" (232), while Sherkat and Ellison (2007) explain the pro-environmental effect of religious participation by theorizing that "church participation involves interactions with religious resources that can help promote private pro-environmental activism" (82).

Both religion and environmentalism can be difficult concepts to operationalize. In the case of religion, some measures assessed the degree of an individual's religion, such as through frequency of prayer and church attendance, while others categorized the differing kinds of Christianity through measures like religious tradition and Biblical literalism. Though the studies analyzed here have

generally made the distinction between variables of degree and kind, it is important to keep this difference in mind when interpreting the results. Differences in religious type represent categorical data, and should not be seen as an attempt to assign individuals to a one-dimensional scale, with some people being seen as "more Christian" and others "less Christian" based on these variables. Those who believe in the literal truth of every word in the Bible, for example, are not necessarily more Christian than those who take a metaphorical view of Scripture. Difficulties may also arise when measuring differences in both degree and kind of religion using the imprecise tool of surveys. A statement like "The story of creation as reported in Genesis is true" leaves little room for nuances of belief, particularly when the responses are limited to "agree," "disagree," and "undecided."

A close examination of the specific questions used to gauge environmentalism highlights the difficulty in operationalizing these ideas. Several studies, for example, used environmental spending and environmental regulation as measures of environmentalism (e.g., Hand and Van Liere, 1984). It can be argued that those with greater incomes can more easily support greater spending for the environment (Woodrum and Wolkomir, 1997). Likewise, questions about environmental spending and environmental regulation are policy specific, and one might argue that market-based mechanisms could be used to achieve the same ends. Political conservatives, therefore, might oppose such measures because of their general opposition to expanded government programs and taxation (Woodrum and

Hoban, 1994; Kanagy and Nelson, 1995), and not because of decreased concern for the environment. At least two studies (Kanagy and Willits, 1993; Schultz et. al., 2000) used a portion of the NEP, a 12-item test developed by Dunlap and Van Liere in 1978, to test environmental attitudes. Some aspects of the NEP may be interpreted as arising from a highly specific view of environmentalism, and may have a "New Age" feel to certain respondents. Examples include:

"Humans must live in harmony with nature in order to survive."

"When humans interfere with nature it often produces disastrous consequences."

"The earth is like a spaceship with only limited room and resources."

Kanagy and Willits (1993) conclude from their findings that environmental concern and action may "arise out of ideas other than those contained in the NEP" and that "ideas congruent with New Age thought and postmaterialist values may appear to conservative and fundamentalist Christians to be implicit within the NEP scale, and thus may be rejected by these individuals" (682). Hayes and Marangudakis (2001) used data from the British Social Attitudes Survey, which included the following statements:

"Any change humans cause to nature - no matter how scientific - is likely to make things worse."

"Almost everything we do in modern life harms the environment."

"Animals should have the same moral rights that human beings do."

"Nature would be at peace and in harmony if only humans would leave it alone."

These statements seem to arise out of a highly specific set of environmental ideas, and it seems entirely possible for a person to disagree with the statements above, yet still show great concern for the environment. Additionally, Hayes and Marangudakis (2000) used a set of three questions to classify environmental behavior, including whether or not a person is a vegetarian and whether he or she regularly eats organic fruits and vegetables. Clearly this is a rather restricted range of pro-environmental behaviors. Interestingly, however, the studies by Hayes and Marangudakis conclude that religious

identifications are weak and inconsistent indicators of environmental attitudes and behaviors, perhaps implying that both Christians and non-Christians reject these attitudes and behaviors as extreme. Regardless of the interpretation, these examples illustrate the fact that whether a group is found to be environmentally friendly or not can depend upon how the term "environmentally friendly" is defined.

CONCLUSIONS

There is no clear consensus in this literature on whether the empirical data completely support or refute Lynn White's hypothesis that Christianity is the root of our ecological problems. Some studies find a statistically significant difference in environmental attitudes and behaviors between Christians and non-Christians, others find no difference, and still others find divergent patterns in the data. Some generalizations can be made, however, based on the results of these studies. First, religion appears to have negative effects on environmental concern in about half of the studies, while more than half of the studies which separated concern from behavior found positive effects of religion on environmental behavior. Second, where significant differences exist between Christians and non-Christians, they are often small. Third, where measures of religion are negatively correlated with environmentalism, the controlling variable is frequently some aspect of fundamentalism. Fourth, measures of religion and environmentalism vary widely between studies, and these differences may influence the outcomes of those studies. It is important to note that none of these generalizations has unanimous support in the literature.

While one may legitimately criticize the details of these studies, perhaps the more important question is whether White's thesis can be proven at all using the methods cited here. Although White claimed that Western Christianity is "the most anthropocentric religion the world has seen," he was not arguing that individual Christians are less environmental than non-Christians. Rather, White argued that modern Western science, cast as it was "in a matrix of Christian theology," sees human beings as separate from and superior to nature. As heirs to this worldview, post-Christians in the West are also conditioned to see the world from this perspective, as are the scientists of non-Western cultures, since "all significant science is Western in style." Therefore, testing environmental differences between Westerners, or even between those educated in Western science, does not test the heart of White's thesis. A better test would compare environmental

attitudes between those educated in Western science and those educated in a non-Western tradition. The task is complicated, however, since even if a difference in environmental attitudes between cultures is found, it may be difficult to prove that Christianity is the source of that difference. As comforting as it is to attempt to prove the point with hard numbers, it may be that a historical thesis like White's is best argued using historical methods, and not sociological ones. This is not to say that the research analyzed here is useless; on the contrary, it provides valuable information about the influence of religion on environmental values. But though these studies are valuable in themselves, they simply cannot prove or disprove Lynn White's argument.

Whether or not Christianity really is the historical root of our ecological crisis, one of the significant contributions of White's article was probably to galvanize intellectuals in general and Christians in particular into reevaluating the role of Christianity in attitudes towards nature (Livingstone et al., 1994; Murphy, 1995; Kearns, 1996; Downs and Weigert, 1999). White, a church-goer himself, was of course not the first or only Christian intellectual to express concern over the environment and our relationship to it. J.R.R. Tolkien, a devout Catholic, wove environmental themes into *The Lord of the Rings* more than a dozen years before White's article was published, and the Anglican C.S. Lewis anticipated White's complaint about "the sacred grove" being alien to Christianity by enthusiastically syncretizing Christianity with pre-Christian myth. Since White's article was first published, Christians have become increasingly concerned with environmental issues, with some arguing that the Bible teaches stewardship of the earth rather than dominion. The publishing company HarperOne, for example, has recently released *The Green Bible*, printed in soy ink on recycled paper, with a foreword by Archbishop Desmond Tutu. This volume of scripture is touted as helping Christians "understand the Bible's powerful message for the earth" (HarperOne, 2008). While the research examined in this study has focused on differences in the environmental behavior and attitudes of present-day Christians and non-Christians, an equally intriguing set of research questions surrounds the changes that have occurred in Christian attitudes towards nature since the Industrial Revolution and the birth of the environmental movement. Ironically, when White wrote of a complex Christianity that varies in differing contexts, he was helping to change the context of Western Christianity. Understanding how religion has responded to that changed context, particularly within the last few decades, may be a fruitful area of future research.

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