

TWO GENERAL OUTLOOKS

THE project of understanding has three major areas—understanding ourselves, understanding the world, and understanding people. No doubt there is a sense in which the three fields are one, but we need to inquire into them as separate, by reason of their practical differences. We may be "one" with our fellow human beings, but the word "others" has a meaning which cannot be ignored. If unity is the primary truth, it can hardly be realized except by grasping the meaning and function of otherness, and thereby reconciling the two. If we are parts of one another, this affirmation is plainly not enough. We need to know *how* we are parts of one another, so that the differences we experience will no longer bring conflict and pain.

Again, we may all be children of life and nature, and ours the best of all possible worlds, but the incidence of earthquakes, hurricanes, and periodically descending glaciers suggests that the "interests" of nature—if we can speak of nature in such terms—are often quite different from ours. What is it to understand "the world"? Do you take a course in cosmology and another in geophysics, or consult the *Tao Te Ching*? Is Bertrand Russell the one to follow, or is it better to seek the illumination of a "Peak Experience"?

So we study ourselves, the world of nature, and the puzzles of human thought and behavior. Naturally, we do not—cannot—do this singlehanded. We listen to others and we read. We measure what we read by referring to the ambiguous record of history, and the persuasions of logic play a part. Manifestly, we participate in the opinions of one another. We rely on authorities, learn from them, but are also misled by what they declare, and try to become independent of them. Humans do have the capacity of independent discovery. Yet how to use already existing knowledge, how to validate it

before using it—which means to make it the same as independent discovery—and how to recognize what this knowledge leaves out are among the most difficult things we try to do.

Does a writer confirm our intuitions or fortify our prejudices? The question embodies the continuing uncertainty of human life, which has of course other forms. Learning to put up with uncertainty may be a full half of the business of life. The other half would then be defining and using appropriately the certainties which are possible for us.

One great and undecided question is in what direction to look—that is, what to focus on primarily, since we will always have all three regions (ourselves, the world, and people) to cope with. Should we be primarily "religious," since religion is, or tries to be, an explanation of the Self; or should we be "scientific," on the theory that if we can understand the world we shall also (eventually) understand both ourselves and other people, since we are plainly parts of the world. Or should we become social psychologists, believing that, even if we can't know everything about ourselves and the world, knowing about people will lead to far better arrangements than we have now.

This may seem a nice division of possible undertakings, but we find, on inspecting the record, that dependable wisdom in any one of these areas seems to include an impressive grasp of the others. So we have this counsel: Divide (but don't divide) up the regions of investigation. Does this mean that our certainties will always be laced with uncertainties? And is this a merely mournful or a useful discovery?

We think of three men of our time who have thought effectively and fruitfully along these lines. One is a scientist, Erwin Schrodinger, who ended

his reflections on the constitution of the world by entering the area concerned with self-knowledge. His *What Is Life?* is an example. Then there is W. Macneile Dixon, a philosopher and literateur, whose pursuit of self-knowledge became an excursion in other directions, increasing his understanding of both the world and people. His best book is *The Human Situation*. The third is Huston Smith—happily still among us—a man of religion who is also at home with both science and psychology, and who has intimate touch with the wonderings, longings, and anxieties of people generally, becoming able to speak to them as guide, counselor, and friend. He is the author of *The Religions of Man*, published in 1958 in response to what was evidently a widespread hunger for self-knowledge. (God, Truth, and Self are interdependent variables in human thought.)

Here, for reasons that will become clear, we shall take Huston Smith as a guide. For this purpose we reduce the three areas to two—science and religion—since psychology has become a battlefield where both science and religion are contending for territorial supremacy. In *The Religions of Man* the author begins by establishing what he means by "religion"—he means its ideal content or direction, not a sociology of its perversities. In our review of this book (MANAS, May 25, 1960) we quoted from its opening chapter a passage which makes his purpose clear. Certain practical comparisons, he says, are inevitable, and he warns:

I wince to think of the shock if the reader were to close the chapter on Hinduism and step directly into the Hinduism described by Nehru as "a religion that enslaves you": her Kali Temple in Calcutta, the curse of her caste system, her two million cows revered to the point of nuisance, her fakirs deliberately offering their bodies as living sacrifices to bedbugs. Or what if he were to find himself in the streets of the leading city of Bali with one or two of its movie houses named the Vishnu-Hollywood after the second god in the Hindu trinity, and bookstores doing brisk business in *KLASSIK COMIKS* in which the Hindu gods and goddesses mow down hosts of unsightly demons with cosmic rays guns? I know the contrast. I feel it vividly between what I have written

of Taoism and the Taoism that surrounded me during the years of my youth in China: its almost complete submergence in augury, necromancy, and superstition. It is like the contrast between the silent Christ and the Grand Inquisitor, between the Sermon on the Mount and the wars of Christendom, between the stillness of Bethlehem and the department stores blaring "Silent Night" in the rush of Christmas shopping. The full story of religion is not rose-colored. It is not all insight and inspiration. It is often crude; charity and wisdom are often rare, and the net expression bizarre when not revolting. A balanced view of man's religions would record its perversions as well as its glories. It would include human sacrifice and scapegoating, fanaticism and persecution, include witch hunts in Massachusetts, monkey trials in Tennessee, and snake worship in the Ozarks—the list would have no end.

Why, then, does Huston Smith leave all this out? There is a simple answer:

This is a book about values. Probably as much bad music as good has been written in the course of human history, but we do not ask that a course in music appreciation give it equal space. Time being limited, we expect no apology for spending it with the best. I have taken a similar position with regard to religion.

In the Spring 1981 *Teachers College Record* (Vol. 82, No. 3) Huston Smith examines the idea of "certainty" which during the seventeenth and eighteenth centuries grew out of the reaction to various abuses and perversions of religion—the conception of natural or "objective" reality first set forth by Galileo and matured into a confident stance by the philosophers of the Enlightenment. Religion, these thinkers declared,—defining religion in terms of the mistakes and crimes committed in its name,—is plainly unreliable. Even the best of religion, some of them said, can safely be left to poets and mystics who are not expected to say anything important about the "real" world. From these arguments of the *philosophes*, fortified by the astonishing discoveries of science, and morally linked with the emotions of the struggle for political freedom—which science requires for its practice—arose the general outlook of what Huston Smith calls the modern Western mind: the claim that what we

learn through the senses, as amplified by mathematics, constitutes the only reality we are able to know. He comments:

I do not say that the world view this epistemology has generated is materialism (the view that nothing but matter exists), for our thoughts and feelings are, on the one hand, too conspicuous to be denied, and on the other, too different from what we experience matter to be, to be reduced to it. It is safer to dub our modern Western world view neutralism, this being defined as the view that (a) nothing that lacks a material component exists, and (b) in what does exist the material component has the final say.

After quoting Russell's mid-century assertion that "what science cannot tell us, mankind cannot know," and correcting it to read, "what science cannot tell us, mankind cannot collectively know for sure," Prof. Smith gives this summary of the outlook:

Matter is that which (with whatever required amplification) registers on our senses.

Our senses are where our worlds overlap.

The parts of our worlds that overlap are the parts we trust most, for we are social creatures: down isolation's path lies madness.

Or, in another way of saying it:

Seeing is believing, touching is truth (an old American proverb).

Science's extension of our seeing and touching has augmented our power and enabled us to solve certain problems spectacularly.

With the collectivizing of society we look increasingly to government to solve our problems, while the government relies on science to help it do so.

In this part of his paper Prof. Smith seeks a way of describing the modern Western mind-set that will serve as the beginning of further inquiry, rather than a succinct definition. He finds it in a single sentence:

An epistemology that aims relentlessly at control rules out the possibility of transcendence in principle.

What does this mean? *Epistemology* means a theory or doctrine of how we are able to know.

Here the criterion of knowing is the power to manipulate, or control. *Transcendence* means reaching to areas of being beyond the senses, implying purely mental or even "spiritual" realities. But the scientific rules for knowing prohibit even supposing that such realities exist. Huston Smith develops this point:

By transcendence I mean something that is better than we are by every measure of value we know and some that elude us. To expect a transcendental object to appear on a viewing screen wired by an epistemology that aims at control would be tantamount to expecting the melody as well as the lyrics of a song to issue from a printout typewriter. We can "put nature to the rack," as Bacon advised, because it is inferior to us; possessing in its parts at least neither mind nor freedom in the genuine sense, these parts can be pushed around. But if things that are superior to us exist—extra-terrestrial intelligences superior to our own? angels? God?—these are not going to fit into our controlled experiments.

The pantheists fare little better at the hands of the Method. Even if the "superior intelligence" is somehow part or inside of us, with transcendence a natural feat of spiritual psychology, this possibility cannot be recognized by the scientific epistemology. Only in nakedly abstract mathematical deliberations are further dimensions of reality allowed, and only because they render pragmatically sanctioned service to our skills and techniques of control of the world of the senses.

The Method is compelled by its assumptions to define everything in terms of materials that can be controlled. Prof. Smith catalogs the evidence, adding the latest reductionist claim—by E. O. Wilson, the sociobiologist, who maintains that "human behavior, including actions and choices traditionally explained in terms of idealism and disinterested love of others, is ultimately to be understood as genetically determined." "*This*," exclaims Huston Smith, "is why we lay down our lives for our friends; our genes prompt us to do so."

The conclusion or verdict he draws is this:

While the West's "brain," which for present purposes we can equate with the modern university,

rolls ever further down the reductionist path, other centers of society—our emotions, for example, as they find expression through our artists, and our wills, as evidenced in part by rise in crime and senseless vandalism—protest. These other centers of ourselves feel that they are being dragged, kicking and screaming, down an ever darkening tunnel. We need to listen to their protests, for they force us to ask if it is possible to move toward a world view that, without compromising reason or evidence in the slightest, would allow more room to the sides of ourselves that our current world view constricts.

The outlawing by scientific method of any transcendent or even intrinsic meaning in the natural processes of the world (or in ourselves) can be objected to on various grounds. Prof. Smith assembles several critiques, one of which goes counter to the assertion of Jacques Monod (in *Chance and Necessity*) that "The cornerstone of the scientific method is . . . the *systematic denial* . . . of final causes." (Final causes are causes pursuing and embodying meaning. They are purposive acts.) Of Monod's assertion, Prof. Smith says:

It should not escape us that such causes are not denied because they have been found *not* to exist; only because they have not been *found* to exist. But how *could* they have been found to exist when search for them is excluded on principle—"systematic denial" is Monod's term; even the emphasis is his. The unspoken, but in no wise obscure, reason for rejecting final causes out of hand is that every glance in their direction would divert us from the efficient causes the MWM [Modern Western Mind] is bent on getting its hands on.

In short, the scientific method is mission-oriented with a vengeance. Its famous impartiality is grossly violated by the assumption that only the manipulatable, only the controllable, can be accounted real.

But what if there are things (beings, intelligences) that cannot be regarded as no more than means to the ends of other beings or intelligences? What if there are (in more than a Kantian sense) beings-in-themselves with purposes (fulfilling final causes) that cannot be violated (but only shut out from our acquisitive

awareness)? What if the world is actually a collaboration of all the forms of life, and not a smorgasbord for power-hungry humans?

How might another kind of science seek understanding of a world like that? What should be its method, its rules, and its primary assumptions? Obviously, we can have no answers to such questions until we are able to think a little about final causes. It is equally obvious that in order to construct such a science, we must resign ourselves to becoming rank beginners. This will seem a low blow to Western pride, but accepting the blow might prevent a much more painful fall. Huston Smith, at any rate, is reconciled to the need to start with embryonic knowledge, saying:

I need not know the position of San Francisco relative to everything in the universe, much less what space and position finally mean, to be certain that, given the present position of our planet's poles, it lies predominantly west of Syracuse [where he teaches now]. From such simple beginnings we should be able to go on to separate the relativities that should give us pause from ones that are irrelevant, or worse—like sand thrown in the face of desert pilgrims.

Two general outlooks have a grip on our attention. One is the grip of the external world of nature, seen and experienced through the senses, with all its processes (which we need to understand or learn to work with), its attractions, and its dangers (that we amplify in frightening ways). This is the objective world we have in common—which we look at through our senses, and since we all have the same senses (more or less), our personal view of this world, as Huston Smith says, *overlaps* with the worlds of other human beings. By reason, then, of what we agree upon as seen, touched and controlled, we have what we term "collective" or "public" knowledge (science) as the common body of knowledge or truth about the world. It is a world that says nothing about value yet a world we can more or less agree on. This limiting agreement is a species of certainty, which we prize and have relied upon, often with continuing eighteenth-century pride.

But now an increasing number of us have reached another agreement—that the scientific (value-free) knowledge we possess is *not enough* and that uninstructed use of its power is getting us into more and more trouble. Is there, then, another order of knowledge—knowledge that will put an end to our collective mistakes? Poets, mystics, metaphysicians, and essayists say there is. But what about our precious certainty? Inward truth is not "public." There is no institutional sanction for the vaulting vision of a Tolstoy, a Blake, a Thoreau, or a Gandhi.

We cannot have here the same kind of certainty that science provides. But there is this reply: Scientific certainty depends upon knowing *only* what we have power over, and there will be other rules for that portion of the world where power *does not count*, where it has no place or part.

Moreover, there is another sort of "overlap" in this region—the overlap of symmetries of intuition, of insight, of ethical conviction. Can these be deemed less "real" than the deliveries of the senses?

This is the great question before the world during the closing years of the twentieth century. It cannot, as Huston Smith shows, be evaded. Each attempt at escape brings it more forcibly to our attention in another guise.

The problem is to generate a sense of reality for the world of the imagination, the world where mind, and the disciplines of mind, determine the laws and definitions. It may take us some time to acquire this sense, but there is nothing else to do.

Huston Smith finds in a book by Gai Eaton the idea that each of us blows bubbles of airy thought, and then inhabits them—some confined by them, some able to make them more transparent. This seems a poetic parallel to what the psychologists refer to as the "assumptive world" which each of us makes and inhabits—is obliged to inhabit—and which we alter only by heroic effort. By the lens of this bubble we

exercise control over what is unlike or less than ourselves; but the lens has another focus—upon a higher Platonic world of values and mental being, where learning and self-extending identification are the rule, and not "control."

The bubble image has further uses suggesting another parallel—with the *Monadology* of Leibniz, that most distinguished metaphysician of Western thought. The monads reflect each other—we are monads, also self-reflecting ones—and some develop comprehensive and inclusive reflections which have a close resemblance, if not an identity, with the reflections of other monads of similar elevation. Here, it may be, is the "overlapping" possible for inhabitants of the ideal world, and in this world of freedom there is—there has to be—an order of reality which cannot be mechanistically defined. This conception gives substance to the idea of "inspiration" and provides structured character to the idea of evolution beyond the physical.

REVIEW

WORTH THE PRICE

THE books dealing with alternative society—technology, culture, energy sources, agriculture, community, transport, medicine, diet, psychology, philosophy, religion, literature, and anything else you can think of that needs changing—are now gaining encyclopedic proportions. Virtually everything along these lines is still in the "beginning" stage, and will be for quite a while, but what we mean to call attention to here is the impressiveness of the beginnings. Our society is in transition, and it seems likely that the process of change is more self-conscious and deliberated than any great alteration we have been through before.

In evidence we offer a current book—one of the compact encyclopedias of the time: *Radical Technology*—a large 8" x 11" paperback of 300 pages, issued by Random House at \$5.95. The editors are Godfrey Boyle and Peter Harper, who are also the editors of *Undercurrents*, published in England, of which we doubtless should know more than we do. The book has sections on Food, Energy, Shelter, Autonomy, Materials, Communications, and Other Perspectives. Most of the contributors seem to know what they are talking about and they write well; and there are some exceptionally good interviews, as with John Todd and Peter van Dresser. The style is often conversational without being folksy, and if you don't too much mind the "with-it" atmosphere that often seems to prevail, the scope of coverage and precise description should prove attractive and broadly informing to the general reader. The chapters get into the grain of changes now going on.

On occasion the criticism is very good, too. We have in mind the interview by Patrick Rivers with Peter van Dresser, a man who has been in the van of socio-economic thinking and reform for a full lifetime—we've quoted him in MANAS for the past twenty years—and whose work should be better known. His book, *Landscape for Humans*,

on the natural and human ecology of northern New Mexico, is a classic of ecological analysis and planning. Here, in *Radical Technology*, asked by Patrick Rivers if "the alternative movement" offers the prospect of "changing society," van Dresser replies:

Not at its present level of intensity; I live in hope that a genuine psychic change may be operating seriously on society as a whole, and that the present gropings towards an alternative society are the forerunners of a serious movement. But from my experience with it I find it confused, fragmented and self-defeating. I'm talking about the communes and dropouts. They're not genuine. They are pseudo, still linked with the establishment in ways which pretty well neutralize their pretensions to be exponents of the alternative society. . . . There is a middle ground where you don't pretend at self-sufficiency, but rely as much as possible on the resources and products of the local economy.

That's the distinction I make. The dropouts I criticize most are the ones that *pretend* at self-sufficiency—living in a wigwam and all the rest of it—yet going to Safeways once a month for their proteins. This is just a destructive fantasy. The viable middle ground is a slow evolutionary process in which each year you try to reduce your dependence on a greater economy and try to utilize the products of your region more effectively. You try to integrate. You try to strengthen the village community and the regional economy. Phoney self-sufficiency gets in the way of evolving this *localized* self-sufficiency, so important for a viable future.

Asked about "alternative technology," van Dresser said he didn't care for the term. It seems, he said, to reflect "the American hope that gadgets will solve problems."

Much more is needed—the whole alternative rationale for restructuring society. Technology is only a portion of this, and to emphasize it misses a very large part of what has to be thought about and done. I feel that to speak as if technology has a drive of its own is not defensible. Technology has been moulded very much by *human* institutions and drives, and I would argue that we have to change our motivations and our social and economic relationships and that in the process technology will be evolved to satisfy real human needs.

More of van Dresser's common sense:

You know, we are obsessed with the need for mobility, not for functional reasons, but psychologically we just can't stay in one place. It's ridiculous to use this most destructive and complicated of modern industrial products [the automobile] for inadequate reasons. But most minimally, if there's no other means of transport, it is all right. A carefully rationed old "pick-up," kept in reasonably good shape and used infrequently, is better than the dropout's fantasy of a horse which eats as much as five or six cows, and in this country is very ecologically destructive. . . .

Experiments in community are possible under the kind of government we have now: the greatest obstacles to them are not capitalism but the internal psychology of ourselves. To blame failure entirely on capitalism is a kind of "copping out" and dodging the real issue. This is not a defense of monopoly capitalism, but I can't visualize how the difficulties would be less with any of the other existing systems.

The mood of the editors is reflected in the introductory paragraphs of the Bibliography (which is excellent), where one of them says:

"Radical Technology" is a very vague term we decided to use because, having rejected "Mutiny on Spaceship Earth," "Moulin Rouge," "Bicycles of the Gods" and other such gems, we couldn't think of a better title of the book. For a long time we referred to it as "The Alternative Technology Book" because "alternative technology"—or "AT" as it is known in the trade—is by far the most widely accepted umbrella term for wind-generators, methane digestors, autonomous houses, solar stills, etc., etc. But this was too much associated with pure gadgetry, especially of the merely environmental variety, for use by the affluent to soothe their consciences and amaze their friends at a safe distance from the cities.

We wanted to express an ideal of technological organization that was part of a total movement towards a new form of society; but at the same time to assert the belief that technology itself matters, not *just* who controls it—that, in other words, not only the relations of production, but the *means themselves* must be changed to permit the achievement of a just, stable and fulfilling society. . . . under "Energy" I don't discuss miners' wage struggles, or under "Shelter" unionization in the construction industry. I don't wish to minimize these issues, but many of them are obviated by the very nature of Radical Technology. . . .

One entry in the bibliography, by reason of its condescending tone, is difficult to appreciate: "*Small is Beautiful: Economics as if People Mattered*," by E. F. Schumacher (Blond and Briggs, London, 1973; Harper & Row, New York, 1974). A paean to the intermediate technology scale by a 'Buddhist Economist.' Quaintly inspiring, with a dash of old-time religion." Yet Schumacher's book was powerful enough to create an audience for later works like *Radical Technology*.

In general, however, you get the impression that this book was put together by two sharply intelligent and practically omni-competent people. We called it an encyclopedia because it packs in a vast amount of what seems accurate and reliable information together with running commentary of tough-minded criticism and useful asides. In view of the impossibility of summarizing contents filled with detail by experts, it seems best to quote from the editors' Preface, as indication of what can be expected from a reading of *Radical Technology*:

The book is not a blueprint. We don't imagine we have all the answers. Some of the proposals made may turn out to be misconceived. But we cannot know in advance which will, and which won't. We have kept the range as broad as possible, ranging from the sensible and piecemeal ("we used to do that during the war") through the straightforwardly radical (for example, workers' self-management) to the more-or-less utopian (say, repopulation of the countryside). This gives considerable variety, reinforced by the idiosyncrasies of the authors, who each interpreted their brief in different ways.

In terms of the "big picture," one of the most interesting things in this book is Peter Harper's showing (in some chapters on "Autonomy") that what is uneconomic in a fiercely consuming society will often become the only sensible thing to do in a lean, self-restrained culture. He has figures and graphs to explain how this works. In other words, transition, even if painful, is worth the price.

COMMENTARY MIND-CHANGING

ARISTOTLE designed what (on page seven) Huston Smith refers to as the Modern Western Mind. Aristotle maintained that reliable knowledge—the knowledge worth having—is the result of applying logic to the deliveries of the senses. It is knowledge that you *have* to accept because it has been proved.

Other contributors to the design came later. Galileo restricted the real world to its measurable parts and maintained that knowledge is obtained only from "sensible experiments and necessary demonstrations." Descartes also relied on mathematics for dependable knowledge and regarded the world as a great machine, to be understood as a machine, the bodies of men and animals being a species of machinery, with mind or soul having a negligible role.

Focusing his thought through this outlook, Western man proceeded with the conquest of nature, inspired by Bacon's maxim that knowledge is power, and continually encouraged by the way our capacity to control the forces and materials of nature grew under the application of scientific rules. There seemed to be no limit to what we could do.

Yet now the limits are evident, while the capacity to control is itself out of control. There is deep apprehension that we cannot go on as we are, so that more and more people are asking: Is there another kind of knowledge?

A noticeable spur to asking this question comes from the fact that while "public truth" has a splendid democratic sound, nearly all of us are now in the hands of the experts. A public truth of science is seldom *our* truth—nor can it be directly known even by scientists who work in other fields. In short, the "sure thing" truths of science are matters of belief for all except very few, and those few are seldom able to speak to us in the public language. Truth has become too complicated for

that. Notice that most of the arguments, these days, about the social consequences of scientific or technological activities are filled with the names and opinions of "authorities." Real explanations are beyond us.

Developing confidence in another kind of knowledge would be a *mind-changing* enterprise. It will have to be done by us one by one, and the change would mean replacing a now rather fraudulent consensus of facts with an admittedly imperfect consensus of values. While inwardly divined, these values would be reasoned about, clarified by observation, and refined to close family resemblance by the energy of good will.

CHILDREN

. . . and Ourselves

A BASIS FOR EDUCATION

[This article is a portion of a paper on Peace Education by Devi Prasad, an Indian artist (and Gandhian pacifist) now living in London.]

AS an art teacher, I have observed that children who engage in spontaneous creative activity are happier children than those who may do well in intellectual work but do not take part in either sports or creative activities such as craft work, painting and music. I have also found that children's drawings which are the results of spontaneous activity provide direct evidence of their physiological and psychological disposition. Child art has more clinical value than any other form of evidence. These spontaneous self-expressions create a great deal of self-confidence in children. They help in building a healthy self-image. After all, self-expression is self-improvement, even self-realization. Self-realization does not mean merely the discovery of one's intellectual capacities and other skills. It is a process of discovering oneself as a free individual, at peace with oneself on the one hand, and on the other becoming a part of and in harmony with the larger reality. This harmony is developed in the individual, not only by the imposition of laws from above, but by that discipline to which the senses naturally submit. Art is the discipline in which the senses intuitively seek harmony, proportion, and wholeness. The use of medium and tools—such as clay, cotton, wool, leather, wood, stone, brushes, potter's wheel, saw—impose this discipline by their very physical nature. This discipline, in fact, belongs to our being and draws us closer to nature, which is the supreme example of harmony, sympathy, and union. These are the laws on which the human community depends for its unity and integrity.

Freedom to be close to nature—to be one with it—is to gain one's freedom to grow. In Herbert Read's words, the art of the child "is its passport to freedom, to the full fruition of all its gifts and talents, to its true and stable happiness in adult life. Art leads any child out of itself." (*Education for Press.*) I have mentioned the therapeutic aspect of art. I do

not here refer to its tremendous potential as therapy in "special" education (education of emotionally disturbed people or neurotics and psychotics), but am considering art activities in general as having the larger "therapeutic" quality which helps to free the individual of aggressive tendencies, sometimes unnaturally developed during childhood. I offer two examples from my own experience in this field—child art and education. In the Sevagram school (established by Gandhi in India) we had a boy from a tribal area. His father, a Gond, was a nationalist rebel during the Quit-India struggle and was waiting in solitary confinement for trial. The Gonds are a tough and warring people.

The boy, ten years of age, was not only endowed with his tribal characteristics, but he was also emotionally tense. He used to get violent with other children. I took him in my class and gave him the freedom to spend as much time as he liked in art and craft activities. He enjoyed this, and often drew pictures of historical heroes like Shivaji. He was also encouraged to join in hard physical work such as chopping firewood.

Within a year or so he was a different person, responsible and active in a constructive sense, and he continued to make interesting pictures. To put it simply: his need was to give vent to the extra energy and to exhaust the frustrations and anger he had accumulated over months and years. What, I wonder, would have happened if he had gone to an ordinary school? He might have become anti-social and a thoroughly alienated person.

The other example is of a girl of fourteen years, but who seemed about eight or nine. She sat in a corner in every class and did or said nothing. All the teachers considered her almost useless, socially. She herself felt that nobody cared for her. In the art class she did nothing for months. But her teacher often talked to her and asked if she would also like to make a picture, as other children were doing. One day she came and pushed a piece of paper on my desk, then ran away feeling shy. The paper had a bright golden—cadmium yellow to be correct—patch representing a person setting on a floor. This was her first attempt to "say" something, perhaps an expression of joy, with gratitude to the teacher for

treating her like any other child in the class. She told me later that it was my portrait! I asked her to make a picture especially for me, to keep, and she drew an elephant in a sort of folk style. I was astonished at her image-making capacity. At last she had discovered herself, and within six months she became our best "painter." On that all agreed.

Such experiences at Sevagram convinced me that children for whom creative activities are spontaneous and joyful grow into more mature individuals more at peace with themselves. This seems similar to the fact that, in general, people who live on the land, who farm or garden, and also those who earn their livelihood by arts and crafts—who make things—are by and large more disinclined toward war and war-like activities than those who do intellectual work. But people who, while engaged in art and music, have joined the rat-race must be excluded from our example of creative people, since their motivation has shifted from creativity to competition.

A disinclination toward war among peasants and artisans seems to flow from the kind of work that they do, which provides them with a healthy expression and probably sublimates their aggression. There is, however, another consideration: Their activities are such that they are at one with nature or the material which they handle, and with the form contemplated as the final product. Ananda Coomaraswamy wrote:

The Chinese artist does not merely observe but *identifies* himself with the landscape or whatever it may be that he will represent. The story is told of a famous painter of horses who was found one day in his studio rolling on his back like a horse, reminded that he might really become a horse, he ever afterwards painted only Buddhas. An icon is made to be imitated, not admired. In just the same way in India the imager is required to identify himself in detail with the form to be represented. Such an identification, indeed, is the final goal of any contemplation—reached only when the original distinction of subject from object breaks down and there remains only the knowing, in which the knower and the known are merged. If this seems at all strange to us, whose concept of knowledge is always objective, let us at least remember that an "identification" was also presupposed in mediaeval European procedure, in Dante's words, "He who would paint a figure, if he cannot be it, cannot draw it.

This quality of identifying with the subject of his work by the artist is universally evident in child art. An endless number of examples show the capacity of children to become totally absorbed, not only in the act of painting or modelling, but in the "drama" that is the subject-matter of the picture or model. A child of nine years once made a picture of a landscape showing a bullock tied to a tree on the far side of a brook. A boy is trying to cross the brook, to bring the animal to the shed, since it had started raining. The boy was holding an umbrella, and he slipped and fell, so that the umbrella flew away. Before adding the finishing touches to his picture, the artist placed it at a distance, to have a good look. (I was quietly watching him.) After leaning the picture against a wall, he started walking backward. His right hand pantomimed holding the umbrella in his hand. Suddenly he acted the falling boy of the picture, moving as if to catch the umbrella. Both Dante and Coomaraswamy might have been delighted with the scene!

From the examples I have given from my own experience the question may arise: Was it on account of creative activities that the children were helped, or was this due to a special teacher-pupil relationship? The answer is: both. In the framework of the education advocated in this paper, the two are inseparable.

Let nobody jump to the conclusion that I expect that, once creative activities become the center of education, a world without war will come into being. I suggest no such thing. What I wish to convey is this: To abolish war, it is essential that men and women be *predisposed* for peace, *i.e.*, be free and courageous enough to choose the path of love and unity instead of the path of hatred and fragmentation. I am asking no more than what Maria Montessori suggested to the International Congress against war and militarism held in Paris in 1937. She said:

If at some time the Child were to receive proper consideration and his immense possibilities were to be developed, then a Man might arise for whom there would be no need of encouragement to Disarmament and Resistance to War because his nature would be such that he could not endure the state of degradation and of extreme moral corruption which makes possible any participation in war.

FRONTIERS

Things We Need To Know

EXCEPT for our specialties, said a wise scientist of more than fifty years ago, we all belong to the masses. This seems especially true of contributors who write for a paper like MANAS. Through the years, they add to their verbal skills what Oscar Levant called "a smattering of ignorance," because, you could say, they try hard to find an appropriate level for writing about *everything* in behalf of the non-specialized reader. So, when some publication comes along which deals briefly yet thoroughly with a difficult subject practically everyone needs to understand, we report it here with considerable enthusiasm.

A present example is Jack Miller's *Primer on Nuclear Power*—48 pages of information, comment, and criticism that is both interesting and needed by citizens of today. We have read it, and feel able to remember the essentials of what it says—the best sign we know. The author and editor has put together essays and extracts on the subject that educate without overwhelming the reader. (Miller, founder and former editor of *North Country Anvil*, now runs Anvil Press, as printer and occasionally publisher. His address is P.O. Box 37, Millville, Minn. 55957 and the price of the *Primer*, including shipping is \$3.00.)

The contents tell how a nuclear reactor works, detailing the major problems. One section describes exactly what happened at Three Mile Island, explains why such accidents are an immeasurable threat to the population, near and far, and lists several other "near-disasters," concluding:

These accidents are by no means isolated. In the last ten years, there have been about 35 cases in which nuclear plants have gone out of control. In each case, a major disaster could have occurred; and in a number, major amounts of radiation were released.

Almost all of the supposedly "one in a million" accidents have already occurred. The "Rasmussen Report" said an accident as serious as the Browns

Ferry fire would occur only once in a billion reactor-years of operation. In 1979, after a group of independent scientists "demolished" the Rasmussen findings, the NRC [National Regulatory Commission] withdrew most of its support from it. The Union of Concerned Scientists, meanwhile, added more doubts about the industry's record, revealing a new list of about 100 previously unreported accidents and safety deficiencies. Some were outrageous. In one case, a tank of radioactive water was hooked up by mistake to one of the plant's drinking fountains. In another, an inflated basket-ball was used to plug a pipe, and when pressure escaped from the ball, 14,000 gallons of radioactive water were spilled.

Why is this serious?

One nuclear power plant of 1,000 megawatt capacity will produce as much dangerous radioactive poisons as 1,000 bombs of the type dropped on Nagasaki, Japan, in 1945. These poisons—capable of causing cancer, leukemia and birth defects—have lethal life spans ranging up to hundreds of thousands of years. No one now knows how to keep these poisons safely contained for long periods.

A section titled "Radiation's Deadly Work" gives a number of reports:

Researchers have found that in Wisconsin, people are storing radioactive poisons in their bones at rates seven to 43 times higher than federal studies indicate as an "average population dose." The study, conducted by Dr. Charles H. Huver of the University of Minnesota and a research team from the League Against Nuclear Dangers (LAND) in Stevens Point, Wisconsin, based its estimates on state measurements of radioactivity in milk between 1963 and 1976. The study also found that Wisconsin youngsters who were 17 in 1980 have up to two and a half times the normal risk of leukemia—and that their risk will increase year after year as the remainder of the radiation in their body cells continues to decay.

The tailings or rubbish accumulated by uranium mining are poisonous and it has been known for a century that the miners usually die of lung cancer. This danger seems to have been largely ignored. In the section on "Hazards" it is said:

Throughout the West, something like a million tons of tailings have accumulated in huge piles, some covering up to hundreds of acres. All are vulnerable to the forces of wind and water erosion. Some are

covered with a mere two feet of dirt, others are uncovered. Some are in population centers—like the 200-foot pile that rises above the city of Durango, Colorado. If nuclear power were expanded to the full size once envisioned by the AEC, the tailings totals would reach some 20 billion tons, which would cover the entire state of Rhode Island to a depth of about seven inches. One thing is certain, wherever the tailings go, they will be hazardous for tens of thousands of years. Already, the lung cancer rate in the Durango area is four times the national average.

Among the contributors to this primer are scientists of the stature of George Wald, John Gofman, Arthur Tamplin, and Helen Caldecott. In addition to accounts of the dangers from nuclear power plants, there are sections on what can be done to oppose their construction, with the names and addresses of people and groups active in this way, and also a good bibliography for people who want to go into available research and discussion more thoroughly.

An opening text is by the late Dr. Elise Jerard, a biologist and writer on environmental issues. She said:

For now, the morning after, we all know the legacy of technological tyranny: haphazard over-chemicalization and increased radiation of a multiply poisoned world; the wasted and fouled natural resources. It is an old story, but a new one. No children ever walked the earth who breathed such air, drank such water, ate food treated with 30,000 compounds. No infants ever absorbed PCBs, PBBs, Mirex and Kepons with their mother's milk.

Even people distracted by the clatter of round-the-clock selling and their daily dose of cold sensationalism know that if we cannot sufficiently undo all this—and more—what comes next will not be worth much.

Millions of people are mobilized against it and already have a foot in a changed future. Even under the appearance of cynical apathy, rebellion has swelled against those who have run the past, presumably, to suit themselves.

Today's citizens' movement has a full range of professionals who also happen to be aware generalists. The citizens' movement, of course, is more than the consumer movement, but includes it; more than "the environmentalists" (that handy slug

word) since they happen to be diverse as people and sometimes in the nature of their goals. The citizens' movement, above all, is concerned with basic rights and opposes concentrations of power—the arrogance and the deadening, often disastrous, results. Citizens want a say in critical decisions. The movement wears no halo and sees none.

This is a good illustration of the temper of the contributions to *Primer on Nuclear Power*.