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A NECESSARY BOLDNESS

A CRITIC of the Platonic philosophy might cite passages from the *Theatetus* as easily as a friend, since this dialogue, which pursues a definition of knowledge, fails to reach a conclusion. It displays no certainties in behalf of the Socratic method, and often seems to confirm the charge that "philosophers" have little or nothing to show for their pains. In one place, after demonstrating the folly of expecting a simple formula to determine what knowledge is, Socrates says:

> However, we must stick at nothing; suppose we try being quite shameless.
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> *Theatetus:* In what way?
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> *Socrates:* By making up our minds to describe what knowing is like.
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> *Theatetus:* How is that shameless?
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> *Socrates:* You seem to be unaware that our whole conversation from the outset has been an inquiry after the nature of knowledge on the supposition that we did not know what it was.
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> *Theatetus:* No, I am quite aware of that.
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> *Socrates:* Then, doesn't it strike you as shameless to explain what knowing is like, when we don't know what knowledge is? The truth is, Theatetus, that for some time past there has been a vicious taint in our discussion. Times out of number we have said, "we know," "we do not know," "we have knowledge," "we have no knowledge," as if we could understand each other while we still know nothing about knowledge. At this very moment, if you please, we have once more used the words "know nothing" and "understand," as if we had a right to use them while we are still destitute of knowledge.
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> *Theatetus:* Well, but how are you going to carry on a discussion, Socrates, if you keep clear of those words?
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> *Socrates:* I cannot, being the man I am, though I might if I were an expert in debate. If such a person were here now, he would profess to keep clear of them and rebuke us severely for my use of language. As we are such bunglers, then, shall I be so bold as to describe what knowing is like?

Needless to say, Theatetus encourages Socrates to "be so bold," and the dialogue goes on, but to no better conclusion than that much or most of what men regard as knowledge is not knowledge at all. What, then, sustains the Platonic inquiry, in spite of such frustrations? The motor of all this striving is the implicit contention, sometimes made openly, that knowledge is virtue—an end which cannot be reached by intellect, yet which, on the other hand, cannot be reached without it. Taken as a whole, the Dialogues seem a sort of rational incantation; they are admitted to be inadequate for the task they attempt, yet it must be undertaken; there is nothing else to do. At the same time, the effort is not without occasional reward. Wise and virtuous men are known to exist. And there is a sense in which talk about knowledge, even though it cannot be defined, has meaning. Plato's vast audience of readers, spread over some two thousand years, testifies to this.

From the candor of the *Theatetus* it is clear why the philosophic quest has never been popular. Not only is it very difficult, but philosophers have confident and skillful competitors, among them the "experts in debate" referred to by Socrates. What is the ultimate issue between Socrates and his opponents? Perhaps there is more than one "ultimate" issue, but the others are hardly important without the one concerning final authority. It is the policy of Socrates never to call but *one* witness to the truth of what he says: that witness is his opponent or partner in dialogue. For example, he says in the *Gorgias*, in an interchange with Polus:

> *Socrates:* My dear sir, you are trying to refute me orator-fashion, like those who fancy they are refuting in the law courts. For there one group fancies it is refuting the other when it produces many reputable witnesses to support its statements whereas the opposing party produces one or none. But this

> method of proof is worthless toward discovering the truth, for at times a man may be the victim of false witness on the part of many people of repute. And now practically all men, Athenians and strangers alike, will support your statements, if you wish to produce them as witnesses that my view is false. . . . Yet I, who am but one, do not agree with you, for you cannot compel me to; you are merely producing many false witnesses against me in your endeavor to drive me out of my property, the truth. But if I cannot produce in you yourself a single witness in agreement with my views, I consider that I have accomplished nothing worth speaking of in the matter under debate. . . .

The man who takes the opinions or testimony of others without making them independently his own is in deep trouble—he becomes guilty of "double ignorance," of thinking he knows when he doesn't—the ill which Socrates treated in the market place throughout all his life. This distinction between belief—even "enlightened" belief—and knowledge, makes the portal to Platonism, but it is also the portal to understanding of all the high religions. It is the key conception of the *Bhagavad-Gita*—Arjuna gets nowhere until he resolves to overcome his depression at finding so many eminent persons disagreeing with him; and it defines the relation between Jesus and his disciples, to whom he unfolded "mysteries."

This point need not be labored. What, for example, would the history of Europe have been without the bloody contests over religious "authority"? While it is true enough that we fear to think for ourselves, it is equally true that letting others think for us eventually brings worse terrors. The Hobson's choice of this dilemma was what made Plato devote himself to persuading men to get *practice* in thinking for themselves. In no other way, he was convinced, could they finally become free of the terrible and costly oscillations between authoritarian and wild anarchist doctrines.

Only in recent history has there been a noticeable return to Platonic modes of thought. Why, for so many centuries, have they been neglected?

The answer lies in the double-edged persuasion of the scientific idea of objective truth. An *objective* truth is a truth beyond dispute. All you have to do is show it to a man. He *must* accept it. The contrast with shaky theological claims to certainty is devastating. And the relief from intellectual dilemmas of the sort revealed in the *Theatetus* seems immediate. At the same time, science could promise certain of the advantages claimed by religious revelation without being convicted of its most objectionable defects. Science could become a truth-finding and truth-storing institution, yet remain free of the bad habits of institutional religion. For the scientific institution is obliged to conduct all its determinations out in the open. Science is "public" truth. Scientists demonstrate before witnesses the truths that are established as "scientific." The scientific safeguards against pretense or even innocent mistakes have seemed without flaw. Every scientist is a watch-dog of the integrity of the scientific institution. Every researcher is under the eye of all the other researchers. By this means, in the progress of time, all things must eventually become known, and known beyond doubt.

The fit of each aspect of the scientific undertaking with all the other aspects has itself been a powerful persuasion. If the needs of industry and commerce spur scientific inquiry, this leads to glorious by-products of truth about the universe, even as material progress is served. Each discovery becomes an addition to the great mosaic of knowledge, the true picture of the natural world. Even the humblest worker in science can think of himself as a philanthropist, a public servant, adding his bit to the knowledge of the whole.

One effect of all this optimism was the gradual spread, not only in the educated classes, but among all members of society, of the idea that *real history,* in the sense of the march of human

progress, had just begun. The people who lived before the scientific revolution came to be regarded as story-book characters who knew hardly anything of what life is about. "Progress" was unknown to them, and their history fell into the jumbled category of a vast prelude to the real affairs of mankind. No person with a typical Western education can fail to recognize this feeling as something he absorbed in school, as a matter of course. He might have experienced a mild curiosity about the ancients, but seldom a real interest in what they thought, since "truth" hadn't even-begun to be known in those days.

What about Socrates? He and one or two others are special cases. Socrates is regarded as a martyr to the cause of freedom of thought, an ideal inseparable from the practice of science. His lack of dogmatism was taken as a halfway house along the road to a proper scientific agnosticism, and such a man could be excused for his enthusiastic tendencies. His modern admirers have tended to ignore them. Socrates became the symbol of a *man* and was remembered for his courage and his lack of pretense, rather than for his philosophic quest and faith in the transcendent possibilities of human development.

Yet the modern world is in the curious plight of depending on a faith—faith in science's "objective" portrait of the world and its processes—which is hardly believed in any longer by its founders. That is, only a very few scientists now voice the belief that scientific knowledge can replace both philosophy and religion, or that it is providing the blueprints of natural reality. Most present-day scientists are of the modest positivist persuasion, which means that they feel able to tell how certain things work, but not what they "mean." They can fill orders for people interested in the manipulation of nature, but when it comes to saying what men ought to want, or what is best, they are little better off than the rest of us.

Yet it takes time for a great faith to die, even though there have been terrible shocks to the modern confidence in science. It is hard for a great many people to realize that the scientists who made the atomic weapons of the present were only elite technicians filling the orders of a power-obsessed government. And there is only a very slow penetration of the criticisms of the conservationists who expose the antihuman side-effects of scientific and technological imperatives. The eighteenth-century dream of an endlessly advancing civilization, powered by industrial invention and enlightened by scientific education, has no acceptable alternative as yet, so that its failures, while increasingly obvious, are minimized or ignored. What this means, in practical terms, is that modern man is struggling desperately to free himself from the weight of a theory of knowledge which no longer works, but which has no basis for self-criticism, there being no recognition of human *selves* within the scope of the system itself.

It has remained for one man to make a frontal attack on the basic assumption of the scientific faith—the assumption that, little by little, knowledge about the world is being accumulated through progressive discovery, and that a coherent whole of meaning, unchallengeable because scientifically verified, step by step, will eventually result. This man is himself a scientist, Michael Polanyi, whose researches in chemistry and physics have been rewarded by election to the Royal Society and by honorary doctorates from Princeton and the University of Leeds. His major work, *Personal Knowledge,* was first published in this country in 1958 by the University of Chicago Press, and it is now available in paperback. This book may seem to some readers both difficult and repetitive. It is difficult because it is thorough, and concerned with the origins and validity of scientific theory and knowledge. It is repetitive because it ought to be. The author attempts nothing less than basic reform of scientific epistemology. As he says in his preface:

> This is primarily an enquiry into the nature and justification of scientific knowledge. But my reconsideration of scientific knowledge leads on to a wide range of questions outside science.

> I start by rejecting the ideal of scientific detachment. In the exact sciences, the false ideal is perhaps harmless for it is in fact disregarded there by scientists. But we shall see that it exercises a destructive influence in biology, psychology and sociology, and falsifies our whole outlook far beyond the domain of science. I want to establish an alternative ideal of knowledge, quite generally.

There is a sense in which Prof. Polanyi writes in the mainstream of the Platonic tradition, since he insists, as Plato did, that all true knowledge grows from moral involvement and that without this involvement there is only the illusion of knowledge. (For confirmation of this comparison, see the chapter, "The Sovereignty of the Good," in Robert E. Cushman's *Therapeia* [Chapel Hill, 1958].) In the section titled "Intellectual Passions," in *Personal Knowledge*, Polanyi shows that every contribution to science depends upon three factors: "(1) certainty (accuracy); (2) systematic relevance (profundity); (3) intrinsic interest." The third of these factors has special importance since it determines why a scientist looks in one direction and not some other, for what is to be found out.

In short, there are powerful pre-scientific suasions which affect the selection of the raw material and the direction of research, and the personal attitudes (including the morality) of scientists as well as broad cultural attitudes, often involving prejudices, play their part. Without these factors of *interest*, there would be no science at all, but only the disintegration of the inquiry, the disappearance of its subject-matter. Prof. Polanyi examines carefully the central delusional claim made for science in neglect of such controlling motivations:

> The paradigm of a conception of science pursuing the ideal of absolute detachment by representing the world in terms of its exactly determined particulars was formulated by Laplace. An intelligence which knew at one moment of time—wrote Laplace—"all the forces by which nature is animated and the respective positions of the entities which compose it, . . . would embrace in the same formula the movements of the largest bodies and those of the lightest atom: nothing would be uncertain for it, and the future, like the past, would be present to its eyes." Such a mind would possess a complete scientific knowledge of the universe.
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> This ideal of universal knowledge is mistaken, since it substitutes for the subjects in which we are interested a set of data which tell us nothing that we want to know. [Polanyi here gives Laplace's equations offering mathematical demonstration.]
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> That such virtually meaningless information was identified by Laplace with a knowledge of all things past and all things to come, and that the stark absurdity of this claim has not been obvious to succeeding generations since his day, can be accounted for only by a hidden assumption by which this information was tacitly supplemented. It was taken for granted that the Laplacean mind would not stop short at the list of *p's* and *q's* at the time *t*, but proceed by virtue of its unlimited powers of computation to evaluate from this list the events, and indeed all the events, that we might be interested to know.
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> But this assumption is actually much larger and quite different in character from that explicitly made by Laplace. It neither demands, nor is it satisfied by our having an unlimited capacity for carrying out complex computations concerning a mechanical system, but requires instead that we should explain *all* kinds of experience in *terms of atomic data.* This is of course the program of a mechanistic world view, which in modern times was first speculatively mooted by Gallileo, but this program has never been carried out even in principle and we shall see in Part Four that it cannot be carried out at all. The tremendous intellectual feat conjured up by Laplace's imagination has diverted attention (in a manner commonly practiced by conjurers) from the decisive sleight of hand by which he substitutes a knowledge of all experience for a knowledge of all atomic data. Once you refuse this deceptive substitution, you immediately see that the Laplacean mind understands precisely nothing and that whatever it knows means precisely nothing.
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> Yet the spell of the Laplacean delusion remains unbroken to this day. The ideal of strictly objective knowledge, paradigmatically formulated by Laplace, continues to sustain a universal tendency to enhance the observational accuracy and systematic precision of science.

A further generalization is of central importance:

> Applied to human affairs, the Laplacean universal mechanics induces the teaching that material welfare and the establishment of an unlimited power for imposing the conditions of material welfare are the supreme good. But our age overflows with inordinate moral aspirations. By absorbing this zeal the objectives of power and wealth acquire a moral sanctity which, added to their supposed scientific necessity, enforces their acceptance as man's supreme and total destiny. The comprehensive claims of this movement leave no justification to public liberties, and demand that all cultural activities should subserve the power of the State in transforming society for the achievement of welfare. A discovery will then no longer be valued by the satisfaction it gives to the intellectual passions of-scientists, but will be assessed according to its probable utility for strengthening public power and improving the standard of living. Scientific value will be discredited and its appreciation suppressed. This is how a philosophic movement guided by aspirations of scientific severity has come to threaten the position of science itself.

Various other critical themes need to be pieced together with this one to make a path back to the Socratic criterion of knowledge and a philosophic conception of saving truth. Some of these are found in Polanyi's writings, others are turning up elsewhere. All these trends are part of the contemporary rediscovery of the individual, although most of them are concerned with human need and bring evidence of extreme deprivation resulting from reliance on scientific or other external authority. What is wanted most of all is rediscovery of the individual in terms of his new-found is rediscovery of the individual in terms of his new-found capacity and resources. The example of Socrates might serve as well as any for this. He had the boldness required.

REVIEW
THE GREEN AND PLEASANT LAND

IN these days of impassioned criticism of man's relationships with nature, it becomes obvious that we know far more about what is wrong than about what would be right. The effects of what is wrong are plain enough. As Lynn White, Jr., wrote in *Science* (March 10, 1967) two years ago: "With the population explosion, the carcinoma of planless urbanism, the now geological deposits of sewage and garbage, surely no creature other than man has ever managed to foul its nest in such short order." By spelling out such indictments we could accumulate long lists of things we ought to stop doing, but apart from the difficulty of enforcing these prohibitions, there would still be the problem of deciding on the right things to do. For example, speaking of the external orderliness already achieved in Holland, a Dutch architect, Aldo van Eyck, complains of the bland meaninglessness of the result:

> Instead of the inconvenience of filth and confusion, we have now got the boredom of hygiene. The material slum has gone . . . but what has replaced it? Just mile upon mile of organized nowhere, and nobody feeling that he is "somebody living somewhere." No microbes left—yet each citizen is a disinfected pawn on the chessboard—hence no challenge, no duel and no dialogue. The slum has gone—Behold the slum edging into the spirit.

An ideal relationship with nature, it seems clear, is every bit as obscure as Rousseau found the true nature of man to be, some two hundred years ago, when he wrote:

> For it is by no means a light undertaking to distinguish properly between what is original and what is artificial in the actual nature of man, or to form a true idea of a state which no longer exists, perhaps never did exist; and of which it is, nevertheless, necessary to have true ideas, in order to form a proper judgment of our present state.

Well, how *would* you go about gathering examples of harmonious and mutually beneficial relationships between man and nature? We think easily of but two, and these are only tokens which require a great deal of contextual filling in. One occurs in a charming passage by John Burroughs in *Wake-Robin,* a book entirely devoted to birds, first published in 1871:

> Indeed, what would be more interesting than the history of our birds for the last two or three centuries. There can be no doubt that the presence of man has exerted a very marked and friendly influence upon them, since they multiply so in; his society. The birds of California, it is said, were mostly silent till after its settlement, and I doubt if the Indians heard the woodthrush as we hear him. Where did the bobolink disport himself before there were meadows in the North and rice fields in the South? Was he the same lithe, merry-hearted beau then as now? And the sparrow, the lark, and the goldfinch, birds that seem so indigenous to the open fields and so averse to the woods,—we cannot conceive of their existence in a vast wilderness and without man.

The other example is virtually an archeological note on the Indians who once lived along the Gavilan river, in the delta country where the Colorado pours into the Gulf of California. Aldo Leopold explored this region on a canoe trip with his brother in 1922. In *Sand County Almanac,* he writes of the "song" of the river:

> . . . on a still night, when the campfire is low and the Pleiades have climbed over rimrocks, sit quietly and listen for a wolf to howl, and think hard of everything you have seen and tried to understand. Then you may hear it—a vast pulsing harmony—its score inscribed on a thousand hills, its notes the lives and deaths of plants and animals, its rhythms spanning the seconds and the centuries.
>
> The life of every river sings its own song, but in most the song is long since marred by the discords of misuse. Overgrazing first mars the plants and then the soil. Rifle, trap, and poison next deplete the larger birds and mammals, then come a park or forest with roads and tourists. Parks are made to bring the music to the many, but by the time many are attuned to hear it there is little left but noise.

Now comes a wonderful symbiosis of man and nature:

> There once were men capable of inhabiting a river without disrupting the harmony of its life. They must have lived in thousands on the Gavilan, for their works are everywhere. Ascend any draw debouching

> on any canyon and you find yourself climbing little rock terraces or check dams, the crest of one level with the base of the next. Behind each dam is a little plot of soil that was once a field or a garden, sub-irrigated by the showers which fell on the steep adjoining slopes. On the crest of the ridge you may find the stone foundations of a watch tower; here the hillside farmer probably stood guard over his polka-dot acrelets. Household water he must have carried from the river. Of domestic animals he evidently had none. What crops did he raise? How long ago? The only fragment of an answer lies in the 300-year-old pines, oaks, or junipers that now find rootage in his little fields. Evidently it was longer ago than the age of the oldest trees.

So, for ideas of the natural life, we resort to nostalgic anecdote—or, if we want to be "progressive," to elaborate utopian abstractions that we can't think how to apply. Missing from most calculations is the key to all humanizing change—hopes that can come true must be lived before they are conceptualized; they must be acted upon in germ before they can be developed in life.

This seems the underlying theme of a recent paper by E. F. Schumacher, "The Proper Use of the Land," in which the author asks a simple question:

> Why should England's green and pleasant land remain green and pleasant? If I can have a comfortable little corner for myself, that is good enough for me. Why should we bother about the magnificence and beauty of animals, if it only costs money? Why should we get together here and worry that with certain practices, wild life will be exterminated, will disappear? I can have a little bird in a cage if I need this kind of thing.

Dr. Schumacher endeavors to show that man's relation to nature is not a cost-equation but a life-equation. The incommensurables of life are not demonstrable for the reason that either we know them intuitively or they are unknowable. To respect and honor nature is a way of respecting and honoring ourselves. We need justification of reverence for the land no more than we need justification of reverence for life. Dr. Schumacher says:

> The subject of the proper use of the land at first sight looks a somewhat technical subject, but the more I think about it the more I realize it is not; it is a highly philosophical subject. We are really deceiving ourselves if we think that it requires a special inventiveness of a technical kind to cope with the problems of land use.
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> There are always some things which we do for their own sakes, and then there are other things which we do for some other purpose. One of the most important tasks for any society is to distinguish between ends and means and to have some sort of cohesive view and some agreement about this. What are the things which we do for their own sake, and what are the things which we do for a purpose other than themselves?

The things we do for their own sake are beyond finite measure. We do not make shrewd judgments about them. They are human essentials, just as breathing is a physiological essential. You don't cost out breathing to see if it is worth doing. As Dr. Schumacher puts it:

> So, the first point I am making is that ends, as distinct from means, are not matters of economic calculation. They are not "economic" but if you like "meta-economic." We can have physics and meta-physics, and we can have economics and meta-economics.
>
> What are the big meta-economic factors? I think one is brought back to the four "elements" that the ancients used to talk about—air, water, earth and fire. These are meta-economic factors. We have not made them, but we depend on them: on each of those four basic elements. They are worth looking after, not as means to an end but as ends in themselves. We do not ask today whether it is economic to take some care to have clean air. No, we say this is a good thing in itself. . . .

Underlying Dr. Schumacher's discourse are the great, old, philosophic questions, which turn ecological considerations into an inquiry into the nature of man:

> People believe today that clean air and clean water are worthy objectives, but is land to be considered as an end in itself, worth bothering about? I am afraid we are still a long way off that. Of course, it can still come; you have only to think back about a hundred years when many people were quite incapable of thinking of the "fifth" element as an end

> in itself, which is of course the human being—man himself. We had theories, which are still leading a ghostly and unpleasant existence, that man was just an economic phenomenon. His income, for instance, should be settled by market forces. Whether he had a chance to work or not should be settled by whether or not the whole economy was easier to manage at this level or that level of employment. All of this used to be considered merely sound, scientific sense. But I am glad to say we have to some extent got away from this; in present-day economics man is generally taken not as a means to an end but as an end in itself. You know what happens when people start mixing up means and ends. The fellow who goes on earning money and forgets that money is only a means to an end, comes in for ridicule and contempt as a miser, an unsavory sort of character. All the same, you find all through present-day societies all sorts of extraordinary attempts to reduce what we all recognize as final values to an economic calculus.
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> People ask, "Does education pay off?", as if a monetary return were the purpose of education; as if education were not a value in itself. Some people ask whether crime pays, and that is a legitimate question. But if they ask, "Does goodness pay?, Is it worth-while?," we immediately realize, although perhaps we cannot find the argument against it, that this is an illegitimate, a degraded question. So I am saying that if one mistakes what is an end in itself, and treats it as a means, then there is a degradation of life. And conversely if one takes what is really a means to be an end and elevates it to the status of an end, then there is a degradation of oneself. . . .
>
> We waste our time if we think this is a matter for scientific proof. No one can prove that it is right to love anybody, or to care for anything. No one can prove that it is right to care for the future. If somebody says to me, "Thou shalt not exploit thy fellow man," I can always answer, why not? "Thou shalt not kill,"—why not? There is no conclusion to it in logic. We see intuitively—call it what you like—that there are values that do not have to be argued, with regard to not exploiting or killing our fellow men. In the same way, do we, or do we not, accept that land, the use, maintenance, health and future of land is one of these values?

This, it seems clear, is the sort of beginning that has to be made if there is ever to be a *working* solution for the problem set by Rousseau—"to form a true idea of a state which no longer exists, perhaps never did exist," yet of which "it is, nevertheless, necessary to have true ideas, in order to form a proper judgment of our present state." Argument and logic cannot do it, and criticism can only point to the need. By acting in small ways on what "we see intuitively," it becomes possible to evolve conceptions of a natural life and harmonious relations with the environment that have the validity of day-to-day realization and growth.

Copies of Dr. Schumacher's paper on land use may be obtained by writing to the Intermediate Technology Development Group, 9 King Street, Covent Garden, London, W.C.2, England.

COMMENTARY
BEHIND THE BOLDNESS

PLATONIC thinkers are easily caught practicing the "as if" device of philosophy. Shall we, Socrates asks Theatetus, be so bold as to talk about knowledge *as if* we knew what it was? Then, by a little indirection, he shows that all men commit this offense; Socrates' only claim to virtue is that he does not conceal his ignorance, but uses it to illustrate the common condition.

Yet the Socratic boldness has a ground. It celebrates the affinities, the tropisms of the human spirit. Concerning what cannot be demonstrated, it asks rhetorical questions or exclaims. Like certain assumptions in mathematics, the insights of intuition gain rational sanction from their consequences; as, for example, in the quotations from E. F. Schumacher in this week's Review. If a man asks for "proof" of an ultimate value, he cuts himself off from its meaning:

> We waste our time if we think this is a matter for scientific proof. No one can prove that it is right to love anybody or to care for anything.

No dialogue, however, involves only "pure" principles, and reason comes legitimately into nearly everything we say. Moreover, the use of reason can create a climate friendly to intuitive perception, or it can put up barriers. And if it were easy to distinguish between such uses of reason—to tell when it is in the service of man and when it degrades—well, we should probably be finished with life, for then we could settle all questions. We should know everything, or perhaps nothing.

A man cannot prove either his knowledge or his love. He can only live them as well as possible. Plato put the difficulty quite simply:

> In one word, neither receptivity nor memory will ever produce knowledge in him who has no affinity with the object, since it does not germinate to start with in alien states of mind.

Or, as Harold Goddard said in his book on the Transcendentalists:

> Intuition—that is the method of transcendental philosophy; no truth worth the knowing is susceptible of logical demonstration.

Yet a man ignorant of logical demonstrations is in no position to speak with assurance on such matters. He has to know something about reason before he can make declarations concerning its limits.

CHILDREN
. . . and Ourselves
THE WORKSHOP PROGRAM

[This is one of a series of lectures by Robert Jay Wolff on teaching art and design to high-school students.]

IT is obvious that a workshop program planned on the considerations which we have been discussing would be bound to conflict with the great variety of methods and practices which prevail today in secondary schools. In some localities rigid formula and requirements are entrenched to the point where the teacher can do no more than bring a certain freshness to tasks which have been frozen from the beginning into a prescribed mold. There is also the other extreme where no particular formula exists but where stereotyped results are sought through disorganized and isolated efforts in still-life drawing, landscape painting, cartooning, gadget manufacture, pottery making, and so on. As a matter of fact, it is unlikely that any program completely satisfying the broad needs and objectives which have been our main consideration, would fit comfortably into most existing setups. However, we cannot base our conclusions and our planning on these limitations without circumventing the biggest part of our job. The only other way is to disregard, for the time being, narrow requirements that have no immediate place in a curriculum designed to meet larger human needs. Once such a curriculum is understood and mastered, alterations and compromises to fit unbudging circumstances can be made without sacrifice of ultimate objectives or without destroying the convictions upon which they rest.

We can divide a design workshop program into three main divisions:

(1) A preliminary workshop in design fundamentals.

(2) Unspecialized application of the fundamentals to interrelated skills, drawing both free and mechanical, work in color, elementary photography, elements of architecture modelling, simple craft problems involving materials such as wood and metal.

(3) A limited application of (1) and (2) to useful projects, demanding ingenuity and resourcefulness without reliance on known patterns.

How far such a progression of stages can be broken up into teaching sequences will largely depend on the special circumstances confronting the individual instructor, circumstances which take into account the time alloted to design courses, the segregation or combining of groups at different stages in the course, availability of materials and equipment, the absence or presence of academic pressures for specified results within a short space of time. These and other conditions may not allow full coverage in any one of the three divisions and they may have to be combined. But whatever the limitations, contraction of the first stage from full exploitation of all basic elements to a premature development in any one skill such as drawing, for example, should be carefully avoided. Ideally, the general coverage of the first phase should carry naturally over into the more specific coverage of the second without loss of continuity. Further, the relatedness of the basic elements established in the first phase should not be lost as emphasis on given skills is increased. For the time being we will confine ourselves to the first stage, the preliminary workshops, leaving the second and third stages for discussion later. We suggest a general outline:

(1) A visual re-examination of all possible aspects of the world around us.

(2) Exercises, making use of the simplest of materials and techniques; combining a creative and resourceful use of these to explore the nature of the basic elements of design, such as qualities of materials, surface textures, volume, mass, space, line, plane, light, color and value. Each element should be treated in both two dimensions and three dimensions.

(3) References to carefully selected examples in design, both past and present, which utilize elements and materials relevant to the specific task at hand. These references should be used to gain acceptance of

the teaching procedure through a realization that basic elements are applicable to all design and not only to preferred specialties, and that they must be mastered before they are applied. The exercises, of course, should have no similarity in content to these references.

(4) References, wherever relevant, to visual sources in nature in relation to design. The general introductory visual exploration is continued here to relate specifically to given tasks not in the sense of imitating nature but to stimulate original observation and creative effort.

TEXTURES

Before introducing your first workshop exercises, certain preparations will have to be made. Your students will be wondering what specific connection there will be between the experience of the previous session's field trip and the work which they are about to undertake. If you do not make this connection clear at once they will look back upon the trip as a goose chase and upon you as a strange eccentric. Above all things, these children will demand that you make sense. If you cannot maintain continuity between the many factors which you are trying to integrate it would be much better to go back to the one-track road of still-life drawing with a soft pencil and let it go at that. Actually, your problem is not too complex once you clearly understand your objectives. If each exercise is planned to serve the same general guiding considerations, then continuity will automatically follow. In evaluating an exercise, ask yourselves if it can be related, either directly or indirectly, to all the following considerations:

(1) Can it draw upon sources in nature, not for imitation, but for stimulus and inspiration, and to maintain a strong link with reality?

(2) Does it allow for original and imaginative solutions?

(3) Can it, as an exercise in design fundamentals, be associated, but not identified in formal content, with similar elements that have been expressively used in good design either past or present?

(4) Does it provide the opportunity to develop tactile and visual sensitivity, manual proficiency and skill and a craftsmanlike approach to materials and techniques?

(5) Does it stress one of the elements of design and are there no loop holes that will allow it to drift into a complex problem involving the integration of more elements than can be competently handled at this stage?

(6) Does it maintain an interlocking continuity with the work already covered and the work to come?

(7) Is it within the range of all abilities?

Start them off with a brief talk about textures, the part they play in our contact with nature and the part they play in the design of the man-made world. The exercise you are leading them to, once they get to it, will be authenticated by its close association with everyday experience and with design of all kinds. Refer here at length to the variety of textures discovered and observed on the recent field trip. Produce from your note book textured material of all kinds. Show them pieces of highly textured fabrics, sandpaper, sea shells, books with covers of varying textures, a tree bark, a door handle or a glass jar, a drawing or a painting, a brick wall. Mix up natural textures with textures for use. Show how the development of a sensitivity to texture in nature and in design, and the ability to respond to texture, whether by sight or touch, not only adds much to our pleasure in the things around us but is an essential quality which artists and designers must have. Point out here that this does not only apply to the maker of things but also to the consumer. Show that anyone who furnishes a home is no less a designer because he has had no hand in fashioning the objects and furniture which will go into it. Selecting things and relating and organizing them into a well-functioning and pleasing whole requires good design sense. And an important ingredient of good design sense is a lively feeling for textures and the ability to apply them creatively. You might refer here to some problems in design practice which involve an expert understanding of textured surfaces.

Examples in architecture, both interior and exterior, and in industrial design can be shown from your visual note book. And to make clear that we do not confine ourselves to three-dimensional design alone, it might be a good idea to have a few pages upon which are mounted a multitude of various paper textures: papers for drawing and painting, from very rough water-color paper to smooth detail paper, textured charcoal paper, gritty pastel paper, even canvas of various types. You can show a range of paper used in printing: newsprint, coated stock, mat offset stock, poster board, various textured papers used for brochures and announcements. You can explain that these surfaces upon which designers fix their images and forms are selected for the special processes to which they will be subjected and for the particular textural effects which the designer wishes to obtain. Expertness only comes with experience and practice. There is no better place to begin this practice than the present workshop.

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FRONTIERS

If Poets Ruled

[These paragraphs, reprinted by permission, are selected from "The Poetic State," by George Buchanan, which first appeared in *Comprendre*, No. 31-32, a journal published in Venice in behalf of the European Society of Culture.]

ABSENCE of poetry? If poetry is absent from society, how can you get it to come again? Not being poets, many take drugs to supply them chemically with imaginative experience. Poetry cannot be got this way. But the extent of the drug-taking shows how many are sick for want of poetry.

Politically, how does poetry "work"? It points to evanescence, to the transience of things, sometimes with tears, often with pleasure, and helps make them fugitive, and so edges old systems towards partial collapse.

In a poetic context, over a period of time, some institutions, individuals, social customs would begin to shrink in importance. Not because of a law passed against them, but because they would appear in a different light. Some habits would be less tenable. In the large organizations the executives would have to defer to a new kind of order. Inspiration would take the place of shouted instructions.

The poet says: "Why should we be regarded as miniature citizens? Perhaps the troubles today are due to the absence of poets from the Cabinet." Put it another way, the absence of the poetic principle from society. Let us demand poetic justice, which has never been demanded before. Let politics be haunted, questioned and judged by criteria the poets put into the air.

Is there a tradition of poetry as a subversive force? Were Blake, Whitman, Rimbaud, René Char, the Surrealists, earlier members of that tradition? Shelley said that the poet was "the unacknowledged legislator." The poet's legislation never came before Parliament and was never passed. This lack of acknowledgement may be coming to an end.

If the evils of hunger and war are reduced, many believe some secret juice will flow out among the human race and all will be well. In fact, nourished people are already free enough to show a new kind of scar. They ask, "Was *this* what it was for?" And they look at the wild forest of the cities, the commercial jungle, the mirages of the entertainment desert, and are dismayed. The supposed paradise is, to date, no paradise.

The panacea Education has failed to cure the pain. Burrowing like intellectual moles—what good does that do?

"What do I think?" I must continually ask that question. Otherwise the morning paper has me by the throat.

Newspapers write from day to day the autobiography of a society. We should feel that we are in it. What we wish to avoid is the tendency for people to be news-spectators, as they are spectators of mass-sport. Each man must participate. He will write on the humble pages of his desk-pad, trying to guide himself in the time. To see where he is, even if the position is tragic, is necessary. Those who prefer to shut their eyes enter a category below the human.

In politics it often seems as if "the good man is no good." The public likes the more frightening personalities.

Can a Government command its people to look alive? It can say of a citizen "Cut off his head!" It can't say "Fill his head with intelligence!" It can say "Go to prison!" It can't say "Be original!" This is a problem no government has yet solved.

The civil servants are able to utter moral platitudes with straight faces. "The road to hell," they declare, "is paved with good intentions! So don't go in for anything so foolish as good intentions. See!"

We don't face a battle under 1917 flags. We're in a battle against more nebulous forces. The Establishment's strength rests on dreams implanted in the mass: dream-arrangements which seem more iron than the gates of a fort. Armed revolt would be no good. In such a case rebellious guns would fire in vain against figures who couldn't be wounded.

We glibly say that political inspiration has dried up. But the problem is bigger. Is it not essential, ultimately, that a society should be inspired *in its whole way of life.;* No government, however smart, can blur this final issue, which civilization has to face. Governments ignore it, distract the people from it; but the nation may one day be compelled to come to grips with it, unwillingly . . . or gratefully. The people will be obliged to vote in an invisible plebiscite about the terms of their civilization, its reason, its true character.

Society has learned to detect and harness the mysterious powers out of nature but not, expeditiously and without waste, to recognize and deploy the mysterious powers of the human mind.

Even if war becomes avoidable, the so-called peace will be no picnic. Does it follow that we shall enter an era where all citizens, under a highly developed bureaucracy, will be well-behaved, taxpaying, duty-fulfilling? Is our bureaucracy engaged, as Max Weber said, "in building the houses of bondage of the future, in which perhaps men will one day be like peasants in the ancient Egyptian state, acquiescent and powerless?"

Reality—why are the unimaginative supposed to be better at handling it? The so-called practical people may have the worst touch with the historical facts—or so it nearly always appears afterwards. They get things wrong. After all, why should we expect people of poor vision to be surer guides than those of acute vision? This is one of those oddities of popular reputation—and is due for alteration.

Have we an on-the-eve feeling? How should a turning-point come? The way it ought to happen is easy to describe theoretically. It could happen through the entry of new feelings into the bodies and minds of enormous numbers of people, against expectation, during the night, during the suburban night. The apparent obstacle the People—would turn right round and present themselves in a remarkable mutation. Does it seem likely? The answer is obviously "no."

Is the paradox to be accepted that there can never be a Poetic State (a State run by poets) for the reason that the poets who would create it will cease to be poets as soon as they have created it? Does the Muse not like to be seen among those who govern? If this is so, is it an immutable law? Or is it a temporary or provisional law which in a more thoroughly changed society might be repealed and amended?

One day simple existence may seem a miracle. Now it bores us.

Artists led the way to remote coastal points for enjoyment in their work. The crowd followed. The places became resorts. Look at the present desire of the young to appear like artists, to live like artists. That way of life, so appalling to our fathers, has found favour with the younger generation, whether they are artists or not. They behave like creative men without being creative. They are arriving with an air of novelty at a point at which artists were years ago.

The demand to be human has always led to revolt. It will again. Simple wishes aren't as unpolitical as many suppose. In the past we were afraid to wish. Wish-fulfillment was a term for something absurd. We had a block. To wish with imagination—a poetic act—was in danger of perishing.

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