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# THE TROUBLE WITH INSTITUTIONS

YOU don't really have to make a "study" or gather a lot of data to find out what is wrong with institutions—the evidence keeps coming in all the time. Take the form letter which arrived this morning from one of the better American magazines—a "class" magazine, the trade calls it. At any rate, its writers are seriously concerned with contributing to the decencies and integrities of culture in the United States. But this letter is subversive of all the magazine is supposed to stand for. It starts out:

> "Wouldn't it be wonderful if you could give one of your special friends a Christmas gift that would be subtly flattering, reflect your own good taste, be certain to please—and cost only $4.95?"

It's enough to make you cancel your own subscription. For only $4.95, you, too, can practice the devious art of the sophist, no previous training required. The circulation manager tells you how. But it seems obvious that if you take him up, you haven't *got* any good taste, so how could your gift "reflect" it? After all, what sort of person is interested in becoming "subtly flattering"? You wonder if the magazine is put out by Dale Carnegie. And what kind of tepid, timid, insecure people do they think these letters reach? Surely not the readers of what you like to believe is a fine magazine.

Well, it's just the circulation department doing its thing. But no good contributor to the pure reading matter of this magazine would do such a thing. He'd know better. Probably the circulation department doesn't know any better. Maybe it shouldn't, since the paper has to *survive*.

The best you can say about this situation is that it is a typical example of the generally accepted schizophrenia you find when you start examining institutions. A schizophrenic is a man with a split psyche. One part of his "mind" makes no sense to the other part. Somehow, the two parts get along; they have to, being hitched to the same physiological organism; but there's no collaboration between them, no rational unity. Sometimes one part has charge, then the other part takes over. They operate in different schemes of meaning, and when they come into conflict the man they inhabit feels pain.

Unfortunately, when this conflict is projected to the institutional level, the pain seems to go away. This is because the different parts negotiate or inherit a contract to tolerate each other. No lobotomy is needed. The party of the first part says to the party of the second part: "I'll keep our ideals untarnished, you make the money, and then we'll split. That way we'll both survive."

Many years ago a MANAS contributor worked for a large metropolitan newspaper. It was quite successful and grew rapidly by mergers with less fortunate journalistic enterprises. On this paper, in those days, they kept the editorial writers in little glass boxes. These men, who had charge of ethics and morals, were supposed to stay in their boxes and use their excellent principles for comment on the condition the world, the country, and the city were in. They meant what they said and their writing had a lot of zing. Meanwhile the paper was making money and the publishers were paying it out to the stockholders. That's what the stockholders required of the publishers—to make and save money for them. One day this successful, progressive organization saved money by firing a man who had spent over forty years of his life helping to build one of the finest newspapers ever published in the United States, He had grown old, of course, and was no longer doing a job of any importance—he had charge of the morgue. So, to save a few dollars a week they gave his job to a fourteen-year-old boy. Anybody can file clippings, they said.

The editorial writers never got the word about what happened to the old man. They were in their glass boxes really going to town on matters of public interest. It was a great liberal newspaper in those days. (It isn't any more.)

Of course, you couldn't have the editorial men running a *business.* They can write, and all that, but you have to be tough to keep afloat in a competitive world. Yet a robber baron would probably have figured out a way to keep the old man. Or a Kentucky colonel. The Kentucky colonels didn't sell their old horses to a glue factory. They found a bit of pasture for them until they died.

About twenty years ago in Los Angeles there was a meeting of people interested in spreading the word that great ideas are found in books—the best books available. The claim is true and the interest laudable. As we recall, the meeting was held in the Shrine auditorium, although offhand you wouldn't think there'd be that many people in the Los Angeles area who care about books. It was an "organization" meeting of discussion leaders and other interested parties, and it got under way by playing a record of a good and wise man's voice—a man who loved good books, and knew what was in them, starting with Plato. Then somebody got up on the platform and began to make money raising sounds. When an amateur, would-be Socrates asked what was *going on,* he was told: "There are people out there in the audience with a lot of money and we are going to *get* some of it. We *need* it."

So this very junior Socrates went home wondering whose picture to turn face to the wall. He just couldn't imagine Plato up there on the platform, playing the voice of old Socrates and then asking for contributions to make that voice really immortal.

Why not? Didn't Bruce Barton of BBD&O put Jesus over back in the days when Madison Avenue was learning its ABC's? It worked, didn't it? Did it? Well, it seemed a good idea at the time.

The Gospel according to Madison Avenue is based on the Law of the Conditioned Reflex. Applied to society this law maintains that people can be made good by conditioning them with Christian attitudes and beliefs. A judicious use of anxiety also helps—you suggest, for example, that it is hard to be a Man of Distinction without being Christian. How do you become Christian? Well, the easiest way of becoming known as a Christian is to be seen going to church. Nearly all the presidents of the United States have found this advisable. George Washington, of course, being the first president and inexperienced, stopped going when the preacher addressed him a little too personally one Sunday morning. He just acted the way he felt, and you can't really get ahead that way.

We know, now, that the image is the thing. You are moving on to the good life, for example, if other people think you have "good taste," and anyone you can "subtly flatter" is likely to have a nice image of you. Getting good images of yourself—*and* your business—*and* your country—circulated around is the way you grow into a fine, acceptable, human being. And it all goes back to the conditioned reflex. This is the effortless way, the American way, to grow. Not just in business, but in everything, you can succeed without really trying.

Believing this now seems to be pretty basic for many people. It is not quite what Ortega calls "binding observance"—so universally practiced that if you don't do it you get pressure from all sides—but it has certainly become an acceptable idea. Joseph Wood Krutch noticed this back in 1954 and observed:

> Some of our liberal leaders have an unfortunate habit of falling in with the current formulas without, perhaps, really accepting them. Mayor Joseph Clark of Philadelphia has an excellent record as a liberal. Yet he recently permitted himself to justify his hope for the future by remarking that in our schools and universities "Youth is *conditioned* (italics mine) to respond to a liberal program of orderly policing of society by Government, subject to popular will, in the interests of social justice."
>
> Now I am not objecting to "the orderly policing of society." But I *am* objecting to the fact that Mayor Clark permitted himself to speak as though he didn't pin his faith on education in any sense of that term compatible with a democratic society, but upon exactly what the totalitarians rely on. I repeat that I do not believe that he really accepts this philosophy. Probably what he meant to say was that school and college students are being—or should be—led to *think* about policing, about what kind and what extent of policing is necessary or desirable. But what he says is that they are being "conditioned" to respond to a liberal program. Yet he might agree with me that any program ceases to be "liberal" at the very moment

when it becomes acceptable because we have been "conditioned to accept it."

Maybe about now we ought to deal with a practical objection, which goes like this: "But surely Mr. Krutch can't be suggesting that the conditioned reflex is not real! It's there to be used, isn't it? And why not use it for the *good* of everybody?"

We'll have to admit that the autonomic nervous system is a great thing, and that we'd hardly survive without it. Training its mechanisms to quarterback common-sense behavior and signal for good manners reserves a lot of awareness for more important decisions. The conditioned reflex has its value with babies and animals, and it probably saves a great many lives on the highway, once the sign-symbol meanings are registered. But if you use it to settle questions about good and evil, the true religion, the right political system, and whom to vote for or shout *Heil* to, there just won't be any human beings around any more. How can we say this? Because people won't have minds, any more. Their minds will all have been sucked down into the autonomic nervous system, which is running things without fuss or bother.

It's no real problem to get the right man elected to office, these days. You just dehumanize the electorate. And everybody knows that survival in business depends upon using the conditioned reflex to sell more goods and that prosperity depends on treating human beings like animals. After all, the science of psychology is largely based on the study of animals.

This is an only mildly exaggerated account of the common institutional arrangements some people make to get other people, the great majority, to behave in certain ways—"good" ways, they explain if you question them, or profitable ways, if stockholders or politicians ask them. The thing that is never explained, however, is the incredible egotism which makes the managers of these various institutional enterprises truly confident that they know what all these people ought to do. And they do believe it. They believe it in various ways, as people have believed in their own righteousness all through history. They believe in themselves like kings with Divine Right, like Calvinists with the Institutes to back them up, like fiddling Neros or White Sahibs or Southern Massas. Such beliefs come quite easily in an institutionalized society. The institutions can be changed around but it doesn't have much effect on the capacity for belief. Even if you change the institutions radically, there will still be the habit of deciding what to do with and about other people. It's the institutional way. Some nations, for example, need to be cast as "buffers." Stalin understood this quite clearly. As he once wrote to President Truman:

> The question of Poland has the same meaning for the Soviet Union as the question of Belgium and Greece for the security of Great Britain. . . . I do not know whether there has been established in Greece a truly representative government and whether the government in Belgium is truly democratic. The Soviet Union was not consulted when these governments were established. The Soviet Union did not lay claim to interference in these affairs as it understands the whole importance of Belgium and Greece for the security of Great Britain.

Kind of like Vietnam is for us, you could say. And it's a good thing Russia was being run by a man qualified to recognize a "truly democratic" government when he saw one, just as we were able to watch over the South Vietnam elections last September and tell everybody they were okay.

It all seems so natural, so "run of the mill," you can hardly blame anyone at all for believing in the institutions that have charge of his conditioned reflexes. What else can he do?

These things could go on forever, and probably would, if it weren't for the delayed feedback that people get from their schizophrenic institutions. Actually, conditioned reflexes don't have total control of human beings; they just control the sub-human side, and when it becomes impossible to hide the large-scale effects of institutional schizophrenia—what we are doing in the name of profits, survival, and winning elections—the picture gets pretty horrible.

This is the place for diagnosis in depth. We take it from Ortega's *Man and Crisis:*

> If I allow things around me or the opinions of others to influence me, I cease to be myself and I suffer otherness, alteration, confusion. The man in a state of otherness, outside himself, has lost his genuine character and lives a false life.
>
> Very often our life is that and nothing else—a falsification of itself, a supplanting of itself with something else. A great proportion of the thoughts with which we live are not thought out by us with the evidence in hand. With some shame we recognize that the greater part of the things we say we do not understand very well, and if we ask ourselves why we say them, why we think them, we will observe that we say them only for this reason: that we have heard them said, that other people say them. We have never tried to rethink them on our own account, or to find evidence for them. On the contrary, the reason we do not think about them is not that they are evident to us, but that other people say them. We have abandoned ourselves to other people and we live in a state of otherness, constantly deceiving and defrauding ourselves. . . .
>
> My opinions consist in repeating what I hear others say. But who is that "other," those "others," to whom I entrust the task of being me? Oh—no specific person! Who is it that says that "they say"? Who is the responsible subject of that social saying, the impersonal subject of "they say"? Ah—people! And "people" is not this person or that person—"people" is always someone else, not exactly this one or that one—it is the pure "other," the one who is nobody. "People" is an irresponsible "I," the "I" of society, the social "I." When I live my life on what "they say" and fill my life with it, I have replaced the I which I myself am in solitude with the mass "I"—I have made myself "people."

A little later, Ortega speaks of what this man so disowned by himself—so "alienated" by emasculating institutions—must do:

> . . . the man who is too cultivated and socialized, who is living on top of a culture which has already become false, is in urgent need of another culture, that is to say a culture which is genuine. But this can only start in the sincere and naked depths of his own personal self. Therefore he must go back to make contact with himself. But this cultivated self, the culture which he has received from without, and which is now decrepit and devoid of evidence, prevents him from doing this. That which seems so simple—to be one's self—becomes a terrible problem. Thanks to culture, man has gotten away from himself, separated himself from himself; culture intervenes between the real world and his real person. So he has no course other than to rise up against that culture, to shake himself free of it, to rid himself of it, to retreat from it, so that he may once more face the universe in the live flesh and return to living in very truth. Hence those periods of a "return to nature," that is to say, to what is natural in man, in contrast to what is cultivated or cultured in him.

In this passage Ortega happens to be talking about the Renaissance, but it doesn't matter. He has thrown some light on the trouble with institutions. Institutions give impressive authority to what "other people" say. First they make you dependent on them and after that they tell you what to believe. And then people who know what's practical explain that you *have* to believe it.

But what *are* they, in themselves? They are the imperfect social organisms evolved by beings who know that good and evil exist but have a hard time distinguishing between the two. We say, in a bad time like this, that institutions aren't "natural." But they are. They're natural enough for beings who have dual natures and experience in themselves the moral struggle. A good institution—and we can't do without them—gives some order and objectivity to this struggle, so that people can see a little more clearly in making up their minds. A bad one pretends that the struggle is over, the decisions all made, and everything under control. Bad institutions raise the amount of evil in the world to the *nth* power.

Bad institutions, when they get as strong as the ones we have today, make, as Ortega says, "a terrible problem." He also describes the only way to meet this problem—by going back into "the sincere and naked depths" of yourself. A man has to "return to living in very truth." This, too, is very difficult, but only because it is so hard to accept the fact that institutions can never tell us how to do it.

# *REVIEW*
## SEARCH FOR ROOTS

THE practice of the Dialectic, more or less according to Plato, is now going on in various fields of specialized activity. This claim, far from being merely wishful, can be supported by a definition in Robert E. Cushman's book, *Therapeia:*

> Dialectic . . . is the art of inquiry rather than of demonstration. It is a method calculated not so much to enforce a thesis as to discover one. It does not derive consequences from postulates; its business is to authenticate postulates.

Many of the serious scholars and professionals of today are in their own way engaged in just such a quest. Whether you read Polanyi or Bronowski or Maslow, it soon becomes plain that these men are looking for first principles. On *what,* for example, can scientific investigation be said to be based? If this question can be answered, reliable judgments can be made about the value and application of scientific knowledge. More general inquiries of this sort are reaching print in books such as Braziller's recent Vision + Value series, edited by Gyorgy Kepes, containing the reflections and speculations of eminent men in science, technology, and the arts. Essentially, these books represent a conscious search for roots and reflect a strong philosophizing tendency.

It comes as no surprise, therefore, to find a wondering architect imbued with the spirit of Frank Lloyd Wright following his designer's instinct and going "back to nature" in quest of primary conceptions of dwellings. In an unpublished paper by a man who combed Thoreau for expressions about architecture there is this keynote found in *Walden:* "What reasonable man ever supposed that ornaments were something outward and in the skin merely—that the tortoise got its spotted shell, or the shell-fish its mother of pearl tints?" As though planning a text for designers who would not be born for almost a century, Thoreau dreamed of buildings which have "gradually grown from within outward, out of the necessities of the indweller, who is the only builder." Like some others of his time, Thoreau felt that imitations of European tradition would ignore the opportunity given to men of the new world to evolve their own forms. He thought that the principles of American architecture should be sought in the habitations of the Indians, the huts of loggers, and the houses of the poor, but most of all in nature. A man's home, he believed, should provide "a sort of lower heaven over one's head." He did not want to live in a place that was "within doors,'" but only "behind a door," and there would be—"No yard! but unfenced nature reaching up to your very sills."

Purest of the pure among nature-lovers, Thoreau had no sooner expressed himself concerning architecture than he abandoned the project and decided that at best a house is a kind of "hospital," a place where a man suffers the ills of civilization, and if he would really be sane, he must return to the world of nature. Impatient of even majestic monuments, he exclaimed: "How much more admirable the Bhagvat-Geeta than all the ruins of the East!"

Perhaps we ought not to complain of Thoreau's cavalier attitude, since we owe him for maxims which lost nothing in value by not being carried out by their originator. Thoreau's main contention, for example, that buildings should reflect the life functions of the people who live in them, has striking confirmation in a recent volume, *Architecture without Architects,* which is filled with wonderful design solutions worked out by generation after generation of human beings who "evolved" the patterns of their dwellings. And as for the idea of having Nature come right up to your sills—the most advanced conceptions of urban planning, today, include almost total respect for the natural landscape. In some cases homes are put underground, so that the world of nature has deliberated support and preservation from human beings.

For the typical "decoration" of the homes of his time, Thoreau felt only outrage: "I wonder that the floor does not give way under the visitor while he is admiring the geegaws upon the mantelpiece, and let him through into the cellar, to some solid and honest though earthly foundation." The term "honest," let us note, has become the cliché of the modern craftsman, who gives it somewhat the same meaning as Thoreau. Thoreau also makes this comment, announcing both the ideal and the moral defeat of the modern architect-dreamer: "Before we can adorn our houses with beautiful objects the walls must be stripped . . . and beautiful living be laid for a foundation." But beautiful living is not to be learned in buildings: "Now, a taste for the beautiful is most cultivated out of doors where there is no house and no house keeper."

Thoreau allows no friendly compromises with the *mores* of his neighbors. His patience is short, his vision cramped by any circumstances created by man. One could argue that Thoreau was so sustained by the Platonic archetypes he saw in Nature that he could not bear to settle for anything less. He rendered his mite to Caesar, but he would not diminish his ideals because he couldn't practice them all. Live, he might have said, in houses if you must, but don't claim the true and beautiful for your compromises. Don't found an *æsthetic* on them. Keep your vision pure, and your houses may then be at least tolerable. Too bad you need them.

Thoreau's insistence that design should evolve from within was for him a kind of aside, but early in this century this idea became the intuitively derived credo of the Bauhaus—the school established by Walter Gropius in Germany in 1919. The Bauhaus brought a virtual revolution in architecture and practically created the profession of industrial design. (Three articles on the Bauhaus were contributed by John Keel to "Children . . . and Ourselves" in MANAS for Aug. 2, 9, and 16.) The men who gave the Bauhaus its original inspiration were partly children of their time, but this, you could say, enabled them to adapt the "organic" rule or principle to the problems of an industrial age. What would have been a dreadful thought for Thoreau was for Le Corbusier a vivid conception of form following function. A house, he said, is "a machine for living." Through men of the Bauhaus persuasion, a new kind of austerity was born for both architects and designers. The slap of glistening pistons, the streamlining of aircraft, the precision of the lathe and the might of the drop hammer became once-removed principles of "natural" function, and a conception of "honesty" in relation to mechanical processes began to pervade the designs for industry. The stark, cold appearance of early Bauhaus creations embodies the travail of artists at work in a new medium. And if a generation had to pass before an ameliorating grace and even elegance were permitted to "grow" into the forms of industrial design, a certain mature "organicism" now has wide expression in this field.

The basic difficulty, of course, remains, and is still as Thoreau defined it. Men must learn to live beautiful lives if their surroundings are to reflect an authentic beauty. A beautiful home occupied by a man whose only contribution is the money he paid for it, tends to grow ugly. Something like this might also be said about the jet bomber which is merely "exercising" over our heads here at home, but bears death and mutilation in its shining thorax when it goes abroad. Can machines for killing be "beautiful"? Their very shapes seem more lethal as "function" is improved.

Perhaps we ought to be more thankful that purists like Thoreau visit us from time to time, even though they don't stay very long. Actually, some of his other ideas, once regarded as quite wild, are becoming more practicable year by year, and even day by day.

# *COMMENTARY*
## IDENTITY CRISIS

A GREAT deal is being written, today, about what is wrong with our institutions of higher education. They are too big, it is said. They can't adapt themselves to change. They are transmitting the skills of specialists in the jargon of professionals, not the essences of civilization. Marilyn Noble, a graduate student on the Davis Campus of the University of California, wonders "about how much longer the academic institution can continue to disenchant and alienate many of its potentially most brilliant members without, itself, suffering in quality, and about how much longer it believes it can just 'sit' on its great majority of students who are increasingly tripping out on it in every way they can." She continues:

> The option of "turning on, tuning in, and dropping out" is a very real one. Academia cannot afford not to recognize it if there is to be any, even tenuous, communication between the students and the rest of the academic world. The "new" student will no longer fight his battles in traditional ways. The Yellow Submarine notwithstanding (that is, the coalition of the hippies and the "politicos" during the December, 1966, strike at Berkeley), the hippies and their cohorts of less colorful plumage are simply not going to play in a sandbox when it s someone else's sand and someone else's game.
>
> For those of us who still hang tenaciously to the idea that we can find relevance, work changes, with*in* the structure, the question looms—just how? Most students seem to think that it is not possible. If they are right, and they may just be, then the university in America is sicker than even its most severe critics claim.

This diagnosis sounds about right, although a lot depends upon what you seriously *expect* of higher education. The first great surprise of the growing child is the discovery that his parents are not infallible. The second surprise—although now a poorly kept secret—is that the college or university will not introduce the student to people who really know and want to teach.

In the Autumn *American Scholar* (from which the above quotation was taken), last year's president of the National Student Association, W. Eugene Groves, asks, "Who's Having the Identity Crisis: Businessmen or Students?" He might have asked the same question about students and universities. To put the matter in a childishly simple way, the university has lost all track of the "Why" questions and is now furiously devoting itself to ever-expanding answers to the "How" questions. For a great many students, the result seems much ado about nothing.

So there are all these inner and outer emigrations. The university is another god that failed.

Quite possibly, the university will not be able to teach much of anything until, like Œdipus, it discovers that it has slain its father and accepts that it is blind. Only then, as we recall, did Œdipus find access to wisdom and people begin to listen to what he had to say.

There is one fundamental truth about a genuine emigration whose time has come: It can't be stopped. Fathers may rage and mothers may mourn, but the young will continue to go on expeditions. There is really nothing else for them to do. They are like the Brownists when they made up their mind to leave England. They may now be at the Low Country stage of their emigration.

But where is the New World? The half-hearted invitations to youth to get an education and then make a new world out of the old one have very few takers. The young who accept seldom seem like people who are planning anything new. And the tools available at the university don't lend themselves to the task. As Miss Noble says:

> The university, on the whole, fails to encourage its students to commit themselves to *self*-motivated intellectual exploration. This failure is connected with the general academic rejection of the rapidly expanding perceptual framework within which the young are viewing their world. There will, perhaps,

> be only a few students who flatly refuse to participate in the Pavlovian experiment demanded of them. But there will be many more who may, unconsciously, blunt their own analytical tools to the extent that they can no longer perceive that they are participating in futile and meaningless exercises; they will lose their inherent abilities in order to achieve institutional approval. Either way, whether they totally refuse to perform within the academic regulations or whether they comply only superficially, students lose the opportunity to develop their own intellects within disciplined frameworks, and becoming disillusioned with the school's version of intellectual discipline, they often conclude that all such regulation is worthless.

Evidently, the New World is going to have to be made out of the personal resolve of the people who will live in it. They are going to have to *create* it out of whatever they find lying around. When they have really stopped expecting much of anything from anybody, or any big institution, the identity crisis will be over and they will be able to use with ingenuity what *is* lying around. These materials will probably look much more useful to them, then.

# CHILDREN
## . . . and Ourselves

CHILDREN'S CRUSADE

FROM time to time a reader asks why we do not discuss the activities of the Hippy Generation. The best explanation we have is that Hippies are not adults. They are "embryo" adults. They have not yet made up their minds about a lot of things. And they know far more about what they are "rejecting" than what they are accepting. How can you discuss with any benefit something which has not yet revealed how it is going to "come out"? Some people see the hippies as ugly ducklings. They see themselves as potential swans. To find out who is right, you have to wait.

What is generally known, or thought to be known, about the Hippies is largely a product of journalism—not very responsible journalism. The descent of the hordes of teenyboppers on San Francisco earlier this year resulted mainly from widely circulated sensational and romantic images in the press, both commercial and "underground," so that the young, while responding to vague longings in themselves, were also attempting to live up to "images" they had read about. All of what they do by no means comes out of the depths of themselves. But some of it, the good part, does.

The climax of the San Francisco episode of youthful revolt and quest makes you think of the Children's Crusade, which has been given this brief description:

> Fifty thousand boys and girls were persuaded by some pestilent dreamers that their childish innocence would effect what their immoral fathers had failed to accomplish, and so they left their homes on an expedition to capture the Holy Land.

Many parents have regarded the whole affair as a kind of epidemic of psychological influenza. They feel betrayed. When J. B. Priestley explains that the real "lost souls don't wear their hair long and play guitars," but are much more likely to "have crew cuts, trained minds, sign on for research in biological warfare," they are only bewildered by what he says.

What are these young people rejecting? Well, there are many ways to get at this, but the following by André Gorz describes its external face:

> Economic, cultural, and social development are not oriented toward the development of human beings and the satisfaction of their social needs as a priority, but *first* toward the creation of those articles which can be sold with the maximum profit regardless of their utility or lack of utility. . . . The social processes, instead of being dominated and governed by human society, dominate *it*; they appear as "accidental" social results of private decisions and they proliferate anarchically: dormitory-cities, urban congestion, internal migrations, various kinds of misery and luxury. [Society] endeavors with all its ingenuity to offer individuals ever-new means of evading this intolerable social reality; and the implementation on a grand scale of these means of escape (automobiles, private houses, camping, passive leisure) thereby creates a new anarchic process, new miseries, inverted priorities, and new alienation. . . . it aims at no civilization of social existence, and of socials relationships, no culture of social individuals, but only a civilization of individual consumption. Simultaneously, the homogeneity and the stereotypes of individual consumption created by the oligopolies produce this particular social individual whose social nature appears to him accidental and alien.

This is a diagnosis in "social" language, accurate enough, as far as it goes. But why, one may ask, are the young so terribly *vulnerable* to siren appeals? The answer may be that they've been softened up in their heads by systematic psychological invasion. *"It's easy to put a yen in a youngster,"* an advertising agency boasted a few years ago, explaining how endless appetites can be cultivated in children. Another agency asked: "What is it worth to a manufacturer who can close in on this juvenile audience and continue to sell it under controlled conditions, year after year, right up to its attainment of adulthood and full-fledged buyer status?" No one suspected that the objects of this attention might get sick of it all—and that things would then go out of control. Who would think of predicting that the young might begin to

respond to another kind of Pied Piper—that "Drop out, turn on, tune in," would become the magic words? The fact is that these children have been humming commercials for years. (No wonder they find Bob Dylan and Donovan a big improvement.)

But this is only the shabby side of the story. There is some kind of a Holy Land to be sought by all human beings, and the youngsters are not wrong in deciding that it's very hard to find if you stay at home. What nobody has told them is that it's very hard to find no matter where you go. Whatever you say, it sounds like another commercial to them. How many parents really know any better tunes?

Meanwhile, there is agonizing longing abroad in the land, just as there was in the beginning of the thirteenth century. And these children who set out on their crusade, expecting by some miracle to do "what their immoral fathers had fai1ed to accomplish"—should they be "stopped"? Actually, there is a lot less likelihood that they will get drowned or sold into slavery, today—which is what happened to the adolescents who went on the Children's Crusade. They know, at least, that the Holy Land is not a piece of real estate or a country that has to be taken away from somebody else.

The same intuitive rejections of the crassly commercial culture of the present are expressed differently by different members of the younger generation. In those with some personal discipline and high scholastic attainment it is coming out as a refusal to prepare for "business" as a line of work—a tendency so widespread that it is the uniform experience of large corporations seeking to recruit future employees. By many more, the war in Vietnam is seen as a particularly obscene example of the loss and betrayal of American ideals. These attitudes are not just "opinions" which have gained momentary popularity with the young. They have behind them a powerful logic which finds expression in dozens of the articulate young—in Mario Savio's "An End to History," in the Port Huron statement of the New Left, in the expressions of graduate students like Richard Kean. There is also the driving energy of what has become a "crowd emotion," whipped to fever pitch by revulsion combined with the emergencies of the times. "Crowd emotion" has strong immunity to outside interference and obtains internal validation from desperate feelings. "Don't trust anyone over thirty" is the reply of the crowd emotion of the young to the stereotypes of the middle-aged. Actually, if we could subtract the phenomena of crowd psychology from the present confrontation between the generations, there might be hope of useful, generalizing discussion of the longings, the genuineness, the unaffected tenderness and insistence upon being "natural" which gave the so-called Hippy movement its initial strength and enormous moral appeal.

We have heard the sad story of its vulgarization and exploitation, and have been instructed concerning its sordid trail of social disease, drugs, and psychic disorder. The other qualities are still there, and so are the human depths from which they come. But as we said, we are talking about an "embryo" condition. On balance, there may be more to hope for than to worry about, although the casualty rate is tragically real.

# *FRONTIERS*

## The Scientific Activity

THE questions, What is Science? What is Art?, while not as formidable as What is Truth?, participate in a common quality—shown by noting that no matter what is said in answer to any one of them, it is always possible to say something more, to add a further explanation. The implications of these questions, in short, cannot be exhausted. They are "open system" questions, to which "closed system" answers will be either misleading or even spurious.

The best we can hope for, then, on these matters, is the suggestive analogue, the conditioned symbol, or an image which assists only by openly confessing its inadequacy.

The nailed down, boxed, and neatly labelled definition has its uses, but not in respect to man or his basic undertakings. The hope of applying such finalities to human beings is almost certainly a form of what Freud called the "death wish," since, as a great many writers have pointed out, they have the practical effect of suppressing the incommensurable qualities which give man his distinguishing reality. A recent study along these lines is *Post-Historic Man* by Roderick Seidenberg. Another is J. Bronowski's paper in the *American Scholar* for the Spring of 1966.

The question of what science "is" is of course one that teachers of science must wrestle with, even if they cannot settle it. A final answer would imply certainty in a theory of knowledge, and neither the scientist nor anyone else is ready for this. There are, however, useful things to be said about the study and practice of science. Some of these are illustrated in *Antioch Notes* for October, in a brief essay by Albert B. Stewart.

As a teacher of physics Prof. Stewart is concerned with the design of science courses which avoid the division of students into those who intend to become scientists and those who do not. Why, he asks, shouldn't all students learn something of what it means to be active in a scientific inquiry? Any education concerned with what science is, he thinks, should include experience of how scientists *feel* about their work. The point is obvious. This kind of awareness of the meaning of science, once obtained, could hardly be forgotten.

The rest of Prof. Stewart's discussion is devoted to what he calls the "subjective satisfactions" of the scientist. While some of these occur in the non-scientific craftsman's pride in his skill, or the pleasure of the athlete or artist in doing things well—others are best identified in terms of the practice of science itself. Most of the latter assimilate pretty well under what may be called the joy of *knowing*. Prof. Stewart writes:

> Many eminent research scientists have testified that they first saw clearly that they wanted to be scientists when they had a chance to tackle a scientific problem. The satisfactions of searching for explanation and reasoned understanding of experiences seem to me much more closely connected with the immediacy of experience and the urge to account for the experience than they are with the importance society places on the accomplishment. One of my own rules of thumb in estimating how much students have become engaged in science is to see how frequently and intensively they identify and adopt problems as their own.

From the experience of growth through cognition it is but a small side-step to the æsthetic aspect of scientific activity:

> The discovery of regularities and invariants in experience and abstractions from experience, as in Galileo's discoveries about the pendulum, are very satisfying. Von Frisch's discoveries that connected the dancing motion of bees with the direction of the maximum polarization of light from the sky must have furnished exquisite pleasure. And I can remember vividly the moment I first saw, under the tutelage of a colleague, the direct connection between the four quantum numbers specifying an electron's state and the four dimensions of space-time.

Much has been written about the "elegance" of equations, and Prof. Stewart speaks of the "delight in recognizing, in systems we observe, symmetries and patterns on the one hand and their

absence on the other." A kind of "beauty" in the order of natural phenomena seems almost always a clue to some order of "truth." Physicists, at any rate, tend to be neo-Pythagoreans and to seek reliable accounts of nature in simple ratios, and are known to experience ecstasy when they succeed in this. Then, as a final statement, Prof. Stewart says:

> The idea that it is possible to connect all of experience at appropriate levels of abstraction seems to carry a great compulsion. The idea seems more suitable for contemplation and direction of activity than as a goal in itself.

It is here, in clearly appropriate terms, that Prof. Stewart takes the incommensurable aspect of science into consideration. One might say that behind this "great compulsion" is the primary longing for unity which animates all synthesizing efforts of the mind, and when he remarks that this unity ought not to be a "goal," he is pointing out that ideal finality is not within the reach of any finite undertaking, although it can enliven everything a scientist attempts.

It may be of interest here to record statements by two theoretical physicists, Albert Einstein, and Pierre Duhem, for their extension of what Prof. Stewart says about the satisfactions and potentialities of the scientific activity. In an article in the *Scientiic Monthly* for April, 1950, Dr. Einstein wrote:

> Why do we devise theories at all? The answer to the latter question is simply: Because we enjoy "comprehending," i.e., reducing phenomena by the process of logic to something already known or (apparently) evident. New theories are first of all necessary when we encounter new facts which cannot be "explained" by existing theories. But this motivation for setting up new theories is, so to speak, trivial. There is another, more subtle motive of no less importance. This is the striving toward unification and simplicity of premises of the theory as a whole.

The "philosophical" justification for science was found by Einstein in the historical failure of metaphysics to "imagine" a complete account of the natural world:

> Time and again the passion for understanding has led to the illusion that man is able to comprehend the objective world rationally, by pure thought, without any empirical foundations—in short, by metaphysics. I believe that every true theorist is a kind of tamed metaphysicist, no matter how pure a "positivist" he may fancy himself. The metaphysicist believes that the logically simple is also the real. The tamed metaphysicist believes that not all that is logically simple is embodied in experienced reality, but that the totality of all sensory experience can be "comprehended" on the basis of a conceptual system built on premises of great simplicity.

Elsewhere (in the *Journal of the Franklin Institute*, March, 1936), concerning the progress of physics, Einstein wrote:

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

Einstein, apparently, thought that scientists might eventually get to the "goal," although the incommensurable factors by which "comprehension" is to be achieved provide an escape from positivist or closed system assumptions. But he also pointed out that as generalizations grow broader, empirical verification gets "harder and harder," which might be a way of acknowledging that the goal of "finality" recedes as we approach it. Even to "come close" might mean mainly some kind of jump to a higher order of relativistic perception.

It is interesting that when Einstein used the word "explain" for what physical theory does, he put it in quotation marks. This may be a

recognition that mathematical accounts of the behavior of matter and energy are not really explanations, but increasingly precise *descriptions.* As Friedrich Lange (in his *History of Materialism*) pointed out years ago, Isaac Newton held that primary causation was to be sought in the Divine Sensorium, as the Cambridge Platonists had named Space. In succeeding years, as Lange observes, *"The course of history has eliminated this unknown material cause, and has placed mathematical law in the rank of physical causes."*

Quite possibly with these developments in mind, Pierre Duhem wrote in a paper, "The Value of Physical Theory" (*Science,* April 23, 1954):

> Physical theory never gives us the explanation of experimental laws; it never reveals realities hiding under sensible appearances; but the more complete it becomes, the more we apprehend that the logical order in which theory orders experimental laws is the reflection of an ontological order, the more we suspect that the relations it establishes among the data of perception correspond to real relations among things, and the more we feel that theory tends to be a natural classification.

And at the close of this paper, Duhem said:

> . . . .the physicist is compelled to recognize that it would be unreasonable to work for the progress of physical theory if this theory were not the increasingly better defined and more precise reflection of a metaphysics; the belief in an order transcending physics is the sole justification of physical theory.

Physics, then, in its completion, becomes a wonderful mathematical myth, a transcendental story told in the image of Nature.