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THE PRIORITY OF MIND

IT seems a major irony of human existence—which has for its defining characteristic the search for knowledge—that the more we know, or believe that we know, the less relation there is between our knowledge and immediate experience. The maturity of a science, as various writers have pointed out, is measured by the extent to which it has been assimilated to some branch of mathematics. Of all the sciences, the one for which we have the most respect is physics, and physics, in its most impressive reaches, is almost entirely mathematical.

Years ago, writing for the *Journal of the Franklin Institute* (March, 1936), Albert Einstein said:

> Physics constitutes a logical system of thought which is in a state of evolution, and whose basis cannot be obtained through distillation by any inductive method from the experiences lived through, but which can only be attained by free invention. The justification (truth content) of the system rests in the proof of usefulness of the resulting theorems on the basis of sense experiences, where the relations of the latter to the former can be comprehended only intuitively. Evolution is going on in the direction of increasing simplicity of the logical basis. In order further to approach this goal, we must make up our mind to accept the fact that the logical basis departs more and more from the facts of experience and that the path of our thought from the fundamental basis to these resulting theorems, which correlate with sense experiences, becomes continually harder and harder.

He means that it becomes harder and harder for *physicists*, to say nothing of the rest of us, who must remain content to accept the "truth content" of modern physics on faith. It would take one of us years simply to learn the language physicists use in talking about their work, and probably only a handful of them are really qualified to exercise critical judgment about new physical theories, as such. That kind of science, in other words, is only for the company of physical magicians; we rely on them, not able to contradict, and after all the machines and other technical devices do *work*, so that we have become largely dependent on them; while, on the other hand, that other climactic achievement of physics, the atom bomb, and all its later "refinements," has established a shivering belief system which recalls medieval certainty in the existence of the devil. It is a bad situation but we don't know what to do about it.

Science, you could say, is the cult of knowing how things work. It studies the "how" of things; it explains what happens in terms of cause and effect, but these relationships give no account of the *meaning* of experience. For a sense of meaning, we need not only a knowledge of causes but also the *reasons* for them—and reasons, in this sense, must relate to the essential qualities of human beings, their feeling about good and evil, and to an undefined future state of being in which we shall find fulfillment. Where shall we look for such reasons, apart, that is, from the teachings of the revealed religions, affording reasons which often ignore what we think of as rationality?

The rational systems of meaning are called metaphysics. These, too, like physics, gain their order and symmetry through abstractions from experience. No more than physics, indeed probably less, are metaphysical abstractions implicit in sense experience. The order attained in metaphysical systems by such thinkers as Leibniz and Hegel was quite evidently the result of "free invention," while the satisfaction we feel in considering such systems is an *intellectual* satisfaction, rather difficult to relate to what happens in the everyday world. Leibniz's "monad" is the ultimate unit in all that is, an instance of the totality considered as a unity, the stuff of which is consciousness. It is the One become the many. The underlying reality of all existence is the

monad, and the endless diversity we see shows forth the differences of the forms of monadic existence. Every human is a monad, a center of consciousness. The monad has the capacity to reflect in itself other aspects of reality, and the degree of reflection attained is the knowledge we have. Leibniz (1646-1716) evolved an all-inclusive philosophy which, he declared, "connects Plato with Democritus, Aristotle with Descartes, the Scholastics with the moderns, theology and morals with reason."

Hegel, who came more than a century later, said in his *Philosophy of History:*

> The history of the World begins with its general aim, the realization of the Idea of Spirit. . . . This vast congeries of volitions, interests and activities constitute the instruments and means of the WORLD SPIRIT for attaining its object; bringing it to consciousness and realizing it. And this aim is none other than finding itself coming to itself—and contemplating itself in concrete actuality. But that those manifestations of vitality on the part of individuals and peoples, in which they seek and satisfy their own purposes, are at the same time the means and instruments of a higher power, of a higher and broader purpose of which they know nothing which they realize unconsciously—might be made a matter of question; rather has been questioned . . . on this point I announced my view at the very outset, and asserted our hypothesis . . . and our belief that Reason governs the World and has consequently governed its history. In relation to this independently universal and substantial existence—all else is subordinate, subservient to it, and the means for its development.

The development is accomplished according to the triadic law of thesis, antithesis, and synthesis. An illustration is the seed which begins as a unity. Sown in the soil, it encounters disintegrating forces, yet the unifying power of the seed, as its form dissolves, draws nourishment from the earth and it becomes the plant—the synthesis, which in turn produces a seed, and the cycle begins again. This is the Hegelian method of analysis. Universally, spirit is the thesis, matter the antithesis, and conscious individuality—spirit by embodiment realizing itself—is the synthesis. Hegel believed this to be the rule of all historical process and also the law of thought. It is difficult not to agree, although Max Eastman, looking back on the course of the Russian Revolution, was troubled by the Marxist application of the Hegelian dialectic in its materialized form. Systems based upon abstractions from experience may be useful theoretical tools of thought, but bad guides to action. As Eastman put it, "To identify theoretic knowledge of reality with a program or a struggle for power is a dangerous self-deception." And he added: "To identify such knowledge with a program of bureaucratic boss-rule is a crime against society, science, art and education."

One could say that Hegel the practical historian is as provincial and timebound as Hegel the metaphysician is catholic and universal. As historian he located the Promised Land of spiritual fulfillment in northern Europe, finding the ideal synthesis of the time in Lutheran Protestantism and the Hohenzollern Constitutional Monarchy. Yet his metaphysics cannot die. It continually provokes similar speculations. Consider his definition of Spirit: it is, he says, self-contained existence. Plato similarly called the soul a self-moving unit, in contrast with the units of matter which are moved by outside forces. Matter, then, Hegel said, "has its essence outside of itself"; it seeks its unity elsewhere than in itself, being affected by gravity from without. Spirit, in contrast, "has not a unity outside itself, but has already found it; it exists *in* and *with* itself."

> Now this is Freedom exactly. For if I am dependent, my being is referred to something else which I am not; I cannot exist independently of something external. I am free, on the contrary, when my existence depends upon myself. This self-contained existence of Spirit is none other than self-consciousness—consciousness of one's own being. Two things must be distinguished in consciousness; first, the fact *that I know;* Secondly, *what I know.* In self-consciousness these are merged into one; for Spirit *knows itself.* It involves an appreciation of its own nature, as also an energy enabling it to realize itself; to make itself *actually* that which it is *potentially*. According to this abstract definition it may be said of Universal History, that it is the exhibition of Spirit in the process of working out the

> knowledge of that which it is potentially. And as the germ bears in itself the whole nature of the tree, and the taste and form of its fruits, so do the first traces of Spirit virtually contain the whole of that history.

Few passages of metaphysical analysis match the logical appeal of what Hegel says here. We sense its fidelity to our own development and intuit its universal application. But how shall we make *practical use* of this knowledge, if indeed it is knowledge?

We have learned something of the hazards of trying to found our politics on inadequate metaphysical theory about the nature of things and men. This lesson is shown in modern history from the French Revolution on. "Reality," the Cartesian philosophy declared, is what is rational and men are rational entities and nothing else. And, as Ortega says in *The Modern Theme:*

> This assumption being granted—"pure reason has always to start from assumptions, like a chess player—the consequences are inevitable and precise. The edifice of political ideas thus built up is wonderfully logical, in other words its intellectual integrity is unquestionable. Now, the Cartesian only admits one virtue; pure intellectual perfection. To all else he is deaf and blind. For him what is anterior and what is present are equally undeserving of the least respect. On the contrary, from the rational point of view, they assume a positively criminal aspect. He urges, therefore, the extermination of the offending growth and the immediate installation of his definitive social order. The ideal of the future, constructed by pure intellect, must supplant both past and present. This is the temper which produces revolutions. . . .
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> The Constituent Assembly makes "solemn declaration of the rights of Man and of the Citizen" in order "that, it being possible to compare the acts of legislative and executive powers, at any given moment, with the final aim of 'every' political institution, they may be the more respected, so that the demands of the citizens, being founded henceforth on simple and unquestionable principles," etc., etc. We might be reading a geometrical treatise. The men of 1790 were not content with legislating for themselves: they not only decreed the "nullity" of the past and of the present, but they even suppressed future history as well, by decreeing the manner in which "every" political institution was to be constituted. . . . It is illogical to guillotine a prince and replace him by a principle. The latter, no less than the former, places life under an absolute autocracy. And this is, precisely, an impossibility. Neither rationalist absolutism, which keeps reason but annihilates life, nor relativism, which keeps life but dissolves reason, are possibilities.

In short, metaphysical theories, when applied politically, usually become ideologies. The limitations of theories based solely on abstractions then become evident, and when the theory is joined with a passion for "justice" and fanatical feelings of certainty as to how justice is to be defined, and how it is to be obtained, then we have programs which lead to the Moscow Trials and the Nazi death camps, to the genocidal horrors of the Khmer Rouge in Cambodia.

Yet humans cannot live without making theories. This being the case, is there a way in which we can learn to make theories which retain close touch with experience? Is this conceivable? It seems clear enough that the abstractions on which our theories are based—with which they begin—are *not* part of our experience of nature. The abstractions come out of our heads and, as Einstein said, "can only be attained by free invention." Which obliges the question: Might there be another order of experience that would be useful in checking our use of abstractions?

One of our best contemporary thinkers, Owen Barfield, seems convinced that such an order of experience exists. In a colloquy held at a State University of California last year, he said:

> . . . if civilization is to be saved, people must come more and more to realize that our consciousness is not something spatially enclosed in the skin or in the skull or in the brain that it is not only our inside, but the inside of the world as a whole. That people should not merely to be able to propound that as a theory, as some philosophers and others have done, but that it should become more and more their actual experience. . . . That, and also the overcoming of the total obsession there is today, with the Darwinian view of evolution—of consciousness or mind having emerged from a material, but entirely unconscious, universe. Putting it very shortly, to realize, not simply as a theory but as a conviction of common

sense, that in the history of the world, matter has emerged from mind and not mind from matter.

This seems a way of suggesting that the material world of the senses is no more than a confused reflection of the world of mind, an impermanent, continually altering, and quite imperfect version of a noetic system of causation which we have not yet begun to understand. If we could generate within ourselves organs of perception relating to that higher order, then we might have experience of the world of mind "in the round," as we say, and no longer be dependent for our theorizing on isolating abstractions which, while they give a certain power of organization, continually violate the being of all that the abstractions have left out and put to one side.

One way to begin might be to develop for ourselves a theory of mind—a theory, that is, of our own being—which would have this capacity.

Owen Barfield is a Coleridge scholar, and in his book, *What Coleridge Thought* (Wesleyan University Press, 1971), he provides a long quotation from a lecture given by the poet in 1825, before the Royal Society of Literature, on the source and nature of mind. What Coleridge says has mythic splendor, showing a Promethean inspiration for the human pedigree:

> The generation of the *nous,* or pure reason in man. I. It was super-added or infused, *a supra* to mark that it was no mere evolution of the animal basis—that it could not have grown out of the other faculties of man, his life, his sense understanding, as the flower grows out of the stem, having pre-existed potentially in the seed: 2. The *nous,* or fire, was "stolen"—to mark its *hetero-* or rather its *allo-*geneity, that is, its diversity, its difference in kind, from the faculties which are common to man with the nobler animals: 3. And stolen "from Heaven"—to mark its superiority in kind, as well as its essential diversity: 4. And it was a "spark"—to mark that it is not subject to any modifying reaction from that on which it immediately acts; that it suffers no change, and receives no accession, from the inferior, but multiplies itself by conversion, without being alloyed by, or amalgamated with, that which it potentiates, ennobles, and transmutes: 5. And lastly (in order to imply the homogeneity of the donor and the gift), it was stolen by a "god," and a god of the race before the dynasty of Jove—Jove the binder of reluctant powers, the coercer and entrancer of free spirits under the fetters of shape, and mass, and passive mobility; but likewise by a god of the same race and essence of Jove, and linked of yore in closest and friendliest intimacy with him. This, to mark the pre-existence, in order of thought, of the *nous,* as spiritual, both to the objects of sense, and to their products, formed, as it were, by the precipitation, or, if I may adopt the bold language of Leibniz, by a coagulation of spirit.

This is Coleridge's way of declaring the absolute priority of mind, of the human essence, as the Prometheus myth suggests:

> In other words, this derivation of the spark from above and from a god anterior to the Jovial dynasty—(that is, to the submersion of spirits in material forms)—was intended to mark the transcendency of the *nous,* the contra-distinctive faculty of man, as timeless, and, in this negative sense, eternal. It signified, I say, its superiority to, and its diversity from, all things that subsist in space and time, nay, even those which, though spaceless, yet partake of time, namely, souls or understandings. For the soul, or understanding, if it be defined physiologically as the principle of sensibility irritability, and growth, together with the functions of the organs, which are at once the representatives of these, must be considered in *genere,* though not in degree or dignity, common to man and the inferior animals. It was the spirit the *nous,* which man alone possessed.

This *nous* is mind in its highest capacity and perspective, giving humans their immeasurable responsibility, as modern Platonists declare.

To put the matter crudely, is there an order or level of experience where, if we make a mistake in theory, we should feel its negative impact as thoroughly as we do when, as physical beings, we offend against gravity and fall? The implication of the question is that in the region of what we call "free invention," to which Einstein referred, there is an intellectual and moral topography that a fully developed mind may have continual reference to, and so avoid making mistakes. It does not seem unreasonable to propose that the author of the *Bhagavad-Gita* and the author of the Sermon on the Mount were in possession of such awareness. How else are we to explain the inner security we

feel in reading such sublime expressions? Their resonances stir in us answering chords, as though certain high human potentialities are being momentarily evoked. The feeling may not last, but neither do other childhood inspirations which later develop into a constancy of insight in some lesser field.

We talk easily of "evolution," but is it not time that we gave this term a deeper and more human meaning? We live in our minds, and it seems evident enough that mental capacities vary widely. Surely this is evidence that there is mental evolution. It is true that, with our present conceptions of societal good, the most tentative definitions of such mental evolution become embarrassing. If we say that some people have evolved better minds than others, the implication that those with better minds are *superior* to the others seems unavoidable. This is morally objectionable and we don't say it. But it wouldn't be objectionable at all if we could see a close correlation between intellectual intelligence and *goodness.* The fact is, however, that smart people often exploit those with less agile intelligence.

Well, is there such a thing as moral evolution, also? Evidence for moral evolution is not lacking. Some people are really kinder, more naturally thoughtful and considerate, than others. Yet we don't have any explanation for this. We don't have a *ground* in our thought for discussing the processes of moral evolution. Did such a ground exist in the thought of the past? Supposing it once existed, where should we look for it?

Surely the discovery of such a ground would be about the most valuable contribution to present human development that one could imagine. A beginning might be made by thinking about human beings—ourselves—as though such a discovery were at least possible.

REVIEW
BEING IN THE ARMY

ROSS PARMENTER, who in 1949 wrote *A Plant in My Window,* a book of curiously unforgettable musings, has now gone back in his memory almost forty years to write about—not just his "experiences" in the army, but his response to them. *School of the Soldier* is self-published. Interestingly, both the best and the worst of books may be self-published. Ross Parmenter's book is one of the better ones, distinguished by a lack of conventional motivation. It is an exploration of the meaning of human freedom—the author's dialogue with himself on the subject.

The merit of this writing is its psychological honesty, its unpretentious simplicity, and its wondering reflection. The reader is likely to say to himself, "This is really making human use of the experiences one goes through." The book is not brilliant or dramatic, yet persistently penetrating; the over-all effect of reading it may be to start the reader off on similar musings of his own. "I ought to do something like that," you say, and feel that you can. Not many books have this effect. It is the virtue which Lionel Trilling found in George Orwell.

School of the Soldier is not anybody's "Movement" book, which is something of a relief. Toward the end the writer says:

> It became clear to me therefore that what men wanted was not freedom, but the sense of freedom.
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> They did not want absolute independence where they did not have to rely on anything or where no one relied on them. They wanted the type of emotions they had come to associate with freedom. If they were ill, for example, they did not want to become free of their bodies. They merely wanted their organs to be restored to the state of normal functioning so that those organs would not interfere with their liberties any more than they had done when they were healthy.
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> Then take the men in the barracks. They were intensely interested in their personal liberty, but they had precious little interest in freedom in the abstract. They weren't even seriously interested in democracy. It was plain they felt the less responsibility they had for the community the better. And they didn't care about complete social freedom in their own towns or cities. All they wanted was to get home where there was a wider degree of personal liberty than in the army. Comfort gives men a sense of freedom. And I could see that most of the soldiers, as long as they had the degree of comfort they were used to, did not care how politically, socially or economically free they were. And the way I felt at the reception centre provides an example of how indifferent one can be to objective factors limiting freedom. I obviously wasn't free there, yet I had what mattered to me as a human being—the sense of freedom. The existence of this feeling also explains why many monks prisoners and slaves have all made the puzzling claim of being free.

This, indeed, is the background reality hardly noticed by so many books and articles which declare what "the people want" or ought to have, and then proceed with logical arguments in behalf of the proper arrangements for a "good society." From reading some of these books, you might assume that the people making up society are all just waiting out there to hear the common sense of the writer, ready to act upon it. Whom, after all, do you address when you write such an article or a book? Are you telling "society" what it ought to do, or are you speaking to that one or two in a hundred—or in a thousand—who may be really interested in what you have to say?

Ross Parmenter is not addressing a hypothetical audience of eager reformers, but writing about the people around him, both like him and not like him, finding confirming analogues in himself. He goes on:

> Next, having isolated man's hunger as being for the sense of freedom—for subjective freedom, that is—I saw that sense was very variable. It could come and go, it could alter with the passage of time, and it could exist almost independently of external conditions. A prisoner, for instance, with no objective freedom, could claim that angels alone enjoyed such liberty; while a rich man, with all the actual freedom the world could offer, could feel confined and bound in.

Freedom, for a great many, perhaps most people, has reality only in an immediate *feeling*—theory does not enter in:

> The variability of the sense of freedom was crystallized for me by a story told to us by one of the speakers in our Army Orientation course. The speaker, a former newspaper man who had turned to the lusher fields of radio commentating, described how he had interviewed one of the young English pilots who had bombed the dam of the Ruhr Valley. The flyer, he said, looked little more than a choir boy. In the split second after he had dropped the bomb that was to destroy the dam he had a sense of peace and complete clarity about why he was fighting. He had no fear of death, he told the interviewer, no regret at the thought he might be shot down.

Parmenter muses:

> To my way of thinking, destroying a dam that will overwhelm and drown human communities is a monstrous crime. Yet that ex-choir boy felt completely at one with his Maker as he did it. I was enormously interested that such a deed, with such appalling moral consequences, should nevertheless induce an exalted sense of freedom in which even the last shred of personal fear was obliterated. It made me realize for one thing, that feelings of intense freedom are generally of short duration.

Books like this deal in an intimate and compelling way with the field and problems of moral psychology, showing that good and evil are essentially mysterious. Was that feeling which came over the young flyer wholly spurious? If not, what kind of deception—"sincere" self-deception—is required for a violent partisan undertaking such as war? The total inadequacy of most of modern psychological theory in the area of motivation becomes evident in a book like this. Endless relativities are involved—relativities which become absolutes for a time for those able to accept their feelings as authentic measures of freedom.

After illustrations which make these relativities quite evident, Parmenter sums up:

> My final conclusion is that this value for which men hunger, call it happiness, expanding life, a sense of freedom, love, peace of mind, or what you will, is a matter for which the individual alone is ultimately responsible. No society can make men free. It can help by good traditions and by lending its cumulative strength, but at best, all it can do is to assure conditions that make it possible for men themselves to find the things they seek. To promise anything more, I think, is dangerously misleading. Men will never find even the sense of freedom if they do not realize they must find it for themselves. It is misleading, too, to promise permanent freedom through war. Complete freedom is an illusion. War destroys the material basis that makes even the illusion possible, and by the hatred it breeds, it also destroys the spiritual bridges that lead to the promised land. For I believe that men are only likely to find the thing they seek, both for themselves and for society, by seeking interdependence through love.

If that's what Ross Parmenter thinks about war, what was he doing in the army? Well, you could say that he wasn't part of the killing mechanism of the army because he was a conscientious objector who chose to be a medic. He has several pages on what this position means as a human right, pointing out that it was first recognized by the governments of England and the United States—a freedom won by men who "had the gall to claim in the face of the majority that they had the right to refuse to take part in war, and they had the courage to stick to that claim in spite of imprisonment, contempt and military punishment." Of his own experience he writes: "In my case the rights of the conscientious objector in the army were tested." Out on the firing range, he was ordered to stand in a conspicuous location where, presumably, he would be scorned by the other men. But he wouldn't shoot at the target. Finally, an antagonistic captain "had to admit that he couldn't 'wrap the rifle around my neck'."

> Why couldn't he? It was because my right not to fire had been won for me by other men. And so it did not take much courage for me to tell him that I would not fire. I knew of that sentence in the draft law. I knew further that in an Executive Order the President had specifically mentioned marksmanship and target practice as among the things that could not be forced on the conscientious objector. And I knew a policy circular of that particular post had said: "These men shall not be required to bear arms or have anything to do with arms or ammunition or replicas thereof, if such is their request. I knew, in short, that I was protected by the Articles of War. The army being as

> strict as it was in obeying its own orders, the captain did not have the power to make me fire. And knowing the extent to which human history has been bedeviled by military despotism, I knew this represented an advanced position in the unending struggle of individuals to win freedom from the power of their fellow men.

By reading this book you go with Ross Parmenter to the Reception Center after he was drafted, experience with him the release from all responsibility beyond the commands of the officers, and contrast his own feeling of deprivation with the reaction of rural conscripts for whom life in the barracks was accompanied by conveniences they lacked at home. You ride on the troop train to the desert region near Palm Springs where he spent the war, and share in his reveries generated by good reading during free time.

We don't know the price of this book or whether the author wants to sell copies, but since he had a thousand copies printed and can hardly have that many friends to give them to, he might be persuaded to part with some. His address is Pension Suiza, Calzada Madero 113, Oaxaca, Oax., Mexico.

COMMENTARY
"THE LONG ROAD"

ARTHUR MORGAN'S small classic, the distillation of a lifetime of thinking, is named in this week's "Children" article. Copies are still available from Community Service, Inc., P.O. Box 243, Yellow Springs, Ohio 45387, at little cost. (They used to be $3.00 and probably still are.) *The Long Road* is filled with practical illustrations of what the author tried to make happen, in terms of individual and group effort. Here we give the underlying theme of the book:

> For perhaps the next half century or more the burden of our attention and of our loyalties, and the full drive of our aspirations, should be given to bringing about a revolution in the personal character of the American people. . . . When I use the word "character" I have in mind three elements. First is purposefulness, or the pattern of desire—the vision of the life it would be well to lead, of the kind of a world which so far as wisdom, judgment, and good will can determine it would be well to live in.
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> Second, I include good will and the skilled and disciplined drive of desire which presses toward the realization of aims and purposes. Great insight into what would constitute a good life for one's self and for society has value only as expressed in well-considered action, though under the term "action" I should include the disciplined and carefully expressed thinking of the student, and the work of the artist, as well as the more obvious activity of the laborer or the businessman.
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> Great vigor of action by itself, however, may have no more social value than the capricious force of the tornado, unless it is directed by a vision of what is desirable. . . .
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> The third factor is ethical or moral quality, the habitual choice of means that are wholesome in their own effects. Even when the desired end is good and the disciplined energy great, it is important that the methods used shall be in themselves ethical or moral.
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> My definition of ethical or moral action is as easy to state as it is difficult to apply. That is an ethical act which is good when judged by its total consequences—which is good for the future as well as the present, for society as a whole as well as for ourselves. . . .
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> There is scarcely any more effective means for bringing about social change than the "apostolic succession" that results from intimate association of persons of clear purpose and great commitment with small groups of young people. . . . We must begin far back, in the slow, thorough building of character which will be tried out in the realities of everyday living, and which by aspiration, disciplined by open-minded, critical inquiry, will mature a philosophy of life reasonably adequate to the present day. As that quality of character is matured, it will result in leadership that will apply itself to the issues of the time. It will give concrete expression in everyday life to a new vision of the quality that life may have. When that vision is clearly expressed and clearly defined the people will gradually receive it as their own. . . . The long way round, of building character, in the end will prove to have been the short way home to a good social order.

CHILDREN
. . . and Ourselves
APPROACHES TO PAIDEIA

DISTINGUISHED individuals who devote their lives to education often come to different conclusions as to the best thing to do. For example, Arthur Morgan, the country's leading flood control engineer (head of TVA), began as a youth to wonder about the formation of human character. What are its ingredients? How are they acquired? In 1921 he resuscitated Antioch College, then about to expire, and within ten years had made it one of the best undergraduate schools of the country. But he was not satisfied with the result. "It's too late," he said to his friends. "By the time the young reach college, the twig is bent, and going to college won't unbend it."

Starting in about 1940, Morgan focused his energies on the restoration of small community life. He organized the foundation known as Community Service, Inc., in Yellow Springs, Ohio—where he lived and where Antioch is located—to foster, inform, and inspire the community movement. He wrote a rather wonderful little book, *The Long Road*, to explain why he was devoting all his capacities to this cause, and another book, *The Small Community: Foundation of Democratic Life*, as a text. This theme was Morgan's way of reviving the Greek idea of *Paideia*, which means that the entire community is the teacher. One learns best from the grain of life, he believed, and the grain of the small community reveals instead of submerging what needs to be learned. An aspect of this idea was the innovation he introduced at Antioch—the alternation of study at school with work on a job. Morgan sent a man into the field to arrange for jobs in industry and commerce for Antioch students. They would work for a period, then go back to school. By this means he assured that their education would not be merely "academic."

Morgan wrote several books. His life of Edward Bellamy is one of the best, and his study of utopias, *Nowhere Was Somewhere*, shows what an autodidact with imagination can make of the contrast between what is and what might be. He was a distinguished educator.

Another was Robert M. Hutchins. His emphasis, however, was very different from Morgan's. He wanted the awakening of minds not to be confused with training for some kind of job. He thought that training, all right in its place, was misnamed education. After years spent in reforming and improving the University of Chicago, he joined Paul Hoffman as co-director of the Ford Foundation, then founded the Fund for the Republic, which later became independent and known as the Center for the Study of Democratic Institutions, in Santa Barbara, Calif. The Center was a comprehensive project in adult education. Hutchins undertook to create an intellectual community to carry on the dialogue of civilization. Years before, while at Chicago, he had launched the Great Books movement, and reading, study, and discussion groups using these famous texts sprang up around the country. Hutchins, you could say, was a Platonist who believed that rulers must become philosophers and that in a democracy all men are rulers, making it the duty of democratic institutions to help the young to grow up into philosophers. This, obviously, must begin with adult education, because, he reasoned, the schools won't attempt it unless the older generation wants them to. In one of his books, *The Conflict in Education* (1953), he said:

> If we are going to talk about improving men and societies, we have to believe that there is some difference between good and bad. This difference must not be, as the positivists think it is, merely conventional. We cannot tell this difference by any examination of the effectiveness of a given program as the pragmatists propose; the time required to estimate these effects is usually too long and the complexity of society is always too great for us to say that the consequences of a given program are altogether clear. We cannot discover the difference between good and bad by going to the laboratory, for men and societies are not laboratory animals. If we believe there is no truth, there is no knowledge, and there are no values except those which are validated

by laboratory experiment, we cannot talk about the improvement of men and societies, for we can have no standard of judging anything that takes place among men or in societies.

Society is to be improved, not by forcing a program of social reform down its throat, through the schools or otherwise, but by the improvement of the individuals who compose it. As Plato said, "Governments reflect human nature. States are not made out of wood or stone, but out of the characters of their citizens: these turn the scale and draw everything after them." The individual is the heart of society.

Hutchins had remarkable command of the English language. He wrote, a scholar once remarked, with the simplicity of the ancient Greeks.

To talk about making men better we must have some idea of what men are, because if we have none, we can have no idea of what is good or bad for them. If men are brutes like other animals, then there is no reason why they should not be treated like brutes by anybody who can gain power over them. And there is no reason why they should not be trained as brutes are trained. A sound philosophy in general suggests that men are rational, moral, and spiritual beings and that the improvement of men means the fullest development of their rational, moral, and spiritual powers. All men have these powers, and all men should develop them to the fullest extent. . . .

The prime object of education is to know what is good for man. It is to know the goods in their order. There is a hierarchy of values. The task of education is to help us understand it, establish it, and live by it. . . . Such an education is far removed from the trivialities of that produced by the doctrines of adaptation, of immediate needs, of social reform, or of the doctrine of no doctrine at all. Such an education will not adapt the young to a bad environment, but it will encourage them to make it good. It will not overlook immediate needs, but it will place these needs in their proper relationship to more distant, less tangible, and more important goods. It will be the only effective means of reforming society.

For some years now, there has been talk of goals for America. But there are no goals apart from individuals. States certainly have no goals worth talking about. What then are states for? Hutchins had clear ideas on this:

When we speak of the consent of the governed, we mean, since men are not angels who seek the truth intuitively and do not have to learn it, that every act of assent on the part of the governed is a product of learning. A republic is really a common educational life in process. So that Montesquieu said that, whereas the principle of a monarchy was honor, the principle of a tyranny was fear, the principle of a republic was education.

Hence the ideal republic is the republic of learning. . . . Truth is not long retained in human affairs without continual learning and relearning. Peace is unlikely unless there are continuous, unlimited opportunities for learning and unless men continuously avail themselves of them. The world of law and justice for which we yearn, the world-wide political republic, cannot be realized without the world-wide republic of learning. The civilization we seek will be achieved when all men are citizens of the world republic of law and justice and of the republic of learning all their lives long.

Robert Hutchins should be remembered as one of the Founding Fathers of such a republic, if it ever comes into being. Meanwhile, we have his vision as a reminder of an ideal way of thinking about the meaning of organized society.

Then there was Gandhi—another great educator. We quote him for the contrasting validity of what he said:

Every house in the land is a school and the parents are teachers. But the parents, ceasing to teach, have betrayed their sacred trust. There is no alternative save to send our boys to schools. But if the child has to go to a school we must see that it looks like a home to him and the teacher like parents and the education provided should be such as would be provided in a cultured home.

John Holt is presently the American advocate of this educational ideal—advocate and leader, for a movement for education in the home is now gathering strength, due in considerable measure to his efforts. His paper, *Growing Without Schooling*, provides a continuous flow of illustration of what may happen when the "sacred trust" Gandhi spoke of is renewed by ingenious parents.

FRONTIERS

Solar Cookers, Biogas, and Trees

READERS wanting to keep abreast of the intermediate technology movement—getting not only the current word on practical applications of technical know-how to rural and other small-scale needs, but also on the increasing spread of this way of thinking about present-day technological resources—would do well to spend seven dollars for a year's subscription to *Science for Villages*, published every two months at Wardha, Maharashtra, 442001, India. It has twelve pages, including a cover which is printed on handmade paper.

The inside front cover presents news of current developments. While it has been pointed out that in many Indian villages the cooking is done morning and evening, making solar cookers impractical, an item reprinted from the *Nagpur Times* shows that in some areas they are nonetheless popular. "Solar cookers," it is reported, "are selling in Baroda city like hotcakes, with orders having been placed for over 2,000 pieces in the city so far." The cookers, the manufacturer says, can be easily operated by housewives. Another report says that a firm identified as KVIC has installed 80,000 biogas plants around the country, and has a goal of half a million plants to make full use of the 980 million tons of cattle dung available annually in India. Still another report describes research resulting in the production of low-cost paper from water hyacinth, a weed that grows so rapidly it congests streams all over the world.

Elsewhere described is the development of a small gear system to reduce the labor of pulling rikshaws—available in a kit from the Science for Villages Center. Credited to the Rural Appropriate Technology Center in Madras is the invention of several pedal-powered implements: a paddy thresher with a capacity of 50 kg. per hour; a winnower using a constant velocity fan; a peanut sheller with breakage of kernels under 3%; and a water pump which draws from 1,200 to 1,500 litres an hour from a depth of six metres—enough to provide drinking water for a small village or irrigation for a kitchen garden. Evidently the power produced by a bicycle mechanism may be used in a variety of ways—to turn woodworking lathes, circular saws, drills, grinders, and other light equipment.

In the United States people read mostly about the international politics of China and, a few weeks ago, were favored with day-to-day reports of the trial of the Gang of Four. The readers of this little paper, *Science for Villages*, may be far better informed about the real China. Following are passages translated from an article in *Le Monde* for last October:

> China, the country of plains and hills, looks the cleanest country of the world. No uncultivated land, no garbage pile, even no abandoned rubbish. Nothing is lost in China, everything is transformed into something useful. When you observe its 950 millions of inhabitants, you can hardly believe that all of them have a vocation of rag-picking. One can see on the roads caravans of trucks, motor-cars, three-wheelers carts, and even bicycles all hidden beneath burdens of rags, thus proving that the official injunction—"Change waste into treasure"—is well listened to.
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> Roads are clean of dung and dirt. The precious organic fertilizer is immediately conserved. No one thinks of burning weeds, straw, dead leaves and other wastes. They are piled up on the edges of the paths for compost-making. . . .

The *Le Monde* writer, Marc Amboise, comments:

> Of course, that faculty of making everything useful is the heritage of poverty, but it is transformed into deep motivation by two noble ideas: Chinese people have only their own strength to count on, and this systematic and skillful recycling is a way to obtain good hygiene and environmental satisfactions. Raw materials [for biogas plants] are taken from public latrines. Three kilos of dry matter give one cubic meter of gas, which in turn gives 1.2 kw/h of electricity and two kilos of compost. In winter, batteried solar heaters are used to warm the tanks. Some 16,000 biogas plants are in operation around Shanghai. Ten per cent of the rural homes in China

meet their cooking and electricity needs from biogas, saving 8,000 tons of coal.

There is this account of local power generation:

> The village of Suzhuang is east of Peking, having an area of 140 acres with 580 inhabitants. The new houses built in 1978 all have two rooms, a kitchen, a closed yard, and outside a pig shelter and the latrines. Along every street are digestors to receive kitchen waste. The digestors provide gas for cooking and light for eight months of the year. Throughout China several millions of these digestors are in operation. Seven hundred of them produce between 8 and 120 KW, and Shanghai has three giant installations with tanks of 250, 400, and 1,000 cubic meter capacity.

E. F. Schumacher, it will be recalled, advised the Indian people to plant trees. China, apparently, knows that this must be done. The *Le Monde* article (in *Science for Villages*) ends:

> The program of new tree planting in China is affecting ten crores [a hundred million] of hectares on a width of 300 kms. While the project cannot give immediate income, the farmers are convinced of its benefit. If something happens to be convenient for everyone, there is no resistance—which explains some of the radical changes in rural behavior. In 1958, all the Chinese people were invited to kill birds, accused of eating 10 per cent of the crops, but without birds it was found, the crop yield fell by 20 per cent, since birds also ate the pests. Today everybody protects the birds, especially since the Chinese leaders admitted their error.
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> Obviously, creation of forests is only a first step in the general ecological program. Three crores [of hectares] of land have already been put into plantation, which for the next generation means reduction of loss caused by inundations (two to three crores of tons of grain in 1980).

No doubt something has been lost in translation, but the real point of repeating this story is that it tells things about life in China we seldom learn from the conventional press. The more we know about that side of China, the better we'll like the people there, and perhaps want to trust them, and in response they may be a bit more inclined to trust us—which might be bad for the international armaments business but very good for everyone else.

Is there really any other way to put an end to the psychology of war and the arms races? Americans aren't going to have a war with Canadians because we know something about them and like and trust them. We may annoy them somewhat, now and then, but they trust us too, and don't build any big forts along the border.