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ecology is compatible with a spirituality that expresses wonder and awe at the unfolding of the universe's potentiality for realized being, goodness, truth and beauty. Furthermore, he finds in such spirituality an implicit critique of the abstract conception of selfhood and dogmatic rationalism found in some versions of social ecology.

Social ecology is at present associated strongly with Bookchin's theoretical position. Consequently, some who have explored the affinities between social ecology and spiritual and religious thought have subsequently gone so far as to disassociate themselves entirely from social ecology as a theoretical and political tendency. Thus, the future relationship of "social ecology" to spirituality and religion will depend in large part on whether the term will primarily connote adherence to Bookchin's system of "dialectical naturalism," or whether it will increasingly refer to a theoretically more diverse tradition founded on a common problematic for inquiry.

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- See also: Anarchism; Berry, Thomas; Earth First! and the Earth Liberation Front; Ecofeminism; Environmental Ethics; Green Politics; Radical Environmentalism.

Social Philosophy – See Environmental Ethics.

Social Science on Religion and Nature

Religion: Good or Bad for the Environment?

"We shall continue to have a worsening ecologic crisis until we reject the Christian axiom that nature has no reason for existence save to serve man." So argued historian of technology and medieval/Renaissance scholar Lynn

White, Jr. (1967: 1207), who effectively set the terms of debate over religion and environmental concern for the last three and a half decades. White did not mince words – "Christianity is the most anthropocentric religion the world has seen" (1967: 1205) – and his powerful condemnation of Christianity as the ultimate cause of Western environmental crisis prompted the coming out of allies, as well as the inevitably countervailing response as believers, sympathizers, and reformers scrambled to bring out Christianity's greener hues.

Most scholarly commentaries on Lynn White's bald thesis have fallen somewhere between the two poles of attributing either outright guilt or utter innocence to religion – scholars generally prefer, rightly or wrongly, to complexify such matters – yet none has come close to the stature of White's 1967 publication. An early collection of top scholars of the era included arguments running parallel in some ways to White's thesis, qualified rejections of White's equation of Christian theology solely with dominion over nature, and a prototypical complexification argument claiming that capitalism, democracy, technology, urbanization, wealth, population growth, and resource tenure have all had environmental impacts on the Earth, with religion (in particular Judeo-Christianity) bearing only tenuous connections to this suite of causes. More recent responses have included philosophical and theological developments of the connection between religion and environment, attempts to bring science, religion, and environmental concern into closer dialogue, and inquiries into the ecological dimensions of a broad array of world religions and spiritual traditions.

Enter social scientists into the fray – after all, White's argument, and the counterarguments of White's opponents, are empirical claims concerning social and cultural reality, and thus could in theory be tested by means of rigorous, often quantitative, social science methods. Perhaps the debate over religion and environment would be settled by means of controlled empirical studies, or analysis of data from existing studies, using the powerful statistical methods social scientists routinely deploy. Perhaps science can help us decide whether White's thesis is correct.

This is the aura of science, but not the reality. Social science has done a tremendous service to the study of religion and environmental concern, but it has failed to deliver the conclusive chapter to the story. To understand why, we must first consider how social science approaches this topic, then examine applications of social science to the environmental dimensions of organized religion as well as the religious dimensions of environmentalism.

The Social Science Approach

The world sketched by White is one in which what he termed the "marriage" of Western science and technology,

not entirely consummated until the mid-nineteenth century, has wreaked environmental havoc in recent generations at a hitherto-unknown scale. The roots of these two institutions in Christian thought are deep: White traces the development of a distinctly scientific form of natural theology back to the thirteenth century, and large-scale technology back to the eleventh century, though with much earlier ties to the Christian doctrine of mastery over nature. By way of a causal model, then, White's argument moves from culturally-diffuse *ideas* inherent in Christianity to the powerful *institutions* of science and technology to the environmental *impacts* so obvious today.

The world sketched by a good deal of quantitative social science is rather stark in comparison to White's world. Not only is the timescale reduced to that for which data can be generated – in the case of surveys, the last several decades at most – but the societal complex of differentially powerful persons, ensconced in and carrying forth a wide realm of cultural and political institutions, often turns into a relatively undifferentiated mass of individuals. Virtually all social science tests of the White thesis operate in a world of self-reporting minds, participating – willingly or reluctantly, self-aware, self-deceived, or intentionally deceptive – in surveys designed to capture salient individual-scale characteristics. This rather ubiquitous doctrine of methodological individualism thus leads to a quite different causal model, which statistically aggregates patterns between the self-reported religious and environmental characteristics of *individuals*. *Ideas* are culturally diffuse only to the extent that a certain number of individuals claim to share them; *institutions* do not effectively exist; and *impacts* are assumed to follow based on expressed intent or concern of individuals – a not altogether convincing surrogate.

The challenges faced by social scientists, who wander this depauperate world in hopes of illuminating the much richer, though far less quantitatively tractable, world to which White referred, are understandably immense. Their strategies have been ingenious, and their accomplishments impressive. At the heart of their project have been three methodological questions concerning how to measure individual religiosity, environmental concern, and the relationship between the two. Though the common assumption is that individual religiosity is well described in terms of theological beliefs, religious scholars running from Otto (1923) to Eliade (1959) to the present have emphasized that religious experience and practice are equally if not more relevant. Thus have followed innovative means of characterizing religiosity as a function of individual beliefs, belonging, and behaviors. More directly relevant has been the desire adequately to capture the religiously based idea White blames for environmental destruction: examples have included notions central to White's thesis, such as dominion-over-nature, or related religious characteristics such as fundamentalism, and con-

servative eschatology. Similarly, individual environmental concern is best captured by a variety of measures, including attitudes and beliefs, policy concerns, and behaviors, though these items do not necessarily produce a consistent picture. Yet many of these factors are omitted in social science analyses due to data restrictions or the view that not all are relevant.

Once the measurement of religiosity and environmental concern has been addressed, the question remains as to how to characterize their relationship. The obvious point of departure is correlation: do individuals who score higher in certain religious characteristics also score higher in certain environmental characteristics, and vice versa? Yet correlation is not causation: if A (in this case, a religious characteristic) and B (an environmental characteristic) are correlated, perhaps A caused B, but perhaps B caused A, or perhaps C (possibly a demographic characteristic such as income or education) caused A and B. Most social scientists translate the White thesis into their world as A (religiously based attitudes toward nature) causes B (lack of environmental concern). Few social scientists are concerned that perhaps B causes A (since A is arguably more general than, and thus includes, B); yet there are two exceptions. If one means not "environmental concern" but "the natural environment," the latter certainly has been assigned causal properties in socio-biological and related accounts. Additionally, if one considers A and B in at the institutional scale of organized religion and environmentalism, there is some evidence for the "greening" impact of the latter on the former in recent decades. Nonetheless, a remaining concern is that A and B may jointly derive from C. Thus most studies proceed from simple correlations to regression analyses in which demographic and other factors are added as "controls" – a method of effectively holding C constant to determine whether A has any independent effect on B. This method appears to be much more rigorous than the simple correlation, and has revealed a number of very important complications to the White thesis. But it should be remembered that, given the effective disappearance of institutions (not just science and technology, but, for instance, language and politics) and the reliance upon sample surveys, religion and environmental concern are understood as dimensions of individual human thought and action, alongside potentially complicating demographic and other dimensions of individuals. Even if, in the social science world, A does not seem to cause B, White's world may remain relatively unexamined.

Religion and Environment

There have been many empirical social science studies of the White thesis, but a small number of themes emerges from this literature. The first is that the connection between religion and environmental concern – as evidenced in surveys of sampled individuals – may be

statistically evident, but it is substantially weak, especially when demographic (e.g., age, education, gender, social class) and other controls are taken into consideration. The weakness of the religion-environmental concern association has led some of these social scientists to declare the White thesis null and void, and others to reserve judgment until further studies sort out currently unsolved puzzles – as but one example among many, religiosity as defined by behavior appears negatively to influence environmental attitudes, but it positively influences environmental behavior. What is unarguable, however, is that not one single social science study has provided powerful and unqualified vindication of the Lynn White thesis.

The second theme is the theoretical point that, in regards to the relationship between religion and environmental concern among individuals, things are more complicated than they seem; or, put less generously, White's thesis is conceptually simplistic. For instance, several studies have called for some form of denominational disaggregation of Christianity, arguing that religiously based ideas of nature are by no means uniform across the spectrum, and some social scientists have joined other scholars who have argued that there are more ideological options available to Christians than the stark opposites of dominion over nature versus unity with nature.

A third, and quite provocative, theme is that ideas of dominion, and even related attributes of theological fundamentalism, may not be fundamentally religious – or, more broadly, religious affiliation may not itself be strictly religious. If so, White may be barking up the wrong tree in placing sole blame on Christian theology. As just noted, a whole suite of ideas of nature may be theologically available to Christians; perhaps, as these social scientists argue, certain ideas are mobilized by certain religious groups as a part of broader political agendas, and individuals accept these ideas as a part of their political – not merely religious – commitments. This in part explains why political orientation is often a stronger predictor of environmental concern than religiosity. Religious identity may thus play an important role in providing individual support (or opposition) to the larger political-economic project of the domination of nature.

Environment as Religion

The above has assumed that religion and environmental concern are, as A and B, separable entities. Yet what if A and B are coextensive? Rather than consider whether religion has implications for environmental concern, some social scientists have taken a different tack in examining religious dimensions of environmentalism itself, or even more broadly, to explore whether something like nature religion exists. To many people, this phenomenon should be called nature spirituality, since the very term "religion" denotes organized religion, yet characteristic features of religion are indeed found among those for whom nature,

not God, serves as sacred locus. Catherine Albanese notes four varieties of nature religion in American history: the Transcendentalist legacy inherited by contemporary environmentalism, metaphysical forms of spiritualism (e.g., Theosophy) reaching to contemporary New Age practices, a revitalized emphasis on bodily healing and well-being grounded in nature, and Enlightenment-style natural religion and natural theology, expressed in peculiarly American forms such as pragmatism. The broad concept of nature religion thus includes, but moves far beyond, environmentalism *per se*.

Empirical work in environment as religion is relatively scarce, however. Most exists in the form of qualitative interviews, which have revealed strong religious dimensions of environmental thought and practice. One major study of American environmental values suggested significant and diverse connections with religion, ranging from nature as "God's creation" to a source of spiritual experience.

But how widespread is this phenomenon? Some indication comes from a question on nature sacredness included in the 1993 International Social Survey Programme (ISSP) environment module, which asked respondents to state whether to them nature is sacred as created by God, inherently sacred, or important but not sacred. Given these three options of transcendent sacredness, immanent sacredness, and non-sacredness, nearly one in four U.S. respondents agreed with immanent sacredness, a strong support of nature religion which raises to nearly two in five (a plurality) among members of environmental groups.

One quantitative study of British responses to the ISSP question discovered that those supporting immanent sacredness in nature scored highest in questions of environmental and scientific knowledge. This finding runs contrary to allegations that nature religion threatens to rob environmentalism of its grounding in scientific rationality. Using other variables from British responses, two scales were constructed, one representing a respondent's "romantic" (anti-scientific, spiritual) inclination, and the other representing a "materialist" (pro-science and economy) stance. Though a negative correlation would be expected there was actually little correlation between the two, and in fact those who scored high on the materialist scale also tended to score high on the romantic scale.

Further social science research on environment as religion may offer a new set of perspectives on the White thesis. Preliminary results from a nationwide survey we administered during spring and early summer 2002 to slightly over 1000 adult Americans suggest that attitudes toward nature sacredness may be a defining feature of American environmental concern. Fifteen candidate statements on nature sacredness were narrowed down to six in a pilot survey. These six statements were included in the final survey, which together with extended respondent

interviews indicate that transcendent sacredness and non-sacredness are opposing positions (i.e., two poles on the same underlying factor), but immanent sacredness is a relatively separate factor: those who believe that nature is inherently sacred thus may or may not (despite possible logical contradictions) ascribe to transcendent sacredness or non-sacredness.

Of these three positions on nature, responses regarding immanent sacredness proved to be quite strongly associated with environmental concern among adult Americans. We measured environmental concern in three ways: self-identification as environmentalist, average concern for a suite of six environmental issues, and average participation in six sets of pro-environmental behaviors. Correlations between immanent sacredness (as measured by a factor score of three related variables) and these three measures of environmentalism are given in Table 1. The table gives results of both zero-order (i.e., uncontrolled) and partial correlations controlled for demographic characteristics, political orientation, and theological fundamentalism. For demographic background, we included age, gender, income, and educational level; political orientation was indicated by self-rating on a liberal-conservative scale, and theological fundamentalism involved belief regarding the Bible as the literal word of God. Zero-order correlations are somewhat stronger in all cases, but the reduction following correction for demographic, political, and theological characteristics is minor. The strong association between belief in nature as sacred locus and environmental concern thus cannot be explained in terms of underlying demographic, political, or theological characteristics. In short, nature religion is a phenomenon in its own right, and closely linked with contemporary American environmental concern.

These correlation results are corroborated by a regression analysis, in which demographic, political, and theological characteristics were entered in successive blocks prior to the inclusion of the immanent sacredness factor. Results, using each of the three measures of environmental concern as dependent variable, are given in Table 2. Even following introduction of these other candidate explanatory characteristics, immanent sacredness alone accounted for between 41 and 59 percent of total variance explained in environmental concern. The closest runner-up, political orientation, explained between 29 and 43 percent, and much of this is due to its inclusion in the

model before theological fundamentalism, which is highly correlated with political orientation and thus would have absorbed more of the variance if it were included first. (It is worth noting that, even in the strongest case, only about 20 percent of total variance in environmental concern was explained by all of these characteristics combined; environmentalism is thus by no means fully explained by them.) Beta weights (standardized measures of relative importance) of immanent sacredness also were much higher than political orientation, theological fundamentalism, and demographic characteristics.

These preliminary results admittedly suffer from the same limitations of social science analysis noted above. Yet they suggest that American environmental concern is more closely tied to nature religion, in which nature serves as sacred locus, than demographic background, political orientation, or degree of theological fundamentalism. Religion and environment are connected in broadly the manner White suggested, but not necessarily in the manner explored by most social science studies. It is thus possible that environmental concern will ultimately be aided both by the progressive greening of institutional Christianity, *and* the growth of religious expressions rooted primarily in nature and not Judeo-Christian theism. White's preferred "patron saint," Saint Francis of Assisi, may well have felt at home in both camps.

Conclusion

The social science literature on the relationship between religion and environment has concentrated preponderantly on the "Does religion influence environmental concern?" interpretation of the White thesis as noted above, and primarily in the context of Christianity in the United States. While this literature has suggested important complications and elaborations of the White thesis, it has generally been inconclusive. A second interpretation, where environmentalism itself is a form of religion, is promising as suggested by the results of our study and others, yet requires further social science elaboration. And other interpretations have scarcely been explored: as but one example, it is quite possible that Protestantism has played a decisive role in nature-society relations in the West, though whether that role has been religious or more broadly cultural, and positive, negative, or both is open to debate.

One of the great limitations in social science research in

Table 1. Zero-Order and Partial Correlations

Immanent Sacredness	Environmental Self-Identification	Environmental Issues Concern	Proenvironmental Behavior
Zero-Order	0.303	0.395	0.339
Partial	0.274	0.362	0.303

-All correlations significant at $p < 0.001$

-Partial correlations controlled for demographics (age, education, gender, income), political orientation, and theological fundamentalism

Table 2. Linear Regression Results

	Environmental Self-Identification			Environmental Issues Concern			Proenvironmental Behavior		
	Beta	R ²	R ² Total	Beta	R ²	R ² Total	Beta	R ²	R ² Total
1. Demographic Characteristics		0.016			0.023			0.020	
Age	0.112**			0.128***			—		
Education	—			—			—		
Gender	—			—			-0.062*		
Income	0.058*			—			—		
2. Political Orientation		0.072			0.058			0.073	
Conservative vs. liberal	-0.194***			-0.169***			-0.208***		
3. Theological Fundamentalism		0.010			0.002			0.003	
Biblical literalism	-0.097**			—			—		
4. Nature Sacredness		0.068			0.120			0.083	
Immanent sacredness	0.267***			0.357***			0.296***		
			0.166			0.197			0.179

-* p < .05; ** p < .01; *** p < .001; results omitted where p ≥ .05

-Independent variables entered as blocks in sequence as above. Note: Political orientation and theological fundamentalism highly correlated (R = 0.343), thus order of entry into regression reduces explanatory power of fundamentalism

this area has been not only the relative paucity of qualitative studies, but also the virtual absence of coordination between quantitative and qualitative research. Both are important, and play complementary roles: quantitative research tends to be *extensive* in that it seeks generalities across populations, whereas qualitative research tends to be *intensive* in that it seeks depth of understanding in particular groups or individuals. Qualitative studies are also well suited for analysis of institutional forces, and not simply individual attitudes and behaviors. Our recent study mentioned above involved a dual, extensive-intensive methodological approach, in which approximately ten percent of all survey respondents were contacted afterward for open-ended interviews. The principal advantage of this dual methodology is that quantitative and qualitative data are linked by respondent; each component can thus directly shed interpretive light on the other.

What is needed is for social scientists to recognize in their analyses that the world of religion and environment is more than one populated by sampled individual survey respondents. Social science has brought great rigor to the religion-environment question, but at the expense of a highly simplified domain. It could well be, as social scientists have generally argued, that the Lynn White thesis is limited; whether or not this is true, social scientists have

not yet offered a conclusive indictment nor a compelling alternative. In their absence, popular culture is deluged with right-sounding proclamations on religion and environment; bookstores are overflowing with new titles. Lots of sweeping theories are being advanced. Many have rather naively suggested that the solution lies in non-Western religious traditions, despite the evidence of serious ecological problems faced in non-Western parts of the world. Social science offers an important empirical check on these notions, but only if it remains mindful of its current limitations and works harder to develop a fuller theoretical and methodological base.

The task is huge, as huge as the scope of religion and nature-society relations. No wonder social science has not yet offered the conclusive word on White's argument! As White himself admitted, "There are many calls to action, but specific proposals . . . seem too partial, palliative, negative . . . What shall we do? No one yet knows" (White 1967: 1204). Though some have ventured that, given this confusion, "It would probably have been better if the Lynn White debate had never occurred" (Hargrove 1986: xvii), academic research on the relations between religion and environment has surely been enriched. The "ecologic crisis" that so concerned White is still a concern for many of us today; we all want solutions. Yet, to the extent that any solution lays claim on the empirical reality of humans and

their relations with the nonhuman world, social science will play an indispensable role.

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- See also: Ecology and Religion; Environmental Ethics; Nature Religion; Nature Religion in the United States; Religious Environmentalist Paradigm; Religious Studies and Environmental Concern; White, Lynn – Thesis of.

Soelle, Dorothee (1929–2003)

Dorothee Soelle is a pioneering figure in German Lutheran theology. She has made significant contributions to post-Holocaust, feminist, and liberation theology from the 1970s to the present. Ecological concerns are reflected throughout her theology, poetry and political activism on behalf of anti-nuclear, anti-war, and anti-capitalist causes. Soelle criticizes traditional Christian theology for conceiving of God as the transcendent ruler of the world who subordinates weak, sinful human beings to "his" omnipotent will, and for conceiving human beings as dependent on God for salvation which implies human passivity in the face of global injustice.