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"HEALING OURSELVES"

A FEW months ago (June 29) a MANAS writer in Frontiers took note of the fact that, for centuries, the peoples of the West have organized their energies and growing knowledge for doing things wrong, with the result that, not knowing any better, they began to destroy their own life support systems. But meanwhile, the knowledge kept on growing so that now we *do* know better—that is, a few individuals know better. Since these few are seminal thinkers and sometimes determined actors, a great change in outlook is beginning to take place. But only beginning. The management of the world is still in the hands of people convinced that the old ways are best—mainly because those ways seem best for *them.*

How to turn those people around becomes the chief problem of the age. No one really knows the best way to attempt this, although most of the individuals working at it seem to think that you start by calling the present managers names they plainly deserve. Maybe that will work, after a fashion, but its effect now seems to be mainly to get the managers mad, suspicious, and more sot in their ways.

How did our misuse of the planet begin? Setting the time of historical beginnings is bound to be partly arbitrary—causation of general human behavior is always complex—but it seems fair to say that the persuasive thought of Francis Bacon, in the early years of the seventeenth century, provoked and marked the evident historical change. A contemporary of Galileo, Bacon declared that *knowledge is power.* Those were the days of the birth of modern science, and Bacon pointed out that through applications of scientific discovery men could make themselves prosperous and wealthy. He was of course right. Using science and invention men—some men—were able to do exactly this, although it took time to combine science with wealth-producing efficiency. As Lynn White jr. observes, it was not until about 1850 that the effective union between science and technology, the deliberate combination of "the theoretical and the empirical approaches," took place. And in the century that followed, he says (in "The Historical Roots of our Ecological Crisis"), "surely no creature other than man has ever managed to foul its nest in such short order."

Prof. White added: "What we do about ecology depends on our ideas of the man-nature relationship. More science and more technology are not going to get us out of the present ecologic crisis until we find a new religion, or rethink our old one."

In some sense the professor is surely right, but it is also possible that a new way of practicing science, informed by the spirit of philosophical religion, might prove the only foundation of authentic change. This would call for another look at the origins of science. Here, to avoid scholarly uncertainty (and save space), we turn to the myth of Prometheus for our answer. Prometheus taught mankind technology, and he has been sorely criticized for doing it, but we should take note that the uses of technology depended on his gift of the power *to think.* The fire he stole from Olympus was also the fire of mind. It made humans capable of forethought as well as exploitation of Nature. Like the apple in the Garden of Eden, the powers of mind made men into moral agents with knowledge (mostly potential at the beginning) of good and evil. With mind, they became creative beings—in other words, gods in the making—with all the responsibility that belongs to this role. In short, humans, as embodied self-consciousness with the capacities this brings, set for themselves problems concerning which no theologian has ever proved

the least help—the problems of gods who make terrible mistakes.

Let us say, then, that the authentic scientist is a Promethean. To be a Promethean, as Eschylus made clear in *Prometheus Bound,* is to invite great pain. Why? Because the Promethean releases forces he can't control. Such was the pain of Albert Einstein, who in 1905 couldn't see into the future far enough to know that men would make nuclear weapons out of his discoveries. It was also the pain of J. Robert Oppenheimer, who tried to stop later military applications of nuclear fission, and was dishonored by the nation because of his moral concern. It seems right to add that the Promethean is vulnerable to two kinds of pain. First, his conscience will hurt unless he breaks out of the conventional rut of science or business "as usual" and works according to what his promethean intuition tells him about "the man-nature relationship." Second, if he does break out of the prevailing pattern of scientific work, Zeus will be extremely annoyed and try to chain him to some rock. Zeus is of course the dominant Establishment which controls the purse-strings of society, although not all of them. A few other would-be Prometheans are around, and sometimes they have a little money to use for keeping going the things they believe in.

We need to come down to earth for examples, and we have one in a young scientist, a Canadian-born marine biologist, whose inner feelings about the role of scientific thinkers in a world like ours gave him less and less peace. We are speaking of John Todd, with William McLarney the founder of the New Alchemy Institute on Cape Cod in 1969, and now, with his wife Nancy, editor and articulator of their team work. founder of Ocean Arks International (10 Shanks Pond Road, Falmouth, Mass. 02540) an enterprise combining the goal of the right way to fish with deepening understanding of man's relationship-friendly, reciprocal relationship—with the sea and the land. But most important of all, perhaps, is the way Todd began to think along these lines—at the moment of conception which comes before the days of growth and action. For the account of this moment we are indebted to the quizzically anonymous writer, *My,* who in *What Do We Use for Lifeboats When the Ship Goes Down?* (Harper Colophon, 1976) set down what Todd told him about his conversion—we might say "reorientation," which would be accurate, but not exciting enough. He was out in the field teaching:

> I taught this course called Cold-Blooded Vertebrates. There were ten or twelve graduate students, and we had been spending time at a commune in the mountains near the Mexican border. And so we went out there. We broke it up into subject areas, and each one wrote up what he would do to make the place autonomous. It was pretty uninspired. In fact, the most inspiring was one paper that said: I wouldn't do anything but build a beautiful Japanese bath, plant a couple of trees around it, and sit naked and watch the sun. The rest were just sort of crude: put a shelter here or grow chickens there. It occurred to me that here I'd been in university since 1957, thirteen or fourteen years in academia—and many of these students had been in almost as long as I had—and we simply weren't trained in sensitive stewardship. Science hadn't trained us to be able to answer the most fundamental questions: How do you make that piece of earth sing, and how do you make it support those that live there? Degrees in agriculture, disease ethology, ecology . . . nothing!
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> So I decided we had to figure a way.

He turned down one or two rather impressive jobs and with Bill McLarney and Nancy started the New Alchemy Institute on Cape Cod. They rented ten acres of a former dairy farm with sandy unproductive soil and got jobs at the nearby Woods Hole Oceanographic Institute as initial financing for the venture.

> The goal of New Alchemy? The original purpose never changed. This rather grandiose legend which sits under our letterhead: To Restore the Lands, Protect the Seas, and Inform the Earth's Stewards. On a more practical level there are several purposes. On the short term is the backyard fish farm. The rationale was simply if there are going to be billions and billions of people without access to transport systems, is there any way to alleviate mass

> starvation? And the backyard fish farm concept was the first solution. We wanted something that could go into a vacant lot or a back alley or a rooftop or arid regions where water is precious. It's got to be contained and used and then slowly dribble the enrichment out to gardens that surround it. That's the short term.
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> The longer term is to make the concept of an autonomous small-scale commutat . . . semi-autonomous communities, whole-earth system derived, in energy and food and shelter attuned to their environment, to make the whole concept so bloody appealing that a lot of those stresses and strains that are chronic will be alleviated. In other words, twenty-first-century pioneering. Not in setting up a community but in sort of getting back to something Fraser Darling studied many years ago in Scotland: to provide the thinking, biological and physical, that would sustain regions or small groups of people with a fair degree of autonomy so that they would not be as subject to co-option or manipulation and could evolve to greater religious and artistic heights.

This is the kind of science we need. Bacon's goal is redefined—not "wealth" but human enrichment. As Wendell Berry has said, agriculture, the right kind. is the foundation of culture. It calls for an independent use of the mind and will develop another sort of science, the science of "sensitive stewardship." This is a science which has its philosophical roots in thinkers like Pico della Mirandola, who founded humanism by saying that humans are self-created beings; and like Giordano Bruno whose moral vision gave a deeper meaning to the discoveries of Copernicus and Galileo—a meaning not adopted by the practical men of the world.

Speaking at the "Limits to Growth" conference in Texas in 1975, John Todd drew attention to the "growing awareness that new strategies are required, and urgently." He said:

> In part this realization is arising out of a waning confidence in the ability of science and technology to salvage an industrialized growth-oriented society in an ultimately finite world. It is becoming apparent that a science of steady states is needed to prepare us for the future. It will be different from the one we now know, having been created within a framework of ethical and moral considerations.

The first project of the Todds in Ocean Arks International was the building of the trimaran *Edith Muma*, familiarly known as "Ocean Pickup," a three-hulled craft 32 feet long, of epoxy-coated wood and metal construction, unsinkably seaworthy, with a large deck area, and a 29-foot fir mast. A first visit of Ocean Pickup was to the shrimp fisheries of Guyana in South America. There Todd met with fishing experts who thought well of the Pickup as a fishing craft, and he began investigating Guyana woods suitable for building similar vessels. Todd wrote from Georgetown:

> I was interested in involving the [Guyanese] Institute [of Applied Science and Technology] with Ocean Arks International in the development of advanced wind propulsion devices for fishing boats, and in the research and development phase of an efficient wind-powered ice manufacturing machine which Ocean Arks is developing. On a broader level, I would like to try to develop models of international collaboration in which an organization such as Ocean Arks International links up, as a junior partner, with indigenous scientific organizations in a number of countries. By so doing we might help to strengthen in-country research and development while, at the same time, linking that research internationally via our talent pool. Each country, no matter how small, would have an important role. If every country developed a particular method or a technology which much of the rest of the world needed, then technological change would be like exchanged gifts between nations.
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> By the end of my May visit I was beginning to feel that an infrastructure for commercial sail in fisheries could be developed in Guyana. The goal of employing sail power in a modern way is right. Whether the resources can be found is hard to say. Guyana's financial struggles are real and she has few allies amongst the largest lending and aid nations. What I hope here is that with Ocean Pickups we are dealing with a scale and technology that can start small and grow on its own efforts. At the wrap-up meeting, Christopher Nascimento posed a challenge which was inspired by the fact that Guyana Fisheries Limited is getting several new trawlers next month. He said, "Ocean Pickups, built in Guyana, would cost about one-thirtieth that of a single imported shrimp trawler. Why not build thirty Ocean Pickups and see

> if they could outfish and outearn a single trawler?" It's a fascinating challenge and a very worthy experiment in the use of technologies, resources, money, and labor.

What's wrong with the way shrimp are now caught? There may be several answers to this question, but one is important enough. The reason why the Guyanese wanted Todd to come see them was "to look at the by-catch question."

> By-catch is the phrase used to describe the fish which are caught in the shrimp nets. Fish are often over 50 per cent of the shrimp catch, and although highly edible, they are thrown back dead into the sea to feed legions of sharks. Economics is the reason for the by-catch being wasted. Shrimpers have a limited freezer capacity so they can't afford to take up space on board with moderately priced fish when their economics is predicated on expensive shrimp. So, an enormous food resource is lost to Guyana and the nearby Caribbean.

We have been quoting from Vol. I, No. 1 of *The Annals of Earth Stewardship,* edited by Nancy Todd and published by Ocean Arks International. There is no mention of how often it will come out, but four times a year seems a likely guess. You can't subscribe to the *Annals* but may receive it free for an annual tax-deductible contribution of $10.00 or more to Ocean Arks International, 10 Shanks Pond Road, Falmouth, Mass. 02540. A gift of more than $10 will help to distribute *Annals* to third-world countries.

One of the men who helped to build the Ocean Pickup (designed by Dick Newick) is Steve Drew, who had built a forty-foot catamaran for fishing off the coast of E1 Salvador, while working there as a Peace Corps volunteer. This two-hulled vessel, the *Delfin,* had far more deck space than a single hull and was also more stable. "We never had to stop fishing because of rough weather and we hauled and set gear very comfortably in seas of from five to eight feet." Drew relates in *Annals:*

> In July of 1980, the escalating war forced me to leave E1 Salvador before my work there was completed. Later that summer the mast and sail were installed in the catamaran. My co-workers, who were Salvadoran fishermen with no previous sailing experience, wrote to tell me that the use of sails on their fishing trips resulted in fuel savings of seventy per cent or more over their previous records. The *Delfin's* performance under motor had already convinced me, and many others, that it was an excellent fishing boat. If anyone had still been skeptical, such a fuel savings must have caused second thoughts.

Of the Ocean Pickup this experienced sailor says: "Best of all, not only does it sail comfortably, it sails efficiently and, with it, a fisherman could bring his catch home having spent little or no money on fuel." He adds: "I was surprised to see that it is able to tow a small otter trawl at a good speed under sail, so we may find it could be a good trawler under certain conditions. . . . I think the Pickup will fit into a great many niches and could have a significant impact on fisheries in unlimited areas."

In the opening article in the first issue of *Annals* Nancy Todd speaks of the Ocean Arks enterprise as "a conscious and concerted effort to reverse and repair the ecological damage that has been inflicted on the Earth—time for a beginning of planetary healing." She continues:

> By planetary healing we mean what the folksinger Pete Seeger said metaphorically when he wished for a golden thread with which he could "bind up this sorry world—with hand and heart and mind." We are convinced that the equivalent of such a thread now exists in the form of such accumulated and interacting disciplines as biology, ecology, and cybernetics, and as a result of advances in materials sciences and technology, to make large-scale restoration possible. We argue this knowing that the industrialized countries continue, as is evident in their policies and action, to behave as though they do not believe that we are all ultimately dependent on the unimpaired functioning natural world for survival. Acknowledging that, because of this, the political and sociological hurdles appear close to insurmountable the need for such work is all the more pressing and obvious in terms of intrinsic obligation to the natural world as well as in order to continue to provide for present and future human generations. We have elected, however quixotic the odds, to make a start.

The intent, therefore, is to concentrate on the science and arts of restoration, taking from Lynn Margulis and James Lovelock the idea that the earth is a living organism typified by Gaia, the Greek goddess of the Earth. Nancy Todd says:

> "The Annals of Earth Stewardship," as the name suggests, will be an ongoing description of the concepts, designs, and projects of people working directly with the natural world—and of the quality of the relationships that grow out of such work. We have chosen the term "stewardship" to convey a sense of nurturing and protecting—of being in the service of the living world. A steward is anyone who comes to that world with a sense of involvement and caring. . . . If enough of us choose and hold to Gaia, the Living Earth, as the key image and analogy for thinking about the world, it may begin to change the way we behave and as such become a determinant of the shape of society.

This is Promethean science. The focus is on informed and disciplined thinking in behalf of the present and the future, on planning and action.

> It is expressly not our intent with "Annals" to concentrate on documenting or decrying the countless blows that everywhere are continually being inflicted on the environment. We choose to make the assumption that "Annals" readers are painfully aware of the ongoing poisoning of the air, ground, and water that are the results of our industrialized methods of maintaining ourselves and of the resultant broad scale deforestation, erosion, and destruction of wild habitat and species. The coverage of these issues is already extensive and further it is not an area in which our expertise has any outstanding claim. Nor are we addressing ourselves, or not directly so, to the political and social strategies inherent to reversing the present destructive bent of the developed world. We consider nuclear disarmament and the search for a stable world order to be global issues of the first priority. Yet we will not be directly discussing such topics.

In her conclusion Nancy Todd says that "only a change of consciousness can change our fate," and she finds inspiration in "the karma yogi who thought that it was through their acts and their inner harmony, their wisdom and understanding would be extended." Finally, "In dedicating ourselves to healing the planet and each other, we may find one day that we are healing ourselves."

REVIEW
ASSUMPTIONS OF PSYCHOLOGY

THE saturation of this Department with the ideas of William James—mainly a result of reviewing Jacques Barzun's *A Stroll with William James*, and of some rereading of James in *The Will To Believe* and *Human Immortality*—led to pondering his historical role. His main purpose, it now seems in retrospect, was to make science, including scientific psychology, behave as it ought to behave. He didn't really succeed, but his effort was both impressive and sound. He meant to show that science cannot afford any sort of prejudice, not even the then popular materialistic prejudice. His chief contention was that the assumption of materialism simply won't work in psychology, and he hoped to demonstrate this by working with that assumption to prove its limitations. Well, that didn't work very well either. Other psychologists ignored his effort. Not until about fifty years later, with the effective advent of A.H. Maslow on the psychological scene, did the materialistic assumption begin to wear away, and it is still with us in a variety of forms. Yet this may serve as protection against psychic extravagance. When the discipline of a science rests on the materialistic assumption, if you choose some subjective assumption, the discipline may go out the window and not even the sky is the limit. Humanistic psychology is now undergoing this result, in the free-wheeling merger of Eastern ideas with Western techniques, but without the moral and intellectual discipline of Eastern tradition.

Another eminent psychologist—who came a generation later—attempted the same thing: to hold psychology open to the idea of the human soul. He was William McDougall, whose classic work, *Body and Mind* (Methuen, 1911), stands as a monumental effort to keep man's study of himself from being submerged in the anti-religious reaction of nineteenth-century science. He fought against the emotional negation of a science triumphantly freed from the centuries of suppression by Christian bigotry and the Holy Inquisition, a science now armed with the bludgeon of Darwinism, added in 1859 to the mechanistic doctrines of Galileo and Newton. In a single sentence, Bertrand Russell characterized what men like James and McDougall were up against: "The materialistic dogma," he wrote in his introduction to Lange's *History of Materialism* (1925), "has not been set up by men who loved dogma, but by men who felt that nothing less definite would enable them to fight the dogmas they disliked."

Twelve years later, in the first issue of the *Journal of Parapsychology*, which he founded at Duke University in 1937, McDougall asked in his editorial:

> Are mental processes always and everywhere intimately and utterly dependent upon material and physical organizations? Do the volitions, the strivings, the desires, the joys and sorrows, the judgments and beliefs of men make any difference to the historical courses of the events of our world, as the mass of men at all times have believed? Or does the truth lie with those few philosophers and scientists who, with or without some more or less plausible theory in support of their view, confidently reject well-nigh universal beliefs, telling us that the physical is coextensive with the mental and that the powers and potentialities of mind may be defined by the laws of the physical science?

In the closing years of his life McDougall became convinced that psychic research would help in the resistance to the materialistic assumption, as had James before him, and he left Harvard University (in 1927) where he had come from England to teach, and went to North Carolina to head the psychology department of Duke University. Within a few years he had enlisted the help of Dr. J. B. Rhine and his wife Louisa, and their collaboration brought into being the pioneering center of research into extra sensory perception.

McDougall also said in his opening editorial:

> Unless Psychical Research can discover facts incompatible with materialism, materialism will continue to spread. No other power can stop it;

> revealed religion and metaphysical philosophy are equally helpless before the advancing tide. And if that tide continues to rise and advance as it is doing now, all signs point to the view that it will be a destroying tide, that it will sweep away all the hard-won gains of humanity, all the moral traditions built up by the efforts of countless generations for the increase of truth, justice and charity.

No one really knows, today, to what extent psychic research has helped to break the manacles of materialistic assumption; there have been other factors difficult to weigh, such as the impact of the new physics, the increasingly meaningless character of life with no motivation but the acquisition of things, and the generally unsettling and frightening effect of nuclear weapons, starting with the devastation of Hiroshima in 1945; but the findings of psychic research, while indecisive as to meaning, have at least called into question "the laws of the physical sciences" when it comes to the inner lives of human beings.

It seems well, therefore, to take a sampling of the thought of men like James and McDougall—James for his free-ranging imagination and McDougall for his rigor and philosophic discipline. The latter, for example, explains in the Preface to *Body and Mind* that he personally had no longing for immortality, that he "could accept with equanimity a thorough-going Materialism, if that seemed to me the inevitable outcome of a dispassionate and critical reflection." He then explained:

> Nevertheless, I am in sympathy with the religious attitude toward life; and I should welcome the establishment of sure empirical foundation for the belief that human personality is not wholly destroyed by death. . . . it seems to me highly probable that the passing of this belief would be calamitous for our civilization. For every vigorous nation seems to have possessed this belief, and the loss of it has accompanied the decay of national vigour in many instances.
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> Apart from any hope of rewards or fear of punishment after death, the belief must have, it seems to me, a moralizing influence upon our thought and conduct that we can ill afford to dispense with. The admirable Stoic attitude of a Marcus Aurelius or a Huxley may suffice for those who rise to it in the moral environment created by civilizations based upon a belief in a future life and upon other positive religious beliefs; but I gravely doubt whether whole nations could rise to the level of an austere morality, or even maintain a decent working standard of conduct, after losing those beliefs.

With this as the basis for his work, McDougall devoted his scientific powers and logical discipline to stating the case for Animism—the idea that the soul may have a life independent of the body—giving its history and endeavoring to show through critical analysis that the findings of physiological psychology supply no firm reasoning for abandoning the idea of soul. A similar case is presented in his later book, *Modern Materialism and Emergent Evolution* (1929).

James, in his essay, *Human Immortality,* the Ingersoll lecture first published by Houghton Mifflin in 1898 (and later issued, bound with *The Will To Believe*, by Dover in 1956), devoted his remarkable powers to showing that the brain, while the vehicle of thought, might be only the transmitter, and not the producer, of the mind's ideations. He wrote:

> My thesis now is this: that, when we think of the law that thought is the function of the brain, we are not required to think of productive function only, *we are entitled also to consider permissive or transmissive function.* And this the ordinary psycho-physiologist leaves out of his account.
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> Suppose, for example, that the whole universe of material things—the furniture of earth and the choir of heaven—should turn out to be a mere surface-veil of phenomena, hiding and keeping back the world of genuine realities. Such a supposition is foreign neither to common sense nor to philosophy. Common sense believes in realities behind the veil even too superstitiously; and idealistic philosophy declares the whole world of natural experience, as we get it, to be but a time-mask, shattering or refracting the one infinite Thought which is the sole reality into those millions of infinite streams of consciousness known to us as our private selves.
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> "Life, like a dome of many-colored glass,
> Stains the white radiance of eternity."

> Suppose, now, that this were really so, and suppose, moreover, that the dome, opaque enough at all times to the full super-solar blaze, could at certain times and places grow less so, and let certain beams pierce through into this sublunary world. Those beams would be so many finite rays, so to speak, of consciousness, and they would vary in quantity and quality as the opacity varied in degree. Only at particular times and places would it seem that, as a matter of fact, the veil of nature can grow thin and rupturable enough for such effects to occur. But in those places gleams, however finite and unsatisfying, of the absolute life of the universe, are from time to time vouchsafed. Glows of feeling, glimpses of insight, and streams of knowledge and perception float into our finite world.
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> Admit now that *our brains* are such thin and half-transparent places in the veil. What will happen? Why, as the white radiance coming through the dome, with all sorts of staining and distortion imprinted on it by the glass, or as the air now comes through my glottis determined and limited in its force and quality of its vibrations by the peculiarities of those vocal chords which form its gate of egress and shape it into my personal voice, even so the genuine matter of reality, the life of souls as it is in its fullness, will break through our several brains into this world in all sorts of restricted forms, and with all the imperfections and queernesses that characterize our finite individualities here below.
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> According to the state in which the brain finds itself, the barrier of its obstructiveness may also be supposed to rise or fall. It sinks so low, when the brain is in full activity, that a comparative flood of spiritual energy pours over. At other times, only such occasional waves of thought as heavy sleep permits gets by. And when finally a brain stops acting altogether, or decays, that special stream of consciousness which it subserved will vanish entirely from this natural world. But the sphere of being that supplied the consciousness would still be intact; and in that more real world with which, even whilst here, it was continuous, the consciousness, in ways unknown to us, continues still.

Go to the sonnets of Shakespeare, or to lines in *Measure for Measure,* and be persuaded that the "possibilities" luminously described by James are not mere speculations, but facts mirrored in a rare human mind.

COMMENTARY
A USE OF HISTORY

READING proof on an issue of MANAS like this one sometimes leads to long thoughts. In all four of the contributions are accounts of or quotations from exceptional individuals—people with vision, capacity, and resolve. The longest of the thoughts is: Why are they so few? Is there an evolutionary plan or design that makes the proportion of the best humans so small in comparison with the average? We have no answer to this except in an analogy found in nature: The number of germ cells in an organism is tiny compared to the count of the somatic cells. What is the difference? A somatic cell is able to reproduce only itself, while the germ cell reproduces the whole organism.

So you could say that more exceptional individuals are not needed—that is, not needed if the rest take the lead, follow the example, of the best humans there are.

But saying this will get us into trouble. Who knows which ones are "the best"? The very expression conjures up charges of elitism, perhaps paternalism, and almost certainly aristocratic theory. Yet, on the other hand, there are obvious differences among men, in quality, character, and capacity. There are excellences which seem to be largely unrelated to either heredity or environment, men or women who rise from the ranks of ordinary folk to become models or examples to us all. They have their influence—wider, perhaps, than we suppose—but being by nature educators, they will not coerce—will not enter into relationships in which coercion is normal operating procedure. They qualify as superior under the definition made by Gandhi—the superior individual is one who will never use power to control the decisions of others.

What can we do to encourage the appearance or development of more such individuals? The question has no easy answer—perhaps no answer at all—but while we are wondering about it we might reflect on something said by Arthur Morgan years ago:

> A person without knowledge of history of the past must see the world as commonplace because except at extreme times, he is going to live among commonplace people who have come to that conclusion. The only way to get at the sum and substance of human experience is to reach out beyond the years we have into the years of the past, into the significant experience of the human race.

CHILDREN
. . . and Ourselves

TINKERS WITH TECHNIQUE

A LITTLE less than ten years ago, Peter Worsley's *The Trumpet Shall Sound* (Schocken, 1974) described certain "strange religious movements in the South Pacific" which became known as "Cargo cults"—

> In these movements, a prophet announces the imminence of the end of the world in a cataclysm which will destroy everything. Then the ancestors will return, or God, or some other liberating power, will appear, bringing all the goods the people desire, and ushering in a reign of eternal bliss.
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> The people therefore prepare themselves for the Day by setting up cult organizations, and by building storehouses, jetties, and so on to receive the goods, known as "cargo" in the local pidgin English. Often, also, they abandon their gardens, kill off their livestock, eat all their food, and throw away their money.

It was the frenzied preparation of hundreds (perhaps thousands) of schools to install computers for the use of students—to say nothing of the growing market for "home computers"—that led to recollection of Worsley's theme. Obviously, Cargo cult believers are not all in the South Pacific. We, too, are being told by one set of prophets about the imminence of a cataclysm that will destroy the world (and alas, they may be right). And we have another set of prophets who inform us that there is now a machine that is far cleverer than we are, the use of which, once learned, will lift us out of the ranks of ordinary people and enable us to cope with practically anything that comes along. Doing some reading on the subject, we found that it is unquestionably true that computers have valid uses, very helpful ones. Yet this capacity turns out to be the most threatening aspect of these (once enormous but now conveniently handy) machines. Why? Because all the people who participate in the cargo cult mentality are jumping to the conclusion that computer verdicts and formulas will eventually be able to solve all human problems. It's only a matter of time.

We turned, first, to Joseph Weizenbaum's *Computer Power and Human Reason* (W. H. Freeman, 1976), which may still be the best book on the subject. Computers, it seems, may be compared to behaviorist psychologists. These are the doctors who would shape our choosing "mechanisms" according to what, in their view, has proved to be good to do in past experience. They are helpless without such references. For them, unsolved problems simply do not exist. Learning is no more than finding out the best technique we have already discovered and giving it fresh application.

This, it is claimed, is *scientific* psychology. In his last chapter Prof. Weizenbaum addresses this outlook in its computer version:

> Some scientists, though by no means all, maintain that the domain of science is universal, that there can be nothing which, as a consequence of some "higher" principle, ought not to be studied. And from this premise the conclusion is usually drawn that any talk of ethical "oughts" which apply to science is inherently subversive and anti-scientific, even anti-intellectual. . . . This development is tragic, in that it robs science of even the possibility of being guided by any authentically human standards, while it in no way restricts science's potential to deliver ever-increasing power to men. And here too we find the root of the much-talked-about dehumanization of man. An individual is dehumanized whenever he is treated as less than a whole person. The various forms of human and social engineering we have discussed here do just that, in that they circumvent all human contexts, especially those that give real meaning to human language. . . .
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> Tinkers with techniques (gadgets worshippers, Norbert Wiener called them) sometimes find it hard to resist the temptation to associate themselves with science and to siphon legitimacy from the reservoir it has accumulated. But not everyone who calls himself a singer has a voice.
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> Not all projects, by very far, that are frankly performance-oriented are dangerous or morally repugnant. Many really do help man to carry on his daily work more safely and more effectively. Computer-controlled navigation and collision-avoidance devices, for example, enable ships and planes to function under hitherto disabling conditions. The list of ways in which the computer has proved helpful is undoubtedly long. There are,

> however, two kinds of computer applications that either ought not to be undertaken at all, or, if they are contemplated, should be approached with utmost caution.

The impact of what this professor of computer science at M.I.T. says is in his examples, which need to be considered in detail. Here we quote one of his final paragraphs:

> If this book is to be seen as advocating anything, then let it be a call to . . . courage. And, because this book is, after all, about computers, let that call be heard mainly by teachers of computer science.
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> I want them to have heard me affirm that the computer is a powerful new metaphor for helping us to understand many aspects of the world, but that enslaves the mind that has no other metaphors and few other resources to call on. The world is many things, and no single framework is large enough to contain them all, neither that of calculating reason nor that of pure intuition. And just as a love of music does not suffice to enable one to play the violin—one must also master the craft of the instrument and of music itself—so it is not enough to love humanity in order to help it survive. The teacher's calling to teach his craft is therefore an honorable one. But he must do more than that: he must teach more than one metaphor, and he must teach more by the example of his conduct than by what he writes on the blackboard. He must teach the limitations of his tools as well as their power.

Teachers who fail to teach these limitations are little better than minions of Dostoevski's Grand Inquisitor or the high priests of cargo cults.

We go to another, more recent book—*The Network Revolution—Confessions of a Computer Scientist* (And/Or Press, Berkeley, Calif., 1982, $7.95) by Jacques Vallee. This writer is obviously very bright, and also very serious, and his book should be read by both teachers and parents. (He is also very amusing.) Vallee believes that computers are already out of control, mainly because they have been oversold and because the people out there are ready to become cargo cult believers. Hopefully, Vallee says:

> The dream is still valid, however, provided we avoid the trap of the easy promises made by those who simply sell the machines, the "hardware." It takes more than electricity to activate a computer: it takes a *program.* The program reflects not only the assumptions of the programmer but also the biases and constraints of the entire society around him.

Both Vallee and Weizenbaum draw our attention to the crucial importance of the assumptions of the programmer. The program cannot improve on those assumptions, and, what is far worse, it may, through its technical magic, make the programmer and a lot of the rest of us think that the assumptions are a part of Eternal Truth.

The Network Revolution is filled with pertinent warnings by a writer who has dozens of reasons for giving them, collected over some twenty years of personal experience. One of them is:

> In November 1979, in an "incident" that passed generally unnoticed in American newspapers, the entire North American continent was in a state of nuclear war for seven minutes because of what seems to have been an operator error. Whether the computer detected the wrong set of patterns, or was fed an emergency training tape, the result was the same: it appeared that a massive enemy attack was being directed at the United States. Going through regular procedures, officers at NORAD—the North American Radar system located under Cheyenne Mountain in Colorado—gave takeoff orders to fighter-bombers from Montana to Canada to meet the expected onslaught, while the entire military system of the United States and Canada was placed on alert status. The Strategic Air Command did not take off because a Presidential order is required for that, and after seven minutes nobody had been able to reach the President, the Vice President, or the Secretary of Defense. Finally, an officer who thought it was strange that the Russians would attack during "a period of relative détente," ordered his staff to run a check of the computer, and the mistake was found. This was before the Afghanistan crisis, and one wonders what would have happened if that particular officer had not perceived his country to be in "a period of relative détente," I found references to the incident in the press of Western Europe, where it aroused understandable concern, but I had trouble finding mention of it in U.S. newspapers. The lesson to be learned is that we would do well to rely on human judgment a little longer, and not to vest total power in computer systems until we know what we're doing.

No comment.

FRONTIERS

The Community Land Trust

THE goal of owning a piece of land where a man and his family could settle in independence and security was a major attraction to the Europeans who came to North America to begin a new life. In its best light, this ideal, so widely realized by the first white Americans, served as the foundation for what might have become a great civilization. As the eminent historian, Arthur M. Schlesinger, said in his classic essay, "What Then Is the American, this New Man?"

> In contrast to Europe, America has had practically no misers, and one consequence of the winning of Independence was the abolition of primogeniture and entail. Harriet Martineau was among those who concluded that "the eager pursuit of wealth does not necessarily indicate a love of wealth for its own sake." The fact is, for a people who recalled how hungry and ill-clad their ancestors had been through the centuries in the Old World, the chance to make money was like the sunlight at the end of a tunnel. It was the means of living a life of human dignity. In other words, for the great majority of Americans it was a symbol of idealism rather than materialism. Hence "this new man" had an instinctive sympathy for the underdog, and even persons of moderate wealth gratefully shared it with the less fortunate, helping to endow charities, schools, hospitals and art galleries and providing the wherewithal to nourish movements for humanitarian reform which might otherwise have died a-borning.

What happened to this spirit? The answer is given in a recent review by Mildred J. Loomis of the School of Living (RD 7, York, Pa. 17402) of a seven-volume study, *Impact of Land Ownership on Rural Appalachia*, summarized by Robert Scrofani of the San Francisco branch of the Henry George School. (The study was compiled by research teams in Alabama, Kentucky, North Carolina, Tennessee, Virginia, and West Virginia.) Mrs. Loomis sets down the essential findings:

> The ownership of land and minerals in Appalachia is concentrated in a few hands. At least 53% of the total land surface in the 80 counties surveyed is controlled by 1% of the population, along with absentee holders, corporations, and government agencies. Nearly three fourths of the surface areas and four fifths of the mineral acres in the survey are absentee owned.
>
> Little land is owned by, or accessible to, local people. Only 1% of the resident population owns tracts larger than 250 acres. Their holdings comprise only 10% of the areas surveyed. Among the large corporations that dominate the ownership picture in much of Appalachia, corporate entities own at least 4.3 million coal-rich acres in central Appalachia. These ownership patterns, it is pointed out, are a crucial underlying element in explaining the inadequacy of local tax revenues and services, the lack of economic development, insufficiency of housing, and loss of agricultural lands in the region studied.

It may be said that conditions in Appalachia are worse than in other areas of the United States (see *Let Us Now Praise Famous Men* by James Agee and Walker Evans, Houghton Mifflin), but as Mildred Loomis finally remarks: "The situation in rural Appalachia reflects the importance of land ownership as a vital ingredient of rural development everywhere, mirrored in the debates on the national level over land ownership and land use."

The need, then, is to alter our thinking about the right to own land. One way of beginning to do this is to study a movement that got going in this country during the past thirty or forty years. It is well described by Gretchen Older in a booklet ($4.00) recently issued by the School of Living Press—*The Community Land Trust: A Next Step in Humanizing the Economy.* (The writer was a young woman of talent who died in 1977 in her thirty-second year, and her frontispiece portrait recalls somewhat the face of Simone Weil, who also died young.)

After a review of the many problems—"problems" is a colorless term for virtual disasters—arising from the present pattern of land ownership, Gretchen Older says that stewardship is a realistic alternative to land ownership.

> Stewardship was practiced in ancient China and now operates in parts of Mexico, Israel, Africa, and India. Under stewardship land is regarded as a

> resource for the people rather than being owned by one individual, it is used for the benefit of the community. The concept of stewardship is also rooted on our continent in the reverence and respect felt by native North American Indians for the gift of the Great Spirit.

The Indians, as one of their spokesmen pointed out, simply could not understand private ownership of land, and the way the whites misused their land, for them, bordered on the sacrilegious. The community land trust is a legal way of restoring to function the stewardship of the land. Why and how will it do this?

> The answer lies in the community land trust's emphasis on *community.* Community land trusts embody a social consciousness that extends beyond the recreational, beyond the protectional—important as they are—and seeks to address more fundamental needs. Community land trusts endeavor to provide long-term, secure access to land for landless people over and over again, and to provide the kind of land that can be used for food production and the creation of a meaningful, dignified lifestyle. . . . Scores of community land trusts are now functioning and hundreds more are in preparation. No two of these trusts are exactly alike. The term "community" may refer to "a group of people with a common characteristic or interest" or to "those persons living within a common geographical region."

The variety of existing community land trusts is described in *The Land Trust Manual,* Institute of Community Economics, 151 Montague City Road, Greenfield, Mass.

An urban community land trust is presently being organized in Washington, D.C., and a Boston group is moving in this direction. The Northern California Land Trust is dedicated to placing low-income people on secure homesteads, and the Oregon Women's Land Trust endeavors to provide productive homesteads for women without access to land. Grekhen Older concludes:

> The growth of community land trusts in this country is indeed encouraging. Properly implemented, the community land trust has the potential to become a widespread tool for land reform, and a non-materialistic approach to land tenure.