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THE AGE OF EXPERTS

A GREAT deal of what is now called "research" seems to result in little more than compilations of what a number of experts have said about a given subject or problem. This is especially true of the field of education, where original work or experiment requires access to considerable populations of students, the collaboration of teachers who understand what the experimenters are trying to find out, and administrators who are sympathetic to the project. So the researcher, who is, practically speaking, a kind of journalist, looks up the papers reporting the conclusions drawn from a dozen or so experiments, and makes his report. Often the consolidated finding is about what common sense would suggest in dealing with the young. But since common sense suffers from idiosyncrasy and individual bias, it cannot be relied upon, and those working in the area of education want the confirmation of scientific procedure. Hence so much research, and then the research of the research, to provide guidelines to policies in conducting the schools and directing the teachers.

Commonly overlooked in all this activity is the fact that there are fashions in research which are at least as prejudicial as the special interests and concerns of individual parents and teachers; and fashions, when they enjoy institutional approbation, are soon turned into orthodoxies which few parents feel able to challenge. Take the fashion of teaching children how to do "research" in order to train them in the scientific method. Not many years ago children in public school in the sixth grade would ask for help from their parents in doing homework which required them to write a "paper" with at least half a dozen footnotes. One parent we know asked his child to find out if, instead, he could write about his own experience at the beach, including what he noticed in the tidepools. But this turned out to be unacceptable because it didn't teach scholarship. So the parent and the pupil collaborated in what amounted to fraud—sticking in a few footnotes giving encyclopedia references or naming texts the parent happened to have around the house. This parent explained to his child that getting through school was a sort of game you play, doing what the teacher asks for whether or not it makes sense, and not blaming the teacher too much because she is expected to require certain things and would get unpopular with the principal if she followed her own judgment. Meanwhile, you would at least learn how to read and write and after you graduate would be free to use these skills any way you want. And the parent said to himself that, after all, Rousseau was right. No healthy child should be cooped up in school and made to sit at a desk until he or she has gone through adolescence and is ready to settle down and study a bit.

Could education, one wonders, get on without research? A few hundred years ago hardly anyone went to school except those destined for the clergy. One learned what he needed to know from the experiences of family life and the surrounding community. Then one farmed or became an apprentice in a craft. Writing on the importance of general education, in the last year of his life, Arthur Morgan (in MANAS for April 9, 1975) described the beginnings of advanced education, saying:

> Conventional formal education grew from recognition that certain skills, acquired by man chiefly during the last two millennia, are not adequately developed in the informal course of family and social life. Reading and mathematics for example, require designed and tested methods to ensure their being learned. As civilization became more complex, the advanced disciplines were increasingly transmitted by formal institutions, while common, practical skills were left to be acquired through the ordinary course of living. This somewhat haphazard pattern of development, mainly a proliferation of forms of education in special skills,

> has been influenced by authority, tradition, usage—with occasional breakthroughs of insight—producing an almost random medley of method and content, without consistent coverage of basic questions. By reason of the exclusive attention given to certain intellectual skills, a large part of human culture is ineffectually transmitted by unorganized social processes. Needed, therefore, is a fresh concept of education which encompasses the entire range of living, with particular attention to matters of human importance thus far neglected by organized education.

Morgan was pointing out that the specialties in education had taken over and replaced what he called "general education." Family and community were no longer natural transmitters of what every child needs to know. He began to try to work out a remedy for this at Antioch—he had been thinking about the general reform or revival of education since before World War I—and attempted to combine related fields of study, such as physics with chemistry, but found that the teachers couldn't or wouldn't cooperate. They weren't able to reduce and combine. Years later, approaching general education from another point of view, he tried to get specialized researchers to cast their findings in a form and language that ordinary people could understand and learn from, but this didn't work either. The research people—concerned, say, with the processes of human development—were not interested in converting their learning into lessons for common folk, on such matters as prenatal nutrition and child-care. They were concerned with their research projects, not people's needs. The specialists were all cultivating their specialties, and one effect of their labors was to make society more complicated, which was a way of making people less competent. Family and community could no longer be of much help, since the best qualities of both these environments had been neglected and displaced by technological imperatives and the adjustments people had to make to them. As a result, the two things that Morgan held to be most important, competence and meaning, were dropping out of our lives. He wrote in MANAS:

Most educated men become specialists. In our society specialization is necessary, yet general and special education should both be part of an over-all design. Often eminent specialists are called upon to deal with issues outside their areas of competence—questions on which they have casually acquired only bits of information, and without understanding the fundamental principles involved. Yet these issues may be crucial, as is certainly the case in matters such as maintaining personal health, rearing children, personal economics, and other concerns in which we are all involved. A nation of specialists may find itself living on what must be identified as a low level of general education.

Of central importance is deliberate inquiry into the meaning and significance of life. By reason of the uncertainty of this question, it has been systematically neglected, or so it would seem, But the consequences of this neglect, are now before us. In a country like the United States, there has been a truce among competitive theologies, resulting in a tacit agreement that "the church" shall convey "the meaning of life" as determined by tradition, while public education shall instruct in practical ways and means. This cultural failure to relate ends and means has meant uncritical reliance on biological drives, emergence of vacuum-filling cultural tendencies, and acceptance of residues of traditional belief—a policy of drift balanced somewhat by free, critical inquiry. But unless strong concern for purpose and significance introduces an ordering principle for both life and education, sustained effort will be lacking, and there will be a tendency to lapse into biological hedonism. . . .

Day by day many experiences come to us, affording opportunity for interest and growth. The education we have does not prepare us to assimilate this wide range of experience. Conditioned by its time-honored division into various specialties, conventional education explains that little can be done about this lack of preparation, there being not even enough time to cover the special fields of learning.

So the dilemma is repeated over and over again. Great values we seek can be had only at the sacrifice of others, and these, too, seem important. While human beings crave to be well-rounded, to find meaning and to develop symmetry in life, the ever-expanding content of each field drives people into narrowing specialties. In the face of this dilemma, education has largely given up.

Elsewhere in this article Morgan remarked, "My education was indeed limited, so limited that it left me free to dream." Was, we might ask, the denial of formal education in his youth a benign neglect? He ends by saying:

> It begins to be plain that a "general education" is not something that can be invented or planned, but is rather a great undertaking in cultural evolution. Its method and content can unfold beyond existing practical limits only through collaborative pursuit of the ideal. Each step of progress will permit a larger vision. What we cannot now even imagine may become evident to a future generation. The task, then, is to formulate, to illustrate wherever possible and to strengthen the conception of the ideal. Without the ideal, the achievement, even relative achievement, will remain impossible.

The formulation of the idea, then, comes first, and must remain the ruling principle throughout the development. But stating the ideal is admittedly difficult. It is the quest for meaning, for symmetry, for balance in all our undertakings. Yet as Morgan remarks, in our society specialization is necessary. This means that we are bound to have a hierarchical structure in respect to specialized knowledge, which will become a disastrous threat to human freedom and growth if any specialty is allowed to dominate general education.

There can be no specialists in the pursuit of meaning. No technique, *per se*, will reveal the truth about life and its purpose. If we permit specialists to claim rank and tell us the meaning of our existence, we are submitting to an orthodoxy, which is a way of evading the primary responsibility of human beings. That is the tragedy of a society of specialists, which means a society dominated by the ends of specialists.

What are our resources for deciding for ourselves on the meaning of our lives and how to pursue our ends? They are our intuition, our reason, and the knowledge of the specialists whom we have come to trust. If we keep these resources in the right order, we generally make good decisions, but if we permit an orthodoxy to take the place of intuition and reason, we no longer have charge of our own lives.

What is the role of orthodoxy in human life? A simple answer would be that it serves as a guide to the ignorant, the admittedly ignorant. Our knowledge about life is plainly incomplete. Orthodoxy takes the place of the knowledge we don't have. Yet orthodoxies may be of different sorts. There are bodies of belief which prevent people from thinking for themselves, while less demanding faiths may actually encourage it. In these terms, orthodoxy is an inevitable socio-moral institution. Yet we should note that the founders of the high religions of the world—Krishna, Buddha, Christ—were all smashers of orthodoxy. They doubtless knew that other orthodoxies would grow up around what they did and taught, yet hoped that these would be better, less confining orthodoxies. The more rigid the orthodoxy, the more extreme the cycle of unbelief—we call it "atheism"—which sooner or later comes as a result. Then, as Morgan puts it, there will be "vacuum-filling cultural tendencies, and acceptance of residues of traditional belief." And as Ivan Illich has pointed out, in modern times the academy—or education generally—has replaced the institutional authority of orthodox religion, wielding unnatural control over our lives.

Meanwhile, education has lost its bearings, as would be expected in a civilization constructed by specialists. Writing on this subject in his article in the Fall 1983 *Katallagete*, Wendell Berry said:

> Education in the true sense, of course, is an enablement to *serve* both the living human community in its natural household or neighborhood and the precious cultural possessions that living community inherits or should inherit. To educate is, literally, to "bring up," to bring young people to a responsible maturity, to help them to be good caretakers of what they have been given, to help them be charitable toward fellow creatures. Such an education is obviously pleasant and useful to have. That a sizeable number of humans should have it i$ probably also one of the necessities of human life in this world. If this education is to be used well, it is obvious that it must be used some *where;* it must be

> used where. one lives, where one intends to continue to live; it must be brought home.
>
> Where educational institutions educate people to *leave* home, then they have re-defined education as "career preparation." In doing so, they have made it into a commodity—something to be *bought* to make money with. . . . To make a commodity of it is to work its ruin, for when we put a price on it, we both reduce value and blind the recipient to the obligations that always accompany good gifts to use them well, and to hand them on unimpaired.
>
> To make a commodity of education, then, is inevitably to make a kind of weapon of it—to dissociate it from the sense of obligation, and so to put it directly at the service of greed.

There is hierarchy here too, but not because of the levels of authority established by specialists. There is inevitable hierarchy in the value structures of human beings. When that hierarchy is removed from our own independent decision-making and transferred to an external structure of experts, the sort of corruption Berry describes becomes acceptable, the natural order of an acquisitive society. Instead of getting an education in order to serve, in whatever field or specialty, one seeks an education in order to compete. In time, even the specialties lose their symmetry, and it is here, in our specialist society and culture, that we may look for help. The specialists, when they find their own integrity violated, object and sometimes rebel. The declaration of Erwin Chargaff, a distinguished biochemist (in *Heraclitean Fire*) is an example:

> It is clear that to meditate on the whole of nature, or even on the whole living nature, is not a road that the natural sciences could long have traveled. This is the way of the poet, the philosopher, the seer. A division of labor had to take place. But the overfragmentation of the vision of nature—or actually its complete disappearance among the majority of scientists—has created a Humpty-Dumpty world that must become increasingly unmanageable as more and tinier pieces are broken off, for "closer inspection" from the continuum of nature. . . .
>
> From an undertaking designed to understand nature, it [science] has changed into one attempting to explain, and then to improve on, nature. This has brought about an overemphasis of the mechanical side. . . . The stress on mechanisms has given rise to one of the curses of our time: the expert. It has made body mechanics out of physicians and cell mechanics out of biologists; and if the philosopher cannot be called a brain mechanic, this is only a sign of his backwardness.

Specialists are trained to be problem-solvers. And since, except for the goals of specialists, mostly technological specialists, our society lacks any coherent objective, the methods and techniques of the specialists are adopted in areas where no specialist should be allowed, as in education. General education loses its direction and aim, submitting to the prescriptions of researchers and technicians. Then the transformation Berry spoke of takes place. Learning becomes a commodity.

A paper by Paul Goodman which appeared in the *Harvard Educational Review* (Winter, 1967) sums up what happens:

> Throughout, there is an emphasis on extrinsic motivation and social engineering for national goals that are, in my opinion, foreign to education or democracy or the decent future of mankind.
>
> Crash programs to wage war on Sputnik or poverty, or to export the great society, are heavily funded; in this atmosphere of emergency, the mass-manufacturers move in. Tailormade, piecemeal, and spontaneous efforts are impatiently brushed aside or wilfully aggrandized till they lose their salt. It is necessary to show that something "tangible" and "commensurate with the magnitude of the problems" is being "done." Nevertheless, in education, as in the sciences and fine arts—and, for that matter, in social welfare—one cannot *do* it this way. It would be a better bet to go back to the grass roots; but this would mean dismantling the school establishment, and that will be the day!

Goodman's paper had for title, "The Education Industries," and he goes on to show that it was well chosen:

> Inevitably, any great influx of lifeless capital—hardware tests, textbooks—into an enterprise decides many disrupted issues and predetermines future direction. When an activity is on a small scale and open to personal improvisation, it is possible to diminish the consequence of bad prior decisions for

instance, a perceptive and affectionate teacher, in a small-enough class, can modify or bypass the mistakes of the parents, school board, superintendent, curriculum, and textbook manufacturers. Classically, teaching has always been considered an art. At present, however, it is presumed that

(1) for 100 per cent of the children

(2) divided into types and conditions that we can as certain

(3) we know what is good for them, as instruction or training,

(4) we know the methods to achieve these aims

(5) in graded steps that can be tested at regular intervals,

(6) and we have qualified specialists and appropriate apparatus to execute these programs.

Every part of this presumption is dubious; the package is quite improbable. Yet the more we capitalize the school establishment and the education industries, the more we trap children in this schema of abstractions. In a period of historical transition, when we should be emphasizing human scale, molecular experimentation, intuitive improvisation, student democracy, we are underwriting top-down deciding and processing for questionable (and hopefully transient) national goals. And even in this context, the motives of the education industries are not bona fide. . .

Whom must the giants of the education industries satisfy? They live on subsidy, parental panic, and superstition—a self-proving system of testing and grading (and hiring and paying) that perhaps has no relation to learning or achievement.

All this of course is sanctified by research. The point of real research is that the findings may give the opportunity to deepen and widen the scope of general education. Yet most of the research now pursued has an opposite effect, increasing the gap between non-specialized people and the experts. What cannot be handed on to common folk in the form of general ideas or principles is not learning, should not be regarded as valuable, does not unite students and ordinary people in common understanding. The more a good and useful specialist learns from his investigations, the humbler he becomes, and the wiser and more skillful as a teacher.

REVIEW
THE MEANING OF SCIENTIFIC INQUIRY

THE books of primary interest to this Department are books which affect how we think by giving light on the process of thinking. In short, they increase our self-awareness and thereby our understanding of and control over our lives.

Such books, needless to say, do not come out every year, and we are fortunate to have one or two per decade. These are the books, if we are able to identify them, to which we try to give repeated attention in MANAS, and to return to as a way of extending the influence they represent. The works of Michael Polanyi a Hungarian scientist (chemist) who worked in Britain during the last part of his life are an ideal example, for Polanyi (brother of the influential economist, Karl Polanyi) in mid-life left the field of chemistry, in which he was eminent, and undertook the study of psychology by reason of historical developments which raised for him the very meaning of scientific inquiry and of human life. He explains this briefly in the introductory chapter of *Science, Faith and Society* (issued by the University of Chicago Press in 1946), saying:

> At Easter 1935 I visited N. I. Bukharin in Moscow. Though he was heading for his fall and execution three years later, he was still a leading theoretician of the Communist party. He explained to me that the distinction between pure and applied science, made in capitalist countries, was due to the inner conflict of this type of society which deprived scientists of the consciousness of their social functions, thus creating in them the illusion of pure science. Accordingly Bukharin said, the distinction between pure and applied science was inapplicable in the Soviet Union. This implied no limitation on the freedom of research, scientists would follow their interests freely in the U.S.S.R., but, owing to the internal harmony of socialist society, they would inevitably be led to lines of research which would benefit the current Five Year Plan. The comprehensive planning of all research was to be regarded merely as a conscious confirmation of the pre-existing harmony between scientific and social aims.

Polanyi asked himself, Is science, then, no more than a practical branch of ideology? It was this and similar causes which led him to his notable inquiry into the nature of scientific knowledge, and to publication in 1958 of his major work, *Personal Knowledge* (University of Chicago Press). The far-reaching character of this undertaking is made plain in the Preface to *Personal Knowledge:*

> I start by rejecting the ideal of scientific detachment. In the exact sciences, this false ideal is perhaps harmless, for it is in fact disregarded there by scientists. But we shall see that it exercises a destructive influence in biology, psychology and sociology, and falsifies our whole outlook far beyond the domain of science. I want to establish an alternative ideal of knowledge, quite generally.

Scientific knowledge, he sets out to show, is an artifice of the mind, a construction, like civilization itself, which is erected and sustained by the moral qualities of exceptional human beings. It is a way of envisioning natural reality and will not come about without this capacity for vision and the passionate commitment to the discovery of truth by individual scientists. It is not a vast mosaic of bits of truth accumulated over centuries to establish a changeless account of the nature of things, absolute and untouchable because objective and unaffected by human errancy. This latter conception, which has ruled scientific thinking for generations, began, he says, with the French astronomer, Laplace, who maintained: "An intelligence which knew at one moment of time—wrote Laplace [in *Traité de Probabilite,* 1886]—'all the forces by which nature is animated and the respective positions of the entities which compose it, . . . would embrace in the same formula the movements of the largest bodies in the universe and those of the lightest atom: nothing would be uncertain for it, and the future, like the past, would be present to its eyes.' such a mind would possess a complete scientific knowledge of the universe."

What is wrong with this formula, so impressive and dramatic, so in key with

Enlightenment dreams? Polanyi demonstrates its error in a mathematical equation, notes the popular version of Laplace's conclusion, then adds:

> But this assumption is actually much larger and quite different in character from that explicitly made by Laplace. It neither demands, nor is it satisfied by our having an unlimited capacity for carrying out complex computations concerning a mechanical system, but requires instead that we should explain all kinds of experience in *terms of atomic data.*
>
> This is of course the programme of a mechanistic world view, which in modern terms was first speculatively mooted by Galileo; but this program has never been carried out even in principle and we shall see (in Part Four) that it cannot be carried out at all. The tremendous intellectual feat conjured up by Laplace's imagination has diverted attention (in a manner commonly practiced by conjurers) from the decisive sleight of hand by which he substitutes a knowledge of all experience for a knowledge of all atomic data. Once you refuse this deceptive substitution, you immediately see that the Laplacean mind understands precisely nothing and that whatever it knows means precisely nothing.
>
> Yet the spell of the Laplacean delusion remains unbroken to this day. . . .

What then *is* science, if Laplace was deluded? Polanyi answers this question later in the book:

> The discoveries of science have been achieved by passionately sustained efforts of succeeding generations of great men, who overwhelmed the whole of modern humanity by the power of their convictions. Thus has our scientific outlook been moulded, of which these logical rules [which he has stated] give a highly attenuated summary. If we ask why we accept this summary, the answer lies in the body of knowledge of which they are the summary. We must reply by recalling the way each of us has come to accept that knowledge and the reasons for which we continue to do so. Science will appear then as a vast system of beliefs, deeply rooted in our history and cultivated today by a specially organized part of our society. We shall see that science is not established by the acceptance of a formula, but is part of our mental life, shared out for cultivation among many thousands of specialized scientists throughout the world, and shared receptively, at second hand, by many millions. And we shall realize that any sincere account of the reason why we too share in this mental life must necessarily be given as a part of that life.
>
> Science is a system of beliefs to which we are committed. Such a system cannot be accounted for either from experience as seen within a different system, or by reason without any experience. Yet this does not signify that we are free to take it or leave it, but simply reflects the fact that it *is* a system of beliefs to which we are committed and which therefore cannot be represented in non-committal terms.

Personal Knowledge is a book of four hundred pages devoted to elaboration and demonstration of the validity of this analysis, restoring the scientific undertaking to the humanities, showing its moral foundation and its complete dependence on how we think, on the fact *that* we think. In his discussion of Laplace, Polanyi shows the effect of mechanistic thinking, devoid of the sense of commitment, on our civilization:

> Applied to human affairs, the Laplacean universal mechanics induces the teaching that material welfare and the establishment of an unlimited power for imposing the conditions of material welfare are the supreme good. But our age overflows with inordinate moral aspirations. By absorbing this zeal the objectives of power and wealth acquire a moral sanctity which, added to their supposed scientific necessity, enforces their acceptance as man's supreme and total destiny. The comprehensive claims of this movement leave no justification to public liberties, and demand all cultural activities should subserve the power of the State in transforming society for the achievement of welfare. A discovery will then no longer be valued by the satisfaction it gives to the intellectual passions of scientists, but will be assessed to its probable utility for strengthening public power and improving the standard of living. Scientific value will be discredited and its appreciation suppressed. . . . This self-contradiction stems from a misguided intellectual passion—a passion for achieving absolutely impersonal knowledge which, being unable to recognize any persons, presents us with a picture of the universe in which we ourselves are absent. In such a universe there is no one capable of creating and upholding scientific values; hence there is no science.

These are ideas which today are more and more in the air. They do not recommend the abandoning of science, but rather its humanization. It is a work of our minds, subject to continual revision, yet containing implicitly the grounds for that revision. Polanyi has been a major influence in this change in how we think about science and important, therefore, to read. The earlier, smaller book, *Science, Faith and Society*, presents the same ideas quite briefly, and another small book, *The Tacit Dimension* (Doubleday, 1966, Anchor, 1967), deals with the initial kind of knowing that we all practice and take for granted without being able to describe. The conclusion of the first chapter of this book gives the keynote of what Polanyi has accomplished and shows the direction of future thinking about science:

> To accept the pursuit of science as a reasonable and successful enterprise is to share the kind of commitments on which scientists enter by undertaking this enterprise. You cannot formalize the act of commitment, for you cannot express your commitment non-committally. To attempt to do this is to exercise the kind of lucidity which destroys its subject matter. Hence the failure of the positivist movement in the philosophy of science. The difficulty is to find a stable alternative to its ideal of objectivity. This is indeed the task for which the theory of tacit knowing should prepare us.

COMMENTARY
REFLECTIONS OF AN AMATEUR

A READER, after reflecting on a recent MANAS, set down some thoughts which may be of interest to others. (We have condensed what he says.)

* * *

I don't know why anyone would object to a search for the meaning of life, or how and why we came to exist, but I can see why some might feel that this search belongs more to our past. Perhaps our main interest now should be in the task of keeping man in existence. Concentrating on the problem of survival, then, we know enough about the other planets to know that the ones within reach are not habitable. We may never know why we are here, but we do know that we *are* here, and quite a lot about this old mud ball. It is a limited globe with limited resources for the continued existence of the human species.

In the past men have thought that there was a power interested in man and his welfare. The facts seem to be telling us that the creative force is really impersonal. Certainly the creative force is not interested in the welfare and protection of individual human beings. It is possibly interested in the survival of the species, and if this is so it might indicate what sort of behavior by man would assure his survival.

In the traditional Bible story, it is said that God created man in his own image. There may be one way in which this is true. Man is like the creator of the world and the universe, since he is himself a creator. He has changed the world in which he lives. Even the idea of a creative force is his creation.

The Gods of our religions are the creation of man. It can be said that instead of a God creating man, Man has created his God or gods. So he is like the creator in that he *is* a creator.

Man has used and abused his "mother" earth, but with his creative power he can just as surely learn how to preserve the planet that is the source of his existence. It would be foolish to reject anyone who tries to learn the reason for our being here, but just as foolish not to use our creative minds for the continuance of our species.

* * *

The contributor of the forgoing is Frank E. August, a retired teacher of philosophy, now an *amateur*.

CHILDREN
. . . and Ourselves
WAYS OF SAYING

THERE are times when the sheer beauty of a passage in a book or article makes us indifferent as to where it gets quoted, so long as we get it in. On this ground, then, we reproduce below the opening words of Henry Beston's *Herbs and the Earth* (Doubleday, 1935; and in Anchor paperback, 1973), a small book on the herbs he grew on his northern farm in Maine—not a doctor's book, but a gardener's book, most of all a book by the author of *Outermost House.*

> It was a pleasant fancy of the ancients that the lights of heaven, the sun and the moon, the errant planets and the military and ordered stars sang each his song as they moved in harmony upon their paths, ennobling thus the shell of space with music. Were mortals ears prepared to sustain such melodies, it was thought, one might chance to hear, at cloudless noon, in a high and quiet land, a sound of the great cry of the sun, and by night and the moon another music not of earth brushing against earth and the blood. In this celestial harmony what song, then, sang the earth? What vast and solemn music did this our planet make as turning upon its poles it wheeled through the universal void rolling up its cities to the sun and its fields down to the night? Was the sound but the unconfused and primal voice of the planet welling forever from its cores of stone, or did a sound of rivers and many oceans, of leaves and immeasurable rain mingle to make a mysterious harmony? And might a listening god, perhaps, have heard echoes of man, the shrilling of a plough turned from earth into earth and stones, or a woman singing her dream and her content?
>
> It is only when we are aware of the earth and of the earth as poetry that we truly live. Ages and people which sever the earth from the poetic spirit, or do not care, or stop their ears with knowledge as with dust, find their veins grown hollow and their hearts an emptiness echoing to questioning. For the earth is ever more than the earth, more than the upper and the lower field, the tree and the hill. Here is mystery banded about the forehead with green here are gods ascending, here is benignancy and the corn in the sun, here terror and night, here life, here death, here fire, here the wave coursing in the sea. It is this earth which is the true inheritance of man, his link with his human past, the source of his religion, ritual and song, the kingdom without whose splendour he lapses from his mysterious estate of man to a baser world which is without the other virtue and the other integrity of the animal. True humanity is no inherent right but an achievement; and only through the earth may we be as one with all who are yet to be, sharers and partakers of the mystery of living, reaching to the full of human peace and the full of human joy.

With this as introduction, Beston gets to his subject:

> A garden of herbs need be no larger than the shadow of a bush, yet within it, as in no other, a mood of the earth approaches and encounters the spirit of man. Beneath these ancestral leaves, these immemorial attendants of man, these servants of his magic and healers of his pain, the earth under foot is the earth of poetry and the human spirit, in this small sun and shade flourishes a whole tradition of mankind. This flower is Athens; this tendril, Rome; a monk of the Dark Ages tended this green against the wall; with this scented leaf were kings welcomed in the morning of the world. Lovely and timeless, rooted at once in gardens and in life, the great herbs come to the gardener's hand our most noble heritage of green.

Each herb becomes a phrase in the poet-gardener's song. There are herbal books a plenty, some with a poetry of their own, but we know of no other book that does what Beston does with this subject:

> After all, what is an "herb"? In the new enthusiasm for the plants, there are those who will call anything an "herb" from a carrot to a night-blooming Cereus, and put it in their garden. Horticulture and Botany, holding to a usage familiar to the King James, classify as "herbs" all plants which are not truly shrubs or trees; the dictionary calls an herb "a plant with a use." For lovers of herbs the word has another and much more living sense. In its essential spirit, in its proper garden meaning, *an herb is a garden plant which has been cherished for itself and for a use* and has not come down to us as a purely decorative thing. To say that use makes an herb, however, is only one side of the story. Vegetables, quasi-vegetables, herbal what-nots, and medicinal weeds are not "herbs" and never will be "herbs," for all the dictionaries. It is not use which has kept the great herbs alive, but beauty and use together.

This is a kind of education that should never be reduced to generalization for the purposes of definition. Its value is in the texture of thought, the melody of words. Don't classify it. Just read it for access to a level of feeling and idea that sometimes seems altogether gone from the modern world. It is the ichor, not the blood, of our noetic life, and now as never before needs renewal. It needs people who are alive as Beston was alive, those for whom the music of the spheres is more than legend, who make songs as naturally as the rest of us draw breath. Beston was a man who lifted us above righteousness and beyond good and evil.

This is his concluding prescription, which will salve and calm when it is no longer a prescription, but our normal nourishment:

> Intricacy of leaf' unborn, colour drawn upwards out of the earth, fragrance and potency and beauty are here in secret being, soon to be manifest to the several senses, and at their roots a gift of the gardener's peace which none shall have who have not a deep peace with the earth, though the road to her seem but a path. For beside that path lie the seasons and the ritual of the year, the vast adventures and journeyings of the sun, the towering of a wave to its breaking, the faithful wheeling of the moon, the sound of rain when there are no more leaves, and the furrow lengthening under the tug of hooves on a morning in spring. Sustained and moulded of its immeasurable forces, it is by this mystery we exist, and by its poetic power in our lives that we attain the stature of human beings, having the sun to our right hand and the earth and seas beneath us; without it becoming like the ghosts in Homer, houseless, and thin and dead, and crowding and whispering angrily for blood.

Are we prepared to be called to account according to this canon? Examined for signs of the mystery by which we exist, could we hope for a passing grade?

One almost certain to pass would be Dr. Lewis Thomas, author of *Lives of a Cell* a few years ago, and now a book called *Late Night Thoughts*, which we haven't seen, although the English *Guardian* (on Aug. 30 of last year) printed a long extract from it. Challenged to list seven "new" wonders of the world, he responds with strange facts about a species of bacteria, a virus, a beetle that lives on mimosa trees, the olfactory receptor cell in man, and termites, who turn out to be incredible architects, But he saves his first choice for last, and declares that the seventh wonder is a human child.

> I used to wonder about childhood and the evolution of our species. It seemed to me unparsimonious to keep expending all that energy on such a long period of vulnerability and defenselessness with nothing to show for it, in biological terms, beyond the feckless irresponsible pleasure of childhood. After all, I used to think, it is one sixth of a whole human lifespan! Why didn't our evolution take care of that, allowing us to jump catlike from our juvenile to our adult (and, as I thought) productive stage of life? I had forgotten about language, the single human trait that marks us out as specifically human, the property that enables our survival as the most compulsively, biologically, obsessively, social of all creatures on earth, more interdependent and interconnected even than the famous social insects. I had forgotten that, and forgotten that children do that in childhood. Language is what childhood is for.

Next and finally, he reveals his first choice, which is our planet:

> It is a living system, an immense organism, still developing, regulating itself, making its own oxygen, maintaining its own temperature, keeping all its infinite living parts connected and interdependent, including us. . . . Our great hope is in being such a young species, thinking in language only a short while, still learning, still growing up.
>
> We are not like the social insects. They have only the one way of doing things and they will do it forever, coded for that way. We are coded differently, not just for binary choices, *go* or *no-go*. We can go four ways at once, depending on how the air feels: *go*, *no-go*, but also *maybe*, plus *what the hell let's give it a try*. We are in for one surprise after another if we keep at it and keep alive. . . .Provided we do not kill ourselves off. . . . At this early stage in our evolution, now through our infancy and into our childhood and then, with luck, our growing up, what our species needs most of all, right now, is simply a future.

Does the idea of *deserving* a future have any meaning?

FRONTIERS

A Peace Wave?

LAST fall's *WRI* (War Resisters International) *Newsletter* reports figures released by the West German government showing a large increase in-conscientious objection in that country. Applications in 1983 increased more than 14 per cent over the previous year. Total applications in 1983 were 68,334, compared to 59,776 in 1982, an increase of 8,558. The West German Constitution provides that "no one may be forced to serve with weapons, if this goes against his religious or philosophical beliefs." To be accepted, the applicant must demonstrate his "reasons of conscience" before a board. Meanwhile a West German environmental group has asked the government to include "ecological grounds" among the acceptable reasons of conscience. This nationwide organization has declared that "An appeal based on the rejection of environmental damage caused by military preparations must be seen as a sufficient reason to object."

Of equal or even greater interest is the report in the *WRI Newsletter* on conscientious objection in East Germany, where the obstacles are great and punishment is heavy.

> The number of conscientious objectors in East Germany continues to grow, according to the "13th August Berlin Workgroup." There are now about 1,200, most of whom are given prison sentences of 18-24 months. In order to conceal the numbers involved, the COs are imprisoned in prisons throughout the country; and while other political prisoners are often allowed to go West or are expelled or released on bail after having served one third of their sentence, COs are normally forced to serve the full sentence.

There is a slowly rising tide of rejection of war throughout the Western world. Since Hiroshima people have been forced to begin to think about what another—nuclear—war will mean. The people who are thinking are growing in number, and they are getting more and more encouragement from cultural leaders who set an example. Last Summer's *Journal of Humanistic Psychology* was a "special peace issue," entirely devoted to possible ways of putting an end to war. In the first contribution, by David South, titled "Notes for a Final Exam," the writer says:

> We Americans who for the past 35 years have paid our taxes and either remained silent about or ineffectively opposed the massive build-up of nuclear weapons, which is our half of the arms race, have authorized the construction of a system that at any moment could create an even greater Holocaust, in which we would be among the victims.
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> Most of the people I know are unwilling or unable to talk about this; unwilling because they fear being overwhelmed by their emotions—dread, despair, hopelessness—and unable because they have for years avoided thinking and, therefore, learning about nuclear war technology and strategy. Seeing themselves as powerless, they are either complacent, trusting in the common sense of the world's leaders, or resigned, abandoning both their responsibility and their political power. The causes of our silence are complex: The nuclear build-up has been slowly going on for a long time, and we have become used to it; none of our presidents and few legislators have realized or dared to admit that our nuclear strength does not defend us, the radically different nature of nuclear war makes it hard to understand, and many of our culturally learned attitudes support either acceptance or silence.

Getting around to what we can do, Mr. South says:

> Our democratic system still works; it gives power to those who put time, money, and energy into it. At the moment, that means mainly politicians, industrialists, and the military, since about half the citizens have given up participating even by the minimal extent of voting. When citizens get concerned enough to participate in the political process—Mothers Against Drunk Driving, Proposition 13, or the 1982 state referenda on a nuclear freeze—it works for them. Government policy reflects the level of consciousness of the citizens; if the citizens are asleep, the government acts out their dreams and nightmares. . . .
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> Without discussion, the people cannot learn, issues do not get into politics, unexpressed feelings continue to seem overwhelming, and an issue as vital as national—perhaps even species—survival can, by common consent, be ignored until it is too late. At

> this second level, action that reminds citizens of the problem, encourages open and shared expression of feelings, informs them about technology and strategies, starts discussion of feasible alternatives, or encourages participation in the political process can lead to change in our national priorities.
>
> At a third level, citizens act on the basis of their beliefs about human nature, history, religion, strength and defense, competition, the national character of other countries, our place in the biosphere, and so on. Many of these beliefs support the arms race and may be leading to the destruction of much of the life on Earth. To encourage looking at these beliefs as *assumptions*, thinking about their origins and consequences, and adopting a planet-wide point of view could lead, eventually, to change in the behavior of many people and their governments. . . .

Learning to recognize our habitual beliefs as only *assumptions* would go far in the right direction.

The contribution of Willis Harman to the Summer 1984 *Journal* is concerned with the necessity of altering many of our unconscious beliefs. How far-reaching this would be is suggested by the following:

> For the medical community, the distinction between the goal of disease control and the goal of health proved to be a subtle one, and the recognition was long delayed that pursuit of the former does not lead to achievement of the latter. Similarly, the goal of conflict control and arms limitation is not only different from the goal of global peace, but obsession with the former can obscure the latter.
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> Peace implies security. The Palme Commission report (1982) insists that in a nuclear age there cannot be national security without global security. The problem of achieving global security cannot be separated from the global problems of hunger, poverty, and environmental spoliation. . . . The complex of problems relating to global security, global development, and protection of global environment are not separable. Global peace requires a satisfactory resolution

But this requires, as Dr. Harman shows, getting out into the open our unconscious beliefs, inspecting them, and replacing the ones that can lead to nothing but trouble. This would be, by any sensible definition, maturity. But how shall we expose our *unconscious* beliefs? Only pioneer minds are able to do this, it seems. The Buddha worked at it. So did Tolstoy. So did William Blake; and in our own time Mumford, Ortega, Maslow, and Berry have made contributions. There can be no lasting peace without this basic understanding of ourselves.