VOLUME XX, NO. 31
AUGUST 2, 1967

PRINCIPLES AND SPECIFICS

IN the *Saturday Review* for July 1, the science editor, John Lear, devotes his department to the question, "What Has Science To Say to Man?" One contributor of answers to this question, J. Herbert Hollomon, deputy secretary in the Department of Commerce, illustrates a quality of mind recently discussed in these pages—the philosophic temper of thoughtful specialists who recognize the importance of grounding their critical opinions on general principles. Mr. Hollomon writes on the need of engineers to become literate humanists. He says in his conclusion:

> The use of technology is almost never limited by technology itself. It is limited by social, political, and economic forces—the organizational structure of a company, the attitudes of people. So I urge that the engineer, if he is to be effective in a modern world, has to be literate. He must have some concept of the society in which he operates—its economics, its politics, its art, its esthetics, its laws. The society of engineers must encompass people who are deeply wedded to the value systems of our society—men who concern themselves with whether or not engineering is worth doing at all. It is a travesty, in my view, that engineers are responsible for the design of vehicles in which so many people are killed or maimed. It is a travesty that engineers are responsible for the design of industrial plants that pollute our atmosphere and our streams. Engineers must feel a sense of moral values through which they weigh the consequences for good of their work and make some judgments between them.

Let us suppose, for a moment, that Mr. Hollomon's dream had come true—that engineers throughout the country were taking the initiative as fully responsible humanists in the practice of their profession: What would be some of the results?

Well, for one thing, they would release men of aroused moral intelligence to activities far more constructive than the criticism of engineers. Take for example Ralph Nader, who wrote *Unsafe at Any Speed* (Grossman)—a brilliant critical analysis of the indifference of the automotive industry to the bodily safety of drivers and other people on the road. It goes without saying that the talents of Mr. Nader could be applied more usefully if he had not been *compelled* by the toll of death from traffic accidents to write about the cavalier attitude toward human life of the makers of automobiles. Mr. Nader has undoubtedly induced reforms in the design of cars. He has accomplished something; but it took a costly Congressional investigation to complete his task, along with elaborate exercises in the practice of adversary law in which the best legal brains the car manufacturers could hire were pitted against the brains of Mr. Nader and the Committeemen who sought to protect the lives of the American people. What a *waste* of human intelligence, from any rational view of the general public good!

Those lawyers are undoubtedly very bright men who could be using their minds to much better ends than outwitting one another. And there are literally enormous economies that could immediately go into effect as a result of the determined adoption of humanistic attitudes by all such specialists. It is becoming quite obvious that the practice of specialties, whether of engineering, law, or anything else, according to narrow specialist canons is afflicted by the rule of diminishing returns. What these men are doing must be recognized as the systematic pursuit of social self-defeat.

Without this recognition, the best minds among us are virtually condemned to the practice of another specialty—muckraking. What else can they do?

At issue here is the problem, not of the sins of specialists, but of the general orientation of people

in terms of philosophic assumptions concerning human life. Mr. Hollomon frames this problem in a broadly circumstantial way in his first paragraph:

> Today you and I can buy a house, but we cannot buy an attractive city; you and I can buy a car but we cannot buy an efficient highway; you and I can pay tuition for a son to go to college but we cannot buy an educational system. The public—in the small or large—buys these public goods: school systems, cities, suburbs, road systems, air pollution control systems, airways systems. Today an increasing share of your and my money is being spent for public goods. This is because we live closer together, and have become more interacting and interdependent than we ever were before.

How is this a philosophical problem? Well, it is a philosophical problem in the sense that it cannot be managed well without making some basic assumptions about the nature of things. This is soon demonstrated by trying to do without them.

For example, a man's comment on the above paragraph is almost certain to depend upon polarities of feeling—a spread of reactions toward which he is himself ambivalent. On Monday he may have to visit downtown Los Angeles and be led, as a result, to agree with Mr. Hollomon about cities. On Tuesday he may go to an area outlying Pasadena or Beverly Hills and feel better about living conditions.

But then on Wednesday a disturbance in Watts may make him ashamed of Tuesday's complacency. And on Thursday a rigid, fearful high school principal may bar this man's son from class because the boy won't have his hair cut. On balance, it must be admitted, Mr. Hollomon is right. Time and progress have changed our attitude toward the social environment, which is daily becoming uglier and more intrusive. Sartre's 1945 comment on American cities—in which, he said "everyone is free—not to criticize or reform their customs—but to flee them, to leave for the desert or another city"—is dated. It is becoming less and less possible to get away from it all. Whether as challenge or avenue of flight, "Go West, young man," has lost its promise and appeal. As Mr. Hollomon says, we "have become more interacting and interdependent than we ever were before."

An "engineering" term is useful here. In the intimacy with one another which technology and growing population have forced upon us, we are beginning to get a kind of *feedback* which people—Americans in particular—have been able to ignore for generations. We can no longer take flight from the quality of our lives as it is reflected in other people. We make only failing attempts at insulation and the feedback comes in stronger all the time. It is turning people into anarchists, nihilists, and John Birchers and producing various other insulating reactions to different kinds and different readings of the feedback.

So, generalizing from the human situation as described by Mr. Hollomon, we begin to see the outline of a metaphysics of human relations. If we can call this feedback from the social environment we have created—or allowed to develop—a form of natural critique which applies secondarily to our actions, but primarily to the attitudes which made the actions inevitable, then we have a metaphysic to consider and perhaps to improve.

There are various ways of formulating the problem which this metaphysic generalizes. Mr. Hollomon gave it an "individual-and-society" formulation. In his contribution to the Summer (1967) *American Scholar*, Joseph Wood Krutch discusses exactly the same situation from a more openly philosophical point of view. After talking about his enjoyment over many years of a "reasonably satisfactory" private life, and noting that the opportunity for privacy is now diminishing on every hand, Mr. Krutch says:

> I think that man is free to make those choices that can be made without reference to the way in which society is evolving but that neither he nor, perhaps, collective humanity can resist the tendency of society to be molded by processes man cannot control. When Emerson said that things are in the saddle and ride mankind, he did not mean that we must let them do so. But that is exactly what the

> Marxists do mean when they talk about society as the product of evolving technology, and I think that there is a good deal of truth in the contention. A Thoreau can go to Walden Pond and (as he said) refuse to live in the bustling nineteenth century. But he could not have prevented the nineteenth century from bustling. The paradox is somewhat like that of the unpredictable atom and the predictable behavior of any large aggregate of atoms. We can predict with considerable degree of accuracy how many people will go to the seashore on a day when the temperature reaches a certain point, even how many will jump off a bridge. And although I am not, nor are you, compelled to do either, the statistics show that the group considered as a whole—like a group of atoms in a physical object---must obey the laws it does not formulate. That is why I believe that, although man's individual potentialities are much greater than commonly assumed today, he will probably not realize most of them, at least in any near future.

To come to the realization that "we" or society is being "molded by processes man cannot control" is to enter what is potentially a "revolutionary situation." This means that freedom-loving, right-thinking people tend to get together, form discussion groups, unite in revolutionary cadres; that they evolve theories of control which they believe will have a better effect on human life, and attempt to establish new patterns of social organization. This, at any rate, is what the Marxists did. The main criticism made by other right-thinking people of what the Marxists did is that their revolution took away the options of people who thought otherwise, and severely narrowed the options of even those who agreed, with the result that the Marxist socialist states, whatever else they may have accomplished, can not be described as free societies.

One thing seems clear: You cannot successfully define freedom for large numbers of *other* people. And you cannot successfully enforce a particular form of freedom for other people without creating a *de facto* tyranny. This seems a fact of political experience. In his answer to the question, "What Has Science To Say to Man?", Mr. Hollomon seems to read the record of technological experience in the same way. The polycentric "value" definitions of technological progress produce a tyranny of impersonal intrusions, dislocations, pollutions, and anti-human conditions. We are now suffering this tyranny, and it is getting worse.

So, as in political revolution, once such facts become more or less evident, there is again the tendency for right-thinking people to get together and to decide what is the "right" thing to do. From the vantage-point of having defined the problem—which most other people do not even attempt—they feel able to judge.

Why should they feel qualified to judge? The question is ridiculous. *Of course* they can judge! They have drawn up a bill of particulars. Who can deny the reality of the evils they describe?

There is, however, a difference between recognizing symptoms and defining causes. There is a difference between being able to say what is wrong and being able to say what is right. What is wrong *hurts.* What is right doesn't hurt, and it is often invisible. Who can define health? The variables which support health are amazingly extensive and complex. What is wrong is seen as a series of separate, intolerable, but definable abuses, while what is right is holistic, even Taoistic—it is imperceptible and gets defined only in terms of its absence.

Right, then, is not the opposite of what is wrong. It only seems to be, because of the atomistic way in which we perceive wrong. So, while specific, particularized remedies may obliterate or mask some of the symptoms of ills, they don't make things right. Iatrogenically, they create new wrongs and problems.

There are of course differing categories of wrong. Specific wrongs or evils exist. A broken arm has a specific remedy; it needs to be set. But none of the more serious wrongs and evils of society are in this category, except on the surface. Mr. Hollomon sees this. He sees that the wrong lies in attitudes. He wants engineers to become humanists. He wants them to have holistic vision.

He wants them to have *health*—to stop producing endless other problems by attacking only specifically problems which have a non-specific origin in attitudes.

There is one massive objection to what Mr. Hollomon proposes. It is that if you talk about "attitudes" you are not doing anything *real. You* are wasting time preaching "education" and ignoring plain facts. Yet one is obliged to note that the people who make this objection are always people who are quite sure they are *right.* They may be quite right about their catalog of wrongs, but are they right about the essential origin of those wrongs, and how they can be corrected?

An editorial in the *Christian Science Monitor* for June 30 tells the story of Joe Sorrento, a man from Brooklyn who delivered the valedictory address this year as a graduate of the Harvard Law School. The story of Joe Sorrento is a model *Reader's Digest* epic. Joe was a "four-time highschool drop-out," the "leader of a street gang in a tough neighborhood," a youth who failed in one job after another, and a marine who rebelled so much against "authority" that he was given a general discharge. Drawing on Joe's valedictory address, which apparently was autobiographical, the *Monitor* reports:

> As he put it, his story wasn't "what the social scientists would have predicted." This former longshoreman, factory hand, cement worker, and what have you, decided to give up the beginnings of a professional boxing career "because a part of me would not accept it."
>
> It was at the age of 20 that he realized his "only chance for a better life was through education." For the fifth time he went back to high school. While hoisting steel during the day, he finished three years of high school at night. His grades warranted his acceptance at the University of California. There he was elected a student body president and graduated magna cum laude.
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> He re-enlisted in the marines, became a platoon leader, excelled in athletics, and changed his "general" to an "honorable" discharge. Then followed three years at Harvard Law School.
>
> He attributed the change simply to "a resolution from within." To the 15,000 in the audience at Harvard he said, "I come here today not just to tell my story, but to emphasize that in America such things are possible."

It doesn't seem likely that Joe Sorrento is going to recognize the relevance of revolutionary cadres—not just yet—and he may not be able to hear even the gentle voice of Mr. Hollomon for quite a while. Further, it doesn't seem likely that any group of right-thinking people will be able to take the marines away from Joe Sorrento. The marines were an instrument of his salvation.

The point is that individual salvation is a very choosy, individual affair. Righteous planners are notorious in their neglect of this fact.

And there are so many ways to be "right." Paul Goodman was right, for example, when he said at a conference at the Lower East Side Action Project (LEAP) conference:

> I feel we have a lot of kids here who have the same kind of garbage in their minds that any kid in Yale or Harvard has. They have the same ambitions, want to climb up the same way, and who needs it?

And the young "Movement" volunteers described by Dorothy Samuel in *Contemporary Issues* (Spring, 1965) were right, too:

> Even among the active, dedicated ones—SNCC workers and CORE demonstrators—there is little sense of hope. . . . "I know I'm not really changing the world any out there," one said to me in emotionless tones. "But at least I'm doing *something;* I am working with living human beings whose needs are clear and obvious. But whatever I accomplish, it won't change the greed and cruelty and lying and exploitation that run through our whole bomb-happy civilization." And another pointed out, "It's easy to bleed for the Negroes now. But I have the horrible certainty that, once they get a square deal in our society, most of them are going to play the game just as the whites have been playing it for years."

This view has a shallow echo in the remark of a hippy to Jack Newfield (which he reports in the *Nation* for June 26): "Civil rights is a game for squares. Why should I demonstrate to get the spades all the things I'm rejecting?" Mr. Newfield,

who is an editor of the *Village Voice*, might have discussed this a bit. How is the element of "rightness" in this remark related to the "rightness" to be found in Stokely Carmichael's explanation of what he means by "Black Power"? You can't really "reject" something that has been denied to you in the first place, and it may be snobbish to set standards for the "rejections" of other people. People have to speak and act for themselves. Politics is both for and against self-activity.

What accumulates from this slight sampling of different ways of feeling "right" is a very subjective view of the good society. And the trouble with subjective views of the good is that they give little comfort to the activist temperament and none at all to the makers of utopian blueprints. To take the subjective position in respect to human development is to have an excuse for doing nothing at all.

Yet the subjective view of human right and good is indispensable in any educational undertaking, such as Mr. Hollomon's demand for a humanistic outlook among engineers. Perhaps what is needed is a conception of being "right" which has the broadest possible base in the growth-potentials of human beings. The question must be asked: How many people will a given conception and program for the good society shut out? And: Can the plan still be called "good" if *any one* is shut out? At what point do you invoke the Utilitarian slogan? When do you qualify it with Ivan Karamazov's crucial humanist stand? To be "shut out," humanistically speaking, means to be allowed no role in terms of your own idea of the good.

So the problem is not really one of deciding what is "right." You can do this easily enough, but whenever you do, you have to divide up the population into groups who think differently about what is "right." This may be necessary in a truly revolutionary situation—or rather, it may be inevitable, which is different from being "necessary"—but after the revolution you will still have competing "righteous" ideas, which haven't been eliminated; they were only suppressed, and for a very short period of time.

The problem lies in creating a society which does not divide people into the righteous and the unrighteous, but establishes modes of thinking which permit and encourage people to move freely—or as freely as possible—from one level of being "right" to another—until, at last, they become wise enough not to be so certain about who is "right" and who is not. This is the humanistic attitude; it is the educational attitude; there is a sense in which it is the anarchist attitude. It won't work, of course, unless it has some muscle behind it—intellectual and moral muscle—developed out of the conviction that nothing else can really help the human race.

Where does the muscle come from, in relation to human attitudes? It comes from having a metaphysic—a profound conviction, that is, about the way things are. The modern tendency is to fight off metaphysical conviction, mainly because, historically, it has led to reactionary and dogmatic attitudes. But the historical metaphysical systems and theologies have almost always been based upon a view of what is "right," and systems of righteousness always degrade into systems of defensiveness and fear. What is "right" changes, while social systems modelled after righteous intellectual systems do not. They grow rigid instead, and have to be broken up by angry men. But what about a metaphysics based on *becoming* instead of righteousness—on attitudes instead of rules? Isn't this precisely the Humanist ideal?

REVIEW
ON "THE NATURE OF MAN"

THE Bobbs-Merrill "Dialogue" series (paperback) under the general editorship of Robert Theobald represents a new kind of publishing and deserves to be recognized as such. We have for review two books of the series, *Dialogue on Education* and *Dialogue on Technology*, both published this year ($1.25). The intent of the series is to raise questions, not provide answers, and these books are very effective in this. They also give uninhibited voice to the intelligent, articulate, balanced, and incredibly *direct* thinking of students and graduate students, which is vastly stimulating. What is important, of course, is not the youth of such writers, but the value of what they say. Their youth is only an incidental encouragement.

This space will be devoted to *Dialogue on Technology*, to which there are several contributors. The format is loose. First comes an introduction by Mr. Theobald, then something called "Dialogue-Focuser," which he also probably wrote. Next is the report of conversation among five men who are students, graduates, and teachers at Union Theological Seminary. These people are very bright—almost too bright—and they go a bit fast, but the reader need not hurry along with them; he can stop and argue. The remaining essays are remarkably good, especially the one by Edward McIrvine called "The Admiration of Technique," which is about the best thing on the computer revolution we have read. Jacob Landau of Pratt Institute is excellent on the split psyche of modern man. He writes on art and technology. Myron Bloy, of M.I.T., assembles essential issues and leads the reader to the threshold of important questions. Other papers by William R. Cozart, Richard Kean, and C. R. DeCarlo are also good.

We shall use this book for its announced purpose, which is to provoke comment and response.

It is pretty hard to keep the guaranteed annual income out of a book edited by Robert Theobald. So, in the Union students' dialogue, this subject is the central content, with the "work ethic" the bone of contention. Apparently, people are a little ashamed to admit that they "believe" in this ethic. A student, Albert Basler, said:

> . . . this summer when I was in a strange kind of job which was very unstructured and in which I was not expected to produce a thing, I felt guilty for not producing, although production, in whatever sense I might have defined it, was exactly that which I wasn't supposed to be doing. I feel this is an extremely ingrained kind of problem. It's not just a matter of getting the information and perceiving what we ought to do. We have to recognize that we are trapped in the old era both emotionally and subjectively. This subjective-objective dilemma is not going to be overcome rationally. The work ethic is part of me; and I see this as an extremely difficult thing to get free of.

A little later, a graduate student comments on "leisure":

> I think that meaningful vacation is not really possible unless one is pursuing, or has pursued over a long period of time, a meaningful vocation in life. Leisure does not really have a chance to become meaningful if man hasn't found what it is to really work hard at something. This is what I'm afraid is an old fashioned kind of belief. . . .

A faculty member objects, arguing that technology can now free men from drudgery, enabling them to choose what to do with their time: "All I ask is freedom for man who wants to do nothing but sit beside the stream and fish to be able to do that without being considered some kind of subhuman."

So the issue is squarely joined. To enlarge the context, we need a passage from the "Dialogue-Focuser" in the *Education* book, which reads:

> An increasingly heated debate is developing about the desirability of providing an adequate income to all in the rich countries as a matter of right. Although the argument is usually couched in terms of efficiency, it is actually an argument about the nature of man. Most of those making policy believe that

> man reacts to positive and negative sanctions; they therefore claim that the removal of the necessity to hold a job would limit incentives and reduce the willingness to work. Those advancing the concept of the guaranteed [annual] income believe that as man's basic economic needs are satisfied, he will strive toward self-actualization. They argue that it is the very inadequacy of present incomes which limits the drive of the individuals in poverty. In effect two views of man's nature clash. This should be made clear in any statement on this subject. Thus analysis about the guaranteed income should state: If one believes that man reacts to positive and negative sanctions, the guaranteed income is strongly counter-indicated because it would remove many present positive and negative sanctions. If one believes that man rises to challenge, the passage of the guaranteed income is extremely urgent, for it is the absence of an adequate income which prevents man from striving.

This doesn't, somehow, seem a fair statement of the issue; or, at least, it leaves out other alternative views. It seems to say something like this: If you are an old fuddy-duddy who believes in conditioning-and-response psychology and positive and negative "reinforcement" then you will of course not like our program, but if you know in your heart that Rousseau's reading of human nature was right, and Irving Babbitt's quite wrong, then you will recognize the human response to "challenge" as a natural law and join our movement.

Plainly, the "response to challenge" idea is better than John B. Watson. But Mr. Skinner, at least, is willing to test his theories in a Walden II, if he can ever get one started, while we know of no such plan for small-scale, pilot, Bellamy states or communities. The conditions under which human beings best "respond to challenge" are truly unknown, or at best problematic. Some people, at least, are challenged by mutilating, twisted-up environments—the hippies, for example, who manage in a curious, mooching way with no income at all.

How about a historical study of the response to challenge over, say, the past three or four hundred years? Offhand, we think that uniformities of condition will be hard to isolate. One popular assumption is, of course, that response to challenge in straitened circumstances is not the ideal situation, and should not therefore be made into a norm—but what circumstances *should* be made into a norm? Suppose response to challenge occurs under conditions which require essentially subjective definition? Just possibly, this whole argument errs in being concerned with the environment—when it ought to be concerned with the nature of man more searchingly than the Dialogue-Focuser passage quoted above finds necessary.

In his essay, "Technology and Theology," Myron Bloy says: "What we need in order to achieve our cultural maturity is a sense of purpose passionate enough to overcome the anti-normative tendencies of our time and use our freedom and awareness in behalf of man."

Let us accept this and ask what it means. It means, for one thing, that human beings are most successful when they are committed altruists. This potentiality, then, must be in all men. What assurance have we of this? Well, committed altruism has been a leading characteristic of the very great. It is a quality of the self-actualizing. What environment, then, is best for developing the capacity for self-actualization?

Without meaning to be light-hearted about this question, we are obliged to point out that A. H. Maslow, who has given more thought to it than most people, has written a book (*Eupsychian Management*) on the subject, in which he finds the "work" scene the most promising for universal education. He says at the beginning:

> I gave up long ago the possibility of improving the world or the whole human species via individual psychotherapy. This is impracticable. As a matter of fact it is impossible quantitatively. (Especially in view of the fact that so many people are not suited for individual psychotherapy.) Then I turned for my utopian purposes (eupsychian) to education as a way of reaching the whole human species. I then thought of the lessons from individual psychotherapy as essentially research data, the most important usefulness of which was application to the eupsychian

> improvement of educational institutions so that they could make people better en masse. Only recently has it dawned on me that as important as education, perhaps even more important, is the work life of the individual, since everybody works. If the lessons of psychology, of individual psychotherapy, of social psychology, etc., can be applied to man's economic life, then my hope is that this too can be given a eupsychian direction, thereby tending to influence in principle all human beings.

Interestingly enough, this was also Gandhi's idea of the most natural and effective field for growth (see his *Basic Education*, Navajivan Trust, Ahmedabad 14, India). Actually, the idea of "work" has been grossly coarsened to mean only economic enterprise, whereas, if the ideal man is a committed altruist, it means that every man has from his inmost being the longing to do "work" which increases the sum total of meaning, of realization, of value, in the universe. This is the Promethean motive, and, we would suggest, the root-longing which makes people cling to the "work ethic," even though they are embarrassed by the form it takes in our acquisitive society. The longing is too fundamental; they can't give it up.

Meanwhile, it seems wrong to assume a one-to-one relation between condemning our shallow version of the work ethic and proving the desirability of the guaranteed annual income. We may come to it, ready or not, of course; but this is not a philosophic justification. The economic elements in a man's life ought not to be thought of as the major determinants of his dignity; if they are, the dignity isn't worth very much. True dignity is not a thing that can be bought.

This is not, however, an argument against plenty and enough free time to do what you want to do. It is an argument against mistaking money and leisure time for something they are not. To make this mistake may be precisely what could defeat the alleged purposes of the guaranteed annual income. The Bellamy-like state will need Bellamylike men to live in it; how else can it avoid turning into Huxley's Brave New World or Orwell's 1984?

COMMENTARY
KNOW A PROGRAM BY ITS RISKS

IN a rather large book that has come in for review—*Enter Plato*, by Alvin W. Gouldner (Basic Books, $8.50)—the author, a social scientist, finds himself disconcertingly in the company of Kafka, who said that writing is "a form of prayer." Dr. Gouldner means that in this work, which is concerned with the origins of social theory, he was confronted by a task so formless and big that "his practiced professional skills and familiar techniques" were wholly inadequate. When this happens, he says, a man has to "swim down into the inky waters of the self," where he "comes at length to that unsettling knowledge that the quality of his work—if it is to be more than a routine performance—depends, not only on what he knows and certainly not on any mere tricks of his craft, but on what he *is."* Hence the parallel with Kafka's predicament:

> It is bad enough when a man has to put his skills up for inspection, but writing becomes a form of prayer when what he places on the line is himself. Yet not all prayers can be granted, and perhaps some are never heard. There is no avoiding this hazard, and, at any rate, this is the only way that I have learned: I have never believed that anything is worth working on unless I seriously risk compromising myself in doing it.

This is profound verity for the individual, and the reader will surely expect the work of such a man to be good. But what interests us here is the rule established, and how it might be applied in other areas. In the wide spectrum of social action from Machiavelli to Gandhi, what would be the changing values of obligated risk?

If a man has identified himself with a "program," to risk compromising himself is to risk compromising the program, too. Is a program that can afford such risks a program that has hope of getting somewhere?

Is there in this question nothing but hard and lonely choice—a choice between the "program" and placing yourself "on the line"? In other words, could there be a program in which the searching, risky integrity of which Dr. Gouldner speaks is the first principle of action, or would this be a contradiction in terms?

Institutionally speaking, it seems that the only place in which a program of this sort could exist is a school. But such a school would sow doubts, whereas a program which intends to "get somewhere" is supposed to sow confidence.

Socrates, however, who sowed many doubts, was not without confidence. But did he get anywhere? Was his "program" of the sort that you put aside when the time comes to accomplish great things? Socrates, it must be admitted, devoted all his energies to identifying destinations worth reaching and measuring what men account "great things." He never even started on a journey of his own—or so he said.

CHILDREN
. . . and Ourselves

THE BAUHAUS AND ITS EDUCATIONAL HERITAGE

THE idea of aesthetic education has been a rare phenomenon in the history of educational thought, but education as a predominantly æsthetic activity has been an even rarer occurrence in practice. Perhaps one of the clearest examples has been the German school of design called "the Bauhaus" which Herbert Read in *Art and Industry* called the "greatest experiment in æsthetic education yet undertaken."

In 1919, following World War I, Walter Gropius, a leading pioneer in modern architecture, was appointed as director of both the School of Arts and Crafts and the Weimar Academy of Art. Gropius amalgamated the two institutions under the name *Steatliches Bauhaus, Weimar* (State Building School). In staffing his school, he called leading artists working in diverse *avant garde* forms: Johannes Itten, Lyonel Feininger, and Gerhard Marcks in 1919, Paul Klee, George Muche, and Oskar Schlemmer in 1920, Wassily Kandinsky in 1922, and Laszlo Moholy-Nagy in 1923. Because of hostility to the new school at Weimar, it was moved to Dessau, under the name, *Bauhaus, Dessau*, in 1926, with Gropius continuing as director. Early in 1928, Gropius resigned, followed by some of the leading members of his staff. The years under his directorship, 1919-1928, are usually regarded as the most significant years in the school's history; the remaining years were a matter of compromise and unsuccessful struggle with the forces of political and cultural reaction that led to its eventual closing in Berlin in 1933.

Gropius founded the Banhaus with the specific objectives of realizing a modern architecture which was to be all-embracing in scope and within which was to be co-ordinated every branch of design and every form of technique related to building. In his first proclamation he wrote:

> *Architects, sculptors, painters, we must all turn to the crafts.* Art is not a "profession." There is no essential difference between the artist and the craftsman. The artist is an exalted craftsman. In rare moments of inspiration, moments beyond the control of his will, the grace of heaven may cause his work to blossom into art. *But proficiency in his craft is essential to every artist.* Therein lies the source of creative imagination. Let us create a *new guild of craftsmen*, without class distinctions which raise an arrogant barrier between the craftsman and artist. Together let us conceive and create new buildings of the future, which will embrace architecture *and* sculpture *and* painting in one unity and which will rise one day toward heaven from the hands of a million workers like the crystal symbol of a new faith.

Gropius thus set aside the conventional separation of "fine" and "applied" art and focussed on the concept of building for man's day-to-day existence. A curriculum and method were evolved and a philosophy articulated out of a creative interaction of teachers, students, and the new kinds of problems encountered. Leading modern artists like Klee and Kandinsky were brought into a congenial group where they found a confirmation of artistic aims which they had been pursuing in solitude. "When I came to be a teacher," said Klee, "I had to account explicitly for what I had been used to doing unconsciously." Other artists, particularly Moholy-Nagy, discovered a fulfillment in the tasks of teaching and dedicated their futures to the expansion of educational principles and the vision which they had found in their creative work in the arts. Students like Marcel Breuer and Herbert Bayer, working out individual problems in furniture design and typographical design with the approach of creative artists, not only became masters of their respective crafts and leaders in their fields of work but helped to change the nature of the Bauhaus curriculum, setting up new prototypes for professional training in design for industry and mass-society.

The Bauhaus curriculum viewed architecture and design as no more specialized fields but rather as an integral part of the stuff of life, necessary for everyone in a civilized society. Hence, the Banhaus training was a matter of general æsthetic education of the mind and the senses which eventually tended to focus upon some specialized field of study. At the foundation of this general education was a one-year preliminary course which introduced the student to the elements of design—such as proportion and scale, color, light and shade, texture and rhythm—and allowed him to pass through many kinds of experience with diverse tools and materials in order to discover ways of working in accord with his natural talents in terms of which he might later find secure footing for his artistic work. Such training planned to give the student confidence and to enhance his productiveness and speed in subsequent training.

Besides the exploratory exercises with diverse techniques and materials, the preliminary course inaugurated an intensive study of the "language of vision" which was continued through the later years of the course of study. This area of work, as it developed, included scientific study of perception combined with direct experience with systematic experiments with visual elements, and it resulted in the development of concepts for use with design problems.

The three years following the preliminary courses were spent in workshop training in the various crafts, on a modified apprenticeship basis, with each student entering the workshops of his choice. At Weimar there were workshops in carpentry, wall painting, weaving, stained glass, pottery, metal, and stage design. In each of these, the student worked under two masters, a handicraft master and a master of form (like Klee, Feininger or Kandinsky), with whom they worked to develop skills in both technique and design. When the Banhaus moved to Dessau, a new generation of teachers had been developed, including Bayer and Breuer, who could take over both functions, so that the separation between masters of technique and design became superfluous. The Dessau curriculum included the following workshops: furniture, metal, weaving, typography, wall painting, sculpture, and stage. Although in its original conception the culmination of the Banhaus training was to be in architecture, this aspect was severely limited because of monetary limitations. In the course of its short history the nature of training shifted from the training of skilled craftsmen to the training of designers producing prototypes for the mass production methods of industry.

San Francisco JOHN KEEL

(*To Be Continued*)

FRONTIERS

Entropy—Get Out of Town!

IF you could mutate a Walt Whitman into a vastly intuitive inventor, add a dash of Prometheus, and then fill this half-god with an all-engrossing vision of the beneficent potentialities of science and technology, instead of the national being of the United States, you might have something like an R. Buckminster Fuller. In any attempt to understand Fuller, it is necessary to "submit" to him, at least temporarily. His convictions have a twofold source. He speaks, first of all, with the unembarrassed certainty of a Sibylline Oracle, only he calls his oracle Design Science. Then there is a very real sense in which what he says is for him an articulation of Nature in a self-conscious state. This fits well enough with Fuller's philosophy. To take him seriously is to give him a hearing on this basis. Why not?

Fuller's prose poem, *No More Secondhand God* (and other writings), published this year in paperback ($2.25) by the Southern Illinois University Press, is an idiomatic declaration of Fuller's sense of the presence in nature and in himself of integrating, anti-entropic intelligence—the expression of which, he believes, is the role of all men. Fuller is a spontaneous pantheist and the role he describes is godlike. The customary way to speak of such men is to call them "prophetic." The word is weak if used simply to classify Mr. Fuller. It is as though Fuller had invoked the awareness men are becoming capable of in this age with the same intensity as Shelley when he said to the West Wind, "Make me thy lyre . . . Be thou me, impetuous one!

> Scatter, as from an unextinguished hearth
> Ashes and sparks, my words among mankind!

Fuller heralds an awakening through scientific inquiry to "the comprehensive, orderly, nonsimultaneously interaccommodative, integrity of the universe in which the energy of the physical portion of the universe is total and integral and though infinitely differentiable locally can neither be created nor lost and in which finitely combined physical and metaphysical universe a law of conservation of intellection will also obtain whereby intellect as the metaphysical portion of the universe will also be total and integral—and though infinitely differentiable locally intellect can neither be created nor lost." Then he says:

> Thus will emerge
> an entirely new philosophical era
> of man on earth.
>
> All religions we have known
> have been sustained
> by the arbitrarily adopted or inculcated credit
> (credo belief) of individuals who have not themselves
> made direct discovery,
> or unique intuitive apprehension
> of the universe's intellectual integrity
> superstitiously accorded
>
> by the blindfolded believers
> to the few individuals of high intellectual lucidity
> and extraordinary self-discipline
> who have dedicated themselves
> to their intuitive anticipation
> of the now scientifically emerging realization
> of the comprehensive integrity of total information.
>
> All organized religions of the past
> were inherently developed
> as beliefs and credits
> in "second hand" information.
>
> Therefore it will be an entirely new era
> when man finds himself confronted
> with direct experience
> with an obviously a priori
> intellectually anticipatory competence
> that has interordered
> all that he is discovering.
> With this discovering will vanish
> all concepts of a universe
> originating out of chaos,
> out of a "primordial ooze."

A second "poem" in this volume is called "Machine Tools," subtitled "Orchestral Instruments of America's Mass-Production Symphony."

It would be folly for any reviewer to tell his readers what to make of Fuller. What ought to be said is that any man really looking for grounds of

hope in relation to the wild energies of technology should bend with Fuller's Dionysian vocabulary and his mantic outbursts long enough to discover that every word he uses has a precise meaning, and that all his meanings are carefully deliberated and related to a core intent. In speaking of Whitman, we do not mean to suggest that Fuller is a great poet. He is rather a great man who composes dithyrambs from an inner necessity to give his thoughts the kind of embodiment their content seems to him to require. The only "prose" in this book is the last section, called "Omnidirectional Halo," which embodies Fuller's epistemology. Readers whose "mathematical intuition" is only rudimentary will have some trouble here, but there are parts which anyone can understand and which invite speculation about how "peak experiences" fit into Fuller's scheme. It should be added, for those ignorant of Fuller's achievements in applied science, that he is an enormously practical man whose inventions *work.* The geodesic domes which seem to be going up everywhere, these days, are a kind of monument to the validity of his epistemology.

The Preface to *No More Secondhand God* ends with these words:

> The most poetical experiences of my life have been those moments of conceptual comprehension of a few of the extraordinary generalized principles and their complex interactions which are apparently employed in the governance of universal evolution. It is an intuitive realization of the indescribable magnificence and exquisite lucidity of the intellect, conceiving and inventing these entirely and only intellectually discernible principles, which generates the sublimity of those poetical moments of man's fleeting glimpses of the omniscient-omnipotence manifest in the universal interactions of purely intellectual principle.

As a sidelight on what may be involved in any kind of encounter with Buckminster Fuller, a passage from the beginning of Calvin Tomkins' excellent *New Yorker* (Jan. 8, 1966) profile may help the reader to prepare himself with sufficient daring. When Fuller was in New Zealand in 1965 he visited with an anthropologist friend who happened to be also the Keeper of the Chants of the Maoris. As these chants go back for more than fifty generations and are an oral history of the Maori people, Fuller said that they ought to be taped. The anthropologist said that ancient tradition required him to repeat the chants only to fellow-Maoris. Then, as Mr. Tomkins says:

> Fuller thereupon launched into an extensive monologue. It was buttressed at every point by seemingly irrefutable data on tides, prevailing winds, boat design, mathematics, archaeology, architecture, and religion, and the gist of it was that the Maoris had been among the first peoples to discover the principles of celestial navigation, that they had found a way of sailing around the world from their base in the South Seas and that they had done so a long, long time before any such voyages were commonly believed to have been made—at least ten thousand years ago, in fact. In conclusion, Fuller explained, with a straight face, that he himself had been a Maori, a few generations before the earliest chant, and that he had sailed off into the seas one day, lacking the navigational lore that gradually worked its way into the chants, and had been unable to find his way back, so that he had a personal interest in seeing that the chants got recorded. We have Fuller's assurance that the anthropologist is now engaged in recording all the chants, together with their English translations.

Compulsively critical note on *No More Secondhand God:* the proofreader of this book needs instruction in the difference between complimentary and complementary, and between discreet and discrete. And the name of the mathematician. Brouwer. is not spelled Brower.