

Science and the Sense of the Holy

I

When I was a young man engaged in fossil hunting in the Nebraska badlands I was frequently reminded that the ravines, washes, and gullies over which we wandered resembled the fissures in a giant exposed brain. The human brain contains the fossil memories of its past—buried but not extinguished moments—just as this more formidable replica contained deep in its inner stratigraphic convolutions earth's past in the shape of horned titanotheres and stalking, dirk-toothed cats. Man's memory erodes away in the short space of a lifetime. Jutting from the coils of the earth brain over which I clambered were the buried remnants, the changing history, of the entire age of mammals—millions of years of vanished daylight with their accompanying traces of volcanic outbursts and upheavals. It may well be asked why this analogy of earth's memory should so preoccupy the mind of a scientist as to have affected his entire outlook upon nature and upon his kinship with—even his concern for—the plant and animal world about him.

Perhaps the problem can best be formulated by pointing out that there are two extreme approaches to the interpretation of the living world. One was expressed by Charles Darwin at the age of twenty-eight; one by Sigmund Freud in his mature years. Other men of science have been arrayed on opposite sides of the question, but the eminence of these two scholars will serve to point up a controversy that has been going on since science arose, sometimes quietly, sometimes marked by vitriolic behavior, as when a certain specialist wed-

SCIENCE AND THE SENSE OF THE HOLY

ded to his own view of the universe hurled his opponent's book into his wastebasket only to have it retrieved and cherished by a graduate student who became a lifelong advocate of the opinions reviled by his mentor. Thus it is evident that, in the supposed objective world of science, emotion and temperament may play a role in our selection of the mental tools with which we choose to investigate nature.

Charles Darwin, at a time when the majority of learned men looked upon animals as either automatons or creatures created merely for human exploitation, jotted thoughtfully into one of his early journals upon evolution the following observation:

"If we choose to let conjecture run wild, then animals, our fellow brethren in pain, disease, suffering and famine—our slaves in the most laborious works, our companions in our amusements—they may partake of our origin in one common ancestor—we may be all netted together."

What, we may now inquire, is the world view here implied, one way in which a great scientist looked upon the subject matter that was to preoccupy his entire working life? In spite of the fact that Darwin was, in his later years, an agnostic, in spite of confessing he was "in thick mud" so far as metaphysics was concerned, the remark I have quoted gives every sign of that feeling of awe, of dread of the holy playing upon nature, which characterizes the work of a number of naturalists and physicists down even to the present day. Darwin's remark reveals an intuitive sensitivity to the life of other creatures about him, an attitude quite distinct from that of the laboratory experimentalist who is hardened to the infliction of pain. In addition, Darwin's final comment that we may be all netted together in one gigantic mode of experience, that we are in a mystic sense one single diffuse animal, subject to joy and suffering beyond what we endure as individuals, reveals a youth drawn to the world of nature by far more than just the curiosity to be readily satisfied by the knife or the scalpel.

If we turn to Sigmund Freud by way of contrast we find an oddly inhibited reaction. Freud, though obviously influenced by the elegant medical experimenters of his college days, groped his way alone, and by methods not subject to quantification or absolute verification, into the dark realms of the subconscious. His reaction to the natural world, or at least his feelings and intuitions about it, are basically

cold, clinical, and reserved. He of all men recognized what one poet has termed "the terrible archaeology of the brain." Freud states that "nothing once constructed has perished, and all the earlier stages of development have survived alongside the latest." But for Freud, convinced that childhood made the man, adult reactions were apt to fall under the suspicion of being childhood ghosts raised up in a disguised fashion. Thus, insightful though he could be, the very nature of his study of man tended to generate distrust of that outgoing empathy we observed in the young Darwin. "I find it very difficult to work with these intangible qualities," confessed Freud. He was suspicious of their representing some lingering monster of childhood, even if reduced in size. Since Freud regarded any type of religious feeling—even the illuminative quality of the universe—as an illusion, feelings of awe before natural phenomena such as that manifested by Darwin were to him basically remnants of childhood and to be dismissed accordingly.

In *Civilization and Its Discontents* Freud speaks with slight condescension of a friend who claimed a sensation of eternity, something limitless, unbounded—"oceanic," to use the friend's expression. The feeling had no sectarian origin, no assurance of immortality, but implied just such a sense of awe as might lie at the root of the religious impulse. "I cannot," maintained Freud, "discover this 'oceanic' impulse in myself." Instead he promptly psychoanalyzes the feeling of oneness with the universe into the child's pleasure ego which holds to itself all that is comforting; in short, the original ego, the infant's ego, included everything. Later, by experience, contended Freud, our adult ego becomes only a shrunken vestige of that far more extensive feeling which "expressed an inseparable connection . . . with the external world."

In essence, then, Freud is explaining away one of the great feelings characteristic of the best in man by relegating it to a childhood atavistic survival in adult life. The most highly developed animals, he observes, have arisen from the lowest. Although the great saurians are gone, the dwarfed crocodile remains. Presumably if Freud had completed the analogy he would have been forced to say that crocodilian adults without awe and with egos shrunken safely into their petty concerns represented a higher, more practical evolutionary

level than the aberrant adult who persists in feelings of wonder before which Freud recoiled with a nineteenth-century mechanist's distaste, although not without acknowledging that this lurking child-like corruption might be widespread. He chose to regard it, however, as just another manifestation of the irrational aspect of man's divided psyche.

Over six decades before the present, a German theologian, Rudolf Otto, had chosen for his examination what he termed *The Idea of the Holy (Das Heilige)*. Appearing in 1917 in a time of bitterness and disillusionment, his book was and is still widely read. It cut across denominational divisions and spoke to all those concerned with that *mysterium tremendum*, that very awe before the universe which Freud had sighed over and dismissed as irrational. I think it safe to affirm that Freud left adult man somewhat shrunken and misjudged—misjudged because some of the world's scientists and artists have been deeply affected by the great mystery, less so the child at one's knee who frequently has to be disciplined to what in India has been called the "opening of the heavenly eye."

Ever since man first painted animals in the dark of caves he has been responding to the holy, to the numinous, to the mystery of being and becoming, to what Goethe very aptly called "the weird portentous." Something inexpressible was felt to lie behind nature. The bear cult, circumpolar in distribution and known archaeologically to extend into Neanderthal times, is a further and most ancient example. The widespread beliefs in descent from a totemic animal, guardian helpers in the shapes of animals, the concept of the game lords who released or held back game to man are all part of a variety of a sanctified, reverent experience that extends from the beautiful rock paintings of South Africa to the men of the Labradorean forests or the Plains Indian seeking by starvation and isolation to bring the sacred spirits to his assistance. All this is part of the human inheritance, the wonder of the world, and nowhere does that wonder press closer to us than in the guise of animals which, whether supernaturally as in the caves of our origins or, as in Darwin's sudden illumination, perceived to be, at heart, one form, one awe-inspiring mystery, seemingly diverse and apart but derived from the same genetic source. Thus the *mysterium* arose not by primitive campfires alone.

Skins may still prickle in a modern classroom.

In the end, science as we know it has two basic types of practitioners. One is the educated man who still has a controlled sense of wonder before the universal mystery, whether it hides in a snail's eye or within the light that impinges on that delicate organ. The second kind of observer is the extreme reductionist who is so busy stripping things apart that the tremendous mystery has been reduced to a trifle, to intangibles not worth troubling one's head about. The world of the secondary qualities—color, sound, thought—is reduced to illusion. The *only* true reality becomes the chill void of ever-streaming particles.

If one is a biologist this approach can result in behavior so remarkably cruel that it ceases to be objective but rather suggests a deep grain of sadism that is not science. To list but one example, a recent newspaper article reported that a great urban museum of national reputation had spent over a half-million dollars on mutilating experiments with cats. The experiments are too revolting to chronicle here and the museum has not seen fit to enlighten the public on the knowledge gained at so frightful a cost in pain. The cost, it would appear, lies not alone in animal suffering but in the dehumanization of those willing to engage in such blind, random cruelty. The practice was defended by museum officials, who in a muted show of scientific defense maintained the right to study what they chose "without regard to its demonstrable practical value."

This is a scientific precept hard to override since the days of Galileo, as the official well knew. Nevertheless, behind its seamless façade of probity many terrible things are and will be done. Blaise Pascal, as far back as the seventeenth century, foresaw our two opposed methods. Of them he said: "There are two equally dangerous extremes, to shut reason out, and to let nothing else in." It is the reductionist who, too frequently, would claim that the end justifies the means, who would assert reason as his defense and let that *mysterium* which guards man's moral nature fall away in indifference, a phantom without reality.

"The whole of existence frightens me," protested the philosopher Søren Kierkegaard; "from the smallest fly to the mystery of the Incarnation, everything is unintelligible to me, most of all myself."

By contrast, the evolutionary reductionist Ernst Haeckel, writing in 1877, commented that "the cell consists of matter . . . composed chiefly of carbon with an admixture of hydrogen, nitrogen and sulphur. These component parts, properly united, produce the soul and body of the animated world, and suitably nourished become man. With this single argument the mystery of the universe is explained, the Deity annulled and a new era of infinite knowledge ushered in." Since these remarks of Haeckel's, uttered a hundred years ago, the genetic alphabet has scarcely substantiated in its essential intricacy Haeckel's carefree dismissal of the complexity of life. If anything, it has given weight to Kierkegaard's wary statement or at least heightened the compassionate wonder with which we are led to look upon our kind.

"A conviction akin to religious feeling of the rationality or intelligibility of the world lies behind all scientific work of a high order," says Albert Einstein. Here once more the eternal dichotomy manifests itself. Thoreau, the man of literature, writes compassionately, "Shall I not have intelligence with the earth? Am I not partly leaves and vegetable mould myself?" Or Walt Whitman, the poet, protests in his *Song of Myself*: "whoever walks a furlong without sympathy walks to his own funeral drest in a shroud."

"Magnifying and applying come I"—he thunders—

"Outbidding at the start the old cautious hucksters . . .

Not objecting to special revelations, considering a curl of smoke
or a hair

on the back of my hand just as curious as any revelation."

Strange, is it not, that so many of these voices are not those of children, but those of great men—Newton playing on the vast shores of the universe, or Whitman touched with pity or Darwin infused with wonder over the clambering tree of life. Strange, that all these many voices should be dismissed as the atavistic yearnings of an unreduced childlike ego seeking in "oceanic" fashion to absorb its entire surroundings, as though in revolt against the counting house, the laboratory, and the computer.

II

Not long ago in a Manhattan art gallery there were exhibited paintings by Irwin Fleminger, a modernist whose vast lawless Martianlike landscapes contain cryptic human artifacts. One of these paintings attracted my eye by its title: "Laws of Nature." Here in a jumbled desert waste without visible life two thin laths had been erected a little distance apart. Strung across the top of the laths was an insubstantial string with even more insubstantial filaments depending from the connecting cord. The effect was terrifying. In the huge inhuman universe that constituted the background, man, who was even more diminished by his absence, had attempted to delineate and bring under natural law an area too big for his comprehension. His effort, his "law," whatever it was, denoted a tiny measure in the midst of an ominous landscape looming away to the horizon. The frail slats and dangling string would not have sufficed to fence a chicken run.

The message grew as one looked. With all the great powers of the human intellect we were safe, we understood, in degree, a space between some slats and string, a little gate into the world of infinitude. The effect was crushing and it brought before one that sense of the "other" of which Rudolf Otto spoke, the sense beyond our senses, unspoken awe, or, as the reductionist would have it, nothing but waste. There the slats stood and the string drooped hopelessly. It was the natural law imposed by man, but outside its compass, again to use the words of Thoreau, was something terrific, not bound to be kind to man. Not man's at all really—a star's substance totally indifferent to life or what laws life might concoct. No man would greatly extend that trifling toy. The line sagged hopelessly. Man's attempt had failed, leaving but an artifact in the wilderness. Perhaps, I thought, this is man's own measure. Perhaps he has already gone. The crepitation at my spine increased. I felt the mood of the paleolithic artists, lost in the mysteries of birth and coming, as they carved pregnant beasts in the dark of caves and tried by crayons to secure the food necessarily wrung from similar vast landscapes. Their art had the same holy quality that shows in the ivory figurines, the worship before the sacred mother

who brought man mysteriously into the limited world of the cave mouth.

The numinous then is touched with superstition, the reductionist would say, but all the rituals suggest even toward hunted animals a respect and sympathy leading to ceremonial treatment of hunted souls; whereas by contrast in the modern world the degradation of animals in experiments of little, or vile, meaning, were easily turned to the experimental human torture practiced at Dachau and Buchenwald by men dignified with medical degrees. So the extremes of temperament stand today: the man with reverence and compassion in his heart whose eye ranges farther than the two slats in the wilderness, and the modern vandal totally lacking in empathy for life beyond his own, his sense of wonder reduced to a crushing series of gears and quantitative formula, the educated vandal without mercy or tolerance, the collecting man that I once tried to prevent from killing an endangered falcon, who raised his rifle, fired, and laughed as the bird tumbled at my feet. I suppose Freud might have argued that this was a man of normal ego, but I, extending my childlike mind into the composite life of the world, bled accordingly.

Perhaps Freud was right, but let us look once more at this brain that in many distinguished minds has agonized over life and the mysterious road by which it has come. Certainly, as Darwin recognized, it was not the tough-minded, logical inductionists of the early nineteenth century who in a deliberate distortion of Baconian philosophy solved the problem of evolution. Rather, it was what Darwin chose to call "speculative" men, men, in other words, with just a touch of the numinous in their eye, a sense of marvel, a glimpse of what was happening behind the visible, who saw the whole of the living world as though turning in a child's kaleidoscope.

Among the purely human marvels of the world is the way the human brain after birth, when its cranial capacity is scarcely larger than that of a gorilla or other big anthropoid, spurts onward to treble its size during the first year of life. The human infant's skull will soar to a cranial capacity of 950 cubic centimeters while the gorilla has reached only 380 cubic centimeters. In other words, the human brain grows at an exponential rate, a

spurt which carries it almost to adult capacity at the age of fourteen.

This clever and specifically human adaptation enables the human offspring successfully to pass the birth canal like a reasonably small-headed animal, but in a more larval and helpless condition than its giant relatives. The brain burgeons after birth, not before, and it is this fact which enables the child, with proper care, to assimilate all that larger world which will be forever denied to its relative the gorilla. The big anthropoids enjoy no such expansion. Their brains grow without exponential quickening into maturity. Somewhere in the far past of man something strange happened in his evolutionary development. His skull has enhanced its youthful globularity; he has lost most of his body hair and what remains grows strangely. He demands, because of his immature emergence into the world, a lengthened and protected childhood. Without prolonged familial attendance he would not survive, yet in him reposes the capacity for great art, inventiveness, and his first mental tool, speech, which creates his humanity. He is without doubt the oddest and most unusual evolutionary product that this planet has yet seen.

The term applied to this condition is neoteny, or pedomorphism. Basically the evolutionary forces, and here "forces" stands for complete ignorance, seem to have taken a roughhewn ordinary primate and softened and eliminated the adult state in order to allow for a fantastic leap in brain growth. In fact, there is a growing suspicion that some, at least, of the African fossils found and ascribed to the direct line of human ascent in eastern Africa may never, except for bipedalism and some incipient tool-using capacities, have taken the human road at all.

Some with brains that seem to have remained at the same level through long ages have what amounts quantitatively to no more than an anthropoid brain. Allowing for upright posture and free use of the hand, there is no assurance that they spoke or in any effective way were more than well-adapted bipedal apes. Collateral relatives, in short, but scarcely to be termed men. All this is the more remarkable because their history can now be traced over roughly five if not six million years—a singularly unprogressive period for a creature destined later to break upon the world with such remarkable results

after so long a period of gestation.

Has something about our calculations gone wrong? Are we studying, however necessarily, some bipedal cousins but not ancestral men? The human phylogeny which we seemed well on the way to arranging satisfactorily is now confused by a multiplicity of material contended over by an almost equal number of scholars. Just as a superfluity of flying particles is embarrassing the physicist, so man's evolution, once thought to be so clearly delineated, is showing signs of similar strain. A skull from Lake Rudolf with an estimated capacity of 775 cubic centimeters or even 800 and an antiquity ranging into the three-million-year range is at the human Rubicon, yet much younger fossils are nowhere out of the anthropoid range.

Are these all parts of a single variable subhumanity from which we arose, or are some parts of this assemblage neotenus of brain and others not? The scientific exchanges are as stiff with politeness as exchanges between enemies on the floor of the Senate. "Professor so-and-so forgets the difficult task of restoring to its proper position a frontal bone trampled by cattle." A million years may be covertly jumped because there is nothing to be found in it. We must never lose sight of one fact, however: it is by neotenus brain growth that we came to be men, and certain of the South African hominids to which we have given such careful attention seem to have been remarkably slow in revealing such development. Some of them, in fact, during more years than present mankind has been alive seem to have flourished quite well as simple grassland apes.

Why indeed should they all have become men? Because they occupied the same ecological niche, contend those who would lump this variable assemblage. But surely paleontology does not always so bind its deliberations. We are here dealing with a gleam, a whisper, a thing of awe in the mind itself, that oceanic feeling which even the hardheaded Freud did not deny existed though he tried to assign it to childhood.

With animals whose precise environment through time may overlap, extinction may result among contending forms; it can and did happen among men. But with the first stirrings of the neotenus brain and its superinduced transformation of the family system a new type of ecological niche had incipiently appeared—a speaking

niche, a wondering niche which need not have been first manifested in tools but in family organization, in wonder over what lay over the next hill or what became of the dead. Whether man preferred seeds or flesh, how he regarded his silent collateral relatives, may not at first have induced great competition. Only those gifted with the pedomorphic brain would in some degree have fallen out of competition with the real. It would have been their danger and at the same time their beginning triumph. They were starting to occupy, not a niche in nature, but an invisible niche carved into thought which in time would bring them suffering, superstition, and great power.

It cannot, in the beginning, be recognized clearly because it is not a matter of molar teeth and seeds, or killer instincts and ill-interpreted pebbles. Rather it was something happening in the brain, some blinding, irradiating thing. Until the quantity of that gray matter reached the threshold of human proportions no one could be sure whether the creature saw with a human eye or looked upon life with even the faint stirrings of some kind of religious compassion.

The new niche in its beginnings is invisible; it has to be inferred. It does not lie waiting to be discovered in a pebble or a massive molar. These things are important in the human dawn but so is the mystery that ordained that mind should pass the channel of birth and then grow like a fungus in the night—grow and convolute and overlap its older buried strata, while a 600-pound gorilla retains by contrast the cranial content of a very small child. When man cast off his fur and placed his trust in that remarkable brain linked by neural pathways to his tongue he had potentially abandoned niches for dreams. Henceforth the world was man's niche. All else would live by his toleration—even the earth from which he sprang. Perhaps this is the hardest, most expensive lesson the layers of the fungus brain have yet to learn: that man is not as other creatures and that without the sense of the holy, without compassion, his brain can become a gray stalking horror—the deviser of Belsen.

Its beginning is not the only curious thing about that brain. There are some finds in South Africa dating into immediately post-glacial times that reveal a face and calvaria more “modern” in appearance, more pedomorphic, than that of the average European. The skull is marked by cranial capacities in excess of 1700 cubic centimeters—

big brained by any standards. The mastoids are childlike, the teeth reduced, the cranial base foreshortened. These people, variously termed Boskopoid or Strandlooper, have, in the words of one anthropologist, “the amazing cranium to face ratio of almost five to one. In Europeans it is about three to one. Face size has been modernized and subordinated to brain growth.” In a culture still relying on coarse fare and primitive implements, the face and brain had been subtly altered in the direction science fiction writers like to imagine as the direction in which mankind is progressing. Yet here the curious foetalization of the human body seems to have outrun man's cultural status, though in the process giving warning that man's brain could still pass the straitened threshold of its birth.

How did these people look upon the primitive world into which they found themselves precipitated? History gives back no answer save that here there flourished striking three-dimensional art—the art of the brother animal seen in beauty. Childlike, Freud might have muttered, with childlike dreams, rushed into conflict with the strong, the adult and shrunken ego, the ego that gets what it wants. Yet how strangely we linger over this lost episode of the human story, its pathos, its possible meaning. From whence did these people come? We are not sure. We are not even sure that they derive from one of the groups among the ruck of bipedal wandering apes long ago in Kenya that reveal some relationship to ourselves. Their development was slow, if indeed some of them took that road, the strange road to the foetalized brain that was to carry man outside of the little niche that fed him his tuberous, sandy diet.

We thought we were on the verge of solving the human story, but now we hold in our hands gross jaws and delicate, and are unsure of our direction save that the trail is longer than we had imagined twenty years ago. Yet still the question haunts us, the numinous, the holy in man's mind. Early man laid gifts beside the dead, but then in the modern unbelieving world, Ernst Haeckel's world, a renowned philosopher says, “The whole of existence frightens me,” or another humbler thinker says, “In the world there is nothing to explain the world” but remembers the gold eyes of the falcon thrown brutally at his feet. He shivers while Freud says, “As for me I have never had such feelings.” They are a part of childhood, Freud argues, though

there are some who counter that in childhood—yes, even Freud might grant it—the man is made, the awe persists or is turned off by blows or the dullness of unthinking parents. One can only assert that in science, as in religion, when one has destroyed human wonder and compassion, one has killed man, even if the man in question continues to go about his laboratory tasks.

III

Perhaps there is one great book out of all American literature which best expresses the clash between the man who has genuine perception and the one who pursues nature as ruthlessly as a hunted animal. I refer to *Moby Dick*, whose narrator, Ishmael, is the namesake of a Biblical wanderer. Every literate person knows the story of Moby Dick and his pursuit by the crazed Captain Ahab who had yielded a leg to the great albino whale. It is the whale and Ahab who dominate the story. What does the whale represent? A symbol of evil, as some critics have contended? Fate, destiny, the universe personified, as other scholars have protested?

Moby Dick is “all a magnet,” remarks Ahab cryptically at one moment. “And be he agent or be he principal I will wreak my hate upon him.” Here, reduced to the deck of a whaler out of Nantucket, the old immortal questions resound, the questions labeled science in our era. Nothing is to go unchallenged. Thrice, by different vessels, Ahab is warned away from his contemplated conquest. The whale does not pursue Ahab, Ahab pursues the whale. If there is evil represented in the white whale it cannot be personalized. The evils of self-murder, of megalomania, are at work in a single soul calling up its foreordained destruction. Ahab heartlessly brushes aside the supplications of a brother captain to aid in the search for his son, lost somewhere in a boat in the trail of the white whale’s passing. Such a search would only impede the headlong fury of the pursuit.

In Ahab’s anxiety to “strike through the mask,” to confront “the principal,” whether god or destiny, he is denuding himself of all humanity. He has forgotten his owners, his responsibility to his crew. His single obsession, the hidden obsession that lies at the root of

much Faustian overdrive in science, totally possesses him. Like Faust he must know, if the knowing kills him, if naught lies beyond. “All my means are sane,” he writes, like Haeckel and many another since. “My motive and my object mad.”

So it must have been in the laboratories of the atom breakers in their first heady days of success. Yet again on the third day Starbuck, the doomed mate, cries out to Ahab, “Desist. See. Moby Dick seeks thee not. It is thou, thou, that madly seekest him.” This then is not the pursuit of evil. It is man in his pride that the almighty gods will challenge soon enough. Not for nothing is Moby Dick a white snow hill rushing through Pacific nights. He carries upon his brow the inscrutability of fate. Agent or principal, Moby Dick presents to Ahab the mystery he may confront but never conquer. There is no harpoon tempered that will strike successfully the heart of the great enigma.

So much for the seeking peg-legged man without heart. We know he launched his boats and struck his blows and in the fury of returning vengeance lost his ship, his comrades, and his own life. If, indeed, he pierced momentarily the mask of the “agent,” it was not long enough to tell the tale. But what of the sometimes silent narrator, the man who begins the book with the nonchalant announcement, “Call me Ishmael,” the man whose Biblical namesake had every man’s hand lifted against him? What did he tell? After all, Moby Dick is his book.

Ishmael, in contrast to Ahab, is the wondering man, the acceptor of all races and their gods. In contrast to the obsessed Ahab he paints a magnificent picture of the peace that reigned in the giant whale schools of the 1840s, the snuffling and grunting about the boats like dogs, loving and being loved, huge mothers gazing in bliss upon their offspring. After hours of staring in those peaceful depths, “Deep down,” says Ishmael, “there I still bathe in eternal mildness of joy.” The weird, the holy, hangs undisturbed over the whales’ huge cradle. Ishmael knows it, others do not.

At the end, when Ahab has done his worst and the *Pequod* with the wounded whale is dragged into the depths amidst shrieking seafowl, it is Ishmael, buoyed up on the calked coffin of his cannibal friend Queequeg, who survives to tell the tale. Like Whitman, like

SCIENCE AND HUMANISM

W. H. Hudson, like Thoreau, Ishmael, the wanderer, has noted more of nature and his fellow men than has the headstrong pursuer of the white whale, whether "agent" or "principal," within the universe. The tale is not of science, but it symbolizes on a gigantic canvas the struggle between two ways of looking at the universe: the magnification by the poet's mind attempting to see all, while disturbing as little as possible, as opposed to the plunging fury of Ahab with his cry, "Strike, strike through the mask, whatever it may cost in lives and suffering." Within our generation we have seen the one view plead for endangered species and reject the despoliation of the earth; the other has left us lingering in the shadow of atomic disaster. Actually, the division is not so abrupt as this would imply, but we are conscious as never before in history that there is an invisible line of demarcation, an ethic that science must sooner or later devise for itself if mankind is to survive. Herman Melville glimpsed in his huge mythology of the white beast that was nature's agent something that only the twentieth century can fully grasp.

It may be that those childlike big-brained skulls from Africa are not of the past but of the future, man, not, in Freud's words, retaining an atavistic child's ego, but pushing onward in an evolutionary attempt to become truly at peace with the universe, to know and enjoy the sperm-whale nursery as did Ishmael, to paint in three dimensions the beauty of the world while not to harm it.

Yesterday, wandering along a railroad spur line, I glimpsed a surprising sight. All summer long, nourished by a few clods of earth on a boxcar roof, a sunflower had been growing. At last, the car had been remembered. A train was being made up. The box car with its swaying rooftop inhabitant was coupled in. The engine tooted and slowly, with nodding dignity, my plant began to travel.

Throughout the summer I had watched it grow but never troubled it. Now it lingered and bowed a trifle toward me as the winds began to touch it. A light not quite the sunlight of this earth was touching the flower, or perhaps it was the watering of my aging eye—who knows? The plant would not long survive its journey but the flower seeds were autumn-brown. At every jolt for miles they would drop along the embankment. They were

SCIENCE AND THE SENSE OF THE HOLY

travelers—travelers like Ishmael and myself, outlasting all fierce pursuits and destined to re-emerge into future autumns. Like Ishmael, I thought, they will speak with the voice of the one true agent: "I only am escaped to tell thee."