

# Religion's Responsibility for the Ecological Crisis: An Argument Run Amok

Thomas Sieger Derr

The current passion for a "theology of ecology" got its chief start with the appearance in *Science* in March, 1967, of an article titled "The Historical Roots of Our Ecologic Crisis." Its author, medieval historian Lynn White, Jr., of UCLA, is an engaging raconteur with a gift for the memorable phrase and the arresting thought. He is professionally adept at rummaging through heaps of historical scraps and making sense of them, frequently rather novel sense. Specializing in the development of technology in the Middle Ages, he links happenings from seemingly different realms, particularly ideas and artifacts, so that once familiar history suddenly looks quite different, rather like the shock one gets when old stories of kings and armies and conquests are retold from the medical point of view. White retells the history of ideas from the technological point of view. "Until we have learned to look at the carpenter's brace with a certain awe, we have not begun to absorb the cultural implications of the democratic revolution," he writes;<sup>\*</sup> or "[The invention of the chimney] may . . . have fostered the individualism of the later Middle Ages more than all the humanists."<sup>\*\*</sup>

In "Historical Roots" he matches the environmental crisis to the Christian faith, and, as usual, he does so memorably. Arguing that ecology is "deeply conditioned" by religion, he traces the heedless modern technological exploitation of nature back through the ages to the Judeo-Christian doctrine that man has God-given "dominion" over the earth and all its lesser creatures. Non-Western religions tend not to separate man from nature, hence do not have the mentality of objective detachment which gave to the Western world leadership in science and technology. Even in the Western tradition it is only Latin Christianity, not Islam or Eastern Ortho-

doxy, which created the cultural climate in which modern technology grew. As for Judaism, it did not have the same broad cultural impact (though, if it had, White would doubtless have given it an equal portion of the blame which it now bears only derivatively through its Christian offshoot).

Why just Latin Christianity, when the Eastern tradition has the same basic doctrines? Because, says White, the Latin style—Roman Catholic and later also Protestant—is activist and voluntaristic, stressing right conduct and ethics, while the Greek Church is contemplative and intellectualistic, finding salvation in illumination. In the Western Church one studied the natural world in order to understand the mind of the Creator, hence "modern science is an extrapolation of natural theology." In the East Creation was, of course, also held to display the mind of God, but more allegorically and aesthetically than scientifically. White concludes, then, that "modern technology is at least partly to be explained as an Occidental, voluntarist realization of the Christian dogma of man's transcendence of, and rightful mastery over, nature." Given the current state of technology as ecologically "out of control," "Christianity bears a huge burden of guilt."

As the trouble is at root religious, so also must the cure be, and White finds it in St. Francis of Assisi. St. Francis, "a pan-psychis[t] of all things animate and inanimate," treated the rest of nature's creatures as if they, like man, possessed souls to be saved, hence "Brother Ant," "Sister Fire," and so on. He was, alas, "clearly heretical," because he "tried to

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THOMAS SIEGER DERR, who teaches at Smith College, is author of *Ecology and Human Need*.

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\*"The Changing Canons of Our Culture," in *Machina Ex Deo, Essays in the Dynamism of Western Culture* (Cambridge, Mass., 1968). "Historical Roots" has been reprinted in this volume.

\*\*"Technology: Assessment From the Stance of a Medieval Historian," *American Historical Review* (February, 1974).

depose man from his monarchy over creation and set up a democracy of all God's creatures." But heretical or not, his ideas are "recessive genes" in Christian faith, and we need them today if we are to reject "the Christian axiom that nature has no reason for existence save to serve man" and if we are to overcome our "orthodox Christian arrogance toward nature." St. Francis, White proposes, would make a fine patron saint for ecologists.

**H**istorical Roots" achieved immediate fame. It was widely reprinted and quoted. Its thesis, even sometimes simplified and distorted, was borrowed with and without acknowledgment, as if it were established fact. René Dubos, who disagrees with it, says in his book *A God Within* that the White article gave popularity and "academic glamor" to the idea "that the Judeo-Christian tradition is responsible for the desecration of nature in the Western world." Religion and ecology proved a powerful mix of passions, and all sorts and conditions of people rushed forward. Landscape designer Ian McHarg exploded in righteous fury at iniquitous Western monotheism (*Design With Nature*, 1969):

The emergence of monotheism in Judaism had as its corollary the rejection of nature; the affirmation of Jehovah, the God in whose image man was made, was also a declaration of war on nature.

The biblical story of creation

in its insistence upon dominion and subjugation of nature, encourages the most exploitive and destructive instincts in man rather than those that are deferential and creative.

The text, a license for polluters and destroyers, means "conquer nature—the enemy, the threat to Jehovah."

Literary critic Leo Marx incorporated White's thesis into his long-standing concern with the conflict between rural and urban values in America: Christian separation of man from nature has aided the "violent assault upon the physical environment," and Christianity has fostered an "aggressive, man-centered attitude toward the environment. . . . Everything in nature, living or inorganic, exists to serve man ("American Institutions and Ecological Ideals," *Science*, November, 1970).

The splenetic ecologist Paul Ehrlich snapped White up:

Our dilemma is an unfortunate outgrowth of a Judeo-Christian heritage which has produced a blind science and technology and a berserk ethnocentric culture . . . [and which of course compares unfavorably to] the Eastern and gentle pacific cultures in which lives (or lived) a leisurely life of harmony with nature (*How to Be a Survivor*, with Richard L. Harriman, 1971).

Arnold Toynbee stripped the White argument down to its bare, and grossly oversimplified, essentials. Given his reputation as an all-purpose expert on the past, he had little difficulty in persuading the gullible *New York Times* to print "The Genesis of Pollution" six years after White, as if it were worthy and novel current opinion (see the issue of September 16, 1973).

The Earth-Day movement early took up White and reprinted his article in *The Environmental Handbook* (1970). The attractiveness of "Historical Roots" was increased by the large overlap between the Earth-Day people and the counterculture, which rejoiced that White had given its religious predilections such a favorable review. "More science and more technology," he had written in "Historical Roots,"

are not going to get us out of the present ecologic crisis until we find a new religion, or rethink our old one. The beatniks and hippies, who are the basic revolutionaries of our time, show a sound instinct in their affinity for Zen Buddhism and Hinduism, which conceive of the man-nature relationship as very nearly the mirror image of the Christian view.

The superimposed "o" and "e" on the Earth-Day green-and-white-striped flag and decal come with explanatory symbol-words redolent of primitive and mystical religions ("oneness, om, orgasm, enlightenment, eros, ecstasy") but remarkably innocent of ideas drawn from the Western religious tradition.

Many others with their own interests have ground their favorite axes with White's article. It is almost magically adaptable, serving historians, ecologists, drop-outs, religion-haters, social-planners, commune dwellers, and more, giving to each what he or she wants in his or her own situation.

White was mightily surprised by the reaction, and confesses he has not tried to follow it all. Perhaps that is just as well, for some of the uses to which he has been put would surely embarrass him. Yet he remains well disposed to all, a kindly, humorous, immensely likable man, generous to his opponents, even to interviewers who forewarn him of critical intent. He is obviously pleased that his effort has stirred up such a fuss, and is only half-joking when he says of the "theology of ecology" (as in a letter to me in late 1973), "Of course, I claim to be the founder!"

**H**ow new, really, are his arguments? The major premise, that the Western Christian tradition is indirectly responsible for the rise of science and technology, has been debated for a good many years. White acknowledges his interest in the ideas of Ernst Benz, for example, who found the origin of Europe's technological advance in such Christian ideas as the creator God's command to man

to fulfill his will for earth by cooperating with him. The biblical linear view of history led to the notion of work to achieve a goal; and in such work matter was not despised but honored, as we see from the doctrines of the incarnation and the resurrection of the body.\*

One of the best-known proponents—and celebrators—of the Christian parentage of modern technical civilization is Arend Van Leeuwen, whose 1964 book, *Christianity in World History*, created considerable interest with its bold argument, supported by an impressive grasp of world cultural history, that Western civilization owes its unique power and dominance ultimately to Christianity, however much contemporary secularism may feel at odds with its religious foundations. Modern science and technology, emanating from the West to pervade the world, have their origins in the biblical view of nature as the creation of God, a “theocratic” view sharply opposed to the “ontocratic” view of the cosmos held in nearly every other traditional culture.

At about the same time there appeared in English translation a work already famous in French, Jacques Ellul’s *The Technological Society*. Ellul took seriously the arguments for the Christian origins of modern technical culture, but he had a somewhat different problem. Convinced of the demonic influence of “la technique,” and anxious to detach the Gospel from this demon, he spent his efforts on debunking the famous argument. Early Christian expectation of the end of the world, and later Eastern Christian otherworldly mystical interests, could hardly have spurred interest in technology. Even in the West, Ellul thinks, the technological advance, after a millennium of Christian civilization without it, was due more to commerce with the Near East and Asia than to Renaissance humanism, and finally, in the eighteenth century, to a complex of factors, including population, social structure, and secular philosophy.\*\* Ellul’s vigor in prosecuting his case is revealing. Clearly, though he is quite out of sympathy with it, he finds the argument for the Christian parentage of science and technology popular, persistent, and powerful.

Another important product of the mid-sixties was Clarence J. Glacken’s learned tour through primary source documents from ancient Greece to the eighteenth century, *Traces on the Rhodian Shore: Nature and Culture in Western Thought from Ancient Times to the End of the Eighteenth Century* (1967). Sometimes seemingly overwhelmed by the volume of his material, worried about his own principles of selectivity, Glacken is cautious enough in advancing any kind of summary judgment. His evidence, predictably, does not all point one way. Man’s awareness of his sharp distinction from the rest of nature could have arisen in primordial times from his ability to assert his will over some animals; or it could have arisen in his sense of artisanship.

The theme that man is the orderer of nature, the

finisher (or repeater) of creation, is virtually a universal myth, as Mircea Eliade has pointed out. The man-nature distinction, in short, is not just a product of Israelite theology. That the human task is to improve and fulfill the intention of the divine mind for the earth, as a kind of steward or trustee of a designed world, is an idea also common enough outside the Judeo-Christian tradition, for example in Stoic thought. There is also considerable variety within Christian thought, not all of it favorable to science and technology! For example, there is a negative, antimaterialistic strain, contempt for the world and for man’s capacity to do anything good with it, ruined as he is by sin. And as if that were not enough, Glacken warns us that technological changes have their own momentum and can proceed *without* a philosophy, or may create their own. Religious ideas may be in the background, but “too bookish and too abstract and general to be applied to everyday situations,” where laymen’s empirical observations govern.

The book is festooned with such caveats, but Glacken does lean more to the side of positive Christian influence. The Judeo-Christian reinforcement of the classical idea of a designed earth, an earth for which man was responsible, was the critical factor in that idea’s survival in power into the modern era. Christian writers, early and late, considered the study of nature to be a pious inquiry into God’s ways, and many added that God meant man to improve on nature in managing it, and to admire it only if God were loved in it, that is, to avoid pantheism. This Christian “preoccupation with creation,” with a delight in human knowledge and skill, was the dominant motif, rather than the relatively minor ascetic, world-denying strain.

So Christianity did, it seems, contribute to the cultural climate in which technological inventiveness flourished. But in the end Glacken draws back from giving it all the credit. He thinks, rather, that out of the Christian culture of the Middle Ages there gradually appeared a secular attitude in many ways antithetical to Christian faith, which could study nature for its own sake and seek to control it purely

\*Ernst Benz, “The Christian Experience of the End of Time and the Idea of Technical Progress,” in *Evolution and Christian Hope: Man’s Concept of the Future From the Early Fathers to Teilhard de Chardin* (New York, 1966). White, characteristically, knows Benz’s original, more detailed piece, “Fondamenti cristiani della tecnica occidentale,” in *Technica e casistica*, edited by Enrico Castelli (Rome, 1964).

\*\*Ellul belittles the technical achievements of the Christian Middle Ages, though had White’s *Medieval Technology and Social Change* (Oxford, 1962) or Bertrand Gille’s long study in *Histoire général des techniques*, edited by Maurice Daumas (Paris, 1962) been published and available to him before he wrote, perhaps he would have known better.

to celebrate human mastery. Not the "dominion" tradition of Genesis 1, but this secular view, which emerges only in the sixteenth and seventeenth centuries, is the beginning of the modern awareness of man's power, today's "breathtaking anthropocentrism." The religious contribution to technological society is only one element in the mix, and not necessarily the dominant one.

Glacken's was the major effort of the 1960's, but interest in the Christianity-and-technology thesis goes back well before the past decade. In the 1950's the Zen Buddhist apologist D.T. Suzuki pointed to a distinction between Eastern and Western religions in their conception of the man-nature relationship. Painting the West in its worst colors and the East, or at least Zen, in its best, he traced the Western antinature "conquest" mentality to the anthropocentrism of Genesis 1—"the real beginning of human tragedy" (*The Role of Nature in Zen Buddhism*, in *Studies in Zen*, 1955).

In the early nineteen thirties Lewis Mumford's *Technics and Civilization* discovered some of the foundations of modern "mechanical" civilization in the routine of the monastery, which led to the regular measurement of time and eventually to the mechanical clock, "the key-machine of the modern industrial age," because it transformed "organic time" into the abstract measurement of a routinized day. More generally, he thought that the antianimistic theology of high scholasticism, positing an orderly, lawful world, laid the basis for the later view of the world as an independent natural entity. Actually Mumford tended to regard religion as an obstacle to technology, because it treated the natural world as inferior to heaven, and inhibited the dispassionate study of nature by requiring that the divine intention be sought in its workings. Thus Christianity's *positive* influence seems to him largely unwitting and ironic. But positive influence there was, even though it was only one of the several cultural factors which formed contemporary civilization.

Still a decade earlier Alfred North Whitehead, in his influential lectures collected in *Science and the Modern World* (1925), addressed the puzzle of the causes of the unique eruption of modern science in Western Europe. The prerequisite for science is an "instinctive conviction of an *Order of Things* and in particular of an *Order of Nature*," which was passed down in our culture from the ancient Greeks to Stoic philosophy to the Middle Ages and thence to the modern era. Science also requires the habit of definite exact thought, which the European mind got from Scholastic theology. Above all, science needs the "inexpugnable belief" that all details can be correlated in a system exemplifying general principles; and "there seems to be but one source for its origin, . . . the medieval insistence on the rationality of God."

The faith in the possibility of science, generated antecedently to the development of modern scientific theory, is an unconscious derivative from medieval theology.

Anticipating the current interest in the Benedictines' technology, Whitehead also gives their practical-minded interest in nature some credit as a precursor of modern science.

These examples merely scratch the surface of prior interest in the subject. Indeed, Lynn White himself had contributed much to it even before the appearance of "Historical Roots." He had already noted, in his study of medieval technology, that Christian thought was apt to view inventiveness and mechanical skill positively, contrary to the assumption which people like Mumford inherited that religious otherworldliness must have bred contempt for material things. Christian moral enthusiasm for technology was accompanied regularly by insistence on the spiritual value of hard work and the dignity of manual labor, values notably lacking in classical civilization.

Max Weber and a host of followers have implied that it was Protestantism, or at least Calvinism and later Puritanism, that turned the ascetic strain into a this-worldly asset; but White shows instead that the tradition goes back a long way in Christian history to its Jewish roots in the elaboration of the Fourth Commandment, to keep the Sabbath: "Six days shalt thou labor." The tradition was especially well preserved in Latin monasticism, which, because of turbulent social conditions in the West, found itself the guardian of secular as well as sacred learning. The Western monks could not afford to be as withdrawn and as purely contemplative as their Greek counterparts.

White has also argued, variously, that the unique acceleration of technological progress in the West was due in part to agricultural changes leading to altered social structures; to "Celtic cultural genes" which took pride in artisanship; to the psychological shock of the barbarian incursions, disposing the mind to receive and use new ideas and forms; to Christian opposition to animism, ending the old mythological subservience to the cosmos and making nature amenable to human work; to the Western Church's battle against the Cathar heresy, with its dualistic devaluation of the material world as the creation of an evil god; and to a religious quest for labor-saving devices as humane.\* Thus, though not all of his reasons

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\*See White's "The Iconography of *Temperantia* and the Virtuousness of Technology," in *Action and Conviction in Early Modern Europe: Essays in Memory of E.H. Harbison*, edited by Theodore K. Rabb and Jerrold E. Siegel (Princeton, 1969); "What Accelerated Technological Progress in the Western Middle Ages?" in

touch on religion, religious elements play an important part.

White's earlier essays, then, contain most of what is in "Historical Roots," even his "Franciscan twist"; for long ago he saw in St. Francis a revolutionary against theological anthropocentrism in understanding nature.<sup>6</sup> The important difference is that in his earlier work White almost uniformly put the Christian contribution to science and technology in a positive light as democratizing and humanizing. The uniqueness of "Historical Roots," and the ironic source of its fame, is that here White turns pessimistic and makes a sour face at what up till now has afforded him much pleasure. Having defended the Western religious tradition for its beneficent effect on science and technology, White now looks at the position he has gained with so much patient labor and calls it pernicious. It is an academic Pyrrhic victory. The result is an ecological disaster. It is this rather startling feat which gained his essay its notoriety—this, and its magical adaptability, already remarked, to current trends in popular culture.

Much of the professional scholarly criticism of "Historical Roots" follows the line suggested by the above review of prior literature on the subject: The origins of Western science and technology are multiple, complex, and obscure. It is a false simplification to identify and make prominent one particular religious strand when so many secular factors were also at work, like geography, climate, population growth, urbanism, trade, democracy, and humanistic philosophy. Besides, even if Christian doctrine had produced technological culture and its environmental troubles, one would be at a loss to understand the absence of the same result in equally Christian Eastern Europe. And conversely, if ecological disaster is a particularly Christian habit, how can one explain the disasters non-Christian cultures have visited upon their environments? Primitive cultures, Oriental cultures, classical cultures—all show examples of human dominance over nature which has led to ecological catastrophe. Overgrazing, deforestation, and similar errors of sufficient magnitude to destroy civilizations have been committed by Egyptians, Assyrians, Romans, North Africans, Persians, Indians, Aztecs, and even Buddhists, who are foolishly supposed by some Western admirers to be immune from this sort of thing. We are simply being gullible when we take at face value the advertisement for the ecological harmony of non-Western cultures.<sup>7</sup>

In fact there is considerable evidence of an early and persistent Christian concern for environmental protection. Glacken patiently documents a continuing strand of thought, including St. Augustine, St. Thomas, and a host of moderns, protecting the "crude utilitarianism" which says nature exists *only* for man's use. Relentless pursuit of the proof for

God's existence from the order in the universe led to close observation of, and respect for, the interconnections in nature's workings, so that Glacken can conclude, after his survey of the vast literature: "Modern ecological theory . . . owes its origin to the design argument." And Dubos says flatly:

If men are more destructive now than they were in the past, it is because there are more of them and because they have at their command more powerful means of destruction, not because they have been influenced by the Bible. In fact, the Judeo-Christian peoples were probably the first to develop on a large scale a pervasive concern for land management and an ethic of nature.

If there is any "orthodox" Christian attitude toward nature, it is not, as White has it, arrogance, but respectful stewardship of an earth which belongs only to God. White, and those who applaud his thesis, feel that the current chorus of celebration for stewardship is a belated response and a disguised confession of prior guilt, and doubtless new ecological awareness *has* stimulated it. But it remains orthodox doctrine, and has certainly not been submerged for centuries, as Glacken shows so thoroughly. Nor is stewardship incompatible with anthropocentrism. The Judeo-Christian placement of man at the apex of creation as trustee for the rest of nature certainly does not mean that nature may be manipulated to serve the whims of man. That would contradict the meaning of "trustee" or "steward." But at the same time it puts man prominently into the picture and avoids the dangerous unreality of making nature without man our moral standard.

It will not be at all helpful to the human race in managing the environment wisely to adopt the mystic reimmersion of man in nonhuman nature, as St. Francis seems to do. Actually, it is not at all clear that White himself means to do this. His use of Francis is somewhat ambiguous. Before "Historical Roots" he praised Francis as "paradoxically" an unwitting founder of modern science, because "he first taught Europe that nature is interesting and important in itself," and his treatment of all creatures as autonomous entities provided "the emotional basis for the objective investigation of nature." And in

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*Scientific Change*, edited by A.C. Crombie (New York, 1963); "Dynamo and Virgin Reconsidered" and "The Context of Science," both in *Machina Ex Deo*.

<sup>6</sup>See White, "Natural Sciences and Naturalistic Art in the Middle Ages," *American Historical Review* (1947); and "The Context of Science," the original date of which is 1963.

<sup>7</sup>See discussions in Yi-Fu Tuan's article on "Our Treatment of the Environment in Ideal and Actuality," in *American Scientist*, Vol. 58; Dubos's *A God Within*; Glacken's *Traces on the Rhodian Shore*; and my own *Ecology and Human Need*.

fact, as White himself had noted, the Franciscan order did lead in natural science. These observations cut against the motif of "Historical Roots," that Francis's attitudes should be recovered in order to stop the consequences of our scientific mentality—unless, of course, White means that we should be more respectful scientists, in which case we are back at the orthodox Christian stewardship position.

Most likely that is where we ought to be. Dubos thinks so. St. Francis's "absolute identification with nature" is a "romantic and unworldly attitude" which is largely irrelevant today. Dubos's counterproposal to White is to take St. Benedict as the ecological model, where work is religiously sanctified and nature is transformed while maintaining environmental quality. "The solution to the environmental crisis will not be found in a retreat from the Judeo-Christian tradition or from technical civilization." A responsible anthropocentrism, the dominion of man as trustee, is the only practical course open to us.

After reading much of White's published work and talking with him at some length, I am fairly certain that "Historical Roots" has been interpreted and used in many ways contrary to his intent, though his talent for the sharp and memorable phrase has left him open for such misuse. In spite of his comment about Christianity's "burden of guilt" in the ecological crisis, he did not mean that it was the "cause" of that crisis or of the technological society in which the troubles arose. Many times he warns readers that no historian can speak simply about "causes," that one must rather talk of multiple roots, of indirect action through cultural climates, of religious "approval" of developments which may have other sources—and one must not neglect historical accidents, sheer chance, spontaneity.

Perhaps nowhere is the need for caution better illustrated than in the obvious differences between Greek and Latin cultures. In response to the charge that the atechanical civilization of Eastern Orthodoxy belies his estimation of the influence of Christian doctrine on the development of technology, White admits that the difference between East and West is "very puzzling." Maybe the Western Church's necessary assumption of civil functions was the source of the distinction, or perhaps we can speak only of a "spontaneous genetic mutation" which made the slight but crucial difference and brought out in the West the seeds which were *latent* in Christian faith.\* Such comments implicitly qualify his imputation of "guilt" to Christianity for environmental damage.

His exegesis of his own phrase, "orthodox Christian arrogance toward nature," is an open warning against misunderstanding and misuse. He did *not* mean, he says, that arrogance toward nature is orthodox Christian doctrine, only that presumably orthodox Chris-

tians have, as a matter of fact, been arrogant toward nature for centuries. Similarly, when he speaks of "Christian ruthlessness toward our environment," he means "ruthlessness abetted by Christian faith and rationalized in terms of Christian doctrine," not that that doctrine requires ruthlessness. And when he says that the Judeo-Christian concept of man's "dominion" is pernicious, it is because it has been *used* that way by men to serve their selfish ends, even though such use is contrary to the trusteeship concept intended in the doctrine itself. "The Christian axiom that nature has no reason for existence save to serve man" means that some Christians have *regarded* it as an axiom, not that it is a matter of true faith.\*\*

These qualifications are so significant that they may vitiate the argument of "Historical Roots." The essay surely meant to convey the impression that Christians were arrogant toward nature largely *because* they were Christians. But if we are now to understand only that Christians found it possible to serve their selfish ends by appropriating certain easily misused doctrinal concepts, then the argument may not be any more of an indictment of Christianity than it would be to blame the inventor of fire for all the world's arsonists.

White's qualifications of his argument stem from healthy scholarly caution combined with an irenic attitude toward his critics. But his willingness to yield goes only so far, and in the end he acknowledges an irreducible minimum of differences. Despite chance, spontaneity, and secular influences, attitudes toward technological change depend fundamentally "upon what people in a society think about their personal relation to nature, their destiny, and how it is good to act. These are religious questions." And no matter what the original intent of the "dominion" doctrine was, "technological aggression, rather than reverent coexistence, is now man's posture toward nature. Such aggression is the normal Western Christian attitude toward nature" ("Cultural Climates" and "Continuing the Conversation"). White will not accept the trusteeship concept, even properly understood, because men are too sinful, too self-deceived, and too anthropocentric to be trusted with the stewardship of the earth. He really means it when he counsels a Franciscan comradeship with nature, and Dubos is fair enough in characterizing

\*For White's thoughts here see his "Continuing the Conversation," in *Western Man and Environmental Ethics*, edited by Ian G. Barbour (Reading, Mass., 1973); "Historical Roots"; "Cultural Climates and Technological Advance in the Middle Ages," in *Viator: Medieval and Renaissance Studies* (1971); and "The Act of Invention," in *Machina Ex Deo*.

\*\*The quotation is from White's "Continuing the Conversation," and the clarification here—as at some other points—is from an interview I conducted with him last June 28.

the differences between himself and White as a distinction between Benedictine and Franciscan views. Dubos, says White, wants just a "cleaning up of our traditional attitude, but I say it can't be cleaned up."

In finally taking his stand where he does, White may be paying a fearful price. The danger is not from critics of his historical judgments; history is his business, and he can handle attacks from that quarter. The problem is that the values he has espoused throughout his career—Christian, democratic, humane—are likely to be subverted by people making even perfectly legitimate use of "Historical Roots." White's own work will be used (it is already happening) to undermine his highest ideals.

He has always celebrated technology as a liberator, the essential contribution to relieving mankind from drudgery, a humanistic work as surely as writing sonnets, and every bit as creative. It is democratizing, giving to the masses what had hitherto been the privilege of the few—"a new order of plenty, of mobility, of personal freedom." He has applauded the reinforcement of this "humanitarian technology" by Western theology, which insists on the infinite worth of even the least of humans.

In keeping with his positive view of technology, White has never been a nature romantic. His first use of St. Francis to *support* science has already been noted. He would derive nature's value from its creation by God, not from its possession of a soul or consciousness analogous to the human being's. He is impatient with "the romantic brand of ecologic buff" who thinks "men have no 'rights' at all against those of caribou." He has no intention of abandoning science and technology, and his own environmental program when spelled out emphasizes the practical: limit births, use replaceable materials, recycle, stop pollution, reduce waste.

White is, above all, a Christian, whose own piety, though lightly worn, is evident enough in his writing. It is impossible to miss his concern for Christianity in "Historical Roots," his open identification of himself as a troubled churchman, his seriousness in looking for new attitudes *within* Christianity and not outside it. "Christian myth," he maintains, "remains the most compelling expression of man's timeless spiritual experience evolved by any religion" ("Christian Myth and Christian History," in *Machina Ex Deo*).

The irony is surely bitter, then, that "Historical Roots" has been embraced by an environmental movement deeply tinged with elitist, antidemocratic values; by ecologists ready to sacrifice millions to starvation and to institute totalitarian methods to keep the population down; by romantic technology-haters ready to abandon centuries of civilization; and by various anti-Christian types with a mixture of

personal motives. None of them should have much in common with Lynn White, and yet their conclusions follow all too easily from "Historical Roots."

There is even a suggestion that the inevitability of their arguments has had its effect on White too. In a deeply disturbing paper, "The Future of Compassion," read in Bucharest last summer at a World Council of Churches conference, he suggests that the combination of Christian compassion with science and technology has contributed so much to human longevity that the globe is threatened with a population inundation. Having proved so destructive in the end, "the ethics of Christianity is today obsolete in its traditional form." We should replace our dominant compassion for mankind with an equal compassion for nature, as St. Francis, of course, did.

This is obviously a repetition of the essential argument of "Historical Roots," and now White draws some logical conclusions from it. Although men and animals may kill to eat or to defend their territory (he is still not a nature romantic), no species may crowd another to threaten its existence. If locusts swarm and threaten men's food supply, men have a right to kill them—but not to exterminate them as a species. The balance is to be restored by the killing. Unfortunately it is now men who are swarming, threatening by overbreeding to destroy other creatures who are their "comrades" on the planet. So should many *men* now be killed (by whom?) so that the balance may be restored? Shall individuals be sacrificed in defiance of traditional Christian ethics, on the presumption that this killing will save the species?

White walks right up to this moral abyss and looks in:

I hesitate, in compassion both for ourselves and for our companion creatures, to light candles before the saints requesting a new Black Death such as gave fourteenth-century Europe a tragic respite from its Malthusian situation, enabled it gradually to restore its forests and soils to a great extent, and provided time for finding ways of using resources better ("The Future of Compassion").

One can almost feel him shrink from what he sees, visibly drawing back from the fearful answer which has appeared before him. And yet, with only slight obliqueness, he says it: many must die.

Is even this most humane and Christian man here preparing us—and himself—for the "final solution" to the problem of people and resources? Has the logic of the argument begun in "Historical Roots" led him this far, against his lifelong inclinations? If so, perhaps in this painful outcome he makes his own best case against his famous essay. The diagnosis it suggests and the advice it offers are not likely to support the author's own Christian humanism but to replace his values ultimately with paganism, authoritarianism, and brutality.