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# ESSAY ON "BEING"

A CERTAIN monotony attaches to asking the question, "What is *really* going on?", time and again. Yet there seems justification for doing so. The main business of our lives is to find out their meaning—what is really happening, so far as we are concerned. We need to be sure we are helping it along, not getting in the way. Our sense of participation obviously depends upon awareness of what is going on, both in general and in some particular way.

Quite evidently we can't know *all* about what is going on. If we did, the enterprise would probably collapse. Knowing it partly, and engaging ourselves at the outermost borders of our knowledge, increasing our understanding of what needs to be done, seems the best possible relationship to the human situation—which is halfway between ignorance and knowledge, as Plato said.

How does one find out what is going on? An initial answer is easy enough. We are born into the middle of things—which means that a great many things are already going on, into which we are drawn, starting in childhood. At first we think we know what to do, since we see what other people are doing. Then, after some encounters with obstacles, confusion and deception, we become less confident. We discover that in order to understand what is good, and to do good, we need to understand evil. Evil, for the most part, turns out to be ignorance. We confuse appearance and reality, and then work for false objectives. Meanwhile, both life and the wise instruct us in the difference between appearance and reality. We at least learn that the distinction must be made, though we may make it inadequately. We have the equation, but the factors are mostly unknowns. So, living in a scientific age, we make hypotheses: We put partly established knowns in the place of unknowns and try them out for successful or passable function. And this becomes the chief activity in every department of knowledge.

What is really happening, for example, in science?

For the start of an answer we pick two eminent scientists—one a physicist, Pierre Duhem, the other a biologist, Jonas Salk. These men show a similarity in their thinking. Both are directly concerned with the basic meaning of scientific inquiry.

An article in *Science* for April 23, 1954, gives the substance of Duhem's mature reflections. He begins with the outlook declared by Whitehead in *Reason and Nature.* "A dead Nature," Whitehead said, "can give no reasons." He added: "All ultimate reasons are in terms of aim at value. A dead Nature aims at nothing." Duhem, the theoretical physicist, starts his discussion of what physics is about by saying:

> Concerning the very nature of things, or the realities hidden under the phenomena we are studying, a theory on the plan we have just drawn teaches us absolutely nothing.

He means that the aggregate of descriptive information concerning how physical forces work gives no reasons. It is only elevated technology, not really *science* in the original meaning of the term. Duhem saw this; he said that physics as practiced amounted to no more than representation and classification. He then pointed out that the ultimate nature of things is not the object of physical theory, although physics may exhibit "parallels" with this higher sort of inquiry. He said:

> Physical theory never gives us the explanation of experimental laws; it never reveals realities hiding under sensible appearances; but the more complete it becomes, the more we apprehend that the logical

> order in which theory orders experimental laws is the reflection of an ontological order the more we suspect that the relations it establishes among the data of perception correspond to real relations among things, and the more we feel that theory tends to be a natural classification.

Duhem titled this discussion, "The Value of Physical Theory." Concluding, he wrote:

> . . . the physicist is compelled to recognize that it would be unreasonable to work for the progress of physical theory if this theory were not the increasingly better defined and more precise reflection of a metaphysics, the belief in an order transcending physics is the sole justification of physical theory.

It now begins to appear that this idea is the *Zeitgeist* of the age, so far as Science is concerned.

*Man Unfolding*, by Jonas Salk, the world-famous biologist, published by Harper & Row in 1972, iS a forthright declaration of change in the spirit of science. In its way, this book embodies a new goal for the life-sciences in relation to man. Needed, Dr. Salk says, is an explanation of man's "`esthetic sense and its expressions and those transcendental qualities which might be referred to as the art in him—the essence of his character and personality that distinguishes each individual from all others." Continuing, he asks:

> Is this a proper subject for scientific inquiry? How might this be done and by whom? At the present time there are many who are interested in knowledge of this kind. They are asking: What is man for? What does he produce or create? Where does he fit in his own species? What are his strivings? What does he seem to want? What is it that seems to give him contentment and satisfaction?

These themes are pursued throughout *Man Unfolding* and in Dr. Salk's later work, *The Survival of the Wisest* (Harper, 1973). He writes at a level of abstraction which assumes recognition of the importance of such questions. This makes him a designer of future edifices of scientific thinking, in company with other pioneers such as Michael Polanyi and Abraham Maslow. His books are really inquiries into the assumptions and structures necessary to self-knowledge, and are based, therefore, on premises involving transcendental reality.

For readers who have done little exploration in this direction, the ground of his discussions may seem obscure. Unlike the study of the phenomena of objective nature—which are objects plainly in view—this inquiry rests on subjective realities which obtain substance only from persistent thought, so that understanding what Dr. Salk says requires a similar effort on the part of the reader. With this qualification, then, it may be said that his work is the lucid expression of a great transformation in scientific thinking—toward a humanistic psycho-biology.

What is the problem of this new sort of science?

> The problem we face in many aspects of life is in not knowing what we want. In other aspects the difficulty is in knowing and not being able to attain. Since desire is more compelling than reason, it is important and necessary for man to know and manage his desire. To what extent, then can he through reason satisfy his desire, or divert, thwart, or postpone its fulfillment—if that is his wish?

Writing of this sort restores science to the humanities. Implicit in this brief paragraph is a partial reflection of the Buddha's consideration of the role of desire in human life, and of the Platonic idea of the function of the Dialectic. Dr. Salk uses biological analogies to illustrate the character of man's mental being in a chapter titled "Immunologic and Psychologic Phenomena." Another chapter is headed "Purpose—A Biological Necessity." We might notice in passing that fifty years ago a biologist who wrote seriously—that is, philosophically—about purpose would have been ignored or attacked. Not so today.

Dr. Salk says:

> My aim is to emphasize the appropriateness of speaking of purpose in biology in general as well as in relation to man. I hasten to add that I think it entirely unnecessary to consider purpose in order to understand the phenomena of physics and chemistry.

> Living systems require different considerations than nonliving systems; the idea of purpose in living systems is not just relevant; it is essential.

He now distinguishes between manifest biological purpose and human purpose. "Survival," he suggests, sums up biological purpose, leading to the conclusion:

> It would appear, therefore, that "goal" and "purpose" are part of living systems. By definition, a living system does not exist, in the sense of being alive, without purpose, even if the purpose is merely that of staying alive.
>
> Apart from the many different factors and many different sets of needs that have entered into the design of living organisms, they are at least programmed for survival. It should be no surprise, therefore, to find man conforming to other living systems in this respect. But for man there is a difference between survival and "living."

How so? Man, as is at once evident, has dozens of "purposes." Moreover, these many purposes are often in conflict, one with another. The conflict obscures the answers to the questions, "What is man for?" or "What does he want?" And the dangerous question, "What *ought* he to want?", presents even greater difficulty, since who can be sure of what another ought to long for?

Dr. Salk makes some deductions from this situation:

> We cannot satisfy every urge. On the other hand, there are times when we have a sense of futility because there seems nothing for us to do. The absence of purpose leads to a sense of nothingness, or emptiness—to a feeling of "want." This is an uncomfortable and, at times, an unhealthy state, the cause of which needs to be identified. Is it because there are no challenges? Is it because we are not sensitive to those that exist? Is it that we are not interested? Is it conceivable that we are not conscious of new challenges and that we may be overly concerned with preoccupations that no longer satisfy us? What more is there for individuals to do? What more is there for a school or profession, or for practitioners of an art or a science or a service to do? What more is there for mankind to do?
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> Whatever the answers to these questions, we acknowledge the existence in each of us of different interests and desires which have to be satisfied. They may be intellectual, aesthetic social, or personal. The exhortation to "know thyself" is based on a real need—we might call it a biological need—for an awareness of the special interests and desires which are in each of us. This awareness creates a demand for their development to the extent of our ability to develop them under the circumstances that prevail. "What is there in us that can be cultivated to bring satisfaction to ourselves—and in so doing become creative, contributing members of society?" When the answer to this question is not clear, then we have not yet reached a point of sufficient understanding for commitment. For each pattern to be expressed, a source of power is essential, and that source lies within each of us.

In his next chapter Dr. Salk goes on to speak of responsibility, and of how the only hope of bringing order out of the chaos of human life lies in combining individual responsibility with the sense of purpose. The task, as he says toward the end of the book, is "finding ways and means of engaging the mind constructively and finding ways of thinking about the mind so that its workings can be known sufficiently to engage it in the evolutionary scheme." For this to occur, a strong sense of purpose is a necessity.

As we said, Dr. Salk writes at a high level of generality. What may not be apparent from these few quotations is that their sense is always well within hailing distance—for him, at least—of disciplined practice of the science of biology. These views are not the reflections of a generalist, but the explorations of a scientific specialist whose feeling for the larger meanings emerging from the practice of his specialty drove him to give them rigorous expression. When a man like Jonas Salk speaks, he cannot help but speak for at least a portion of his colleagues in biology. Science is not a lone wolf enterprise.

What is the gist of his contention? Human life is the orderly pursuit of meaning, a search for purpose, the *reason*, as Whitehead declared, which lies within and behind all Nature.

Interestingly, Dr. Salk's second book, *The Survival of the Wisest,* published a year after *Man Unfolding,* turns out to be his reading of what is *really* going on. Again his thesis is based on biological analogues. He contends that, in the present, human beings are rapidly becoming conscious of their need to discover their real purposes and to learn to live by them—through vision, self-discipline, and rationally directed effort. This, he suggests, is the hierarchical climax of scientific study. Physics (agreeably to Duhem's prediction) gains its fulfillment in metaphysics, where it meets the heights of Salk's metabiology, which has risen on the foundations of biology.

Man, Dr. Salk suggests, has two centers of gravity: using his language—Man is both BEING and EGO. BEING is his root nature, his Platonic archetype, one might say, or his full but as yet unrealized possibility:

> The characteristics of BEING are hidden until revealed in the course of life's experiences. Thus it can be developed or not, depending upon awareness of its existence and knowledge of the factors required for its cultivation and expression. Consciousness of one's own BEING, in this sense, is a prerequisite to full self-development as well as to full self-expression with self-restraint; the word "self-discipline" means, at one and the same time, *expression with restraint.*
>
> If the BEING of Man is meaningfully related to what might be thought of as Nature's "purpose," its essential character must be discovered through its own expression guiding the means it possesses for doing so while, at the same time, influencing the circumstances of its existence and evolution which are revealed by the effects "caused" by it.

The EGO, in this scheme, is, so to speak, the interface between the BEING and Nature—the EGO is in effect the *tool* of the BEING, communicating with it, with others, and with the environment, by various modalities. BEING is man's true self and his link with the underlying purpose of Nature, while EGO is the transient adaptation he makes to the changing environment, creating the "place" where he evolves habits of adjustment which outlast their usefulness, and later causing much trouble for him when he needs to change his ways. He resists change because he has learned to sanction intellectually his past adjustments to experience.

What is the present? It is a time, Dr. Salk believes, when we are slowly coming to awareness of these two outlooks within ourselves—the outlook of the EGO, which is dominant, and the outlook of BEING, which is more or less hidden but needs to take charge, through its own higher consciousness. Thus the present and the immediate future, Dr. Salk maintains, is the time for the emergence of BEING. However, since this is also the emergence of larger self-consciousness, the change requires that it be accomplished deliberately. An emergence of self-consciousness must be consciously achieved.

Why does Dr. Salk think this is happening, or that it ought to happen? He obtained his clues from biological analogy. Early in the book he presents diagrams of biological transitions (changes in population) which suggest to him that after one sort of climactic development, another sort of development should and must begin. Statistically the significant moment of change is when the upward thrusting arm of an S-curve begins to flatten out. That, he suggests, is the time when humans must move from quantity to quality—from driving, ambitious EGO consciousness to self-consciousness. These two "epochs" in the human or historical cycle are labeled by Dr. Salk "A" and "B." "A" values are acquisitive, material, monumental; "B" values—by more than coincidence—are like the "Being" needs of Dr. Maslow. They represent the motives of self-actualization. A great deal of this book is devoted to the interpretation of population and other biological cycles in terms of man's transition from EGO domination to the emergence of BEING supervision and control.

The following indicates the spirit of the book in its later chapters:

> The diagrams do not tell how to develop the BEING and EGO systems nor how to develop relationships. They do however, indicate that we need to be more than simply cognizant of Nature's

> pattern, of which we are a part, and of our metabiological patterns. We need to learn to use our consciousness, to facilitate the healthy development of the young, enabling them to continue their own harmonious development. This knowledge could then be employed to help the expression, through the EGO, of the unconscious patterns and forces of the BEING toward constructive, creative purposes in a hierarchy based on native talents and abilities and the disciplined capacity to perform and grow to the satisfaction and fulfillment of the individual. We must, in short, develop the kind of wisdom that would keep the BEING and EGO systems in a balanced relationship within the boundaries of excess and insufficiency. What is required is the kind of constant, disciplined management of these relationships and forces that would give rise to a performance in life corresponding to that of a well-trained athlete, dancer, painter, writer, scientist, engineer, or any of the other man-practiced arts.

Reading, not the words, but the intensities in what Dr. Salk has to say, one is reminded of some remarks by Ortega on the history of philosophy (in *Concord and Liberty*). It is crucial, he says, to go behind the merely "doctrinal" or logical significance of what is quoted from some thinker, and to find out, by intensive study and questioning, what those ideas *meant to the man who set them down.* They were, if now really worth reading, a matter of life and death to him—his deepest convictions. How can we understand what he meant unless we try to feel what he felt when he expressed them?

This surely applies when we read a man like Jonas Salk. The words of his books are only the reflected images of what was for him exciting and vital discovery. This is the importance of his work, the reason for considering the implications of what he says. Many of the ideas in his books are not "new." But the framework in which they have appeared to him is original and new. And since, for us, they emerge from within the discipline of what, heretofore, has been the empirical science of biology, they represent a decisive cultural event—an upward movement of scientific thought toward a new plateau of inquiry and a higher level of meaning.

# *REVIEW*
## HEALTH OR "HEALTH SERVICES"?

WE have for review two books on the same subject—health—that supplement each other. *The Care of Health in Communities* (Macmillan, $8.95) is by Nancy Milio, the registered nurse who spent a year or two working in a "mom and tots" center in the ghetto area of Detroit—getting it going, making it work—and then telling the story of this adventure in 9226 *Kercheval* (1970). The Detroit experience became the foundation for wide investigation. Miss Milio went back to school, did research, and wrote the present general report on health services throughout the United States. Quite evidently, *The Care of Health in Communities* is the result of a deeply felt need to understand why there are so many practical obstacles in the way of anyone who tries to work personally and effectively to help the poor and disadvantaged. *Access for Outcasts,* Miss Milio's subtitle, gives the motive and theme of this work.

The other book—not yet published in this country; still a draft circulated for comment and criticism—will be the American edition of Ivan Illich's *Medical Nemesis,* which has already appeared in England in briefer form. This book is the best example yet of Illich's extraordinary capacity for effective generalization. The impressive documentation supporting his judgments suggests that he and his colleagues have read every criticism in print of the modern practice of medicine. Illich's fundamental claim is that during the expansion of the social processes and structures of a civilization dominated by industrialism, a point is reached where activities originating as services begin to have a reverse effect. They begin to *harm* people instead of helping them. The damage is both subjective and objective. The reader is directed to proof of the damage in Illich's numerous footnotes. His text deals with psychological subversion, and the cutting edge of most of his generalizations is at this level. He contends that when individual responsibility is diminished by the requirements of technological systems, people tend to deny themselves the very possibility of healthful lives. Health, he suggests, is the spontaneous result when normal human beings cope resourcefully with a normal environment, matching their capacities with the natural limitations and obstacles in life.

Such statements have obvious metaphysical implications. They also have great intuitive appeal. *Medical Nemesis* represents Illich's effort to demonstrate that the facts of modern experience at every significant level support this analysis. Here we are able to give only a few of his generalizations:

> Increasing and irreparable damage accompanies present industrial expansion in all sectors. In medicine this damage appears as iatrogenesis (physician-caused ills). Iatrogenesis is clinical when pain, sickness and death result from medical care; it is social when health policies reinforce an industrial organization which generates ill health, it is structural when medically sponsored behavior and delusions restrict the vital autonomy of people by undermining their competence in growing up, caring for each other and aging, or when medical intervention disables personal responses to pain, disability, impairment, anguish and death.
>
> Most of the remedies now proposed by the social engineers and economists to reduce iatrogenesis include a further increase of medical controls. These so-called remedies generate second-order iatrogenic ills on each of the three critical levels.
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> The most profound iatrogenic effects of the medical techno-structure are a result of its non-technical functions, by which it supports the increasing institutionalization of values. The technical and non-technical consequences of institutional medicine coalesce and generate a new kind of suffering: anesthetized, impotent and solitary survival in a world turned into a hospital ward. Medical nemesis is the experience of people who are largely deprived of any autonomous ability to cope with nature, neighbors and dreams, and who are technically maintained within environmental, social and symbolic systems. Medical nemesis cannot be measured, but its experience can be shared. The intensity with which it is experienced will depend

> upon the independence, vitality and relatedness of each individual.

What is Illich's ideal? The following states it briefly:

> The level of public health corresponds to the degree to which the means and responsibility for coping with illness are distributed among the total population. This ability to cope can be enhanced but never replaced by medical intervention or by the hygienic characteristics of the environment. That society which can reduce professional intervention to the minimum will provide the best conditions for health. The greater the potential for autonomous adaptation to self to others and the environment, the less management of adaptation will be needed or tolerated.

The weakness of *Medical Nemesis* is certainly not in Ivan Illich's diagnosis, but in his remedy—he wants to limit medical monopolies by law, and to give legislative encouragement to people to evolve their own forms of health service and care of the sick. Why should this be a weakness? Because Illich, despite the avalanche of facts he has assembled, is making *a philosophic* criticism. At root he is recommending *a* changed attitude of mind—better ways for humans to think about themselves, their capacities, and their needs. You don't change minds with legislation. Changed minds may cause better legislation, but a vast number of minds have to change before the laws can be substantially improved. Only a dictator or an autocracy is able to change the laws in advance of a strong current of public opinion.

Illich may feel that his thought will remain utopian unless he proposes a political remedy for the ills he defines so well. But truly utopian programs are best initiated by numerous small-scale experiments, persistently repeated until they finally take root. Law-making is now in the hands of a collection of second-rate, secular grand inquisitors whose methods are all infected with their spiritual ancestor's assumptions. Entrusted to their hands, reforms aimed at self-reliance and increased individual responsibility will inevitably be turned around and made to have an opposite effect.

Illich's genius lies in showing what is wrong with the *Zeitgeist* of the industrial age. He reveals its self-defeating Faustian delusions and gives chapter and verse on where the defeats are taking place.

What is the *Zeitgeist?* It is spirit and mood, embodying both conscious and unconscious overall value judgments about our lives and what is good. But men are more than any *Zeitgeist.* They are not entirely its creatures. They are not totally occupied by the generalization of their common weaknesses. In every doctor who submits to the imperatives of technological medicine there is still a human being who may be uneasy, who may sense that something is seriously wrong. The Prometheus who is subdued is not defeated. The *Zeitgeist* reflects the action, not the potentiality, of the age. Law-making, as a means, belongs to the past, not the future.

Nancy Milio, one could say, looks at world health care, and especially health care in the United States, from the point of view of what can be done in spite of the *Zeitgeist,* of which she seems well aware. While Illich works at changing the polarity of human thinking, Nancy Milio considers what we may be able to do, in the meantime, out in the field. Mostly, of course, her book lists the limitations on health care—what is wrong. Inevitably, the *Zeitgeist* threatens her positive recommendations. In one place she says:

> Without public awareness of the very different consequences of numerous proposals all of which are labeled "national health insurance," there is likely to be little consumer response to Congressional moves. Without definitive public response, Congressional approaches are likely to follow familiar paths, with the result that changes will not alter current prerogatives very much, outcasts will gain little, and the health of the American majority is not likely to improve.
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> Creating such a truly democratic responsiveness would meet with many impediments, beyond finding sources for the funds that would be needed. Among them is the fact that health professionals—who are assumed to be experts on health—are often unaware, or narrowly aware as a result of their training and

other reasons, of the big picture, of the context in which they work. In effect, they are more concerned about health services than health.

Further, most health care providers are part of large groups and associations. Thus group decisions and organizational priorities are likely to take precedence over personal doubts, to stifle questions, to close options to new ways. And soon the newer—and sometimes more open—health personnel accept the same constraints and rewards as their mentors. Personal intention to do good and perform well takes or retains priority over the critical examination of the effects of collective actions. Were it otherwise, organized health professionals would probably have significant policy making influence toward support for the health-deriving social changes that would make personal health services more effective.

True to her purpose, Nancy Milio concludes by giving three examples of improved access that has already been achieved—programs in Orissa, India, in Amsterdam, Holland, and in Edinburgh, Scotland. The State of Orissa, "with all its difficulties, is doing what others have only talked about." Here paraprofessionals are reaching into outlying villages of Harijans ("untouchables," of whom there are four million in Orissa), and training local practical nurses and midwives. An extraordinary woman in Amsterdam is accomplishing similar effective contact with Surinam Blacks who have migrated to Holland, and have been long neglected there. In Edinburgh the people of a low-income district have themselves organized a day nursery and health program and generated a community spirit which animates a variety of other activities—housing rehabilitation, and recreation for both young and old—with the result that "those who were to be organized have become the organizers, those who are outcast are together working to open and enter the decision-making that sets their options for living." A book entirely devoted to such initiative and achievements would make fine reading.

# *COMMENTARY*
## THE SOURCES OF VALIDATION

THE books noted and quoted in this issue have something in common: a surging human intention which ranges beyond the limits of sense experience, yet finds analogical support in the areas open to objective investigation. Surely the most apparent quality of the books by Jonas Salk, the critiques by Ivan Illich and Nancy Milio, and the study of wildlife in Sally Carrighar's volume is the stress on the ethical intelligence of which human beings are capable.

In these books, then, there is both science and something beyond science. The science frames the "beyond science" content or flowering. Scientific knowledge can be codified—it is what we know, what has passed the tests of public truth. The "beyond science" reach of these books, however, cannot be codified. It represents individual insight and inspiration, longing and appeal. It expresses feelings conveying the *meaning* of what we do, how we behave. The proving ground of feeling is always subjective.

Scientific propositions, to be of any value, must be testable by the canons of objective certainty. Moral propositions also need testing, but by ethical canons which are the inward endowment of every human being. There is no other explanation available for the fact that the most admirable human beings have always, in the course of their lives, found it necessary to reject externally imposed moral codes.

What Joyce Carol Oates says about a work of art applies with equal force to the moral or ethical intent of the sort of books named in this issue. The science is public truth, but the ethical inspiration *remains* ethical only through individual recognition. Miss Oates declared: "The greatness of a work of art usually blinds us to the fact that it is a hypothetical statement about reality—a kind of massive, joyful experiment done with words, and submitted to one's peers for judgment."

Why "hypothetical"? Because the confirmation must come from the reader. When moral truth is made into a dogma it loses its moral power. The power comes from the free response of individuals who give it their attention.

# CHILDREN
## . . . and Ourselves
### A NATURE LOVER'S BOOK

THE best books about nature are by nature-lovers. But what is a nature-lover? We have no reliable answer to this question, but feel able to name a few. One is Sally Carrighar, whose *Wild Heritage* (Houghton Mifflin, 1965 ) reached our desk the way many good books do brought by a friend. You read a while in this book and begin to realize the writer inhabits a world most people experience only vaguely, in outline and at a distance. To understand a nature-lover you probably have to try to *be* one. Involved is intense but not obtrusive, non-interfering experience of other forms of life.

We commonly think that knowing something means being able to explain it in terms other than its own. In that way we "master" it, get outside or on top of it. We make it submit to definition. Until about a hundred years ago, Miss Carrighar relates, there wasn't much careful definition—little "scientific knowledge"—of wild creatures. Victorian writers described animals as though they were humans—"Raccoons were thieves because they stole corn from farmers; the squirrel who ate the breadcrumbs thrown out for the birds was a robber; the lion was a king; snakes were true to their Biblical reputation, the very incarnation of evil; birds were sweet innocents, except the ones like jays that sometimes raid other birds' nests—they were murderers." There was a reaction against this, of course. Animals don't have moral qualities.

But one thing Miss Carrighar doesn't discuss—and we wish she had—is the mystery of why, sometimes, they *seem* to have moral qualities! A horse is noble. Pigs are not. Nobody is fond of hyenas or wolverines. Slugs are not attractive. Chickens are dumb. But many birds are fascinating, and there is endless beauty hidden away in wild places. These qualities we understand in terms of our thinking about ourselves; which turns out to be inevitable, natural, and partly misleading, as she shows. To say that a horse has a magnificent way of tossing his head, of moving at a gallop, is not to say he *chose* to be that way, as a man embraces a heroic course of action, but shows that the best intuitive description of a horse will call attention to qualities known from such human behavior. We know what a horse is like from the similitude found in ourselves.

But similitude is not identity. To confuse a horse's nobility with human nobility is sentimental, and heaped-up, overflowing sentimentality always produces a cultural reaction, as it should. Miss Carrighar relates:

> It [the reaction against sentimental anthropomorphism] was led by C. Lloyd Morgan, the British animal psychologist [and Emergent Evolutionist], who distrusted all delusions about thinking and moralizing animals, and with his associates formulated Morgan's Canon, or the Law of Parsimony. According to this rule an animal's action must never be interpreted as the result of a higher psychical faculty if it can be attributed to one lower in the psychological scale.

This is what we now call "reductionism." It was the approach to natural phenomena which made highschool students in the twenties go about saying that "love is a chemical reaction," and in the sixties talk about being) "turned on," the way an engineer pulls a switch or releases a fluid flow. So, as Miss Carrighar explains, from sentimentality we went to the other extreme:

> The Victorians were guilty of sentimental anthropomorphism; soon the new biologists were indulging in anthropomorphism of another kind: they were describing animals according to the current infatuation with machines. It was the age when automobiles, airplanes, and ever more complex industrial equipment were ravishing the minds of men, and biologists like J. B. Watson and Pavlov followed along with the declaration that animals are no more than reflex mechanisms.

Why, one wonders, do we feel driven to *explain* everything around us? In other ages men seemed content to let mysteries remain mysteries. We seem to be different. Is our zest to penetrate the unknown a Faustian sin or a Promethean glory? Something of both? Curiously, in some men knowledge becomes the practical extension of wisdom—the tool of a wider usefulness—while in others it turns into menacing weapons. Is there really such a thing as a morally neutral truth?

In asking about the balance characteristic of nature-lovers—the balance between their awe and their understanding of the wonders of nature we are, we suppose, raising the basic question of evolution, inquiring into the *meaning* of life. When a thing has meaning, we think of it as moving toward something good, realizing a goal. Nothing static excites much interest. We cling to life because it has the appearance of meaning, even though it is filled with contradiction, too. And the wonderful, spontaneous qualities in the texture of natural life—endlessly flowing, remaking and improving itself, outdoing itself—all this is surely what makes nature-lovers of the people who begin to sense some transcendent meaning behind the spectacle.

Our hunger for explanation, then: Is it some kind of evolution in *us*? Are we experiencing a new phase of development?

But a question of this sort is precisely what the nineteenth-century evolutionists would not allow. The mind, Huxley declared, is an epiphenomenon. It doesn't count. Only what can be understood in terms of the machine principle counts. And a machine does not hunger to know. It demands lubrication, not explanation.

Miss Carrighar is the sort of observer who can now look back on this past history of science and help us to see how we were blinded by the very abstractions that were meant to give satisfying explanations:

> Earlier philosophers like Descartes lent prestige to these theories, but now they were reinforced by a whole new terminology and with new apparatus for experimentation. An animal, said these biologists, is as automatic as a system of levers: an external object or event presses a lever and the animal responds with an inevitable and predictable reaction. The existence of any innate motivations, instincts or other inward impulses, was denied. And even yet there are mechanists who lean towards the chain-of-reflexes theory, although most of them now admit that some innate tendencies are inborn. How can they do otherwise? As proof there are such examples as birds raised from hatching in soundproof rooms, where they can never have heard another bird sing and yet as adults produce the typical song of their species. What external lever, what learned behavior, can account for the song pattern?

A whole new cycle of inquiry may now be on the way. Science, as Miss Carrighar says, proclaims "many 'final' conclusions which then are revised in a few years." We are, she says, convinced too easily by these "men-of-facts." Renaissance philosophers gave birth to science, and another sort of science may now be born in our own time:

> Even a layman should be bold enough to question the scientists; even a layman, it is hoped, may be well enough informed so that he has at least an intuitive sense of discomfort when a scientific conclusion is incomplete, or indeed quite dubious. J. B. Watson was certain that no animal has any innate instinctual urges, and yet it took only one bird, singing in a soundproof room, to bring that great edifice of scientific theory crumbling to the ground.

Sally Carrighar has lived in the field, observed the wild creatures in many parts of the world, and she has also read the works of the ethologists—the scientists who study animal life and behavior in its natural setting. One could say that in her writing one encounters the insight of a nature-lover whose intuitive understanding is selectively enriched by study of the careful observations of scientists who are now trying to interrogate nature with discipline but without preconception. She has for example a chapter on the often proclaimed "aggressiveness" of animals when fighting and seeking prey. Asking, "How Red the Tooth and Claw?", she answers by showing that what we think of as "aggression" is by no means a major trait of animals. When animals in captivity have all their natural needs—"nutrition, reproduction, social relationships, sleep, and care of the body surface"—supplied, they are able to fulfill their needs without fighting, and "they showed no aggressive drive and no distress of the central nervous system because an innate urge was being denied expression." Commenting, she says:

> When these scientific conclusions become better known, will they modify one of mankind's favorite myths? The human imagination is a marvelous faculty, perhaps most marvelous in its technological inventiveness because there it does not distort facts. It is also skilled, however, in inventing fantasies—fantasies such as the idea that men are "fundamentally" bestial and aggressive because we have inherited those tendencies from our animal ancestors.

The teaching of science in the schools should be in the charge of people like Sally Carrighar.

# *FRONTIERS*

## The Institutional Fix

ONE of the more unnerving aspects of the "knowledge explosion" is fully represented by *The Genetic Fix*, a book by the sociologist, Amitai Etzioni, first published in 1973 by Macmillan and now available as a Harper paperback ($2.95). Explored are claims of the numerous ways in which medicine (and science and technology) can now (or will soon be able to) alter the biological endowment of human beings. Prof. Etzioni asks what should be done to encourage, control, direct, or prohibit such undertakings. His book is a somewhat personal report on a Paris meeting of the Council for International Organizations of Medical Sciences, a body created by the World Health Organization and UNESCO.

*The Genetic Fix* examines in detail the scary innovations reviewed by Horace Judson in "Fearful of Science," a two-part article in *Harper's* for last March and June. Mr. Judson discussed the anxieties growing out of the idea that human beings can be remodeled by biologists according to their conceptions of a more perfect specimen. As one disenchanted scientist put it: If we are not noble and self-determined, but "rather a kind of pliable, malleable creature whose very structure can be modified to suit the ends of others, then our own self-image must begin to change." What sort of change? "Instead of a collection of possibly exalted individuals, we become a glob."

Prof. Etzioni writes from another point of view. His lifelong concern, he says, is to define "the conditions under which we can deal with societal problems caused by science rather than being overwhelmed by them." He would like to see "the establishment of a commission to deal specifically with the social and ethical issues raised by genetic interventions and new breakthroughs in medicine—in short, the establishment of what might, for the sake of brevity, be referred to as a Health-Ethics Commission." After noting some of the problems that such a commission could not hope to correct, Prof. Etzioni describes its possible functions:

> It could . . . act as an agency to educate and mobilize public opinion around some of these matters. It could look into alternative arrangements and point to medical systems which are more humane, just, and responsive. Above all, it could serve as a symbol of what we need: *greater emphasis on systematic, publicized overviews of our health system and the mobilization of necessary social forces to enforce the superiority of human needs over the interests of service providers—be they industries, practitioners, or scientists—and, finally, the advancement of a decent, egalitarian, humane system.*

The reader who does not break out of the framework of assumption of this book is likely to reach two conclusions: First, that Prof. Etzioni is morally right; second, that his proposal will confront so many obstacles, both practical and psychological, that there is virtually no chance of it being carried out. A third guess—which may have more importance than just a guess—would be that the extensive discussion of socio-technical-professional issues as set by *The Genetic Fix* will lead to an obsessive focus of debate—a debate which would accomplish nothing, exhaust the participants, and confuse the public to the point of anger and disgust.

Brooding over this possibility, we wondered how many of these hair-raising issues and problems would exist for a society which ordered its life on very different assumptions of meaning, progress, health, and human good. A society, say, like that described by J. R. Rodale in *The Healthy Hunzas* (a rambling, poorly organized, but informing book about people who seldom need any medical care). Or a society founded on the principles set forth in the chapter, "Buddhist Economics," in Schumacher's *Small Is Beautiful.*

Do we, in short, know enough to say with any confidence what would contribute to "the advancement of a decent, egalitarian, humane system"?

It seems almost a certainty that present conceptions of how to design such a system were developed in close association with the logic and the activities responsible for all the problems which now confront us, including those specified by Prof. Etzioni. Can such ideas actually guide us to any sort of far-reaching reform?

In *Birth Without Violence,* Frederick Leboyer reminds his readers of the ancient Greek idea that human birth begins with the infant's effort "to search for a way out—using its feet to propel itself forward, to force its way toward freedom." This old idea, the French obstetrician muses, was long thought to be an "old wives' tale," but is now recognized as the truth of the matter. Actually, this is a time when various ancient beliefs and conceptions are gaining progressive vindication. (See for a recent example *More Than Herbs and Acupuncture,* Norton, 1975, by E. Grey Dimond, a leading cardiologist.)

Good ideas from the past are no doubt mixed with ancient "superstitions," and we find it very difficult to discern the truth-content of a superstition. Meanwhile, it may be equally important to decide how many of our up-to-date modern ideas are really "Enlightenment" superstitions. A quick proof of the folly of one kind of biological manipulation is provided by Prof. Etzioni when he lists the almost certain consequences if all the people who want "boys" got their wish from obliging doctors capable of sex determination. There would be too many men, not enough women, and then, he says, violent crime would go up fast, since from 80 to go per cent of all crime is committed by men!

The real issue, it seems clear, is the restoration of life to a human scale. We may not feel that we know with finality what the "human scale" is, but we may be sure that it differs radically from the imperatives laid down by very nearly all the social institutions we are more or less obedient to today. Inspection of a simpler, more self-reliant life there are plenty of *individual* examples to choose from—would give the start of a working definition of "human scale."

It would be silly to say that we are incompetent to establish or speak of values because our lives are so misorganized. But it is not silly at all to say that we cannot afford to entrust the determination of any important values to institutions—not even a commission of elite scientists such as Prof. Etzioni or someone else may have in mind. The unexamined assumptions of modern institutions are at the root of the most pressing problems of modern life.