

EXPERIENCING NATURE:

A COMPARISON BETWEEN EARLY

MEDIEVAL AND MODERN

ENCOUNTERS WITH NATURE

We witness today a widespread concern about the relation between man and nature: we have, it seems, reached a limit in the exploitation of the resources of the earth; if we continue to treat nature merely as our inexhaustible source of supplies, the balance between man and nature might be destroyed forever.

What are the historical roots of the ecological crisis? There seems much to say for the thesis that ultimately the Western, more specifically the Christian assumption that man is the appointed ruler of the world, is responsible for our ruthless attitude toward nature.¹ Is not man admonished in the biblical account of creation to rule the earth? The story of Genesis suggests that, from the moment Western Civilization was born, an awareness of the antagonism between man and nature has existed;

¹ Lynn White, Jr., "The Historical Roots of Our Ecological Crisis." In: *Science*, 10 March 1967, Vol. 155, No. 3767.

it underlines the prevalent opinion that nature, whether it be the outside nature of wild seas, rugged mountains, marshes, jungles, or whether it be the instinctual nature inside of us, has to be conquered by man. It is, after all, the function of civilization to protect man against the violence of outside nature and against the untamed nature inside of ourselves and our fellowmen.² Civilization emerges, we feel, only where hostile nature has been defeated and made serviceable to our goals. It might be interesting in this context to recall some earlier Western attitudes toward nature.

In this essay I shall first sketch the early medieval notion of a cosmic solidarity on the basis of a history enveloping the human as well as the natural world. Then I shall show how in the modern period the worlds of man and nature had become separated. This divergence was accompanied by a feeling of alienation from nature: the world was experienced as a closed book, or a labyrinth. In this view, only man had a history and nature was seen as a basically unchanging machine serving as the neutral backstage for man's activities. Although the indifferent world of nature had no longer a meaning or a message to offer man, he was at least its center. Darwinism destroyed the comforting belief that man was placed by God at the heart of the world. With Darwin, man could no longer be considered as the glory of the creation: in the struggle for life he had to fight to maintain his position as much as any other natural being. I shall conclude, therefore, that the hostility between man and nature that seems today so obvious to us emerged only with Darwinism. The concept of a hostile nature is the product of the nineteenth and early twentieth century culture. The hostility of nature is not, as we are inclined to think, a fact of nature. As I shall indicate, this notion still dominates contemporary Western thought, but as it is so much part of our culture, we hardly reflect upon it and take it for granted. I wonder whether we have not been reading these unconscious ideas into the Bible in assuming so readily that we were already then told to keep the enemy, nature, under control.

When we look back to the past the seemingly "natural"

² S. Freud, *Civilization and Its Discontents* (*Das Unbehagen in der Kultur*), transl. J. Strachey, New York, 1962, p. 33.

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antagonism between the human and the natural world turns out, indeed, to be a latecomer on the scene of Western history. A comparison of the ways in which nature has been experienced in the past with our encounter with the natural environment can contribute to a heightened awareness of our own position in this regard. Now that the consequences of our current attitude have become apparent, we have to reconsider the assumption of the fundamental hostility of nature. In trying to find other ways to deal with our environment we cannot, of course, return to past attitudes, but it might be helpful to realize how recent the hostility between man and nature is.

I. COSMIC HISTORY IN THE EARLY MEDIEVAL PERIOD

In the early Middle Ages we find the notion that the Fall of Adam and Eve constitutes, besides a human tragedy, a cosmic catastrophe; not only man, but nature, too, had fallen from its original perfection, spontaneity and fertility. The Incarnation of Christ was interpreted as a promise for a regeneration of nature as well as of man. The words of St. Paul that up to the present the whole created universe is groaning as in the pangs of childbirth are a major testimony to such a belief.³ By the Incarnation the whole universe became reconciled to God.⁴ Now the Day of Judgment would come soon, St. Paul wrote, because the fullness of ages had come.⁵ During the Middle Ages, and in fact, long after, the belief that not only mankind but the whole cosmos was old, decrepit and close to death was common. Alcuin, the learned counsellor of Charlemagne, wrote about himself and his contemporaries as "dwarfs at the end of the world,"⁶ and he calls his period "this ruined end of the declining world."⁷ Dungal, a monk living during the same period, referred in a letter to Charlemagne to the belief that the first men were stronger in mind and body because of the youthfulness of the world.⁸ Otto

³ Romans 8, vs. 19-23.

⁴ Colossians 1, vs. 11.

⁵ I Corinthians 10, vs. 11.

⁶ *Monumenta Germaniae Historica Epp.* IV, Letter 23.

⁷ *Ibid.*, Letter 280, p. 437.

⁸ *Ibid.*, Letter 1, p. 577.

of Freising, writing in the twelfth century, stated in the Preface to his *Chronicle or the History of the Two Cities* that his contemporaries, "living at the end of times," did not have to read in books about the troubles of their situation; they could experience it directly. The decline of the Holy Roman Empire, once so great but now again humiliated by the Pope, announces the fall of the whole universe.⁹ Apparently it was felt that man and cosmos were involved in a common destiny.

The link that tied man and cosmos together in a common process of development was understood in terms of an exact correspondence between microcosmos or man and macrocosmos or universe.¹⁰ According to this conception, man is, on a smaller scale, a complete replica of the universe. The idea of a parallelism indicating that one portion of the universe imitates a part of the human body was widespread in the ancient world. The Fathers of the Church took the notion over from the Greek philosophers. In the Bible much support for such a theory could be found, for instance in the saying of St. Paul that the Son is "the image of the invisible God; his is the primacy of all created things. In him everything in heaven and on earth was created . . . the whole universe has been created through him and for him. And he exists before everything, and all the things are held together in him."¹¹ In Christ the form of every human being and of the cosmos as a whole is performed. The correspondence between man and cosmos is explained by their common existence in Christ before the world was created. God has given the same spatial and temporal proportions to the gigantic instrument of the universe as he gave to the little figure of man. The belief that the world

⁹ Freising, Otto Bischof von, "Chronik oder die Geschichte der Zwei Staaten." *Ausgewählte Quellen zur Deutschen Geschichte des Mittelalters*, Band XVI, pp. 12-13.

¹⁰ G. P. Congar, *Theories of Macrocosms and Microcosms in the History of Philosophy*, New York, 1967 (original ed. 1922). Congar writes that traces of Greek macrocosmos theories are found in patristic and scholastic literature, but that it is mostly a matter of unimaginative repetition (p. 31). Nowhere does he mention the new dimension of history that is imparted to the macrocosmos theory during the early Middle Ages. He does not seem to be aware either of the fact that the passages mentioned from the Bible were frequently referred to by medieval writers to explain the constitution and the life of the cosmos.

¹¹ Colossians 1, vs. 13-21.

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was coming to its end and the macrocosmic theory reinforced this idea.

An early example in Western theological literature of the doctrine of the correspondence between micro- and macrocosmos is found in the works of Johannes Scotus Erigena, written in the ninth century. Erigena wrote in *On the Division of Nature* that man comprises the whole creation in himself. In man the two extremities of the created world, the visible and the invisible, matter and soul, are united. Everything comes together in man, "the workshop of the universe." Man is a harmony formed by God out of all the different created natures. Because man unites all parts in himself, he is, according to Erigena, a kind of mediator for the universe as a whole. Man not only caused the degeneration of the cosmos, but he will assist in bringing about its regeneration too; man will lead the creation back to God at the end of time.¹²

A much more elaborate treatment of the correspondence between microcosmic man and the macrocosmos is the *De Operatione Dei*, written in the twelfth century by Hildegard of Bingen.¹³ The book is a visionary description of the world in its spatial and temporal dimensions. Hildegard told that she received the content of the book in a series of revelations which she interprets in the book. The vision of microcosmic man occurs in the Second Vision. First Hildegard explained the parts of the universe that in the vision surround the human figure placed in the center; then she described the parts and nature of the microcosmic man. She started with man's body, describing in great detail all its parts and their correspondences with the physical universe. From the way the universe is constructed, she derived a complete set of medical doctrines for the human body. She also showed how the universe reflects the moral and doctrinal teachings of the church. So she indicated, for example, that there are seven points inside of the head, corresponding with the seven planets and the seven gifts of the Holy Spirit;¹⁴ the sexual organs

¹² Erigena, Johannes Scotus, *Über die Eintheilung der Natur*. Transl. L. Noack, Berlin 1870, Book II, Chapters 3 and 7.

¹³ Hildegard von Bingen, *Welt und Mensch*. Das Buch *De Operatione Dei*, aus dem Genter Codex übersetzt und erläutert, H. Schipperges, Salzburg 1965, p. 92. Congar, *op. cit.*, seems not to be acquainted with this extremely interesting work.

¹⁴ *Ibid.*, p. 92.

have the capacity to procreate healthy as well as weak offspring, the earth gives birth in a corresponding way to what is valuable as well as what is detrimental, and in the same way the soul has the capacity to achieve the good and the bad.¹⁵

For Hildegard and her contemporaries the world did not consist of material that could be freely manipulated by man for the purpose of gaining knowledge and organizing life. The world and the things in it were not objects but symbols, containing a message that could further man's salvation by yielding information about the Creator and his intentions. Hildegard's symbolism is supported by medieval Realism. Medieval Realism holds that the real basis of everything is its underlying Idea, that was used by God in creating it. True knowledge was not knowledge of things as they are, but it was knowledge of the Ideas behind them. The Ideas could, of course, only be discerned by the spiritual eye. To quote St. Paul: all that men may know "lies plain before their eyes;" God's invisible attributes of everlasting power and deity "have been visible ever since the world began, to the eyes of reason, in the things he has made."¹⁶ The universe was, in fact, a book, containing the same message as the Bible. Hildegard reads the book of the Creation as easily as she reads the Scriptures.

Hildegard saw not only a correspondence between man and cosmos in the static architecture of the universe and the equally static structure of man's body and soul, but, and this is the new Christian element in the theory, she pointed also to the correspondence between the dynamic development of the Creation from the beginning to the end and of man from birth to death. The link connecting the spheres of man and cosmos is again the likening of the universe with a human body, also that of the life of mankind to a man's life. The twelve months of the year represent the twelve periods of a man's life and the twelve ages of the world. What happens to the great body of mankind in the course of its existence is paralleled in the life of that other body in the shape of a man: the cosmos.

The joint history of man and cosmos is also divided by Hildegard into four periods: from the creation till the flood; from the flood till the incarnation; then the time of Christ and the

¹⁵ *Ibid.*, p. 137.

¹⁶ Romans 1, vs. 19-20.

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apostles (which she counts as a whole period, although its duration is short); and a final period from the death of Christ till the end of the world. The vegetation of the earth differs in all four periods: before the flood the earth had such green fertility that it produced its fruits without the intervention of man; after the flood things blossomed differently because the earth had been cooked in the humidity of the water and the glow of the sun; during the age of Christ and the apostles the earth was very fertile, but lately its greening force lost strength and was transformed into womanly weakness.¹⁷ The upper air was changed in a way that contradicted the earth's nature, and as a result summer became strangely cold and winter had quite paradoxical periods of warmth. Drought and humidity came over the earth and other signs, apparently announcing the end of the world . . .¹⁸ God, she added, has allowed these weak times to occur in order to serve as a means of purification, in the same way as the weakness of the body helps us to purify our souls. In this way the Creation itself becomes "an instrument of purification" till the Last Judgement.¹⁹ Hildegard believed strongly in the cosmic nature of the Fall: the Fall caused mortality in man and all other fruits of the earth. The whole creation became darkened as when the sun shines through a dark cloud. From that moment on, she writes, and here she is in agreement with Erigena, man started his creative work with the creation.²⁰

Seen in this perspective, the recording by medieval historians of events in nature that seem to go against nature's own rules, such as severe droughts, heavy rains, monstrous births, the appearance of comets, is not a matter of superstitious incomprehension on the part of the historian, nor does it betray his inability to distinguish between relevant and irrelevant materials. The inclusion of natural occurrences in the story of man points to the profound sense of community between man and nature in the Middle Ages. The belief that good rulers are beneficial to harvest and that the sins of bad rulers and of people in general

¹⁷ Hildegard von Bingen, *op. cit.*, pp. 287, 288.

¹⁸ *Ibid.*, p. 287.

¹⁹ *Ibid.*, p. 288.

²⁰ *Ibid.*, p. 201.

influence the fertility of the earth negatively is very ancient; it can be found in the Hebrew prophets of the Old Testament, in other Middle Eastern religions and, indeed, almost everywhere in the world.²¹ The lingering of these beliefs in the Middle Ages is doubtless furthered by the analogy that was supposed to exist between man and cosmos, in which the actions of man had to have repercussions in the cosmos, and by which disturbances in the cosmos upset the body and the world of man.²²

The philosophy of nature we find in Hildegard of Bingen and other early medieval thinkers bears the characteristics of mythical thought: it is not exact, it is highly speculative and it sees meaning where we see none. Reading the works of Hildegard of Bingen and others of the same period one can but agree with Lévi-Strauss' revindication of this type of thinking. He concedes that this kind of thought is imprisoned in concrete events and experiences that it orders and reorders in its search for meaning, and that its results are bound to be limited. But, he states, its protest against the meaninglessness of the universe comes as a liberation after our own contact with sciences that can see no meaning anywhere.²³

Early medieval thought about nature is distinguished from the classificatory systems Lévi-Strauss describes in that it not only orders the structure of the cosmos but that it also assigns a history to it. The exact correspondence between man and cosmos, not only in structure but also in development, shows that in the eyes of premodern Christianity, man and cosmos did not constitute two separate realms in which one served as the neutral, basically unchanging background for the dramatic history of the other. To the contrary, man and cosmos were participating in the unfolding drama of world history as one person. They were created together, grew old together and were together waiting

²¹ A. M. Hogart, *Kingship*, London, 1927.

²² Hogart thinks it curious that the medieval kings in the Western world had lost the miraculous power over nature (Hogart, *op. cit.*, p. 37). But it did, in fact, exist in the Middle Ages, although it was not an officially recognized attribute of the kings. See H. Fichtenau, *Das Karolingische Imperium. Soziale und Geistliche Problematik eines Grossreiches*. Zurich, 1949, p. 63.

²³ Claude Lévi-Strauss, *The Savage Mind (La Pensée Sauvage)*, English translation, Univ. of Chicago Press, 1970, p. 22.

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for the end.²⁴ Early medieval thought represents a unique synthesis between classical static philosophy focusing on the logos in nature, and dynamic Christian thought in which history has played such an important part.

It is sometimes doubted whether the common man, the historian included, knows anything of the elevated thoughts of philosophers and theologians. But the cosmic awareness we find in Hildegard of Bingen was clearly reflected in the "book of the poor," the church buildings, and religious art in general. In the Romanesque churches we find the grand scenes of Christ as the ruler of the universe in the sculptures over the entrance porch. When the crucifixion is pictured, the sun and the moon are always present. Like other fundamental ideas, the notion of a cosmic solidarity between man and nature did not only belong to the lofty realm of the history of ideas: it was deeply engrained in the culture itself, expressed in many ways, at many levels: in religion, philosophy, science, literature, history, and the arts.

II. THE BOOK OF NATURE IN THE EARLY MODERN PERIOD

It is as difficult to say when and why the feelings of an historic solidarity between man and cosmos started to change as to indicate when this process was completed. A first major factor in the process by which man and cosmos became separated is the reception of Aristotelianism, with its lack of interest in history. Aristotle had considered history less universal than poetry, not worthy of the interest of philosophers because, as a series of accidents, it could not be understood by reason. St. Thomas Aquinas, as a Christian, could not think that history is accidental; but—and here he approached Aristotle's position—he felt that the plan of history is known to God alone. According to him, it does not make sense for man to speculate about God's ways in history. A final judgment at the end of history is still expected but the end will come by surprise. As a result, we do not find in St. Thomas or in later thinkers an awareness of an overall cosmic development.

²⁴ A particularly good example of the early medieval awareness of a cosmic solidarity is provided by the theology of St. Bonaventura. See J. Ratzinger, *Die Geschichts-theologie des hl. Bonaventura*, Munich-Zurich, 1959, pp. 141 ff.

On the other hand, in the seventeenth and eighteenth centuries we still find indications that the ties between man and nature were not completely broken, although they are not part of a cosmic development. In Godfrey Goodman's work, *The Fall of Man or the Corruption of Nature* (1616), nature is still corrupted by the Fall, a reservoir of evils and an instrument of chastisement of a sinful humanity. This gloomy picture has been compared to a field hospital where man, permanently disabled by the effects of the Fall, languishes miserably.²⁵ Goodman was even familiar with the old doctrine of the correspondence between macro- and microcosmos: if man breaks his bounds, he wrote in *The Fall*, "then all the rest of the creatures which were bound together in man, should be inordinate, too."²⁶ In the seventeenth century the end of the world was still thought to be close at hand: Winthrop, for example, settled with his Puritans in Massachusetts because he felt that the old sinful world could not last much longer. He hoped to avert disaster by founding a pure community.

An echo of the idea of a cosmic history is provided by the theories connecting the world of man with that of the stars, theories flourishing abundantly in the Renaissance writing of history.²⁷ A surprising example of such an interest is found in the writings of Isaac Newton. In his *The Chronology of Ancient Kingdom Amended* (1728) and *Observations upon the Profesies of Daniel, and the Apocalypse of St. John*²⁸ the history of the universe and the history of man run parallel. With the help of modern astronomy Newton translated historical events that had occurred in the world of man into astronomical events, and vice versa.

In spite of the continued existence of such beliefs, another profound change in attitude towards nature had occurred. I

²⁵ Ronald W. Hepburn, "Godfrey Goodman: Nature Vilified," in *Cambridge Journal*, April 1954, p. 425. About this time, though, a reaction, stating the virility of nature, was to be heard: see Ronald W. Hepburn, "George Hakewill, Apology of the Power and Providence of God in the Government of the World, 1627." In: *Journal of the History of Ideas*, April 1955, No. 2.

²⁶ Hepburn, *Godfrey Goodman*, p. 430.

²⁷ F. Manuel, *Shapes of Philosophical History*, Stanford Univ. Press, 1965, pp. 46 ff.

²⁸ See for Newton's interest in chronology F. Manuel, *Isaac Newton Historian*, Cambridge, Mass., 1963.

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mentioned earlier the loss of interest in cosmic history since the thirteenth century. In the later Middle Ages Nominalist philosophers stressed the freedom of God in creating the universe. The creation was seen as the arbitrary product of God's will. Its real meaning, God's intentions with the world, could therefore not be explained or understood at all by man. The bridge between our world and the world beyond, represented by the Ideas, was destroyed. This led to a more modern or scientific way of studying nature: it began to be viewed as an object with its own constitution, rules and laws, standing on its own, closed in itself. Such objects have, of course, to be studied by observation: spiritual eyes can be of no help whatsoever in this context. The fact that from now on man and nature followed each their own rules was a second major factor in the process by which the world of man and of nature diverged. Man had a history; the universe, governed by immutable laws, did not.

At first, it was still thought that this static nature was a book in which God was revealed to man. But difficulties were experienced in the attempts to decipher the language in which the book was written. Several reasons were given: man has lost his capacity to read the book of creation as a result of the Fall; the misinterpretations of past generations make true understanding difficult; the language of nature is difficult per se.

Calvin, for example, compared fallen man to old people who cannot read without spectacles; man needs, he said, the Holy Scriptures, serving him as spectacles to decipher at least partially the mystery of God.²⁹ The study of nature does not help at all in this respect, Calvin felt.

Francis Bacon had more faith in man's ability to read nature. We have only to do away with the rubbish of past interpretations, he wrote, and to observe what is actually before our eyes, in order to understand nature. The book of nature is written in a universal language that went out to all ends of the world and that has not suffered the confusion of Babel. Let man cleanse himself from the mistaken opinions of the past, resume his uncontaminated youth, and approach the creation as a little child; then he can read the book of nature as it really is.³⁰ Bacon

²⁹ H. Jackson Forstman, *Word and Spirit: Calvin's Doctrine of Biblical Authority*, Stanford, 1962, p. 14.

³⁰ Francis Bacon, Part III of the *Instauratic*, *The Natural and Experimental*

had his own interpretation of the Fall, one that places him more in our contemporary world than any other writer of the period. After the Fall, Bacon wrote, man had lost control over rebellious nature.³¹ But he retained some power: nature could at least be subdued by true and solid arts. By unprejudiced knowledge man can regain his former dominion over nature. "Let mankind," Bacon exclaimed, "regain their rights over nature, assigned to them by the gifts of God, and obtain that power, whose exercise will be governed by right reason and true religion."³²

But Bacon's optimism was an exception. The revelation of God in nature, Galileo Galilei points out, is not, as in the Bible, written in words. The Scriptures were, in fact, thought to be dictated directly by the Holy Spirit, and since the Holy Spirit spoke in words to the writers of the Bible, the Scriptures are relatively easy to understand. Nature, on the other hand, does not try to make itself understood by man, "as if it did not care whether its abstruse reasons and modes of operation were or were not within the capacity of man to understand," as Galileo wrote.³³ Nature does not lower itself to the understanding man "by way of condescendence" as the Bible does. In fact, Galileo sighed, nature never changes simply to accommodate itself to the understanding of man;³⁴ it was, after all, the discovery that nature is inexorable, immutable, and would never pass beyond the boundaries of laws assigned to it which impressed the natural philosophers of the early modern age so much.

The discovery of a mechanical constitution of the universe, running its course without paying attention to man, meant distance between the two. Nature's language is different from that of man. As long as we do not know nature's language and the geometrical characters in which that language is written,

History for the Making Up of Philosophy; Works, ed. B. Montagu, 3 vols., Philadelphia, 1855, Vol. 3, p. 436.

³¹ *Ibid.*, p. 435.

³² Francis Bacon, *Novum Organum*, Summary of the second part, *Works*, Vol. 3, p. 371.

³³ Galileo Galilei, *Letter to the Grand Duchess*, quoted by A. C. Crombie, *Medieval and Early Modern Science*, New York, 1959, Vol. 2, p. 201.

³⁴ *Idem.*, *Letter to Elia Diodati*, quoted by Crombie, *op. cit.*, p. 201. The expression *to accommodate* is used also by Calvin in this context; see Forstman, *op. cit.*, pp. 13 f.

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nature is a closed book for us, a labyrinth in which we are lost. Galileo had more faith in the capacity of man's reason than Calvin: he thought, in fact, that he had succeeded in deciphering the language of nature: "it is written," he wrote, "in mathematical language, and the characters are triangles, circles, and other geometrical figures, without which it is humanly impossible to understand a single word." But he added, "without these, there is only an aimless wandering in a dark labyrinth."³⁵

What had gone wrong with the language of nature since the medieval period? During the Middle Ages the common man as well as the philosopher had still trusted their senses when trying to read the book of the world. The language in which it was written were its odors, smells, appearances, and sounds. The perceptual world was as little questioned then as it had been in antiquity. Medieval man lived in the concrete world he actually experienced and with his spiritual eye he tried to look through the data his senses gave him. In modern times philosophers and scientists not only did not believe in the symbolic meaning of natural phenomena, they also rejected the senses as a means to gain valid information. The language Galileo discovered was the abstract language of reason. The language in which the world spoke to man had become censured by the Cartesian demand that its signs should be "as clear and distinct" as the signs of mathematics.

Naturally people began to wonder whether nature is a book at all if the language of nature is that alien to them. What meaning could this mathematical nature have for man? What kind of message could be hidden behind the language of triangles and circles? Apart from goodness and solid craftsmanship of the creator the unchanging substance that was supposed to cause all natural phenomena did not tell anything about God nor about the way man should live in order to please him. The laws of nature, observant as they may be of God's commands, do not reach man how to pray. It was believed that Calvin was right in saying that man did not get benefits from the study of nature for his inner life;³⁶ that nature as viewed by the scientist is

³⁵ *Idem.*, *The Assayer*, quoted in J. Brophy and H. Paolucci, *The Achievement of Galileo*, New York, 1962, p. 31.

³⁶ Forstman, *op. cit.*, p. 12.

just what it is, it does not tell anything; that it has no message to deliver. The comparison of nature with a book, so popular in the early modern period, became to many false and fruitless.

III. THE HOSTILITY BETWEEN MAN AND NATURE IN THE CONTEMPORARY PERIOD

Early modern science showed that the cosmos is a mechanically working system that does not change or develop. It seems fundamentally indifferent to man's needs. Man's actions and his history have no effects whatsoever on the cosmos. Although there was at first an awareness that the cosmos still "means" something, that it has something to tell man in its obtuse language, it sunk more and more down into the position of a mere background stage for human activities. It was, as Hegel explained, an extrinsic element to history, the ground on which history unfolds itself, but no more.³⁷

In the perspective of Darwin's evolution theory man and nature were reunited again in a common historical process. In this process the dichotomy between man and nature does no longer exist, for man is now seen as part of nature. The conception of man as a purely natural being, however, does not restore the historical solidarity between the two we found in the early Middle Ages; to the contrary: man and nature are seen as engaged in a perpetual struggle against each other.

A grim "struggle for life" rages continuously in nature, Darwin discovered, a war of all against all in which the strongest will survive. And unfortunately the strongest is not always the best. In the light of Darwin's other discovery, natural selection, the world could no longer be considered as the handiwork of God. In the struggle for life the strongest will survive by his own ingenuity and strength. The universe as it is had not been created by God to serve as the natural foundation for mankind. Seen in the Darwinian perspective the universe came about accidentally as a result of the everlasting struggle for existence that pervades the cosmos. Not only the cosmos had no goal or

³⁷ G. W. F. Hegel, *The Philosophy of History*, Introduction, Transl. C. J. Friedrich, New York, 1956, p. 79.

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destiny in the evolutionary process, man had no destiny either. If, in looking back, a history of both can be distinguished, it is not the meaningful and directed history of the early Middle Ages. Man had no place of his own in the cosmos, nor had he a right to rule it. As a result, man could at any moment be ousted from his dominant position. He had constantly to defend himself against the forces of nature, for nature constantly threatens the fragile world of man.

Thomas Huxley, one of the earliest and most eloquent defenders of Darwinism, illustrated the antagonism between man and nature with the example of planting and cultivating a garden. A wall has to protect the domesticated plants inside the garden against the lower vegetation of mere nature. As soon as the gardener stops taking care of his garden, nature destroys the work of man. The same, Huxley said, is true for a colony planted in the midst of the uncultivated areas of the world.³⁸ Garden and colony are in constant danger of being wiped out by nature. Every world man builds for himself, Huxley wrote, or every civilization, to use a word that became common in the nineteenth century, is an artificial world that has to be defended against nature.³⁹

Huxley compared the exhausting struggle against nature to a game of chess that is being played over life and death. "We are involved," he wrote, "in a game which has been played for untold ages . . . The chessboard is the world, the pieces are the phenomena of the universe, the rules of the game are what we call the laws of nature. The player on the other side is hidden from us. We know that his play is always fair, just, and patient. But we also know to our cost, that he never overlooks a mistake, or makes the smallest allowance for ignorance . . . And one who plays ill is checkmated without haste, but without remorse."⁴⁰ Nature in her struggle for life is incredibly unscrupulous. Before the tribunal of civilized, ethical man the cosmos stands condemned, according to Huxley.⁴¹ In his despair he went so

³⁸ Thomas Huxley, "Evolution and Ethics," in *Evolution and Ethics and Other Essays*, New York, 1896, p. 13.

³⁹ *Ibid.*, p. 83.

⁴⁰ *Idem.*, "A Liberal Education and Where to Find It," in *Science and Education*, New York, 1920, p. 76.

⁴¹ *Idem.*, *Evolution and Ethics*, p. 59.

far as to call nature “the headquarters of the enemy of ethical nature (man).”⁴²

In order to create a civilization, Huxley pointed out, man needs not only to protect himself against outside forces, but he has also to curb the natural instincts within him. The ape and the tiger, Huxley stated, are still with us, and as nature will always be with us, we will have to fight our nature forever. Man “may count upon having to reckon with a tenacious and powerful enemy as long as the world lasts.”⁴³ Nature the enemy is waiting for us outside and inside ourselves.

In the twentieth century the hostility between man and nature has been deeply experienced by Sigmund Freud. In his *Civilization and Its Discontents* he described how nature attacked man from three sides in pointing out the three major sources of human suffering. First, there is the superior power of outside nature that we will never be able to master completely. Secondly, there is the feebleness of our bodies, themselves part of nature. Our bodies have only a limited capacity for adaptation. And finally and most important of all, there is society, behind which, as Freud explains in this book, lies a piece of “unconquerable nature,” that is responsible for the worst of our sufferings.⁴⁴

Civilization, the human world man has built for himself, Freud wrote, has two functions: it protects man against “the violence of nature” and it adjusts man’s mutual relations. Freud did not say much about the first point, protection against nature, as it is generally recognized. Civilization means in this context the use of tools, the use of fire, and more recent inventions like motorpower, ships, aircraft, spectacles, telescope, camera, writing, and printing, all representing instruments to make the earth serviceable by enlarging man’s capacities. The degree to which man is able to exploit the earth and to protect himself against the forces of nature indicates, according to Freud, the level of his civilization.⁴⁵

The most important function of civilization is, however, to conquer the nature that exists inside of man as his original

⁴² *Ibid.*, p. 75.

⁴³ *Ibid.*, p. 85.

⁴⁴ Freud, *op. cit.*, p. 33.

⁴⁵ *Ibid.*, pp. 37 f.

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untamed natural self. In his psychoanalysis Freud explored the wild nature inside of man that is usually hidden from consciousness. Life in society does not permit man to listen to his natural instincts, in fact, civilization is built upon the renunciation of the natural instincts, in particular those of sexuality and of aggressiveness.⁴⁶ Civilization requires a constant fight against the natural instincts that can never be completely tamed. That explains why it is so hard to be happy in the state of civilization.

Civilization grows, Freud explained, in an evolutionary process, but this process is the fierce struggle "between the instinct of life and the instinct of destruction, as it works out in the human species." Freud clearly referred here to Darwin's notion of the struggle for life, for he goes on saying that this struggle "is what all life essentially consists of." The evolution of civilization may therefore "be simply described as the struggle for life of the human species."⁴⁷ Freud despaired as much as Huxley that there would ever be a remedy against this situation: the struggle would go on forever without hope for peace with oneself or the environment.

The Darwinian component of Freudian thought is easily recognized. The way Arnold Toynbee described the struggle of civilization against nature, however, hardly strikes us as Darwinian: the notion of a fundamental antagonism between man and nature is so familiar to us that we do not feel it necessary to label such an attitude unless the author does it himself, as was the case with Freud.

The ruins of bygone civilizations, Toynbee wrote, speak eloquently "of the struggle with the physical environment" which man has once waged. But nature struck back. The Mayan Civilization described by Toynbee disappeared. But, Toynbee continued, "in her very revenge, which reveals her in all her gruesome power, Tropical Nature testifies to the courage and vigor of the men who once, if only for a season, succeeded in putting her to flight and keeping her at bay."⁴⁸ In many places of the world, he said, we find the same spectacle. Ancient Palmyra and Petra stood once in the midst of irrigated

⁴⁶ *Ibid.*, p. 44.

⁴⁷ *Ibid.*, p. 69.

⁴⁸ Arnold J. Toynbee, *A Study of History*, Abridgement D. C. Somerwell, 2 vols., New York, 1965, Vol. I, p. 104.

deserts; their present state “reveals not only the final victory of the desert over man but the dimensions of the previous victory of man over the desert.”⁴⁹ The colonists of North America had “to wrestle from wild nature the whole breadth of the American continent from the Atlantic to the Pacific.”⁵⁰ Only an immense energy could have won the West. Where nature is abundant and man does not have to be aggressive, Toynbee continues, people do not have to work and build a civilization to protect themselves from nature. A civilization is apparently in Toynbee’s eyes a conquest over nature, a position very close to that of Huxley as Toynbee’s reference to the American colonists shows.

We are hardly conscious of the fact how much our daily life is permeated by the feeling that we live in a thoroughly hostile environment. Expressions of hostility and aggressiveness against nature and the environment in general abound in our daily language, such as: the battle against cancer, leukemia, and other diseases; the war against poverty and against inflation; the battle against pollution; the fight against time, the conquests of science, the conquest of outer space, to name a few.

As much as man in the early medieval culture experienced a profound solidarity with nature, man in our contemporary Western culture experiences nature as a hostile power. This has amazingly little to do with technology: medieval man had, after all, very few aids in dealing with nature and one would consequently expect a much more threatening image of nature. As I have indicated, the decline of the notion of a cosmic history and the Nominalist emphasis on the distance between God and the universe represent important steps in the transition from a situation in which man lived in a state of peace with nature, hard as life may be, to that in which he wages a perpetual war against nature. One wonders which profound changes have to occur in our culture to make a peaceful existence possible again.

⁴⁹ *Ibid.*, pp. 105 f.

⁵⁰ *Ibid.*, p. 107.