

Christianity, Environmentalism, and the Theoretical Problem of Fundamentalism

DOUGLAS LEE ECKBERG[†]
T. JEAN BLOCKER[‡]



Previous studies of the relationship between religion and environmentalism have suffered the lack of measures of religious beliefs or of environmental attitudes and behaviors, or samples that were not clearly representative or sufficiently large. We address these problems using data from the 1993 General Social Survey, which has over 40 measures of environmental attitudes and actions, as well as a large number of measures of religious membership, belief, and participation and other background measures. We focus on 10 indexes of environmentalism and 3 indexes of religiosity. Our findings give some support to the thesis of Lynn White that Christian theology has an "anti-environmental" effect, and they do not support the contention that it has a "stewardship" effect. There are, however, complications. We do find evidence of a "pro-environmental" effect of religious participation. Further, the negative effect of Christian "theology" seems to be largely an effect of fundamentalism or sectarianism. While this could be theologically oriented, it might also be an offshoot of conflict between religious conservatives and liberals.

INTRODUCTION

Recent years have witnessed considerable discussion of possible relationships between religion and environmental attitudes, much of it centering on Lynn White's (1967) controversial argument that Christian beliefs carry an antinature bias.¹ The evidence brought to the topic has tended to support the argument, though not unanimously or unambiguously, and researchers do not agree on its interpretation. Further, the studies have a number of different methodological limitations, and it is quite possible that differences in findings stem from these. In this paper we will review findings and limitations of several major studies on the topic. We will then address the topic, using data from the 1993 General Social Survey that should overcome some of those problems.

SURVEY RESEARCH AND THE LYNN WHITE THESIS

White's well-known essay does not need much introduction. Briefly, he proposed that the desacralization of nature in Genesis 1 predisposes Christians to regard the environment as having value primarily through its use by humans, and as falling properly under human dominion. People living in such a culture could be expected to be unconcerned about the general state of nature insofar as they would be oriented primarily toward its exploitation.

Social scientists have engaged in an extended discussion of the argument on three interrelated topics. The first of these concerns evidence of the relationship between Christian beliefs and environmental attitudes. The second concerns White's theological astuteness, whether the creation stories in Genesis actually support dominion over nature.

[†] Douglas Lee Eckberg is a professor in the Department of Sociology at Winthrop University, Rock Hill, SC 29733.

[‡] T. Jean Blocker is a professor in the Department of Sociology at University of Tulsa, Tulsa, OK 74104.

Several scholars have argued that a proper interpretation of Genesis leaves room for a nurturant "stewardship" element that is present in Genesis 2 (e.g., Shaiko 1987). This then leads to the third issue, that of evidence for such a stewardship effect.

We believe that a strictly theological consideration of this matter is unwise. There are many conflicting Christian theologies. To postulate one or another as correct is to involve one in debates that lie outside the scope of social science expertise. Further, as a practical matter, White could be "correct" even if his theology is faulty, or wrong even if correct theologically. It is possible that the presence of "dominion" statements about nature in the introductory chapter of Genesis, under an interpretation that at one time was culturally dominant, could have real effects even if the actual theological situation were more balanced. On the other hand, the Genesis 2 stewardship account might orient Christians toward something of a nurturant stance on nature even if its author(s) actually leaned more toward mastery. We will, therefore, not engage in extended hermeneutics, but we will begin with the *nominal* expectation that there exists a dominion effect. We base this on the facts that the dominion account is earlier and more straightforward than the stewardship account, and even the latter is oriented toward manipulation of the land.

White's essay treated the dominion ethic as a macro-level social fact with macro-level effects, but research on it relies extensively on surveys that implicitly treat it as an issue of the perceptions of *individuals*. This substitution causes difficulties. To follow Peter Berger's usage, culture is external to us as well as internal. Even if a dominion ethic is part of Christian culture, as White suggests, it might not manifest itself as an association among cognitions within individuals, especially not among members of the general public, whose level of theoretical interest is low (see Berger 1967: 30-32). A statistical link between scripture and individual's social cognitions requires that two conditions be met. First, scriptural statements must have meaning for the individual. That is, they must be well known and be interpreted as having important explanatory or directive force. They must be more than just recited words. Second, the individual must be motivated to maintain consistency among cognitions.

In survey research on this topic, researchers have looked for associations between individual belief in the Bible, membership in an appropriate church, or belief in some relevant elements of theology, on the one hand, and environmental attitudes or (seldom) actions on the other. If either of the above conditions fails to hold, a statistical association will be attenuated. On the other hand, an association might exist for reasons *besides* the authority of the Bible on environmental issues. The researcher is not usually in a position to trace the exact lines of influence. Therefore, one must go beyond simple associations and generate hypotheses that are precisely related to the issue — and even then the matter may be subject to reasonable disagreement.

While survey researchers have not fully explored the ramifications of the problem, many have explored the topic. Available studies do find substantial, though not unequivocal, evidence for a scripture-dominion relationship. Hand and Van Liere (1984) found in a Washington State sample that Christians were less concerned about environmental issues than were others, and more likely to believe that humans should have mastery over nature. Among those in conservative Protestant and sectarian denominations, "mastery over nature" was positively predicted by attendance, and this was independent of effects of several social background measures (see also Van Liere and Dunlap 1980). In a test of Biblical effects, Eckberg and Blocker (1989) found direct effects of belief in the Bible on several indexes of environmental concerns in a sample from Tulsa, Oklahoma. Biblical belief suppressed environmental concern, though not greatly, on four different factor-based indexes.

Others have found at least some similar evidence, but not in all situations or not unambiguously. Woodrum and Hoban (1994) found no independent effects of religiosity measures on environmental concerns with a North Carolina sample. Shaiko (1987), Kanagy

and Willits (1989), found effects in the postulated different explanations of the

Shaiko (1987), for tions (as opposed to de nature orientation. On some evidence of inde However, he argued that

Using General Soc on support of environ measures and a measure simply spurious, stemming tem of narrative symbols of "graciousness" of the im (Greeley 1993: 20). However we see no a priori reason why about nature. Harshness as despoilers.

His account of a role for fundamentalists are dispro because they see environmental of religion and green politics association.

Using a sizable Pennsylvania the findings of the previous attendance, namely, a slight, "reported environmental behavior evidence of *both* stewardship attendance was independent of (1993) found that simple "easy important than attitudes in possible that there exists an at could also be the case that atter voluntary associations. In either

Using a very large sample Guth and his colleagues (Guth Kellstedt and Smidt 1995), have White's thesis, effects that gre Ultimately, they conclude tha tudes that stems partly from E on separation of Christians fr 1993: 381). This fundamental except that their data appear cal orientation.

Concerning the attendan found a positive, independent indexes in two of seven sample slight positive independent eff dance. These were not the major

sis leaves room for a nur-
Shaiko 1987). This then
ect.

atter is unwise. There are
er as correct is to involve
se. Further, as a practical
wrong even if correct theo-
about nature in the intro-
time was culturally domi-
n were more balanced. On
Christians toward some-
ially leaned more toward
cs, but we will begin with
ase this on the facts that
stewardship account, and

ocial fact with macro-level
citly treat it as an issue of
s. To follow Peter Berger's
dominion ethic is part of
as an association among
the general public, whose
istical link between scrip-
s be met. First, scriptural
ust be well known and be
ey must be more than just
intain consistency among

for associations between
rch, or belief in some rel-
tal attitudes or (seldom)
l, a statistical association
st for reasons *besides* the
ot usually in a position to
l simple associations and
even then the matter may

ifications of the problem,
l, though not unequivocal,

Liere (1984) found in a
out environmental issues
ave mastery over nature.
ns, "mastery over nature"
of effects of several social
a test of Biblical effects,
ible on several indexes of
iblical belief suppressed
-based indexes.

it in all situations or not
lent effects of religiosity
le. Shaiko (1987), Kanagy

and Willits (1989), Guth et al. (1993, 1995), and Greeley (1993) all found environmental effects in the postulated direction, but their results were complex, and they have offered different explanations of them.

Shaiko (1987), for example, found that Christian members of environmental organiza-
tions (as opposed to Jews and other non-Christians) more often expressed a mastery-over-
nature orientation. On three of four measures of specific environmental concerns, he found
some evidence of independent "Christianity" effects that supports a dominion argument.
However, he argued that the variety of findings pointed toward a stewardship effect as well.

Using General Social Survey data, Greeley (1993) found that an effect of Biblical belief
on support of environmental spending could be attenuated by controlling other religious
measures and a measure of political orientation. He argued that any Biblical "effect" is
simply spurious, stemming not from the Bible's treatment of nature but from "a harsher sys-
tem of narrative symbols" among fundamentalists — which he operationalized as the degree
of "graciousness" of the image of God — along with political conservatism and rigid morality
(Greeley 1993: 20). However, Greeley demonstrated no effects of religious graciousness, and
we see no a priori reason why religious harshness would be associated with a lack of concern
about nature. Harshness could equally well be expressed as hostility toward polluters and
spoilers.

His account of a role for political attitudes strikes us as plausible. He holds that since
fundamentalists are disproportionately conservative politically they may be "anti-green"
because they see environmentalism as "liberal." Guth et al. (1995) also discuss the interplay
of religion and green politics, and we believe it is worthwhile to investigate the possible
association.

Using a sizable Pennsylvania sample, Kanagy and Willits (1993) generally replicated
the findings of the previous studies but discovered a unique *behavioral* effect of church
attendance, namely, a slight, and independent, *positive* effect of church attendance on
"reported environmental behaviors." Like Shaiko, they interpreted these mixed findings as
evidence of *both* stewardship and dominion attitudes. However, as the modest effect of
attendance was independent of effects of beliefs, its meaning is unclear. Derkson and Gartell
(1993) found that simple "easy access to a structured recycling program" is generally more
important than attitudes in predicting recycling activities. With this in mind, it is at least
possible that there exists an attendance-access relationship in the Pennsylvania sample. It
could also be the case that attendance and recycling are both measures of general activity in
voluntary associations. In either case the relationship *might* be spurious.

Using a very large sample of members of diverse religious social action organizations,
Guth and his colleagues (Guth, Kellstedt, Smidt, and Green 1993: also see Guth, Green,
Kellstedt and Smidt 1995), have found substantial religious effects in directions predicted by
White's thesis, effects that greatly outweigh those of standard social background measures.
Ultimately, they conclude that there is a "fundamentalism" effect on environmental atti-
tudes that stems partly from Biblical literalism, but also from "dispensationalist emphases
on separation of Christians from the world and the proximity of End Times" (Guth et al.
1993: 381). This fundamentalism effect is similar to Greeley's (1993) "harshness" effect
except that their data appear to document theological effects independently of general politi-
cal orientation.

Concerning the attendance-recycling association mentioned above, Guth's team (1995)
found a positive, independent effect of religious salience on policy-oriented environmental
indexes in two of seven samples they employed. In their other paper (1993), they found a
slight positive independent effect of "revivalism," an index that includes a measure of atten-
dance. These were not the major foci of the papers but they are nonetheless intriguing.

*Would be interesting to discover the particular texts
behind the "dispensationalist emphases".*

LIMITATIONS OF PREVIOUS RESEARCH

White's essay did not deal with all aspects of Christian religiosity or all attitudes toward the environment, but was limited to creation theology and humanity's relationship to nature. Strictly speaking, the thesis would only lead us to expect direct relationships between measures of orthodoxy of beliefs and measures of dominion-like beliefs and on actions. One would *not* expect noncognitive measures of religiosity, for example religious attendance, to have effects independently of beliefs. Further, only *dominion* beliefs should be readily predicted by theological orthodoxy; nothing about White's essay would lead one to argue, for example, that orthodox Christians would be less concerned about environmental hazards than would others.

None of these studies has been able to address the issue fully. Hand and Van Liere, Shaiko, and Kanagy and Willits, for example, have no measures of religious beliefs at all. Shaiko's and some of Guth's samples come from action groups rather than the general population, raising the question of generalizability (but having the advantage of focusing on those who are most likely to seek theoretical consistency in their legitimations). Eckberg's and Blocker's indexes do not clearly measure dominion beliefs, but rather environmental concerns. Both Guth et al. papers have limited measures of environmental attitudes and none of dominion attitudes. Greeley is limited to a single, three-option attitude item that confounds environmental "concern" with attitudes toward governmental spending. Only Kanagy and Willits employ clear measures of behavior or reported behavior.

THE 1993 GENERAL SOCIAL SURVEY AS A DATA SOURCE

There now exists a data set that can overcome most of these problems, the 1993 General Social Survey (GSS). As is well known, the GSS is a national probability survey of noninstitutionalized adults, administered most years since 1972 by the National Opinion Research Center (Davis and Smith 1993). In 1993, for the first time, it included a battery of questions on environmental knowledge, beliefs, and actions. Even if we exclude a series of questions that specifically tap knowledge of environmental matters (but include an environmental spending question that comes from outside the battery) the survey has 42 such items. This is a far larger number of environmental items than in any of the above studies, and it includes measures of dominion-like beliefs, environmental fears, policy orientations and reported actions.

The GSS has regularly included a number of questions on religious matters. The 1993 GSS is not as detailed in this area as in the past, and many religion items on the survey were asked of only about two-thirds of the sample. However, it does include several measures of religious belief (including Bible beliefs), action, and affiliation. In addition, the GSS regularly includes measures of socioeconomic status, of family background, and so forth, that can be used to test the spuriousness or directness of effects. We therefore are in the position of being able to investigate effects of a variety of elements of religiosity on various environmental beliefs and reported actions. First, however, we must simplify our data set.

Environmental Attitude and Action Indexes

In order to reduce the number of environmental items to a reasonable number we created indexes based on item wording and scoring. We employed only those items that obtained reasonable correlations with their fellows, and used principal components analysis with varimax rotation to confirm the factorial nature of the indexes. In all, we employed all but four of the environmental attitude and action items, in 10 indexes. Alpha coefficients vary substantially among the indexes and some — notably indexes measuring participation

in organized environment. Nonetheless they allow us to report (reported) actions.²

One index measures concern about the environment with concern about policy orientations: performance in part in organized pro-environment to protect nature, and approving individual behaviors. In addition, behaviors as eating organic foods seems to extend the measure. It contains an option to be checked if responses do not suffer the

Two indexes may point to in animal rights and one to was created by God. We are The animal rights movement identification. Also, a statement animal rights so much as a "sacredness" of nature is they appear to us to be less Supreme Being.

Finally, there are in hardship. One of these measures other measures the extent

Background Items and Indexes

The GSS contains measures of attitudes. We use 4 measures of socialization experiences and education, culture, practice and standard background items

The original GSS sample that not everyone was asked environmental questions and other background items. D

Knowledge. A respondent's issues, may affect stances on knowledge: tests of environmental interviewer's subjective materials. The measures are separately correlated. Principal solution, so we reduced each knowledge (alpha = .707).

Social Class. We have prestige, whether one is a analysis yielded a one-factor with knowledge (alpha = .7

Religion. There are 1 of association, 2 measures

igiosity or all attitudes
manity's relationship to
ect direct relationships
ion-like beliefs and on
y, for example religious
minion beliefs should be
essay would lead one to
ed about environmental

y. Hand and Van Liere,
f religious beliefs at all.
r that the general popu-
lvantage of focusing on
egitimations). Eckberg's
it rather environmental
omental attitudes and
ption attitude item that
mental spending. Only
ehavior.

SOURCE

ese problems, the 1993
al probability survey of
y the National Opinion
, it included a battery of
if we exclude a series of
atters (but include an
tery) the survey has 42
han in any of the above
ental fears, policy orien-

igious matters. The 1993
ion items on the survey
es include several mea-
ion. In addition, the GSS
ckground, and so forth,
We therefore are in the
of religiosity on various
simplify our data set.

t reasonable number we
d only those items that
pal components analysis
s. In all, we employed all
lexes. Alpha coefficients
measuring participation

in organized environmental activity and belief in the sacredness of nature — are quite low. Nonetheless they allow us to explore several aspects of environmental belief, attitudes and (reported) actions.²

One index measures dominion-like beliefs, in that it contrasts concern for the environment with concern for the economy. Four indexes measure a wide range of action or policy orientations: performing personal pro-environment activities like recycling, taking part in organized pro-environmental activities, being willing to pay an economic price to protect nature, and approving pro-environment governmental regulation of business and individual behaviors. In addition, we have an index of "green" lifestyle — defined by such behaviors as eating organic produce, being a vegetarian, and restricting one's driving — that seems to extend the measures of action orientation in a New Age direction. The action items contain an option to be checked if the respondent is unable to take the stated action, so that responses do not suffer the "availability" problem that Kanagy and Willits may have faced.

Two indexes may possibly tap a stewardship dimension, one that asks degree of belief in animal rights and one that measures the extent of belief that nature is sacred because it was created by God. We are not convinced of the degree of "stewardship" in either measure. The animal rights movement is highly politically charged, with clear "liberal" and New Age identification. Also, a stewardship orientation would *not* necessarily lead to a belief in animal rights so much as to a belief that animals should not be unnecessarily harmed. The "sacredness" of nature is measured by two items that explicitly tie that sacredness to God; they appear to us to be leading questions that might simply signify a nominal respect for a Supreme Being.

Finally, there are indexes that appear on their face *not* to measure dominion or stewardship. One of these measures the general belief that human actions will harm nature; the other measures the extent of fear of the effects of various forms of pollution.

Background Items and Indexes

The GSS contains measures of many phenomena that may affect environmental attitudes. We use 4 measures of knowledge (besides years of education, which is confounded by socialization experiences and is also a social class measure), 17 measures of religious affiliation, culture, practice and belief, and 4 measures of social status. In addition, we employ standard background items: sex, race, age, and political orientation.

The original GSS sample was 1,606, but NORC employed a split-sample technique, so that not everyone was asked every question. Forty-nine respondents were not asked environmental questions and about a third were not asked religion questions or some of the other background items. Deleting these cases leaves us a sample of 1,046.

Knowledge. A respondent's general level of knowledge, especially of environmental issues, may affect stances on those issues. The data set includes four types of measures of knowledge: tests of environmental and scientific knowledge, a vocabulary test, and the interviewer's subjective evaluation of the respondent's comprehension of the survey materials. The measures predict environmental beliefs and attitudes similarly and are moderately correlated. Principal-components analysis of the 4 measures yielded a one-factor solution, so we reduced each item to a scale of 0-to-1 and summed them to form an index of knowledge ($\alpha = .707$).

Social Class. We have 4 measures of social class: years of education, occupational prestige, whether one is a professional, and family income. Again, principal components analysis yielded a one-factor solution so we formed an index of class in the same fashion as with knowledge ($\alpha = .766$).

Religion. There are 17 measures of religion/religiosity, including 5 measures of aspects of association, 2 measures of religious activity, and several measures of belief. There are

scores on a version of Greeley's (1993) Grace Scale, and on belief in the power of God in the world. Finally, there are 4 measures of religious culture and affect. We use this wide variety of religion items because of the large number of possible religious effects and because of limitations of reliability and validity that plague single-item measures. Inclusion of a sufficiently large set of items allows us to use empirically determined associations to construct indexes. Indeed, principal-components analysis of the set of items yielded a three-factor solution that was readily interpretable after Varimax rotation. We used the results to create indexes of religiosity, excluding items with weaker secondary loadings.³

The first index we judge to measure degree of religious *sectarianism*, in that a high score indicates that the person believes the Bible to be true literally, scores low on Greeley's Grace Scale, believes strongly in obedience, is a conservative Protestant, opposes the ban on school prayer, disbelieves in evolution, believes that God is involved in everyday activities, and enjoys gospel music. The second measures fairly *common religiosity* of the "salt of the earth" variety. It does not tap specific theological underpinnings, but a high score indicates that the person believes in an afterlife, believes in God, believes that faith is very important, prays frequently, and is a Christian. The third index taps level of *participation* in religious organizations. One with a high score belongs to church-related organizations, attends religious services regularly, has faith in religious institutions, and strongly identifies with his or her denomination (see footnote 3).

PLAN OF ANALYSIS

We will first explore zero-order correlations between each religion item (and religion index) and each environmental index. This will give us a first look at which indexes predict which environmental attitudes and actions, as well as which items (if any) provide the bulk of predictive power within each index. Then we will use OLS regression to determine direct effects of the religion indexes. Because of the ease of obtaining significance with large samples, we nominally employ a probability level of .01, or an R^2 of 1%, for determination of "significant" effects. We will note coefficients that fall close to those figures (i.e., $p < .02$).

FINDINGS

Zero-order correlations between the various measures of religiosity and scores on the environmentalism indexes are shown in Table 1. They support the dominion account in places, though the exceptions demand discussion.

Actions and Policy Orientations

We will focus first on correlations with scores on the first 5 indexes, which measure environmental actions or policy orientations. These substantially support the dominion hypothesis. The number of significant relationships varies with the topic, more for personal or organized actions and fewer for policy orientations or green lifestyle, but almost all are in the expected direction. For example, correlations between items forming the sectarianism index and scores on the personal action index are negative, except for the item measuring belief in evolution and scores on the Grace Scale, which are positive. The more traditional or orthodox the belief the less actively "green" one is likely to be.

ZERO-ORDER CO EN

Belief: Bible
Values obedience
Fundamentalist
Opposes prayer ban
Belief: Evolution
God is powerful
Likes gospel music
Grace Scale
Sectarianism Index

Belief: Afterlife
Belief: God
Faith is important
Freq. of prayer
Christian
Common Relig. Index

Church org. member
Freq. of attendance
Religious salience
Faith in clergy
Participation Index

Belief: Bible
Values obedience
Fundamentalist
Opposes prayer ban
Belief: Evolution
God is powerful
Likes gospel music
Grace Scale
Sectarianism Index

Belief: Afterlife
Belief: God
Faith is important
Freq. of prayer
Christian
Common Relig. Index

Church org. member
Freq. of attendance
Religious salience
Faith in clergy
Participation Index

¹ N = 1,046; mean substitution
+ $p < .02$, * $p < .01$, ** $p < .001$, *

Likewise, correlati
ity, and insignificant for
common religiosity or rel

in the power of God in the t. We use this wide variety of effects and because of measures. Inclusion of a sufficient associations to construct items yielded a three-factor solution. We used the results to create indices.³

ctarianism, in that a high score, scores low on Greeley's testant, opposes the ban on ved in everyday activities, *ligiosity* of the "salt of the but a high score indicates at faith is very important, f participation in religious rganizations, attends reli- ongly identifies with his or

religion item (and religion k at which indexes predict is (if any) provide the bulk ession to determine direct g significance with large of 1%, for determination of e figures (i.e., $p < .02$).

ligiosity and scores on the the dominion account in

5 indexes, which measure lly support the dominion e topic, more for personal style, but almost all are in forming the sectarianism pt for the item measuring e. The more traditional or

TABLE 1

ZERO-ORDER CORRELATIONS BETWEEN RELIGION ITEM/INDEX SCORES AND ENVIRONMENTAL INDEX SCORES (PEARSON'S r)¹

	Personal Actions	Organized Actions	Will Bear Costs	Approves Govt. Rule	Cultural 'Green'
Belief: Bible	-.22***	-.11**	-.12***	-.11**	-.01
Values obedience	-.23***	-.08+	-.05	-.09*	.04
Fundamentalist	-.22***	-.07	-.11**	-.09*	-.08*
Opposes prayer ban	-.18***	-.09*	-.09*	-.07+	-.06
Belief: Evolution	.19***	.16***	.16***	.16***	.09*
God is powerful	-.21***	-.08*	-.05	-.08*	.03
Likes gospel music	-.12***	-.02	-.05	-.08+	.09*
Grace Scale	.09*	.05	.07	-.02	.12***
Sectarianism Index	-.32***	-.14***	-.15***	-.15***	-.04
Belief: Afterlife	.03	.03	.03	-.00	.06
Belief: God	-.20***	-.11**	-.13***	-.08+	-.05
Faith is important	-.17***	-.08+	-.07	-.08*	.05
Freq. of prayer	-.05	-.02	-.05	-.07	.11**
Christian	-.11**	-.07	-.10*	-.07	-.04
Common Relig. Index	-.14***	-.07	-.09*	-.08+	.03
Church org. member	.04	.06	.01	.01	.04
Freq. of attendance	-.03	-.03	-.03	.01	.05
Religious salience	-.04	-.02	-.04	-.04	.07
Faith in clergy	-.03	-.06	-.04	-.01	.01
Participation Index	-.02	-.01	-.03	-.01	.06

	Economy Central	Hurts Nature	Environ. Fears	Animal Rights	Nature Sacred
Belief: Bible	.24***	.12***	.02	.08+	.37***
Values obedience	.27***	.13***	-.04	.04	.19***
Fundamentalist	.18***	.08+	-.04	.02	.21***
Opposes prayer ban	.23***	.11**	-.03	.03	.22***
Belief: Evolution	-.16***	-.01	.06	.07	-.27***
God is powerful	.21***	.18***	.05	.13***	.39***
Likes gospel music	.21***	.10*	.02	.04	.27***
Grace Scale	-.07	-.04	-.00	.08+	-.11**
Sectarianism Index	.34***	.17***	-.02	.05	.43***
Belief: Afterlife	-.02	-.02	.01	-.03	.21***
Belief: God	.20***	.06	.01	.01	.42***
Faith is important	.20***	.08+	.06	.07+	.48***
Freq. of prayer	.14***	.06	.07	.02	.33***
Christian	.16***	.01	-.06	-.03	.24***
Common Relig. Index	.18***	.05	.02	.01	.46***
Church org. member	.03	.02	.00	-.10**	.13***
Freq. of attendance	.10*	-.01	-.01	-.10*	.26***
Religious salience	.14***	.03	.00	-.04	.29***
Faith in clergy	.08+	.01	-.02	-.04	.10**
Participation Index	.12***	.02	-.00	-.10**	.28***

¹ N = 1,046; mean substitution is used for missing values.
+ $p < .02$, * $p < .01$, ** $p < .001$, *** $p < .0001$

Likewise, correlations are stronger for sectarianism items, less so for common religiosity, and insignificant for religious participation. Beliefs are much more important than are common religiosity or religious participation. Two measures of common religiosity, belief in

God and belief in the importance of faith, obtain correlations similar to those of items in the sectarianism index; both had, however, obtained secondary loadings on sectarianism. Breaking the trend, frequency of prayer *positively* predicts cultural greenness (albeit weakly) and does not negatively predict scores on any action index. Also, while being Christian tends to predict nonparticipation in environmental actions, being in a conservative (fundamentalist) church is clearly more important.

There is less complexity if we focus entirely on correlations between environmental action indexes and the religiosity *indexes*. Religious sectarianism is negatively correlated with everything except having a green lifestyle. Common religiosity is negatively correlated only with personal actions, and religious participation is correlated with nothing at all.

General Orientations

The index that most closely — but not exactly — fits a dominion orientation is the one that considers economic activity as more important than (or even helpful to) the environment. Most items have significant correlations to this, all in the hypothesized direction. All three factor-based indexes of religiosity are correlated with it as well, but the correlation with the sectarianism index has a substantially greater magnitude than do those of the other two indexes.

Everything correlates with the judgment that nature is sacred, and the correlations are, for the most part, the largest. The pattern of correlations is similar to those just discussed, and they raise a problem with interpretation of the meaning of the index. Namely, the religion items that are negatively correlated with pro-environment actions or policy orientations, and are positively associated with ranking the economy as more important than nature, are positively correlated with belief in the sacredness of nature, while those (like belief in evolution or the Grace Scale) that break the pattern are negatively correlated here. Clearly, a stated belief in the sacredness of nature is not associated with any "pro-nature" actions; quite the *reverse* is true. Because of this, we do not feel confident in assigning to the index any meaning other than a general statement about the grandeur of the Creator.

We find few measures with significant associations to the animal rights index, with no clear pattern. As mentioned above, we did not expect to find substantial associations. Among the indexes of religiosity, only the index of religious participation obtains a significant correlation, a negative one. People who are religiously active are less likely than others to support animal rights, but this is unrelated to religious beliefs.

As we expected, there are no religious correlates with the index measuring worries about pollution. Six of the 7 measures that make up the sectarianism index are positively correlated with the belief that human activity is inherently harmful — a sentiment that fits the generally pessimistic beliefs that evangelicals hold about human beings (Wilcox, Linzey and Jelen 1991). The sectarianism index itself likewise, and unsurprisingly, obtains a positive correlation. The other indexes do not.

Direct Religious Effects

We now regress the environmentalism indexes across the religion indexes and the measure of knowledge, social class, age, sex, race, and political conservatism. This does not allow us to tease out all religious (or other) effects, but by finding direct effects it does let us determine if any religious factors have fundamental effects on environmental actions or attitudes, and it allows us to determine the amount of variance added to explanatory models by the set of religion indexes.

In addition to the tions that emerged in pre than indexes) were empl allow us to focus on some

We begin with hou that the measures of rel environmental indexes. T for either of the environ the Lynn White thesis: t harm nature. Like the fa Religiosity does not predi

Contrariwise, the addressing the sacrednes artifacts of direct referen runs employing religion God as very important in God is responsible for ma

REGRE RELIGIO

Sectarianism
Common Religiosity
Religiously Active

Adjusted RSQ
Adjusted RSQ Added

Sectarianism
Common Religiosity
Religiously Active

Adjusted RSQ
Adjusted RSQ Added

1 N = 1,046; mean substitution and measures of sex, age, race, a + p < .02, * p < .01, ** p < .001, *

Direct Effects on Environ

These 5 indexes th mix of provocative associ "cultural greenness," is a account for *much* varianc equations predicting will environmental controls, t

ilar to those of items in the loadings on sectarianism, cultural greenness (albeit an index. Also, while being lions, being in a conservative

ons between environmental sm is negatively correlated sity is negatively correlated ed with nothing at all.

nion orientation is the one ven helpful to) the environ- hypothesized direction. All as well, but the correlation itude than do those of the

sacred, and the correlations is similar to those just dis- aning of the index. Namely, vironment actions or policy economy as more important nness of nature, while those rn are negatively correlated t associated with any "pro- we do not feel confident in ment about the grandeur of

animal rights index, with no stantial associations. Among n obtains a significant corre- likely than others to support

he index measuring worries rianism index are positively mful — a sentiment that fits man beings (Wilcox, Linzey usurprisingly, obtains a posi-

he religion indexes and the conservatism. This does not g direct effects it does let us nvironmental actions or atti- led to explanatory models by

In addition to the findings presented in Table 2, we will discuss important associations that emerged in preliminary regression runs in which individual religion items (rather than indexes) were employed. The general set of effects (R^2 , etc.) is similar, but this will allow us to focus on some of the most important associations.

We begin with housecleaning, focusing on weak or irrelevant relationships. Note first that the measures of religion add less than 1% of variance to equations for 6 of the 10 environmental indexes. There are no significant associations and little variance explained for either of the environmental indexes that seem irrelevant to expectations derived from the Lynn White thesis: those measuring environmental fears and the belief that humans harm nature. Like the famous dog that did not bark in the night, this seems meaningful. Religiosity does not predict simply everything about environmental concerns.

Contrariwise, the religion indexes explain a large amount of variance of the index addressing the sacredness of nature. Recall that we believed scores on the index might be artifacts of direct references to God. Our belief finds support in that preliminary regression runs employing religion *items* found only 3 items to reach .01 significance: ranking faith in God as very important in life ($\beta = .23$), believing in God ($\beta = .11$), and believing that God is responsible for many outcomes in life ($\beta = .10$).

TABLE 2

REGRESSION OF ENVIRONMENTAL INDEX SCORES ACROSS
RELIGIOUS INDEX SCORES (STANDARDIZED COEFFICIENTS)¹

	Personal Actions	Organized Actions	Will Bear Costs	Approves Govt. Rule	Cultural 'Green'
Sectarianism	-.20***	-.12*	-.07	-.09	-.13*
Common Religiosity	.00	.00	-.00	-.01	.05
Religiously Active	.11*	.08	.04	.06	.19+
Adjusted RSQ	22.60%	3.43%	5.18%	5.51%	5.13%
Adjusted RSQ Added	2.40%	0.76%	0.08%	0.34%	1.06%

	Economy Central	Hurts Nature	Environ. Fears	Animal Rights	Nature Sacred
Sectarianism	.20***	.09	-.07	-.01	.17***
Common Religiosity	-.00	-.06	.04	.03	.33***
Religiously Active	-.01	.02	.03	-.11*	.05
Adjusted RSQ	21.40%	10.76%	9.34%	14.14%	30.16%
Adjusted RSQ Added	2.56%	0.22%	0.11%	0.62%	18.45%

¹ N = 1,046; mean substitution is used for missing values. Items controlled are indexes of knowledge and social class, and measures of sex, age, race, and political conservatism.

+ $p < .02$, * $p < .01$, ** $p < .001$, *** $p < .0001$

Direct Effects on Environmental Actions and Policy Orientations

These 5 indexes that assess environmental actions and policy orientations provide a mix of provocative associations. First only twice, with the indexes of "personal actions" and "cultural greenness," is as much as 1% of variance explained. Religious differences do not account for *much* variance in scores. Indeed, they are utterly without predictive power in the equations predicting willingness to bear environmental costs and approving governmental environmental controls, though we would expect *some* religious effect here.

Still, being sectarian does predict against participating in personal or organized environmental actions or being culturally green. Even here, though, we should note that the effect does not occur through level of belief in the Bible. In regression runs using individual religion items, belief in the Bible had no direct effect on *any* environmental index. This fails to replicate the major finding of Eckberg and Blocker (1989). It does not necessarily mean that orthodox theology plays no role at all, because in the same regression equations belief in human evolution *consistently* predicted scores for the action indexes, even those measuring willingness to bear environmental costs and approving governmental environmental controls ($\beta = .08$ to $.15$). That is, *disbelief* in human evolution, which is conceptually tied to the creation myth in Genesis 1–2, has independent, negative — but again weak — effects on environmental action.

We find weak but positive effects of religious participation on personal environmental action and on cultural greenness, the first of which replicates the findings of Kanagy and Willits (1993) and Guth et al. (1993, 1995) and offers some challenges to the dominion thesis. Again, regression equations using individual religion items found frequency of prayer to weakly predict personal pro-environmental actions ($\beta = .10$) while being a church organization member positively predicted taking part in organized actions ($\beta = .10$).

Environmental Beliefs

Only sectarianism predicts belief that economic activity is more important than the environment. In preliminary runs, 2 items, both of which are part of cultural fundamentalism, maintained independent effects: support for obedience ($\beta = .10$) and opposition to the banning of organized prayer in schools ($\beta = .08$). These give some support to Greeley's (1993) contention that the harshness of religious symbols plays a role here, but it must be noted that the obedience item had no other independent effects and the Grace Scale had no independent effects at all (and few zero-order correlations). On this index, belief in evolution lost its independent effect, replicating a finding of Woodrum and Hoban (1994).

Turning to the animal rights index, about which we had some questions, only religious activity (negatively) predicts belief in animal rights. In runs using individual items, belief in evolution had a positive direct effect ($\beta = .10$) but sentiment that faith in God is very important in life did also ($\beta = .13$). We infer from the first effect that people with a Darwinian perspective are more likely to consider people to be part of, rather than above, nature, a position diametrically opposed to the dominion stance in Genesis 1. The second effect, however, may indicate a positive religious effect on environmentalism, though again it is independent of theology.

DISCUSSION

While we have numerous findings, they can be easily summarized. They cannot be as readily explained. With a representative national sample, a large variety of measures of environmental attitudes and actions, and several measures of religious attitudes and behavior, we have replicated the bulk of earlier findings. First, though we could not support Eckberg and Blocker's (1989) finding of consistent effects of biblical belief on environmental orientations *per se*, we did find consistent effects of antievolution beliefs, which are based on Genesis 1, on several measures of action and policy orientation. Like Guth et al. (1993, 1995), we found a larger "fundamentalism" (we called it "sectarian") effect on environmental behaviors and attitudes. Like Kanagy and Willits (1993) and Guth et al. (1993, 1995), we found positive behavioral effects of religious participation. We find common religiosity to be utterly unimportant in environmental issues. But is there a common thread to these findings?

One possibility — the contrasting dominion and stewardship theologies — has some support. A problem with the dominion thesis is that it is inconsistent with environmentalism, at least of participation, though limited. Like it. When Guth et al. (1993) "perhaps, only an institutional effect" could be true, but our salient finding effects for frequency of participation are plausible that these tap a standard measure of belief. Perhaps they just tap a particular note that church attendance in nonconservative denominations is conservative ones (see Wilson 1993).

From the original question, we do *not* find stewardship toward dominion effects. Dominion attitudes come from biblical roots, as Greeley's single factor and may replicate effects cannot be done readily.

There is, however, at least implicit in the work of Woodrum and Hoban 1994. This solution suggests of biblical. Something about account for the ubiquitous of religious participation independent effects of fundamentalism hypothesis and why belief open the question of why relative to everyone else and special on *this* issue?

Greeley's position on religion-environmental concern, moral rigidity, and environmental index, and the Grace Scale shows variations. All of the relationships of political orientation. Political orientation. Patience, graciousness has little almost unrelated to general issue.

According to our findings with it tend to be religious fundamentalist churches and to favor free thinking, and religious liberals, in the

in personal or organized religion, we should note that the regression runs using individual environmental index. This fails to do not necessarily mean that regression equations belief indexes, even those measuring environmental environmental, which is conceptually tied to — but again weak — effects

on personal environmental. The findings of Kanagy and challenges to the dominion is found frequency of prayer (.10) while being a church member and actions (beta = .10).

is more important than the part of cultural fundamentalism (beta = .10) and opposition to evolution. There is some support to Greeley's role here, but it must be noted that the Grace Scale had no effect on this index, belief in evolution (Hoban (1994).

On these questions, only religious participation of individual items, belief in that faith in God is very important effect that people with a part of, rather than above, is in Genesis 1. The second environmentalism, though again

is marized. They cannot be as large variety of measures of religious attitudes and though we could not support individual belief on environmental beliefs, which are based on religion. Like Guth et al. (1993, 1995) effect on environmental (Guth et al. (1993, 1995), we find common religiosity to be a common thread to these

One possibility — the one that several people have proposed — is that there indeed are contrasting dominion and stewardship effects of Christian theology. Dominion receives some support. A problem with stewardship is that we find no pro-environmentalism effects of Christian beliefs; none of our measures of orthodox religious belief shows effects consistent with environmentalism on any index in which we can have confidence. Yet the effect of participation, though limited, appears real, and this is the fourth study to find something like it. When Guth et al. (1995: 14) found such an effect they dismissed it as representing "perhaps, only an institutionally disconnected New Age environmental spirituality." That could be true, but our salience item specifically mentions denominational affiliation, and we find effects for frequency of prayer and belief that faith in God is important as well. It is plausible that these tap a different element of religious consciousness than one finds in standard measures of belief, one that is characterized by an ethic of responsibility, or perhaps they just tap a propensity to be become "involved." In support of this position, we note that church attendance has effects on secular activities much more among those in nonconservative denominations (who are more likely to be pro-environmental) than in conservative ones (see Wilson and Janoski 1995).

From the original questions that motivated this research, however, two things are certain: we do not find stewardship effects of theology, and we do find some evidence that points toward dominion effects of theology. If we accept this, then the only question is whether dominion attitudes come from acceptance of Genesis 1, or if there are different (or additional) biblical roots, as Guth et al. suggest. All the "sectarian" items we employ load onto a single factor and may represent a single orientation; in any event, disentangling biblical effects cannot be done readily with the present data.

There is, however, the other solution to the religion-environment connection, which is at least implicit in the work of several others (e.g., Greeley 1993; Guth et al. 1993, 1995; Woodrum and Hoban 1994; Weigel 1977). Is it possible that the effect has no biblical roots at all? This solution suggests that dominion attitudes are fundamentalist or sectarian *instead of* biblical. Something about religious sectarianism subverts environmentalism. This would account for the ubiquitous fundamentalism effect and could leave room for the positive effect of religious participation on environmental activities. It would also explain why we find *independent* effects of fundamentalist affiliation that do not clearly flow from the dominion hypothesis and why belief in the Bible has no *independent* effects. It would, however, leave open the question of why fundamentalists would take specifically anti-green positions relative to everyone else and independent of background measures. What would make them special on this issue?

Greeley's position on the matter does not get much support. He contends that the religion-environmental connection is produced by the trio of religious graciousness or harshness, moral rigidity, and conservative politics. We find a direct effect of moral rigidity on one environmental index, and it has a high loading in our principal components analysis. But the Grace Scale shows no independent effects and even fewer significant zero-order associations. All of the relationships in our regression models, further, are independent of effects of political orientation. In data not shown, we repeated our runs without the measure of political orientation. Patterns were almost identical to those reported here. In sum, religious graciousness has little impact on environmental beliefs or actions and religious effects are almost unrelated to general political views. Let us then focus on another church-related issue.

According to our data, those who actively work to protect nature or live in harmony with it tend to be religiously active and nonsectarian. That is, they are active in nonfundamentalist churches and other religious organizations, tend to be nonliteralists on the Bible, to favor free thinking, and to be culturally and religiously nontraditional. Clearly, these are religious liberals, in the U.S. mostly members of the "Christian Left."

Active conflict between the religious right and left, between the "culture of fundamentalism" and the "culture of modernism," has been a paramount religious issue the past two decades (e.g., Page and Clelland 1978), to the point of being characterized as "culture wars" (Hunter 1991). Religious conservatives are well aware of the liberal "bias" of environmentalism. Indeed, conservative churches sometimes are suspicious of it (see the discussion in Guth et al. 1995). With theology so intertwined with politics in the present climate, any strictly theological effects on environmentalism could be overwhelmed by the sides-choosing of the moment. The fundamentalism effect could grow from hostility toward religious liberalism as well as from religious dogma. In this scenario, the various measures of sectarianism stand together because each is an indicator of internal solidarity during a time of external conflict.

We cannot at this time nail down the source of the effect of fundamentalism. It could come about because of dominion statements in Genesis 1 (or other powerful religious concepts like end-times theology). It could also be that morality, biblical inerrancy, and "greenness" have all become politicized, serve as symbols of the two sides in the culture wars and *therefore* are statistically linked in survey research. Disentangling these possibilities will be a difficult task indeed.

NOTES

We are indebted to Eric Woodrum, Andrew Greeley, and Jim Guth for generous commentaries, suggestions, and copies of work in progress, and to the anonymous reviewers.

¹ Strictly speaking, White's thesis applies to all Judeo-Christian theology, and so should apply to Jews as well as Christians. However, White focuses on Christianity. Further, as a practical matter, in the United States, Christians outnumber Jews by almost 50 to 1, and so their beliefs are for the most part of interest to us.

² The 10 environment indexes are as follows. Item scoring is adjusted so that high scores represent agreement with the sentiment in the index title. Exact wording can be found in Davis and Smith (1993).

(1) *Engages in Personal 'Green' Activities*. Four items: (a) how often do you recycle, (b) do you do "what is right for the environment," even if it costs money or takes up time, (c) is it too difficult for you to do much about the environment, (d) have you ever signed a petition about an environmental issue? (alpha = .527)

(2) *Participates in Organized 'Green' Activities*. Two items: (a) are you a member of any environmental group, (b) have you participated in a demonstration on an environmental issue? (alpha = .392)

(3) *Culturally 'Green'*. Three items: (a) how often do you eat organic fruits and vegetables, (b) how often do you refuse to eat meat, (c) how often do you cut back on driving a car for environmental reasons. (alpha = .564)

(4) *Is Willing to Bear Costs to Protect the Environment*. Three items: are you willing to (a) pay much higher prices, (b) pay much higher taxes, and (c) have a lower standard of living to protect the environment? (alpha = .833)

(5) *Approves Government Regulation to Protect the Environment*. Two items: should the government make (a) people, (b) businesses protect the environment? (alpha = .642)

(6) *Believes All Human Actions Hurt Nature*. Three items: (a) Any human change in nature — no matter how scientific — is likely to make things worse, (b) almost everything we do in modern life harms the environment, (c) economic growth always harms the environment. (alpha = .587)

(7) *Believes Humans Take Precedence over the Environment*. Four items: (a) modern science will solve our environmental problems with little change in our way of life, (b) we worry too much about the environment and not enough about prices and jobs, (c) people worry too much about human progress harming the environment, (d) in order to protect the environment, America needs economic growth. (alpha = .589)

(8) *Worries about Pollution*. Seven items: (a) air pollution caused by cars, (b) nuclear power stations, (c) air pollution caused by industry, (d) pesticides and chemicals used in farming, (e) pollution of waterways, or (f)

the 'greenhouse' effect, danger
cause a large increase in ill

(9) *Believes in Animal Rights*.
It is right to use animals for
would leave it alone. (alpha = .527)

(10) *Considers Nature Is Sacred*.
beings should respect nature

³ The 3 religiosity indexes
with the sentiment in the index title

(1) *Sectarianism*. Eight items
fundamentalist Protestant,
(f) belief that God controls
measure of religious "graciousness"

(2) *Common Religiosity*. Five
important traits in a friend,

(3) *Religious Participation*.
attendance at religious services
(alpha = .673)

REFERENCES

- Berger, Peter. 1967. *The sacred canopy*. New York: Doubleday.
- Davis, James A. and Tom W. Smith. 1993. National Opinion Research Center. *Environmentalism in the United States*. Chicago: University of Chicago Press.
- Derksen, Linda and John Gartell. 1991. *Environmentalism in the United States*. Journal for the Scientific Study of Religion 20: 19-28.
- Greeley, Andrew. 1993. Religion and the environment. Religion 23: 19-28.
- Guth, James L., John C. Green, and David M. Smith. 1995. Beliefs and attitudes on environmentalism among religious conservatives. Journal for the Scientific Study of Religion 24: 70-80.
- Hunter, James Davison. 1991. *Culture Wars*. New York: Basic Books.
- Kanagy, Conrad L. and Fern K. Y. Page. 1978. Environmentalism and religious commitment. Journal for the Scientific Study of Religion 17: 181-97.
- Shaiko, Ronald G. 1987. Religion and environmentalism. Journal for the Scientific Study of Religion 16: 103-39.
- White, Lynn. 1967. The historical roots of the environmental movement. Journal for the Scientific Study of Religion 6: 52-61.
- Wilson, John, and Thomas Janoski. 1995. Environmentalism and religious commitment. Research 35: 193-206.