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MODES OF SELF-DEFEAT

SPECIALISTS are people who develop a tendency to denature the goals of what they are doing. Like other human beings, specialists prefer to be comfortable in what they do, so that they choose problems to work on that promise to have a solution, using methods that are familiar. Someone has made a joke about this. If a man has only one tool, a hammer, he will be likely to regard the world as made of nothing but nails. Laura Nader, who teaches anthropology at the University of California in Berkeley, became involved in the work of a National Academy of Sciences committee on nuclear and alternative energy systems. For her, as an anthropologist, the matter of interest was how the members of the group to which she belonged went at the project. "I noticed," she says, "a good deal of standardized thinking; lack of respect for diversity; absolute taboo on the word 'solar.' Their memos discussed nuclear, coal, and non-nuclear." Solar was buried in the non-nuclear category.

Prof. Nader found this puzzling:

> I asked the co-chairman, "How come nobody ever uses the word 'solar' around here? I've been on the board six months and nobody's used the word 'solar'." He looked at me, rather surprised. "I don't know. Solar's been an orphan child." Somebody else piped up. "Solar? Solar's not very intellectually challenging." Somebody else said, "What's solar? A bunch of mirrors."

How or why, Laura Nader wondered, did solar get to be an orphan? After all, as she points out in her article (in *Physics Today* for February, 1981), the president of the American Chemical Society in 1900 "predicted that the U.S. would be running on solar by the 1970's."

> When did it become an orphan child? Did it have anything to do with World War II, the nuclear developments, militaristic interests, and so forth? What are the reasons for that? . . .
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> The other observation: "Solar's not very intellectually challenging." What is intellectually challenging to these people? They seem to relish something complicated, hazardous, difficult and risky, something that requires high technology and big money. They seem to have a real attraction to that sort of thing.

The group she was working with had been asked "to describe what life would be like in year 2010 under different levels of energy expenditure." If we use 70 quads of energy now, how many will we need in 2010? They decided it would be interesting to show that the country could get along with a decrease of 50 quads instead of double or more the present use. There were interesting reactions. "Who ever heard of going down without going backward?" Yet efficient use of energy would do it. In the group's plan,

> Cars get more miles to gallon, refrigerators give the same service but use less electricity. We had gimmicks that people could use to turn on or off their gas or oil in the house; lots of little things that added to a fair amount of saving with very little change.

People, not planners of over-all changes, would accomplish the efficiency, from the bottom up. Prof. Nader comments:

> Many people misunderstood the direction of change and the ways societies change. In the 50-quad scenario, most of the responses to problems are bottom up. The reason that people can't understand that scenario is because professionals in this country tend to think top down. Even where this does not happen, where there is ample evidence of the direction of bottom-up change, people in power believe that change comes from the top down.
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> Many changes in demographic factors, for example, are not top-down changes. They are individual decisions made in households all around the country. The invention of the car was a dramatic change that started as a small industry and diffused.

> Our 50-quad society was a bottom-up change scenario. . . . While we were working, no matter what we sent to Washington, we would be asked for more tables and less prose. We finally got an exasperated note that said, "More tables, less prose. These guys don't read." We know there's a literacy problem among the young, but less recognized is another serious problem in this country: managers and planners do not read and they do not write. They hire people to do it for them.
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> For people who want it all in tables, I ask: "How do you talk about freedom in tables? How do you talk about democracy in a table? How do you talk about most of the things we care about in a table?" We compromised: We used both prose and tables. It's probably one of the few reports that can be read by the tax-paying public.

Prof. Nader also took part in a soft energy path (the term is Amory Lovins') study funded by the U.S. Department of Energy, examining both top-down and bottom-up possibilities.

> We looked at the mandated solar code, that was top down. We looked at the possibilities of distributed energy, which was bottom up. People could create their own wind and electrical systems and then feed it into the grid. . . .The code we looked at dealt with encouraging solar energy use, natural gas, insulation, glazing, and so forth. The people who wrote the code, I think, were inadequately aware of the human component. . . . We interviewed a wide range of people from different interest groups: bankers, contractors, architects, building inspectors, lawyers and realtors. Each type of worker belonged to a particular subculture of work, with an organization and value all to itself. They each had almost unique ways of looking at building codes. It was extremely difficult for anybody we interviewed, except members of the general public, to see the whole picture. Everybody saw the picture that impinged on their individual self-interest.

Architects think building codes block their creativity, and building inspectors want them simple. Realtors don't want provisions that might get in the way of sales, and government bureaucrats are bound by their mandates or rules, and must stay within these limits even when solutions lie outside. The public utilities found it difficult even to think of themselves as *buyers* instead of producers and sellers of energy. And all these people are not rewarded for recognizing the virtues of a change, but for "doing things the way they've always done them." Musing, Prof. Nader says:

> If I were an anthropologist from New Guinea, observing the energy efforts of the past several years, I would note a wide gap between what leadership says and what it does in this country. I would note that the government had no interest in solar. All the solar conferences the government is sponsoring, I would see as rituals of reconciliation. In the absence of true innovation and change, we have one conference after another. Because of the way American leaders are handling the problem, I may theorize that the society is having a nervous breakdown instead of an energy crisis. . . .
>
> The energy problem is not a technological problem. It's a social problem. We must build technologies that recognize human frailty. If there's one thing that social science has documented, it's that people make mistakes. They're going to continue to make mistakes. Build that into the technology and accept and reject technologies on that basis.

At the NASA meeting on energy systems, in the closing session, Prof. Nader told the conferees what she thought of the proceedings. She said to them:

> The possibility of dropping nuclear power as a future alternative wasn't even discussed. The social and political consequences of nuclear power were not discussed. Nobody used the word "safety." These were all taboo areas. The fact that we're making decisions that closed off options to the next generation was considered irrelevant.
>
> None of these and other central issues were talked about. Every time I raised them people would say things like, "You remind me of my son." That gave hope. They were at least raising their children right.
>
> After my talk an engineer smiled at me and said "Professor Nader, I would like to explain why we don't talk about safety; we don't talk about safety because it's built into the design." As an anthropologist I found that statement interesting enough to write down.

She also attended a lecture at the Lawrence Berkeley Laboratory, on the topic of breeder reactors, introduced as "the way we're going to

go." In the question period, a man in the audience said: "I find it incredible that you've talked for a whole hour about the breeder reactor and never raised the question of public safety." Prof. Nader adds, "Several questions followed, but the only ones about public safety came from young graduate students." The people who worked at the laboratory asked nothing about safety, provoking this comment from the visiting anthropologist:

> For the first time, I began to question how the work organization affects how scientists and engineers think. There are certain pressures, at that laboratory and others like it, that encourage people to think similarly—that, in fact, punish deviant thinking.

Who, for example, has the authority to say that "breeder reactors are the way we're going to go?" Eminent scientists have utterly condemned them as extraordinarily dangerous. Yet "There was no discussion of that question either before or after the talk."

A few years ago Michael Polanyi (in *The Tacit Dimension,* Doubleday, 1967) coined the term, "unbridled lucidity," to describe what happens to various specialists when they become too involved in detail and wholly engrossed in technical objectives. They see *too* clearly in the direction of their immediate goals, with the result that they don't see general meanings or implications at all. Prof. Nader illustrated this by noting, in the meeting on building codes, the contrast between members of interest-groups such as bankers, contractors, architects, inspectors, lawyers, and realtors, and other people. "It was extremely difficult for anybody we interviewed, except members of the general public, to see the whole picture." This contrast sets the general problem well. We have a society in which the members of the general public find themselves unable to survive without the services of specialists. When the water doesn't run, you call a plumber. When the phone won't ring, you go next door and make a report, then wait. If you feel unwell, much of the time it isn't enough to see a doctor. You will have to go to the hospital for a series of tests, some of which may be both unpleasant and exhausting, as well as costly. Diagnosis is now a complex technology and doctors who depend on their sixth sense are disdained by the medical profession. You have to *know.*

How can you argue with a specialist? A *professional* specialist? He has all those years in the university behind him, and certificates galore! Yet it remains true, as Prof. Nader says, that only members of the general public "see the whole picture." They see it but they don't *know* it, which makes them almost impotent in practical terms. Yet we might add that the sudden interest in "holistic medicine" is an individual and social response to this dilemma.

However, if you were a politician or a statesman, confronted by a technical problem which has become a public and a moral problem, to whom would you apply for counsel and guidance? To a specialist, probably. The Atomic Energy Commission was staffed by specialists, and so is its successor, the Nuclear Regulatory Commission. A member of the general public is likely to say that he can't live with specialists, and he can't live without them.

There are numerous other versions of this dilemma. In the seventh issue of the *Journal of the New Alchemists,* J. Baldwin writes on "Autologic," by which he means the kind of thinking which pervades the manufacture and selling of cars. First of all, it is powerful in influence: "about half of American paychecks come from some sort of involvement with the automobile." Baldwin, in a few paragraphs, gives objectivity to the dilemma:

> Generally speaking, the auto industry isn't too much different from others; the idea is to make a profit. But to make that profit, Detroit has to sell cars in large numbers. In a good year three cars are made for each child born. Because cars have so many parts, and the parts come from so many sources, about a three-year lead time is necessary to get a new model into the showroom. A completely new model may

require an entirely new factory. A recent front-wheel-drive compact was developed at a cost well over a billion dollars. Obviously, more profits can be made if the new model is not, in fact, new, but only seems that way.

Another ploy is to make the same car but with different name plates at various levels of prestige. A cheap car gussied up to sell at a higher price brings in more profit. Prestige is mostly due to advertised image anyway. Remember the uproar when Olds owners discovered their cars had Chevy engines? That's nothing new! Anyway, to make a model seem new or more expensive, the selling points cannot be the parts that are not new, the expensive parts. Consequently, you see very little in advertising that refers to engines, axles, brakes, steering, and roadholding. What you do see is "features." These tend to be fluff such as speeding temples, dashboard change bins, hidden headlights, and black vinyl roofs that make it necessary to run the air conditioning on mild days. Features tend to be added on rather than parts of a concept. (Mechanical concept, that is . . . they certainly are part of marketing concepts.)

What about "safety"? Since safety is not exactly loaded with marketing appeal, not much is said about it.

The vital parts are not mentioned and consequently the public is never usefully educated. The public doesn't know enough to demand better brakes, for instance. Thus there is no incentive to develop good brakes, and you can still buy cars that cannot be stopped in a straight line. People assume that such things as brakes are automatically taken care of by the engineers, much in the same way one expects a Winchester to refrain from exploding in one's face. Not so in the auto industry. Brakes could be extolled as a sales feature, of course, but market surveys have shown that such talk makes people think about safety and accidents, and that does not lead to a buying mood. In this way, essential issues are masked. About fifty thousand people are killed every year in cars in the U.S.A. and not much is done about it despite studies showing that each death costs society nearly two hundred thousand dollars in lost wages and work. (Grief isn't measured.) In the eyes of many designers, "safety features," as they are known, are optional or hated add-one mandated by excessive government regulation.

Other issues are masked too. The whole pollution controversy is one, and I'll not belabor it here except to say that there is more than corporate malice involved in the industry's attempt to discourage improvement except under duress. Not only does the pollution issue require an admission of corporate social responsibility, it requires expensive tooling for parts that can't be featured on the sales floor.

The parallels of this sort of thing are endless, as Baldwin has no difficulty in showing in a review of other industries. Even windmill makers and the manufacturers of solar collectors are sometimes guilty, but, he says, "the auto industry has tended to be at the forefront of such shenanigans, and its enormous advertising budget spreads its attitude." What, then, is to be done? Baldwin has some suggestions, such as persuading banks to give loans on solar houses only, and he thinks that specification building codes should give way to "performance codes." He also proposes that "Five-dollar-per-gallon gasoline would do more for auto design than any number of government regulations."

His concluding comment is of particular interest. He doesn't recommend joining some organization to put things right by political action, but suggests that individuals must learn to be intelligently critical.

Those of us who know about net energy must be really tough when we propose another piece of hardware, regardless of the righteousness of the concept. We have to think in terms of whole systems instead of components. We must encourage people to look at life-cycle costs of technology, both economic and energetic, and we should pressure lending institutions to take this into account. But most of all we should look into our minds to see how much of what we consider "reasonable" actually is so. The best antidote to autologic is to make everything you do a demonstration of clear thought.

This closing counsel is a way of suggesting that the time has come to remove the complexity—the unmanageable complexity—from modern technology by restoring it to our minds, not our lives. "Clear thought" in the present means handling complexity. Baldwin does it. Thinking in terms of "whole systems instead of components," since it is so important, also means

reducing the size of the systems to dimensions which a good proportion of the general public will be able to understand. This was one of E F. Schumacher's contentions, and it still stands against all critics.

As "consumers" we can do what is possible to avoid doing business with manufacturers who find it necessary to produce or serve on a mass scale. The imperatives of mass marketing are obviously a basic cause of the deception of the public. Support of small industry without this compulsion is obviously indicated. (A rereading of Schumacher's *Small Is Beautiful* would help to strengthen this resolve.)

What about political action? Here we must remind ourselves that politicians are also specialists. Their ineffectuality is directly traceable to the need to win at the polls in order to do the "good" they have in mind. Except for the kind of citizens who take lively part in town meetings, politicians are the prototypes of mass marketeers, obliged to water down their best ideas to the point of making them innocuous in order to give no offense to the mass of voters. It is becoming quite apparent that the cards of human nature are stacked against the specialists of whom we expect so much more than we expect of ourselves. And since complex systems, whatever their benefits (some of them now indispensable), inevitably include the weaknesses and susceptibilities of human nature, writ large, with little or none of the temperings characteristic of human decency in individual action, there is small use in looking to them for solutions. They, too, are a form of technology—organizational technology. The only good systems are those which grow slowly out of the practice of a combination of moral and practical intelligence. Their beginnings, therefore, are of necessity small.

REVIEW
THE SCHOOL OF NATURE

MURRAY BOOKCHIN'S *The Ecology of Freedom* (Cheshire Books, Palo Alto, Calif., 1989, $18.95) is a conceptual analysis of what is wrong with the modern world—almost a search in metaphysical terms for the origin of evil—and a sustained attempt to outline what must be done to put things right. Bookchin might be called an anarchist moralist who searches nature for instruction in the ethics that he believes to be implicit in the natural world. He is widely read, obviously familiar with the major philosophical and sociological documents of the West, and able to turn their contents to his purposes. Fundamental evil, in his view, results from domination, good from freedom. The model to which he most frequently resorts to illustrate the good is the preliterate organic society of the past which, whatever its limitations, gave evidence that human beings in association could live without possessiveness and in harmony. The twin evils of hierarchy and domination, he maintains, have twisted out of shape both the patterns of human life and even our host of earth. To achieve a truly ecological society we must consciously—instead of, as in the past, spontaneously—find in nature the clues to a good social order and develop them into the pattern of joyously natural life. As he says in his last chapter:

> . . . our study of nature—all archaic philosophies and epistemological biases aside—exhibits a self-evolving patterning, a "grain," so to speak, that is implicitly ethical. Mutualism freedom, and subjectivity are not strictly human values or concerns. They appear, however germinally, in larger cosmic and organic processes that require no Aristotelian God to motivate them, no Hegelian Spirit to vitalize them. If social ecology provides little more than a coherent focus to the unity of mutualism, freedom, and subjectivity as aspects of a cooperative society that is free of domination and guided by reflection and reason, it will remove the taints that blemished a naturalistic ethics from its inception; it will provide both humanity and nature with a common voice. . . . Nature does not "exist" for us to use; it simply legitimates us and our uniqueness ecologically. Like the concept of "being," these principles of social ecology require no explanation, merely verification. They are the elements of an ethical *ontology*, not rules of a game that can be changed to suit one's personal needs.

It is our false perception of nature, Bookchin says, which has led us to redefine "humanity itself to mean strife as a condition for pacification, control as a condition for consciousness, domination as a condition for freedom, and opposition as a condition for reconciliation." He continues:

> Yet an entirely different philosophical and social dispensation can be read from the concept of otherness and inwardness of life—one that, in spirit at least, is not unlike that of the Wintu and Hopi. Given a world that life itself made conducive to evolution—indeed, benign, in view of a larger ecological vision of nature—we can formulate an ethics of complementarity that is nourished by variety rather than one that guards individual inwardness from a threatening, invasive otherness. Indeed, the inwardness of life can be seen as an expression of equilibrium, not as mere resistance to entropy and the terminus of all activity. Entropy itself can be seen as one feature in a larger cosmic metabolism, with life as its anabolic dimension. Finally, selfhood can be viewed as the result of integration, community, support, and sharing without any loss of individual identity and personal spontaneity... .
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> "Civilization" as we know it today is more mute than the nature for which it professes to speak and more blind than the elemental forces it professes to control. Indeed, "civilizazation" lives in hatred of the world around it and in grim hatred of itself. Its gutted cities, wasted lands, poisoned air and water, and mean-spirited greed constitute a daily indictment of its odious immorality. A world so demeaned may well be beyond redemption, at least within the terms of its own institutional and ethical framework.

Bookchin writes with compelling eloquence, strong opinions, and romantic determination. The Book of Nature may not be as clear to others as it seems to him, its texts not so easily decipherable, yet the direction of his campaign will find many readers in agreement with him. As for his conception of Nature, there is the following:

> Here, I would like to emphasize that my views on nature are linked by a fairly unorthodox notion of reason. As Adorno and Horkheimer have emphasized, reason was once perceived as an immanent feature of reality, indeed, as the organizing and motivating principle of the world. It was seen as an inherent force—as the *logos*—that imparted meaning and coherence to reality at all levels of existence. The modern world has abandoned this notion and reduced reason to *rationalization*, that is, to a mere technique for achieving practical ends. *Logos*, in effect, was simply turned into logic. This book tries to recover this notion of an immanent world reason, albeit without the archaic, quasi-theological trappings that render this notion untenable to a more knowledgeable and secular society. In my view, reason exists in nature as the self-organizing attributes of substance; it is latent subjectivity in the inorganic and organic levels of reality that reveal an inherent striving toward consciousness. In humanity, this subjectivity reveals itself as self-consciousness.

Some readers may have difficulty with Bookchin's declared war on hierarchy. His definition seems based upon the abuses to which this natural law of relationships has led. "By hierarchy," he says, "I mean the cultural traditional and psychological systems of obedience and command, not merely the economic and political systems to which the terms class and State most appropriately refer." Yet in even the completely voluntarist society there will still be hierarchy in the sense of the wise to whom others apply, not for orders, but for advice. There are *superior* men. Gandhi was one of them, and there are and have been others—individuals of both sexes who are meticulously careful not to infringe on the freedom of others and their need to choose for themselves. One could even say that the ideal hierarchy among humans is characterized by levels of understanding and use of this *law* of human development—that while we may be able to learn from others, the responsibility of choice is always ours. (We may for example learn from Bookchin.) Growth is acceptance of responsibility linked with the capacity for fulfillment.

Another questionable value-judgment emerges in the author's distinction between happiness and pleasure. He says:

> Happiness, as defined here, is the mere satisfaction of *need*, of our survival needs for food, shelter, clothing, and material security—in short, our needs as animal organisms. Pleasure by contrast, is the satisfaction of our desires, of our intellectual, esthetic, sensuous and playful "daydreams." The social quest for happiness, which so often seems so liberating, tends to occur in ways that shrewdly devalue or repress the quest for pleasure. We can see evidence of this regressive development in many radical ideologies that justify toil and need at the expense of artful work and sensuous joy. That these ideologies denounce the quest for fulfillment of the sensuous as "bourgeois individualism" and "libertinism" hardly requires mention. Yet it is precisely in this utopistic quest for pleasure, I believe, that humanity begins to gain its most sparkling glimpse of emancipation. With this quest carried to the *social* realm, rather than confined to a privatized hedonism, humanity begins to transcend the realm of justice, even of a classless society, and enters into the realm of freedom—a realm conceived as the full realization of humanity's potentialities in their most creative form.

Yet there is surely a balance of pleasure and pain in every creative act. Moreover, the socialization of pleasure—pleasure never at the expense of anyone else—may be a difficult task if pleasure per se is held out as so high and desirable a goal. This seems an echo of eighteenth-century optimism (and hedonism) as expressed by de la Mettrie in *Man a Machine*. The *philosophe* declared in 1748:

> If Atheism were universally disseminated, all the branches of religion would be torn up by the roots. Then there would be no more theological wars: there would no longer be soldiers of religion, that terrible kind of soldier. Nature, which had been infected by the consecrated poison, would win back her rights and her purity. Deaf to all other voices, men would follow their own individual impulses, and these impulses alone can lead them to happiness along the pleasant path of virtue.

Here happiness and pleasure remain undistinguished, but the eager following of "impulses" is surely no Ariadne's thread to lead us

out of the maze created by multiplying desires. There are of course various levels of "desire," but reaching the higher levels collectively would be an extraordinary achievement for any modern society. One need be no puritan kill-joy to conclude, as Arthur Morgan did a few years ago, that in a society in which the meaning of life is left to the churches, and virtually ignored by the schools, "This cultural failure to relate ends and means has meant uncritical reliance on biological drives, emergence of vacuum-filling cultural tendencies, and acceptance of residues of traditional belief—a policy of drift. . . ." Morgan added that "unless strong concern for purpose and significance introduces an ordering principle for both life and education, sustained effort will be lacking, and there will be a tendency to lapse into biological hedonism." In short, without a cogent principle of regulation, indulgence of desire will stand in the way of serious inquiry into the meaning of life. Good-time Charlies seldom acquire discipline or become philosophers.

In general, however, the thrust of Murray Bookchin's book is in key with the upsurging philosophic spirit of the times. It is filled, moreover, with sagacious warnings on how, throughout history, means have been corrupted into ends, and how the very language of change is turned to preserving the psychological values of the status quo. Throughout this volume, the reader will find familiar material presented in an unfamiliar light, provoking renewed investigation of the meaning of both past and present. The creation of a better future will require a great deal of this sort of thinking.

COMMENTARY
TRUE, HERE, TOO

IN an article on political theory and Jacques Ellul in the Fall 1982 *democracy*, John Schaar, a teacher often quoted in these pages, sums up our present condition:

> The populations of the industrial countries have accepted the state as the legitimate Grand Inquisitor. Its duty is to feed them, and assure their security and comfort. What is called politics today is largely the administration of the feeding system, a system now so swollen and expensive (the feeders must eat, too) that no general program for changing it decisively on a broad front and by direct political means has much chance of producing good results. All such programs are simplistic, and result in greater governmentalization. . . . We do indeed need, as Tocqueville said, a new political science for this new age.

For suggestions for this science, he turns to Jacques Ellul:

> Ellul recommends an attitude made up of approximately equal parts of patience and restraint, anarchy and play. Don't take the pompous and false-heroic claims of politicians too seriously. . . . And say "no," resolutely but not violently. . . . don't believe the tinsel promises of the state; don't call on the state to solve your problems and serve your needs, for the cure will always be worse than the disease.

To illustrate Ellul's practice of his principles, Schaar tells what he did after World War II—after his involvement with the French Resistance: "Ellul worked to build a parallel university alongside the official one. Meeting in small study groups, teachers and students tried to think critically about things and not just toe the traditional line." Ellul has also been active in the ecological movement and opposes nuclear power in his homeland of Aquitaine. After a brief account of such activities, Schaar says:

> These examples show well enough what might be meant by the politics of the locale and the neighbor. It is a politics akin to those suggested by, say, Kirkpatric Sale, Ivan Illich, E. F. Schumacher, and Wendell Berry, and by Mary Parker Follett before them. . . . Do not dismiss such politics as petty, insignificant. Can anyone doubt that a hundred thousand persons, thinking and acting in such ways as those Ellul suggests, contribute more to the joy and health of French life than the entire party establishment, left, right, and center? Can anyone doubt that the same is true in our own country?

CHILDREN
. . . and Ourselves

DESPITE EVERYTHING

PETER ABBS, who teaches English and teachers of English at the University of Sussex in England, has produced *English within the Arts* (Hodder and Stoughton, 1982, £4.50), one more heroic attempt to bring both life and critical precision to the use of language. His book is partly a report on previous such attempts, with background on the programs which have had much to do with shaping the practice of teaching in British schools. The use of language is not only "communication," he says, but also an art form. In justification, he says:

> I argue that art is committed to the elaboration of meaning. Just as the sciences and humanities are symbolic forms for the comprehension of experience, so, I maintain, it is with the arts. They are the most sensitive instruments we have for the realization of that perennial decree "Know thy self and be thyself". . . . If, as R.G. Collingwood asserted in *The Principles of Art*, it is the power of art to keep consciousness authentic, then it can be seen that art-making and art-responding creates the necessary foundation on which all the other intellectual pursuits can subsequently build. Such an insight is central to the argument of this book.

The book is written in behalf of that most delicate of operations—to teach what can hardly be taught—the disciplined use of the imagination. Northrop Frye is called to witness to the value and importance of this undertaking The following is taken from Frye's *The Stubborn Structure:*

> Literature . . . gives us not only a means of understanding, but a power to fight. All around us is a society which demands that we adjust or come to terms with it, and what that society presents to us is a social mythology. Advertising propaganda, the speeches of politicians, popular books and magazines, the clichés of rumour, all have their own kinds of pastoral myths, quest myths, hero myths, sacrificial myths, and nothing will drive these shoddy constructs out of the mind except the genuine forms of the same thing. We all know how important the reason is in an irrational world, but the imagination, in a society of perverted imagination, is far more essential in making us understand that the phantasmagoria of current events is not real society, but only the transient appearance of real society. Real society, the total body of what humanity has done and can do, is revealed to us only by the arts and sciences; nothing but the imagination can apprehend that reality as a whole, and nothing but literature, in a culture as verbal as ours, can train the imagination to fight for the sanity and the dignity of mankind.

This is the case for Peter Abb's view of education through the arts. He does not think that the teaching of English should be bent to the intentions of social criticism at a given moment of history. The arts of perception, judgment, and expression have a higher calling than the spread of "correct opinion." The ultimately correct opinion appears in the view that the individual, by cultivation of his powers, must find his own way to correct opinion. This is the true law of human development and distraction from it is anti-educational, however plausible the excuses given. Mr. Abbs has this passage:

> As early as 1963 in the textbook *Reflections* there had been a marked shift in English towards the discussion of social issues through the reading of extracts from a largely contemporary literature. At the time [in the early sixties] the approach seemed convincing and, without doubt, it encouraged some excellent work in the classroom, particularly in the socially-mixed classroms of the new comprehensives. But after a decade or so, with the publication of innumerable anthologies parading the nightmares of pollution, abortion, unemployment, racial segregation, teacher and parent cruelty, strikes, women's liberation, prostitution, homosexuality, alcoholism, drug addiction, social exploitation, children's rights, nuclear war, suicide, and the futility of the educational system, the approach became—how shall we say it? —sordidly nihilistic.

The conclusion:

> We politicalize literature at the cost of authenticity. Again, it is a matter of renewing faith in the forces which transcend the merely given, of allowing art its own underground logic and, yes, its own kind of poetic "praxis."

Several chapters of the book give illustrations of Peter Abbs' actual teaching practice—the

"problems" or assignments he set, and what the pupil-teachers did in response—all impressive and provocative. In one of his workshops he said:

> You will remember how in the first workshop I arranged the tables in the manner of certain modern classrooms where children sit not mechanically lined up but informally clustered round him in small groups. You will remember I distributed blank sheets of paper—and we had to wait, as is so often the case in schools, for late individuals to arrive. When we were all assembled I presented each of you with an encased horse-chestnut and asked you to feel it, to examine it and to let your mind play over it. I was, of course, quite deliberately working in a manner of an English teacher in a contemporary classroom and you were my pupils.

He wanted them to experience how children feel when presented with an assignment to "write" something.

> When you had all received your horse-chestnut, I said quickly: "Right, I will give you three minutes to evoke in words the quality of the object." I gave you precisely three minutes and then asked you to open the shell and contemplate what was inside, to sense the nature of the inner husk and the conker it had protected. I gave you three further minutes to make quick jottings. After that I asked you to jot down any associations or memories that the object released in you. Finally, you will remember, I gave you ten minutes to make one coherent passage. "Find a pattern running through the notes. Create from the raw material something that is unified: Something shaped."
>
> When the ten minutes were up, we relaxed (but briefly) and then I asked you to read out your work. The pieces had been written in twenty minutes, the first pieces that some of you had written for years, and yet I felt, as you read them, that they possessed honesty, imagination and accuracy. I was impressed and moved.

So would be anyone else, noting the delicacies and inventiveness, the imagery and associations brought to bear in what the student-teachers wrote. This response quells somewhat the spontaneous objections to the "artificiality" of the classroom scene for such experiments. After all, there is no ideal teaching situation. The point is that whatever the limitations of circumstance, the environmental contradictions, the ridiculous implication of "scheduled" creativity, etc., it *works.* Something good happens. Transcendence is a possibility for all human beings although it may be achieved, on occasion, by only a few. A good teacher learns to sense the moments when something like that should be attempted.

How or why does the potentiality come to the surface? Only a superficial answer can be given to this question. Teaching is an act of faith. Mr. Abbs confesses:

> So I find myself both somewhat divided in loyalties and without proper time to think coherently about the workshops. In fact, I am sure this expresses a key dilemma in education; a dilemma of which, I suspect, all of you [preparing teachers] have already become only too painfully aware. The existing realities seem to conspire against our creative intentions. In the expressive disciplines we talk a great deal about the development of individual consciousness for it would seem to define one of the legitimate goals of our teaching and yet we find ourselves working in conditions which often seem to encourage gregarious banalities and an underlying emotional and intellectual exhaustion. The pace of movement is too fast, the numbers too many, the content to be covered too extensive. The inner self, as a result, becomes neglected, tends to atrophy. It is the most difficult problem, a problem generated by a *personal concept of education* inside a system *of compulsory* mass *education.* On an average day a teacher must see between a hundred and 200 pupils! How can she be concerned for the individual development of so many?

How indeed. Peter Abb gives no answer, but a reason for going on; and a reason, too, for reading his book.

> These questions are daunting but I do feel that they should *not* be suppressed. It is my belief that if we keep them in our minds long enough we may be able to find positive life-enhancing answers to them. At the very least, we will be in a strong position of keeping real, rather than pseudo, issues in the front of our minds.

FRONTIERS

Prediction of the Unpredictable

BRITTLE POWER, a new book by Amory and Hunter Lovins (Brick House, $17.95), is something of a block buster. It began as a study commissioned by the Defense Civil Preparedness Agency (later the Federal Emergency Management Agency) and grew into a volume of nearly five hundred pages. Its original purpose was to inform administrators how easy it would be to cause a paralyzing breakdown of the sources of the country's energy. The chapters describe numerous attempts by saboteurs and blackmailers, some of them successful, to disrupt the operation of energy facilities. In addition, an astonishing number of both minor and major failures have been caused by unpredictable accidents. The conclusion of the book, supported by both experience and expert anticipation, is that our technology has become so complicated that there is no longer a way of assuring its uninterrupted operation. Something is *bound* to go wrong, sooner or later. Disaster, the book shows, can be avoided only by simplification, diversification, and decentralization. The latter half of the book is devoted to the practical meaning, with multiple illustration, of these steps.

Most important, probably, for the general reader is detailed instruction in the fact that most of us are totally dependent on technological systems that we can no longer do without at all. The integration of people's lives with the function of machines and systems of machines is so complete that, should one of the systems—or more than one—fail for more than a few hours or days, we would find ourselves almost completely isolated from the familiar supports of life. The basic resources—earth, air, sun, and water—would still be there, but would be largely inaccessible in the forms that we are able to use. Think of all the things that stop working when electricity is suddenly cut off! Electricity runs pumps, and where would our water come from? The water is there, under the surface of the earth, but either a hundred or a thousand feet down, and how are you going to get it up in order to have a drink, to say nothing of washing your face? How will you put out a fire?

A candid report from the U.S. Energy Research and Development Administration (1976) said:

> It is becoming apparent that the increasing complexities of the nation's electric energy system are rapidly outstripping its capabilities. . . . Today's electric energy system in the United States is one of the most complex technical systems in existence. Unlike most other industries, the individual components do not operate independently but are tied together in an interacting system covering most of the continental United States, wherein deliberate or inadvertent control actions taken at one location can within seconds affect the operation of plants and users hundreds of miles distant. . . . The point of all this is that there does not yet exist any comprehensive applicable body of theory which can provide guidance to engineers responsible for the design of systems as complex as those which will be required beyond the next generation. . . .

The hazards from both accidents and failures, and also sabotage, are as great in other areas. A chapter titled "Disasters Waiting To Happen" details the vulnerability of liquified natural gas, oil and gasoline, nuclear power, along with electric power grids throughout the country.

The Lovins' offer solutions for both impending power shortages and the vulnerability of existing systems. The first solution is more conservation, the chief argument for which is the record saving accomplished in the past few years.

> During 1973-78, the United States got twice as much energy-supplying capacity from numerous small energy-saving actions, and got it twice as fast as synfuel advocates say they can provide at ten times the cost (if, and only if, they are given twenty-two billion dollars' pocket money to get started with). In 1979, ninety-eight per cent of U.S. economic growth was fueled by energy savings, only two per cent by actual net expansions of energy supply. In 1980, while real GNP stayed constant within better than a tenth of one per cent, total U.S. energy use dropped by three and a half per cent—the biggest one year drop in our nation's history.

A similar record establishes the desirability of smallscale renewable resources, the fastest growing supply after that gained by more efficient energy use:

> The United States is approaching its millionth solar building, of which half are passive and half of these are made by adding greenhouse or other sun-capturing accessories to existing buildings. Many of these were built on the basis of word-of-mouth or information from popular journals, few from officially provided information. In the most solar-conscious areas, about six or seven per cent of all space heating in 1980 was solar, and one quarter to all of the new housing starts in those areas were passive solar designs. Nationally, about fifteen per cent of the contractors building tract houses, and virtually all purveyors of prefabricated and package-planned houses, offered thermally efficient, passive solar designs in 1980. By 1981, some of the nation's largest housing developments supplied passive design and active solar water heaters as standard features, and efficient passive designs were moving into the mainstream of construction practice in most parts of the country.

In New England woodburning is increasing in both factories and homes, and wind machines are being installed in New Hampshire, Washington, and California. Hawaii hopes to obtain nine per cent of its power from wind by 1985. Small hydro installations are rapidly becoming popular, and direct solar and photovoltaic systems "were the fastest-growing energy supply technologies between 1975 and 1980, with revenues rising in an average of one hundred fifty-five per cent per year." The Lovins' comment:

> The hypothesis that many small actions can add up to greater speed than a few big actions is thus empirically true; there are good theoretical reasons why it should be true; and it is the approach most consistent with our national traditions. It is one of the reasons, indeed, that a fundamental shift in the architecture of America's energy system is already under way. For the highly centralized technologies which are being outpaced and outcompeted in the marketplace today are also those whose inherent brittleness so endangers national security. Whatever the reason for building those vulnerable technologies in the past, those reasons are no longer surviving scrutiny by inventors. Highly centralized systems are no longer the only or even the most timely and cost-effective way to meet our energy needs.

This brief account of the Lovins' book is only fractional in its coverage. While no such volume can be "complete," its diagnostic and prescriptive contents touch more bases than any other work. In fact, no other such work exists.