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VISION AND VULGARIZATION

A POSITIVE way of reading the meaning of recent centuries of Western history would be to say that from, say, the beginning of the eighteenth century to nearly the end of the twentieth, men in this part of the world were fired by the inspiration and then wrestled with the problems of the idea of shaping their society for themselves. This is the key idea in Edmund Wilson's minor classic, *To the Finland Station*, in which he traces the idea of deliberated social change from Vico to Lenin. He lets the distinguished French historian, Jules Michelet (1798-1874), provide the sense of drama that came with the discovery that Vico was the first man of modern Europe who thought in terms of social action. As Wilson says:

> From the collision of Michelet's mind with Vico's, it is hardly too much to say that a whole new philosophical-artistic world was born: the world of re-created social history. Of this moment in Michelet's life he was afterwards to note: . . . "From 1824 on," he wrote, "I was seized by a frenzy caught from Vico, an incredible intoxication with his great historical principle."

What was that principle? It was that *"the social world is certainly the work of men,"* from which it followed that "one can and should find its principles in the modifications of the human intelligence itself." Why, asks Wilson, should Vico's great work, *Scienza Nuova* (1725), be regarded by "a man of 1820 as an intoxicating revelation?"

> Because Vico [Wilson explains], by force of an imaginative genius of remarkable power and scope, had enabled him to grasp fully for the first time the *organic* character of human society and the importance of reintegrating through history the various forces and factors which actually compose human life. . . . Human history had hitherto always been written as a series of biographies of great men or as a chronicle of remarkable happenings or as a pageant directed by God. But now we can see that the developments of societies have been affected by their sources, their environments; and that like individual human beings they have passed through regular phases of growth.

There would be vast consequences from this discovery or view. We have no difficulty in seeing why, with this idea as foundation, revolution became a scholarly as well as rebellious enterprise. It was now understood that there could be a "science of society," with the blessings brought by Galileo and Newton extended to all the world by the application of impersonal, scientific principles to the structure of social organization. The new faith of scientific socialism was not long in appearing, and Edmund Wilson's book is perhaps the best brief account of its impact upon Western history up to the time of Lenin.

For the educated, civilized man of the nineteenth century, the virtues brought by science to the social movement were twofold. First was its certainty. Demonstrated truths would brook no contradiction: men would simply *see* what must be done. Second, science, conducting its investigations above the level of the moral emotions, would free men of the terrible self-deceptions which human sympathy made possible. Fact, not feeling, would dictate action. Whatever was necessary would be done. A man confident that he had come upon the essential principles of the science of society could thereupon regard himself as an Olympian, above all battles save the revolutionary struggle. His cause, being the embodiment of the highest good (the truth about man in society), was his first and only allegiance.

Yet there was extraordinary emotion linked with this conviction—a reservoir of power based on the exhilarating feeling that those who learned to use science in behalf of society would bring about the true Millennium in the affairs of mankind. Moral emotion had not been eliminated, but was now disguised as the psychological energy of scientific certainty. Age-old frauds and tyrannies could now be ended *forever*. When one has the facts—facts made plainly objective by scientific method so that everyone ought to recognize them—what room remains for "argument"?

In *The Captive Mind* (Vintage, 1953), Czeslaw Milosz describes how the intoxication with scientific social certainty was eventually translated into a total cultural system. Milosz writes of this process as he experienced it in Poland after World War II:

> In the people's democracies, a battle is being waged for mastery over the human spirit. Man must be made to understand, for then he will accept. Who are the enemies of the new system? The people who do not understand. They fail to understand because their minds work feebly or else badly. . . .
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> Free discussion is, of course, eliminated. If what the doctrine proclaims is as true as the fact that 2 x 2 equals 4, to tolerate the opinion that 2 x 2 equals five would be indecent.
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> From his first day in school, the young citizen receives an education based on this truth. . . . In the people's democracies, the materialistic outlook of the nineteenth century has been extended consistently to every subject; history and every branch of human creativity are presented as governed by unshakable and *already known* laws.
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> In the nineteenth century, with the rise of literacy, brochures popularizing scientific theories made their appearance. Regardless of the intrinsic worth of these theories, we must grant that from the moment they take on a popular form they become something other than what they were as hypotheses of scientific research. For example, the simplified and vulgarized version of Darwin's theory of the origin of species and the struggle for existence is not the same concept that it was for Darwin or for his scholarly opponents. It takes on emotional coloration, and changes into an important sociological element. The leaders of the twentieth century, like Hitler for instance, drew their knowledge from popular brochures, which explains the incredible confusion in their minds. Evidently, there is no place in such digests for the humble remarks of true scientists who assure us that the laws discovered are hypothetical and relative to the method chosen and the system used. Vulgarized knowledge characteristically gives birth to a feeling that *everything* is understandable and explained. It is like a system of bridges built over chasms. One can travel boldly ahead over these bridges, ignoring the chasms. It is forbidden to look down into them; but that, alas, does not alter the fact that they exist. . . .
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> Thanks to excellent means of vulgarization, unprepared people (i.e., those whose minds work feebly) are taught to reason. Their training convinces them that what is happening in the people's democracies is necessary, even if temporarily bad. The greater the number of people who "participate in culture"—i.e. pass through the schools, read books and magazines, attend theaters and exhibitions—the further the doctrine reaches and the smaller grows the threat to the rule of philosophers.

There is resistance, of course, but it must stay underground. And in the case of the ordinary man the sense that something is wrong cannot be explained by him in rational terms. "His opposition to this new philosophy," Milosz remarks, "is much like a toothache. Not only can he not express the pain in words, but he cannot even tell you which tooth is aching."

We said at the beginning that one way—an ongoing, optimistic way—of reading the meaning of our historical epoch would be to call it the age in which men determined to shape their societies for themselves. But in the light of what has happened in the twentieth century, we might also say that ours has been the age in which men attempted to find a system which would protect them from the excesses of their own moral emotion. We know what misguided moral emotion can do. It can endorse human sacrifice, Holy Inquisitions, religiously sanctioned genocide, and systematic enslavement of whole peoples. It was the twisting or suppression of facts to suit religious feelings which engendered the moral skepticism of modern science, and since science is both a method and a system, why not have a scientific social system which could absolutely prevent the betrayal of people through their emotions?

Attempts to understand precisely what happened to this dream of an infallible scientific social system remained extremely difficult until, in 1966, Michael Polanyi, who had had some firsthand experience of the Stalinist system, resolved the question into socio-psychological principles. In *The Tacit Dimension* (Anchor, 1967), he tells of a conversation he had with Bukharin in 1935. While he was to be executed three years later in one of Stalin's purges, Bukharin was then still a leading theoretician of the Communist Party. Polanyi asked him about the pursuit of pure science in Soviet

Russia. "Pure science," Bukharin replied, "was a morbid symptom of a class society; under socialism the conception of science pursued for its own sake would disappear, for the interests of scientists would spontaneously turn to the problems of the current Five-Year Plan."

This casual judgment drove Polanyi to a study of the philosophical implications of the practice of science. Years later, in *The Tacit Dimension,* he gave this brief account of what had happened in Russia. The scientific skepticism growing out of the investigation of nature in an anticlerical mood made solid alliance with the moral perfectionism of utopian revolutionary doctrine:

> Scientific skepticism and moral perfectionism join forces then in a movement denouncing any appeal to moral ideals as futile and dishonest. Its perfectionism demands a total transformation of society; but this utopian project is not allowed to declare itself. It conceals its moral motives by embodying them in a struggle for power, believed to bring about automatically the aims of utopia. It blindly accepts for this belief the scientific testimony of Marxism. Marxism embodies the boundless moral aspirations of modern man in a theory which protects his ideals from skeptical doubt by denying the reality of moral motives in public life. The power of Marxism lies in uniting the two contradictory forces of the modern mind into a single political doctrine. Thus originated a world-embracing idea, in which moral doubt is frenzied by moral fury and moral fury is armed by scientific nihilism.
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> Bukharin, explaining urbanely, in the spring of 1935, that scientific truth would no longer be pursued for its own sake under socialism, completed the wheel full circle. Embodied in a scientifically sanctioned political power, moral perfectionism had no place left for truth. Bukharin confirmed this three years later when, facing death, he bore false witness against himself. For to tell the truth would have been to condemn the Revolution, which was unthinkable.

Quite plainly, it was the shotgun wedding between moral perfectionism and political power which excluded truth—a truth, however, already eroded beyond recognition by the "vulgarization" described by Milosz—a vulgarization necessary to instructing the masses in the correct social doctrine.

But is Polanyi's an explanation we can accept? Its implications are far-reaching and will not leave untouched the faith of other men in other political systems which rest on the proposition that power in the service of truth can do no substantial or lasting evil. So far, our discussion has seemed to expose only the malignancy of the Communist system of government and thought-control, but the Soviet propagandists are by no means the only officials guilty of vulgarization in the name of power and social control. *Something happens* to all ideas which are taken over by politicians, even revolutionary politicians, and made into capital for political persuasion. In a society where the good of man is made dependent upon righteous political power, "truth" is invariably converted into units of power-potentiality, and if it will not submit to this conversion it is declared either irrelevant or false.

In a delighting and informing book about the taxonomy of domesticated plants—*Plants, Man and Life* (University of California Press, 1969)—Edgar Anderson recalls the tragic story of the distinguished Soviet biologist, N. I. Vavilov, a man who, after making important contributions to world knowledge of the origins of cultivated plants, fell into disfavor with the Stalinist regime and was unofficially "tried" by his fellow scientists. They found him guilty of cherishing conceptions incompatible with the official Marxian philosophy and he died in disgrace, probably in a Siberian labor camp. This story has been told many times, but Mr. Anderson makes a pertinent comment:

> What has not been stressed, what has only been hinted at, is the much more serious fact that Vavilov's problem in Russia is merely in an intensified form the problem which scientists face in this country and in all countries, an increasing struggle between them and the bureaucrats. In this country the bureaucrats are powerful, and more than one scientist has been persecuted by them, as for instance the distinguished director of the Bureau of Standards. . . . The Soviets were the first great power to take biology seriously and to paint biologists as noble servants of the state. In this country biologists have greater freedom, partly because their importance is not generally recognized. The man in the street still tends to think of botanists as odd little persons who putter with plants, and of entomologists as funny-looking creatures who caper

> over meadows with butterfly nets. When he finally realizes that biologists are working not only with the sources of his daily bread, but with his sex life, his ways of thought, his possible evolution, his most efficient extinction, then biologists will be even more hedged with throttling red tape than are modern physicists.

Mr. Anderson is arguing for the freedom of scientists to search for truth without interference from government officials, but it seems vain to expect in a society which relies on power for its future good, that *anyone* working with the secrets of power will be left alone.

Actually, if you follow these various lines of evidence to their implied conclusion, it seems clear that power ought to be abandoned as an objective. And then what becomes of our familiar and basic rule—that power is necessary in order to do good?

Another phase of the question is concerned with public education. Education by the state has for its main purpose the stability of the social order; since the state is the agency of a collective, it cannot conceive of education in any other way. But this always works out, in practical terms, as an effort to preserve the status quo. It follows that state education can offer only a *vulgarized* version of whatever truths it allows to be taught. Since the state depends upon the support—which means the guidance—of mass opinion, public education will tend to neglect the potentialities of distinguished individuals, excepting only those who may be expected to make important contributions to state power. The latter would include physicists, chemists, engineers, and—if Mr. Anderson's prediction is correct—biologists. But education independent or defiant of the interests of state power will hardly exist.

At this point the moral dilemma becomes inescapable. The *good of all* is perhaps the profoundest and most precious ethical principle of the modern age. For a great many people, the abandonment of the idea of public education—which is education by the state—can mean only the abandonment of the great moral idea of the eighteenth-century revolution: the equal worth and rights of all men. For how can we, except through public or state education, devote our national resources to the service of this ideal?

But what if all the individuals who feel this way—and who therefore support state power as a necessary evil—were to begin to work *directly* for the general benefit of other men?

What if the benefits obtained from individuals who work in the great bureaucratic systems of the nation—the educational system and others—could have reached the people they helped without the filters and dilutions imposed by bureaucracy and by vulgarization? Would not the benefits have been far greater?

This is not a proposal for sudden reform of the vast superstructure of social organization in the modern nation-state, but an invitation to some thinking about how human excellence is obtained and how it best expresses itself. The proposition is rather that good done with the guarantees and assistance of power tends to be vulgarized exactly to the extent that it is really made possible by power; and that in the long term this is the precise formula for mediocrity, decline, and, finally, corruption and failure. This effect could be regarded as the natural outcome of the self-fulfilling prophecy which demanded the use of power in the first place, since it claimed that people will not respond, will not do what they ought to do, without the exercise of power to make them do it.

REVIEW
PROBLEMS OF SOCIAL ORDER

ONCE in a while a writer will say something about the importance of human attitudes and basic objectives in relation to major social issues, but usually only as an afterthought or in some brief aside along the way. In its most familiar and perhaps most tiresome form, this comment comes as a criticism of the so-called "character-shaping" institutions, which are charged with failing in their duty to the young, with the result that there is delinquency and disorder, contempt for order, and crime.

Sometimes the comment is made more obliquely. For example, in a recent review of Urie Bronfenbrenner's *Two Worlds of Childhood*, which compares Russian with American education, the writer muses about Bronfenbrenner's conclusion that the Soviets are more successful than we are in "inculcating those values that their society finds most useful." The children "end up disciplining themselves to achieve desirable group goals." This reviewer—Bob Kay, writing in the Rose Valley School *Bulletin*—himself ends up in something of a dilemma:

> The [Soviet] child tends to be obedient, orderly, and submissive. He will not cheat, lie, or rebel. He works hard and respects his elders—and corporal punishment is never used. He is eager to dedicate himself to society, while he tends to lack the spontaneity, humor, assertiveness, and independence that we find attractive in the best of our children. But the Silent Majority might appreciate the product.
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> But, as if we didn't know it, American families and their progeny are in trouble. The roots are multiple, but the author's thesis is that the major cause of our difficulties is that adults in general, and parents in particular, are spending entirely too little time with the children. This is due to a combination of factors often beyond the adults' control such as distant jobs, working mothers, age fragmentation, and the length of the school day. Other items of lesser importance are the kids' parties in the basement while the adults imbibe upstairs and other ways of "giving" the children their own activities which further isolate them from our world.
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> The result is that many children tend to be "socialized" by the television set and by their friends who are also resentful of parental neglect. In our culture both these are predominantly negative and provide models for aggressive and antisocial behavior. Cut off from the adult world they develop their own sub-culture which, unless we move rapidly, will result in increased alienation, indifference, antagonism, and violence in all segments of our society.

Bronfenbrenner's suggestions for improvement, which would make the school system the primary agent of social change, may founder, the reviewer thinks, "on the problems of bureaucratic rigidity, social fragmentation, and the lack of a strong centralized ethic to which all subscribe as well as the problems of family versus state primacy in the socialization process."

There is no doubt about the "lack of a strong centralized ethic" in our society, yet this observation touches an exposed nerve, since the reinforcement of common purpose seems to require heavy doses of propaganda and indoctrination. It is generally agreed that the communist sort of national unity is little more than a secular or political version of the theocratic state. To speak of moving in this direction would be a symptom of atavism, a conscious betrayal of all past heroism which struggled for freedom of religion and of the mind.

Yet the greater the social problems, the stronger the temptation to look around for some external means of unification. Perhaps the bankruptcy in human attitudes lies right here—in the tendency to regard the qualities of mind which lead to harmony and cooperation as mere "utilities" instead of something to be sought as ends in themselves. While it is true that these qualities prevent disorder and pain, to seek them for this reason may be the surest way of all to prevent their development.

It seems obvious that today practically all the expertise of our time is devoted to the analysis of

pain; we have countless diagnosticians but hardly any healers. We have encyclopedic knowledge of every sort of human and social ill, but understand almost nothing of health. We are scholars of crisis and designers of last-ditch remedies; it is no accident that the greatness of modern nations is measured by their competence in war. Yet the creation of conditions under which there is diminishing pain has never been accomplished by wild flights nor by energetic prosecutions of war against the supposed producers of pain. Years ago Alexis Carrel pointed this out to his colleagues in medicine, reproaching them for treating diseases instead of human beings, and more lately the pioneer in the reform of psychology, A. H. Maslow, pointed out that the study of man ought to begin with identification of man at his best, in both health and human development. A psychology built on the minutia of pathology is not the study of man, but a catalog of his ills and failures. The same criticism could be directed at modern politics, conceived as a study of man in society. It concentrates entirely on the analysis of ills, and on the various uses of power for the control of these ills. Only Gandhi, in modern times, has given serious attention to the growth-processes and human attitudes which are the pre-political realities of harmonious life in social community.

This is a long—probably too long—foreword to brief notice of three books. They are useful books, yet they all seem to deal with politics as though political activity can be regarded as a thing-in-itself, isolated from the more fundamental processes of social life. The books are *The Great Issues of Politics* (Prentice-Hall, fourth edition, 1970, $7.95), by Leslie Lipson; *Youth Against the World* (Little, Brown, 1970, $7.95), by Marjorie Hope; and *We Have Been Invaded by the 21st Century* (Praeger, 1970, $7.95), by David McReynolds, with an introduction by Paul Goodman.

Mr. Lipson deals with five great "issues." These include the stress between practical inequalities and the feeling that all men are equal in essence, the problems of the organized state in relation to society, the question of authority and freedom, central versus decentralized power, and the increasing size of modern states. In one place Mr. Lipson points out that the centralized state is increasingly regarded as the *only* solution for the ordering of society. Not only are there practical reasons for a central authority, armed with coercive power, but the intuitive longings of people for an all-inclusive order, with no one exempt from its benefits, demand a larger unity, and only the state seems available as "the ultimate coordinator." Mr. Lipson says:

> The family cannot serve in this role, since its unit is too small. Religion cannot do it, because there are so many faiths and churches, and modern life, anyway, becomes increasingly secular, scientific, and skeptical. Business cannot do it, because economic considerations alone do not satisfy enough of the needs for which men are socially organized.
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> By elimination, therefore, one is left with the state. But to say that is only to solve certain problems and simultaneously to take arms against another sea of troubles. What if the monistic state be perverted? What if it be a tyranny? What if it should outrageously abuse its powers over society? Will the actual government conform to what the state ought to be?

These are no academic questions, as our other two books make plain. Marjorie Hope has gathered four hundred pages of evidence to show that the monistic state *is* perverted and tyrannical, that it *does* outrageously abuse its powers. For twenty years she has traveled around the world, talking to student radicals and revolutionaries. Scenes she visited include Paris, Hungary, Vietnam, South Africa, Colombia, Spain, Czechoslovakia, West Germany, and the American South. *Youth Against the World* is a book of interviews with "serious revolutionaries who have made a lifetime commitment to working for a radically transformed society." Nearly all of them came up from movements based in universities. Providing intimate portraits and dialogue ranging in time from Paris in 1948 to the

student revolts of the sixties, the book is filled with the passions, energies, and determination of the young, and the reader gains ample insight into the reality of the provocations behind their commitment. Yet, with some few exceptions, this is a book about the struggle for political power to correct the excesses of political power. Most important, perhaps, is the frequent discussion of the idea of non-violence, as a new theme in revolutionary planning. The book is well illustrated with photographs, and some of the leaders known to Miss Hope take on heroic dimensions as she describes their dreams.

The book by David McReynolds can be read as a personal focus on all the elements of modern political struggle. For years field secretary of the War Resisters League, this writer has long been in the thick of the activist phase of the peace movement. He says in his last chapter:

> The very technology that has destroyed the power of the old order has also made violence an impossibly dangerous method of changing society. One can applaud the courage of the National Liberation Front and the existential fury that brings men into the Black Panthers, but that courage must not be ours. Our task is to revolutionize society and to save it. If man can survive, it will be on the basis of deliberately breaking down the conscious barriers of race, class, nation—and, even, age.
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> If we see the threat violence poses everyone, we shall not try using it to change society. It is not a question of whether we are all saintly enough to abandon violence (we are not), but whether we are smart enough. I am not saintly, and neither are you. That is one reason why the surrender of violence is a revolutionary act—because we are being forced to stretch ourselves, to act beyond what we thought possible. History is brutal, catching us always before we are ready, forcing us into decisions we lack the courage to make.

A note on the jacket of this book makes a point about David McReynolds that could have much wider application:

> Wherever he goes, in whatever he writes, he seeks to reconcile his commitment to Gandhian nonviolence with his belief that Marxism, which accepts violence, may have the answers. His failure, so far, to fuse these two philosophies into one accounts for much of the extraordinary tension in his writing and for the freshness of his insights.

To this should be added that Gandhi was only accidentally a "political" leader, and that he absolutely rejected political power as the means for restoring the human community to health, harmony, and good. If Gandhi has a light to throw on the problems of politics, it is the light of his prior faith in voluntary action as the only means of getting at these problems—before they become intolerable social "evils" and burning issues of power.

COMMENTARY
ON PAPERMAKING

WALTER WEISSKOPF says (see Frontiers) that we must "develop a new discipline of human well-being which will help people to learn how to resist the temptations of modern mass production and consumption, should physical and mental health require it."

There are endless ways to act on this idea. Take paper production and consumption, for example. A vast acreage of forest goes into the production of newsprint alone. We are told, for example, that the Sunday edition of the *New York Times* requires for its paper the trees that grow on from a hundred to a hundred and fifty acres, *every week.*

Most of the "news" is ephemeral and unimportant. The bulk of a newspaper is created by the need to provide a showcase for the advertising from which the publisher derives income. To say most of what the advertising offers for sale is also ephemeral and unimportant is a weak understatement. We could easily do without the fashions and the built-in obsolescence on which modern merchandising largely depends. There *must* be a better way to distribute the news essential to our daily lives than the one we submit to.

Among the *curiosa* of paper consumption is the assertion that making a battleship of the *Massachusetts* class involves the use of a hundred tons of paper. Dard Hunter said in *Papermaking:* "Of this amount 16 tons of blueprint paper are used, the balance of the paper being consumed in letterheads, carbon copies, contracts, envelopes, inter-office communications, graphs, stencils, mimeographs, sketches, tracings, routing, crating, packing, and finally the small amount of paper used in actual construction."

One who reads only a little in the vast ecological literature of today is bound to have noticed that paper mills are among the major offenders in the pollution of lakes and streams. This is probably due to the discharge of water to which acids have been added to break down the cellulose structure of wood and eliminate the resin, leaving only the fibres from which paper can be made. Handmade paper can be fabricated by using pure water. Back in 1932, there were between twelve and fifteen hundred individual mills producing paper in Japan, each operating from one to forty vats. In those days, close to a quarter of all the paper produced in Japan was handmade, a proportion now much reduced, since the Japanese, as everyone knows, are great industrialists. Yet paper made by hand of good rags, macerated by hand instead of with chemicals, and not weakened by bleaching processes, is still the most durable and the most beautiful paper that exists.

Well, we are getting into a "spinning wheel" sort of argument, that can elicit jeers. Yet the point is not to abandon the industrial manufacture of paper, but to *reduce* as much as possible the volume of production, as a part of the "new discipline of human well-being." The world once got along pretty well without—paper plates, for one thing. Years ago a Japanese writer, Tanizaki, mused along these lines:

> I always think how different everything would be if we in the Orient had developed our own science. Suppose for instance we had developed our own physics and chemistry: would not the techniques and industries based on them have taken a different form, would not our myriads of everyday gadgets, our medicines, the products of our industrial art—would they not have suited our national temper better than they do? . . .
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> The Westerners have been able to move forward in ordered steps, while we have met a superior civilization and have had to surrender to it, and we have had to leave a road we have followed for thousands of years. The missteps and inconveniences this has caused have, I think, been many. If we had been left alone we might not be much further along now in a material way than we were five hundred years ago. Even now [1934] in the Indian and Chinese countryside life no doubt goes on much as it did when Buddha and Confucius were alive. But we would have gone in a direction that suited us. We

would have gone ahead very slowly, and yet it is not impossible that we would one day have discovered our own substitute for the trolley, the radio, the airplane of today. They would have been no borrowed gadgets, they would have been tools of our culture, suited to us.

Tanizaki remarks about paper:

Western paper is to us no more than something to be used, but the texture of Chinese paper and Japanese paper gives us a certain feeling of warmth, of calm and repose. Even the same white could as well be one color for Western paper and another for our own. Western paper turns away from the light, while our paper seems to take it in, to envelop it gently, like the soft surface of a first snowfall. It gives off no sound when it is crumpled and folded, is quiet and pliant to the touch as the leaf of a tree.

Dard Hunter's book on papermaking describes the multiple uses of handmade paper in Japan and Korea. In 1934, he notes, in the three great papermaking districts in Japan, close to six thousand families gained their support through the fabrication of handmade paper. It no longer seems romantic and utopian to recall such things.

CHILDREN
. . . and Ourselves

CHILDREN'S THINKING

WHILE the second part of Jean Piaget's *Science of Education and the Psychology of the Child* (Orion, 1970) was written many years ago, the content has a freshness and present-day applicability which make it especially useful to the reader. In this section, titled "Educational Principles and Psychological Data," Piaget champions what thirty-five years ago were termed "new" or "activity" schools, in contrast to the traditional schools of that time. But the value of this discussion is not merely in the conception that children learn best when they are "interested" and participate in what they are learning. More important is Piaget's explanation, in effect, of why adults find it so difficult to communicate with small children. They do not, he shows, understand how children think. There are several pages devoted to this question, recalling for the reader the lucid accounts by John Holt of how children learn, and Chukovsky's discussion of books and poetry for children.

But first Piaget's comparison of the traditional and the "new" schools:

> The traditional school imposes his work on the student: it "makes him work." And it is doubtless true that the child is free to put a greater or lesser degree of personal effort into that work, so that insofar as the teacher is a good one the collaboration that takes place between his students and himself will leave an appreciable margin for genuine activity. But in the logic of the system the student's intellectual and moral activity remains heteronomous because it is inseparable from a continual constraint exercised by the teacher, even though that constraint may remain unperceived by the student or be accepted by him of his own free will. The new school, on the contrary, appeals to real activity, to spontaneous work based upon personal need and interest. This does not mean, as Claparède so succinctly put it, that active education requires that children should do anything they want; "it requires above all that they should will what they do; that they should act, not that they be acted upon." Need, the interest that is a resultant of need, "that is the factor that will make a reaction into an authentic act." . . . The law of interest is thus "the sole pivot around which the whole system should turn."

This makes Piaget ask:

> Is childhood capable of this activity, characteristic of the highest forms of adult behavior: diligent and continuous research, springing from a spontaneous need?—that is the central problem of the new education.

In discussing this question, Piaget turns to the reasons for adult misunderstanding of children's "interests." The traditional pedagogy, he says, "attributed to the child a mental structure identical with that of the adult, but a different mode of functioning." Continuing this analysis, he quotes Claparède:

> It [traditional pedagogy] liked to think of the child . . . as capable, for example, of grasping anything that is logically evident, or of understanding the deep significance of certain moral rules; but, at the same time, it also considered the child as functionally different from the adult, in the sense that whereas the hand is capable of laboring without a motive, of acquiring the most disparate forms of knowledge to order, of doing any work you like, simply because the school requires it, but without that work answering to any need arising within the child's self, within its child's life.

Piaget comments:

> In fact, it is the contrary that is true. The intellectual and moral structures of the child are not the same as ours; and consequently the new methods of education make every effort to present the subject matter to be taught in forms assimilable to children of different ages in accordance with their mental structure and the various stages of their development. But with regard to mental functioning, the child is in fact identical with the adult, like the adult, he is an active being whose action, controlled by the law of interest or need, is incapable of working at full stretch if no appeal is made to the autonomous forces of that activity. Just as the tadpole already breathes though with different organs from those of the frog, so the child acts like the adult, but employing a mentality whose structure varies according to the stages of development.

The task of the child is to assimilate the external world to itself, and this is an enormously

busy and active process. In its earliest stages, "the child is at first unable to establish any clear-cut dividing line between its own activity and external reality, between subject and object." Play, Piaget shows, has a crucial role in the gradual extension of the adaptive process. "Play," he says, "is a typical case of the forms of behavior neglected by the traditional schools because it appears to them to be devoid of functional significance." It was thought to be only "relaxation" or a working off of "excess energy." But play for Piaget is a wonderful, intermediate stage of the child's development of his faculties, social instincts, and impulses toward experiment, becoming the means by which new forms of experience grow familiar, while not yet part of the child's real world. It is a normal and essential growth process:

> This is why play is such a powerful lever in the learning process of very young children, to such an extent that whenever anyone can succeed in transforming their first steps in reading, or arithmetic, or spelling into a game, you will see children become passionately absorbed in these occupations, which are ordinarily presented as dreary chores.

Play has also a symbolic aspect:

> Playing with dolls does not serve solely to develop the maternal instinct, but also provides a symbolic representation of all the realities the child has so far experienced but not yet assimilated in a form that it can relive and therefore vary according to its needs. So that in this respect symbolic play, like exercise play, is also to be explained as an assimilation of reality into the self: it is individual thought in its purest form, in its content, it is the unfolding and flowering of the self and a realization of desires, as opposed to rational socialized thought which adapts the self to reality and expresses shared truths; in its structure, the symbol in play is to the individual what the verbal sign is to society.

Perhaps most useful of all, in this book, is Piaget's comparison of the two kinds of logic—adult logic and child logic. The formal sort of reasoning used by adults is unknown to children, who have a practical—one could say "empirical"—approach. As Piaget says:

> For example, a child's spontaneous grasp of the physical world will enable it to succeed in predicting phenomena long before it can explain them. . . . practical adaptation in infants far from being an application of conceptual knowledge, constitutes, on the contrary, the first stage of knowledge itself and the necessary condition of all subsequent reflexive knowledge. This is why the active methods of educating infants succeed so much better than other methods in the teaching of abstract subjects such as arithmetic and geometry. When the child has already manipulated numbers or surfaces, as it were, before knowing them through the agency of thought, the notion that it acquires of them subsequently consists of a genuine bringing into consciousness of already familiar schemata of action, and not, as in the ordinary methods, of a verbal concept accompanied by formal exercises devoid of interest and lacking any previous experimental substructure. Practical intelligence is therefore one of the essential psychological data upon which active education rests.
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> . . . generally speaking, it is impossible for a child before the age of about ten to understand the hypothetico-deductive as opposed to the empirical truth of mathematics; and, moreover, there does seem to be room for astonishment that classical pedagogy should in this field impose upon schoolboys a way of reasoning that the Greeks achieved by dint of great struggle only after centuries of empirical arithmetic and geometry.

In his conclusion, Piaget applies this reasoning to the process of socialization, showing how the same rules work in the development of moral awareness and the autonomy of personal conscience.

FRONTIERS

A Science of Human Well-Being

IN MANAS for Aug. 21, 1963, Walter A. Weisskopf, an economist who teaches at Roosevelt University, contributed an article, "Economic Growth and Human Well-Being," in which he said:

> *A new "science" of human well-being is needed.* Such a discipline may examine the possibility that a person, a family, a group, a nation can have too much wealth and income, too much economic growth and productivity. It may consider that the way in which wealth is produced, distributed, and consumed can, in itself, be destructive. We will have to develop a new discipline of human well-being which will help people to learn how to resist the temptations of modern mass production and consumption, should physical and mental health require it.
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> Such a science of well-being should start with simple assumptions like those of welfare economics. They can be listed as follows:
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> (1) The principle of balance.
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> (2) The principle of real costs.
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> (3) The principle of direct negative effects.
>
> (4) The principle of balance between ends and means.
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> All these principles have to be considered whenever a question of economic policy arises.

The interesting thing about this article by Dr. Weisskopf is that it could now serve as basic introduction and brief text for any of the present-day investigations of ecological problems which seek more than simple correction of pollution or some other environmental disaster. The problems of ecology are rooted in human beliefs; as Lynn White, Jr., put it: "What we do about ecology depends on our ideas of the man-nature relationship." This brings in very nearly every aspect of our lives, including, as Lynn White says, religion. And as Walter Weisskopf declared in another paper (MANAS, April 6, 1966):

> In the economic field the *myth of eternal economic growth* has to be abandoned, in the West and East as well as in the developing countries. Growth as an end in itself, merely as a manifestation of vitalistic power and strength, must be recognized as an "unhealthy" goal. More and more wealth and power as such are not desirable. In the United States the meaninglessness of the myth of economic growth has not yet been generally understood; it is too much rooted in the American belief in progress and in its technological and economic optimism which has spurred the extraordinary accomplishments of the American economy but which has become obsolete in the affluent society. . . . In the last analysis it is this re-evaluation of all values in the light of a holistic world outlook which is required; a world outlook which encompasses *all* elements and dimensions of human existence, not only the intellectual, materialistic and vitalistic dimensions.

Actually, the basic elements of a *philosophic* literature on ecology already exist. Aldo Leopold (*A Sand County Almanac*) is doubtless its most important contributor, and others are important—Lynn White, Jr. (*Machina Ex Deo*), and Wayne H. Davis ("Overpopulated America," *New Republic*, Jan. 10, 1970). Many of the papers of E. F. Schumacher belong in this literature, especially "Buddhist Economics, which appeared in MANAS for Aug. 13, 1969. These writers have many things to say, but they all affirm, each in his own way, the ideas we have quoted from Prof. Weisskopf.

What, one wonders, should the new "science" be called? The name is probably unimportant, and anyway the time has not come for choosing it. Many heretofore separate ways of thinking will come into unity in this discipline. This becomes plain from a valuable series of discussions by the British ecologist, Frank Fraser Darling, presented as the Reith Lectures (six in all) and published in the *Listener* (Nov. 13-Dec. 18, 1969). Mr. Darling said in his first lecture:

> Home, that lovely word, is understood by most races, even if you are a nomad in a *yurt*, but particularly by those folk who have a sense of place. *Oikos*, the Greeks called it, and we have made the root the basis of our words "ecology" and "economics."
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> There are fashions in words, and "ecology," which is much newer than "economics," is being

> bandied about until people are growing sick of it before they know what it means—the science of the organism in relation to its whole environment in relation to other organisms of different species, and to those of its own kind. These two fields, ecology and economics, at present so far apart in outlook, must sometime come nearer together, and may that be soon. The economic factor looms so large that people in power use it as if it were some real power one of a trinity with God and Satan. Folk and family are forgotten in some figment called gross national product expressed in dollars and pounds sterling. God and Satan have been losing out in the battle of ideas but the economic factor has gained such power as almost to dictate a truncated existence for the many. This is called the greatest good of the greatest number. . . . The economic factor is enormously powerful, setting firm against firm in cutting down production costs and caring little about disposal of wastes. Country is set against country in getting the world markets, so the materialist's creed is that once more industry must not be handicapped by idealistic policies of pollution control. An African country has recently pointed out that the measures of control of pollution suggested to it as being desirable when it was beginning to industrialize would come better if European countries were doing the same. We are doing something, but not nearly enough, even to save our face.

What would the discipline include besides a reformed economics? Mr. Darling suggests:

> I truly believe that there is a considerable need for medicine ecology, architecture, landscape and town planning, and conservation, to combine in some fields of our changing world. Stress and psychosomatic diseases stem in part from environmental factors which the ecologist senses but cannot state in medical terms. The landscape- and town-planner should be combining ecology with his sense of order. I sometimes think architecture should be the first subject taught to a child, that he should be given bricks of good and progressive design, even if he does build them in impossible ways and then push them down. He might then be more positively intolerant when he grows up. Good architecture conveys a sense of well-being, and Hogarth's delight in the serpentine line was well based. The sharply angular townscape we know so well, and the plethora of sheer bad design, offend the sensitive excruciatingly, but somewhere medicine and psychology could tell us that even the insensitive are being affected, are made less successful human beings.

Interestingly enough, in the first (1963) article by Prof. Weisskopf, quoted earlier, he points out that the anomie' unthinking conformism, lack of community, and alienation found typical of the members of modern society by sociologists and social psychologists are in fact ills growing out of *"the detrimental effects of our economic system, regardless of the wealth it has given the masses."* It seems clear that what he is asking for is a "discipline" so fundamental and far-reaching that it will reform and reshape all the beliefs and modes of action in our civilization.