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A COMMON DENOMINATOR

IF you do some reading in the excellent books that keep coming out on the welfare of the planet and its inhabitants, and what must be done to preserve it, sooner or later the basic issue of "fit" will arise. How does what I need or ought to do fit with what *we* ought to do? The books invite an exercise of what Rousseau called the "general will"—what intelligent and public-spirited people decide is best for all—but "I" am only one person, one with involvements and responsibilities and goals that, with even the best of intentions, don't match up very well with what the world, or my country, or my city—with what "we"—ought to do. What can "I" do about this?

The question was precipitated by inspection of *Ecology and the Politics of Scarcity* (Freeman, 1977, paper, $7.95) by William Ophuls, certainly one of the most useful of such books. Its point is brought to a head in something quoted by the author from Francis Carney, a man who has obviously spent time in the Los Angeles area. He writes:

> Every person who lives in this basin knows ,that for twenty-five years he has been living through a disaster. We have all watched it happen, have participated in it with full knowledge just as men and women went knowingly and willingly into the "dark Satanic mills." The smog is the result of ten million individual pursuits of private gratification. But there is absolutely nothing that any individual can do to stop its spread. Each Angeleno is totally powerless to end what he hates. An individual act of renunciation is now nearly impossible, and, in any case, would be meaningless unless everyone else did the same thing. But he has no way of getting everyone else to do it. He does not even have any way to talk about such a course. He does not know how or where he would do it or what language he would use.

The absolutes of this expression need qualifying, but the point holds for most cases. Take for example one man who lives in the region, who has made up his mind to work for the prevention of smog because it is gradually killing the trees in the mountain forests around the Los Angeles basin. He has evolved effective language for talking about the damage done by smog to both trees and people, but he drives an automobile to his speaking dates and meetings with like-minded and prospectively like-minded people. He has to. He also plants trees—smog-resistant trees—and shows and trains other people how to do it, and where. Not just cars, but trucks and other equipment are needed for this beneficent work.

Well, we can all *imagine* a distribution of population and a decentralization of industry which would dispense with cars almost entirely, and with better combustion or clean-burning fuel for necessary transport, the pollution problem would be solved. We can imagine it, but can we actually get it? Perhaps, but not soon. William Ophuls would explain that this sort of gradual, self-directed reform takes a long time, while pollution of various sorts is every day getting worse. He generalizes the situation as the "problem of the commons":

> Men seeking gain naturally desire to increase the size of their herds. Since the commons is finite, the day must come when the total number of cattle reaches the carrying capacity; the addition of more cattle will cause the pasture to deteriorate and eventually destroy the resource on which the herdsmen depend. Yet, even knowing this to be the case, it is still in the rational self-interest of each herdsman to keep adding animals to his herd. Each reasons that his personal gain from adding animals outweighs his proportionate share of the damage done to the commons, for the damage is done to the commons as a whole and is thus partitioned among all the users. Worse, even if he is inclined to self-restraint, an individual herdsman justifiably fears that others may not be. They will increase their herds and gain thereby, while he will have to suffer equally the resulting damage. Competitive over-exploitation of the commons is the inevitable result.

It is usually pointed out that when the commons is unlimited—or apparently so—no problem exists. The discovery of America, for example, solved it for Europeans when they came here and spread out across the continent, exploiting natural resources it did not seem possible to use up. During the period of that great expansion nobody paid much attention to the claim of Thomas Malthus—that population growth always outruns food supply—except to ridicule it. Today no one ridicules Malthus. He used to be wrong but now he is right. In our own time, with our extensive technological methods of agricultural production, wholly dependent upon fossil fuels, energy is the critical factor in food supply, and energy is running out.

Without energy, the most brilliant of technological fixes cannot be made to work. Mr. Ophuls says:

> Industrial civilization has used cheap and abundant energy not only to subsidize agriculture, mining, and other forms of production, but also to substitute for (that is, reduce the scarcity of) the basic economic factors of land, labor, and capital. Energy has thus been the modern industrial world's all-purpose antidote to the poison of scarcity. But energy is itself becoming ecologically scarce and, if for no other reason than its potential long-term effects on the global heat balance, this antidote must eventually lose all its efficacy. Without cheap, safe, and abundant energy, most of the proposed technological solutions to the problems of growth simply evaporate. . . .
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> The era of cheap and abundant energy is decisively over. But energy is the linchpin of industrial civilization; as it becomes scarcer and more expensive, so must everything else. We have therefore come almost to the end of the industrial road characterized by ever grander high-energy solutions to the problems caused by previous growth. Without the energy to back them up, such "solutions" have become merely fantastic. The only genuine solution is to begin a transition to a low-energy (yet high technology) post-industrial civilization that depends primarily on flow resources like solar energy for the routine maintenance of life within the overall limitations on energy use that are built into the biosphere.

Needless to say, most of the political and economic proprietors of our world are still planning on technological solutions. That is where the wealth of nations has been invested, and commercial and technological enterprise has shaped the socially controlling patterns of production, trade, and distribution in terms of the drives of material self-interest. People have to conform more or less to those patterns, no matter what they think is the right thing to do, simply in order to work at jobs and provide for their families. The grip of the past remains compelling, even for those who no longer believe in its credo. Meanwhile, a great many still believe in it, and others passively acquiesce. How, then, can the needed changes be brought about?

For his solution, Mr. Ophuls goes back to Plato's Republic and his Guardians, the disciplined educators and rulers who understand what has to be done. Reform, he says, is not enough.

> At best, reforms can postpone the inevitable for a few decades at the probable cost of increasing the severity of the eventual day of reckoning. In brief, liberal democracy as we know it—that is, our theory or "paradigm" of politics—is doomed by ecological scarcity; we need a completely new political philosophy and set of political institutions. Moreover, it appears that the basic principles of modern industrial civilization are also incompatible with ecological scarcity, and that the whole ideology of modernity growing out of the Enlightenment, especially such central tenets as individualism, may no longer be viable. . . . However, our predicament is not hopeless. We can adapt ourselves to ecological scarcity and preserve most of what is worth preserving in our current political and civilizational order. But we must not delay. Events are pressing on us, and our options are being rapidly and sharply eroded; already we confront an array of potentially tragic choices.

The prescription is clear. We must adopt in theory and move in fact toward a steady-state economic society:

> Given a basic willingness to restrain individual self-seeking and legislate social temperance, social devices acceptable to reasonable men and suited to a government of laws could readily be found to serve as

> the "hedges" that will keep us on the path of the steady state. . . . The solution to the tragedy of the commons in the present circumstances requires a willingness to accept less, perhaps much less, than we now get from the commons. No technical devices will save us. In order to be able mutually to agree on the restraints we wish to apply to ourselves, we must give up the exercise of the rights we now enjoy, and bind ourselves to perform public duties in the common interest. The only alternative to this kind of self-coercion is the coercion of nature, or perhaps of an iron regime that will compel our consent to living with less.

This is what "we" have to do. The full measure of the change required is given in a passage at the end of a chapter headed "Learning To Live with Scarcity":

> Throughout most of recorded history, the human race has existed in rough equilibrium with its resource base. Growth occurred, if at all, at an infinitesimal pace; even the population of relatively dynamic Europe grew at much less than 1 per cent per annum between 600 and 1600 A.D. But then very suddenly, the Industrial Revolution rocketed the scale of economic activity upward. With the arrival of ecological scarcity, the rocket cannot continue to rise. The first policy option is an immediate and direct transition to a steady state civilization relatively affluent in material terms (however frugal it might seem to many now living in the richest countries). If this option is not taken, overshoot must occasion a fall to a significantly lower steady-state level than could have been achieved by carefully planned and timely action (II), or even to a level tantamount to a reversion to the traditional pre-modern agrarian way of life (III), so that the entire Industrial Revolution from start to finish will appear as a brief and anomalous spike in humanity's otherwise flat ecological trace, a transitory epoch of a few centuries' duration in which it seemed momentarily possible to abolish scarcity.
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> In short, we stand at a genuine civilizational crossroads. Ecological scarcity is not completely new in history, but the crisis we confront is largely unprecedented. That is, it is not a simple repetition of the classic Malthusian apocalypse on a larger scale, in which nothing has changed but the numbers of people, the ruthlessness of the checks, and therefore the greater potential for misery once the day of reckoning comes. The wars, plagues and famines that have toppled previous civilizations are overshadowed by horrible checks Malthus never dreamed of, like large-scale ecological ruin or global radiation poisoning, for these checks are threats to the very existence of the species. On the other hand, we also possess technical resources that previous civilizations did not when they encountered the challenges of ecological scarcity. Thus in our case a successful response is possible: we can create a reasonably affluent post-industrial, steady-state civilization and avoid a traumatic fall into a version of pre-industrial civilization. This imposing task devolves upon the current generation. But there is no time to lose.

The various subdivisions of the task are given in detail in the books which Mr. Ophuls recommends. We know, in effect, what to do. Yet "we" also can easily enough see why the author harks back to Plato's Guardians. They, or rulers or administrators like them, will be needed because most of the people in the world are devotedly pursuing personal objectives which they regard as vitally important, while the rich and the prosperous find it sensible and good to go on doing things in the way that made them rich and prosperous.

How will all these people be made or moved to change? The author says that they don't have much choice. They will have to take instruction either from wise ecological policy-makers or from the harsh measures that Nature will impose. These are the only options.

He proposes, therefore, a "politics of transformation":

> As in the revolutionary era of the past, inspirational leadership will be needed to steer us clear of anarchy and chaos during the transition. The critical question, therefore, is whether such leadership will be provided, on the one hand, by a man on horseback or Big Brother's Ministry of Propaganda or, on the other, by a Gandhi or a group of Jeffersonian "natural aristocrats" resembling the men who founded the American Republic. Unfortunately, the breadth of mind and nobility of character typical of the latter are not commonly found these days, for our institutions are designed to turn out experts and other brilliant mediocrities whose distinguishing characteristic is what Thorstein Veblen called a "trained incapacity" to see beyond their professional

> blinkers. . . . Next to the sheer lack of time in the face of onrushing events, the paucity of genuine leaders is probably our most serious obstacle to a better and more humane future.

We come back, then, to our original question: What sort of "fit" with this urgent program can there be in the lives of individuals—people who are spotted all across the spectrum of the status quo? We can't all be ecological designers who give most of their time to figuring out what "mankind" must do, and yet, if they are right—and here we are stipulating that they are—finding some kind of fit with what they say has ultimate importance. The best fit, of course, will be a matter of individual discovery and initiative—like the work of the man who plants trees, or the man who combines farming with education, and turns agriculture into a curriculum for social philosophy, or the numerous women doing pioneering work in food production, innovative publishing, and alternative education. But there needs also to be something like a common denominator—an essential ingredient of what both "society" and individuals must do to bring the changes about.

Mr. Ophuls suggests, indirectly, what this ingredient or factor may be. While he says at the beginning that he is not going to write a great deal about "values"—he will leave them to the last, since "philosophical, ethical, and spiritual arguments seem to appeal only to the converted"—there is an underlying theme which surfaces now and then throughout the book. It has articulate expression in the last chapter:

> Finally, the steady-state society will undoubtedly be characterized by genuine morality, as opposed to a purely instrumental set of ethics. It seems unlikely, for example, that a real commitment to stewardship could arise out of enlightened self-interest; it will require a change of heart. But the same could be said about many of the other developments outlined above. Indeed, the crisis of ecological scarcity can be viewed as primarily a moral crisis in which the ugliness and destruction outside in our environment simply mirror the spiritual wasteland within; the sickness of the earth reflects the sickness of the soul of modern industrial man, whose whole life is given over to gain, to the disease of endless getting and spending that can never satisfy his deeper aspirations and must eventually end in cultural, spiritual, and physical death. If this assessment is correct, then the new morality of the steady state must involve a movement from matter toward spirit, not simply in the sense that material pursuits and values will inevitably be de-emphasized, and restrained by self-interested necessity, but also in the sense that there will be a recovery or rediscovery of virtue and sanctity. We shall learn again that canons higher than self-interest and individual wants are necessary for men to live in productive harmony with themselves and others. Thus the steady-state society, like virtually all other human civilizations—except modern industrialism, will almost certainly have a religious basis—whether it is Aristotelean political and civic excellence, Christian virtue, Confucian rectitude, Buddhist compassion, Amerindian love for the land, or something similar, old or new.

While something of this feeling is suffused throughout the book, Mr. Ophuls is true to his determination to write for an audience of pragmatic Americans; as he says:

> Hard-headed scientists, technologists, bureaucrats, and businessmen—that is, the men who make the basic decisions determining our futures—do not as a rule pay much attention to such arguments [the appeal to values]. If one is to argue constructively with the men who incarnate our cultural and political norms, one must argue the case in their own terms. This requires a fundamentally empirical and a scientific or agnostic approach, putting aside the question of values, at least temporarily, to find instead what is possible, given the natural laws that govern our planet.

The writer says this—and offers plenty of tough-minded reasoning—yet there is also that other requirement on which everything depends: *a change of heart!* How is this to be arranged?

It isn't, of course. Changes of heart are not a proper objective for anyone except in the case of oneself, and in addition they are genetically mysterious. Yet it has been a change of heart that has given its humanizing influence to the work of the new generation of social thinkers and essayists, and which led E. F. Schumacher to subtitle his famous book, "Economics as if People Mattered."

A change of heart is surely the common denominator that links "I" with "we." The contradictions in our lives will be with us for a long time; they have to be worn out, their divisive effects exhausted; and for all that long time we'll need to make the best of bad and even compromising situations, by reason of a change of heart. In a concluding paragraph William Ophuls suggests where he has found inspiration:

> In looking out at this ecological ruin we have made of the earth, we see what manner of men we have become. Worse, the degraded environment impoverishes us spiritually so that we are likely to cause further ecological ruin. But the point has been reached where such a vicious circle can no longer continue without serious consequences for humankind. The earth is teaching us a moral lesson: the individual virtues that have always been necessary for ethical and spiritual reasons have now become imperative for practical ones. These virtues were pithily summarized in the fifth century B.C. by the Taoist sage Lao Tzu:
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> Nature sustains itself through three precious principles,
> which one does well to embrace and follow.
> These are gentleness, frugality, and humility.
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> Implicit in gentleness, frugality, and humility are simplicity and closeness to nature. *Walden*, the famous symbolic critique by Henry Thoreau of an American society rapidly headed in the opposite direction, is an extended sermon on the necessity of natural simplicity as the only way to avoid living the quietly desperate life of those weighed down by striving for power, possessions, and position.

Another kind of science grows out of such inspiration, and we are getting more and more of it.

REVIEW
ACHIEVEMENT OF OUR AGE?

GOOD writers are men whose minds are equipped with antennae that pick up currents of thought not felt by others, and whose capacity for ordering the ideas so gained enables us to learn from them. The tools of their craft are analogy, metaphor, and myth. The best writers find themselves led to explore the fundamental aspects of the human situation, so that their conclusions soon become very abstract, but the expression of these ideas is so colorfully illustrated with imagery that the reader's attention is held. Take for example Alan McGlashan (in *Gravity and Levity,* Houghton Mifflin, 1976), who speaks of the limitations of human knowledge, despite its grandeur:

> Clever as the human being may be, there are a surprising number of things he has forgotten how to do. He has forgotten, for instance, how to digest food without a stomach, how to breathe without lungs, how to excrete uric acid without kidneys and how to expel it without a bladder. He has even forgotten how to make movements without muscles. Yet, as J. W. Krutch reminds us, there are living creatures called protozoans in every part of the world at this moment who are doing all these things. Protozoans are, of course, simple souls, being composed of a single cell. But higher up the evolutionary scale are many other creatures daily performing what is humanly impossible. There is, for instance, that curious fish the Gymnarchus which although blind contrives to "see" by self-generated electronic messages, successfully pursuing and capturing by this means the darting, twisting small fish on which it feeds; and the homely honeybee whose dancing discloses a wealth and precision of meaning that no human choreographer can match. . . . These literally super-human feats, however, are easily outclassed by a small colenterate called the Hydra. If you cut off Hydra's head it will grow a new one.

What is Dr. McGlashan getting at? His purpose, it becomes plain, is to inspire a reasoned humility. Knowing is an activity in which we are often beaten, hands down, by various primitive forms of life. There are many other ways of knowing besides our own.

> Even in the sphere of knowledge, that proudest of human achievements, there are areas in which our awareness cannot compare with that of some of our very humblest neighbors on the earth. There are rhythms in nature, particularly solar and lunar rhythms, to which we are grossly insensitive in contrast to many other forms of life. A large body of evidence, which is increasing almost daily, suggests that many living things have an awareness of the changing phases of the sun and moon, and a finely adjusted response to the electro-magnetic influences proceeding from them, which is far beyond human powers; or at least far beyond any attention we have yet given to these matters. It may for instance come as a surprise to some people to learn that "potatoes, algae, carrots, earthworms, and salamanders all 'know' where the moon is, whether it has just appeared over the horizon, whether it is at the zenith, or whether it is setting," and respond to the knowledge by an appropriate adjustment of their metabolism. To be outclassed in any branch of knowledge by a potato should surely loosen up the most arrogant intellectual.

Dr. McGlashan is getting us ready for several sorts or wondering—the possibility, say, that there can be some kind of thought without a brain, or that there is mental life on other planets, supported by conditions radically different from those we are familiar with. The people who refuse to take such suggestions seriously, he says, "are not giving nearly enough credit to the ingenuity of the life-force." Most of our settlements, securities, and certainties, the Doctor thinks, are premature. It is for him—and for us when we think about it—an appalling thought that we might come to a point where there are no more questions to be raised, where all our uncertainties have been resolved. For that would be the case if we reached the unity of a "final answer." "Why on earth," he asks, "is the human mind so hell-bent on finding unity? Suppose we did suddenly arrive at the final, unitary, incontrovertible truth as to the nature of Reality—that mirage which we have passionately pursued for all these centuries." We should then have to live in "a nightmare world where freedom, not merely of action but of thought, would be in eternal exile"—

> Precisely the kind of choice-deprived world which our prime ancestor, Adam-Eve, found intolerable. And if, like him, we found ourselves trapped in so claustrophobic a universe, we should be driven, as he was, to commit some huge, iconoclastic crime to earn once more our banishment beyond the stifling gates of Paradise.

What, finally, does the "unity" Dr. McGlashan talks about mean? It means that there would be no more questions, no more answers, no more talking things over, no more "I" and "Thou"—no differences at all. Is that why we are here? Did the primal motion of the universe arise from centers of intelligence (like ourselves) that would no longer put up with paradisiacal inactivity? Is that what people mean when they speak of the "will to be"?

Yet once we get out into the world, we can think of nothing more desirable than to go back home. We want to *settle* things. Get rid of uncertainty. What is science but a herculean drive against uncertainty? Dr. McGlashan makes it plain that he thinks the nature of man dual or ambiguous. Man is a being who cherishes polar opposites, who must have both yet cannot manage their balance, and so rushes first toward one extreme, then toward the other. Balance is the thing, but how do we get it?

We strive to build more stately mansions, but then, in our isolated splendor, recognize that we must dissolve them in order to have fellowship with all the rest. Why can't we do both at once? Because in theory such doing is a contradiction in terms. *Relative* unities are all that we can have on earth, and relativities are always temporary. Is this the cause of our "divine unrest"? Alan Watts once remarked that we are able to think, and we can think about thinking, but we can't do both at once. Thinking is the human mode of building, and thinking about thinking is the withdrawal from building while continuing in awareness, which may finally be what is meant by Nirvana.

Viewed in this way, humans hold both time and eternity in their hands; we are able to and must of necessity build, while realizing that all compounds, all external structures, are perishable.

Has anyone achieved such extraordinary balance? There seems more than a hint of it in Krishna's counsel to Arjuna, in the third discourse of the *Bhagavad-Gita:*

> Even if the good of mankind only is considered by thee the performance of thy duty will be plain; for whatever is practiced by the most excellent men, that is also practiced by others. The world follows whatever example they set. There is nothing, O son of Pritha, in the three regions of the universe which it is necessary for me to perform, nor anything possible to obtain which I have not obtained; and yet I am constantly in action. If I were not indefatigable in action, all men would presently follow my example, O son of Pritha. If I did not perform actions these creatures would perish; I should be the cause of confusion of castes, and should have slain all these creatures. O son of Bharata, as the ignorant perform the duties of life from the hope of reward, so the wise man, from the wish to bring the world to duty and benefit mankind, should perform his actions without motives of interest.

This is about the only "settlement" we have heard of that is without penalty. All the others, pursued with vigor and expectation, lead to involvement and imprisonment . . . in what? In some splendid kind of illusion from which we must then break free.

The law of gravitation—really only half a law—is a case in point for science. Dr. McGlashan considers this plight and locates another principle of balance:

> What is the secret of the power Newton's theory of gravity holds over the minds of men? . . . Apart from its enormous usefulness in providing an explanation of physical behaviour of everything from a falling acorn to the orbits of the planets, unopposed gravity is a form of Final Answer. . . . here, at last had been discovered a basic, *unitary* fact, proven up to the hilt and plain for all the world to see. No wonder that scientists, and the world too, hailed unopposed gravity as a shining truth.
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> Why should we bother about the possible existence of a force equal and opposite to gravity? Could we not leave all such questions for the experts to quarrel over on their own recondite level? The

> answer is an unequivocal No. The whole world has accepted Newton's concept of gravity as an unopposed force, and it now enters into every aspect of our thinking and feeling. It has distorted our natural responses to the world we live in, by leading us to believe in a universal force which is *unrhythmical*. For rhythm, coming now to be accepted as an essential factor in all living processes, is born of equal and opposite forces in interplay.

The last half of Dr. McGlashan's book is devoted to rhythm as scene and living circumstance of human life. Without it we should go mad. "The horror of my condition," a recovered schizophrenic told him, "was that the days had no structure, time had no rhythm." Later the author says, "For the truth is we are rhythmical creatures swimming in a rhythmical ocean of Being."

> . . . there are, then, two basic rhythms in man—his heart beat and his breathing. By the one he is related to the whole of organic life, by the other to the life of the spirit. He also carries within himself, as we have seen, innumerable other rhythms, from the flickering alternations within each cell to the slow cyclic recurrences of the periodic diseases. And all this inner awareness of time, all these miraculously synchronising systems have their counterpart at least to some degree in every species of living creature. . . . Is it not possible that once fully aware that his inner rhythms are also universal, a man might actually *experience himself* differently, might shed the sick feeling of alienation and find himself at home again in the world?

Dr. McGlashan ends *Gravity and Levity* by wondering if our present awareness of this infinite web of ordered rhythmic relativities—the only home we have may not contain "the seed of a desperately needed psychic mutation."

> . . . there is no way back. The old certainties are dead. It could be the specific achievement of our age not merely to accept this paradoxical quality in life, but to delight in it. Rhythm, which is the cradle of Being, is itself the supreme paradox. It is the never-resting resting-point at the nonexisting centre of existence.

COMMENTARY
GUARDIANS, NOT GUARDS

READERS who feel troubled by the prospect of Plato's Guardians acting as the supervisors of the transition to a steady-state economy—in this week's lead William Ophuls is quoted as saying that "liberal democracy" will have to give way to "a completely new political philosophy"—may feel reassured by the reminder that Plato's *Republic* is an *allegory*, not a serious political treatise. And as Mr. Ophuls later suggests, the coercion that will compel changes in our lives will come from nature, and the conformity will be to necessity. As so often said, Freedom is dependent on knowledge of Necessity.

If we read Plato carefully, as Northrop Frye suggests, "we notice that Socrates, in the *Republic*, is not concerned about setting up his ideal state anywhere: what he is concerned about is the analogy between his ideal state and the structure of the wise man's mind, with its reason, will, and desire corresponding to the philosopher-king, soldiers, and artisans of the political myth." Linking Plato's *Republic* with Thomas More and his *Utopia*, Frye continues:

> For Plato, certainly, and for More probably, the wise man's mind is a ruthless dictatorship of reason over appetite, achieved by control of the will. When we translate this into its social equivalents of a philosopher-king, ruling workers by storm-troopers (not "guardians," as in Jowett, but "guards"), we get the most frightful tyranny. But the real Utopia is an individual goal, of which the disciplined society is an allegory. The reason for the allegory is that the Utopian ideal points beyond the individual to a condition in which, as in Kant's kingdom of ends, society and individual are no longer in conflict, but have become different aspects of the same human body.

Yet the allegory has a lesson in it. What sort of man would we feel easy about obeying? Who is entitled to give orders to anyone? Only the man who is demonstrably without self-interest can qualify.

Where shall we find such a ruler? Nowhere, these days. And if one should exist, who would feel able to believe that, given such awesome power, he would not change? For us in the present, it is a question rather of whom we shall choose as our counselors, guides, and friends.

CHILDREN
. . . and Ourselves
A CHANGE OF TASTE

HOW should scientific studies in elementary and high school be framed by the teacher? We don't propose to try to answer this question, since no formula would be of much help. But in the October 1979 *Technology Review* Vince Taylor presented a framing that might serve as foundation of thinking about this responsibility. Why should science be introduced in a particular way? Why not just teach what science says without any fuss? Well, we know the trouble we get into from letting impressive technique take the place of judgment about the fitness of things. The need is to explain this simply without destroying respect for the discipline of technique.

The letters to which Mr. Taylor is replying deplored the "subjectivity" of his thinking as a policy analyst. He said in reply:

> I do *not* argue for the superiority of subjective over objective research, but rather for explicitly recognizing that our "objective" world is inescapably shaped and colored by our beliefs, ways of thinking, and emotions that is, by our "subjective" world. Nor do I argue for rejecting the scientific method, but rather for recognizing what should be obvious: that applying this method only within the confines of highly quantitative, abstract models will lead to badly erroneous policy prescriptions *because* reality is far too complex to be accurately captured by such models. This is not idle conjecture but a truth painfully proven: in 1962, McNamara (then Secretary of Defense), the paragon of "hard" analysts, offered his "objective" evaluation of U.S. prospects in Vietnam, "Every quantitative measurement we have shows we are winning this war."
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> If, as seems likely, the world's most pressing problems stem not from insufficient *quantities* but from an imbalance of *qualities*, analytical science, by its very nature, will be able to make only a limited contribution to their solution. To acknowledge this limitation is neither to reject the value of logic and evidence nor to argue for replacing science with subjectivity. It does, however, imply the need to move beyond our current exclusive focus on quantitative analysis.

A critic, however, might argue that Mr. McNamara didn't look at the right data. That if the *significant* evidence had been gathered for him, he might have made a very different judgment. But is a decision about the "significance" of evidence "objective" or "subjective"?

"How odd it is," Darwin once remarked, "that anyone should not see that all observation must be for or against some views, if it is to be of any service." Behind calculations about the progress of the Vietnam War were questions such as, Why should we be there? What are we fighting for? What kind of war was it before we began to take part? Obviously, issues of moral judgment are interlocked with technical questions. As Taylor says, we tend to define our objective world in terms of "our beliefs, ways of thinking, and emotions."

Example: In the *Atlantic* for April, 1968, James C. Thompson, Jr., an East Asia specialist, recalled the official disdain for his expertise (insight?) concerning basic issues in Vietnam:

> I shall not forget my assignment from an Assistant Secretary of State in March, 1964: to draft a speech for Secretary McNamara which would, *inter alia*, once and for all dispose of the canard that the Vietnam conflict was a civil war. "But in some ways, of course," I mused, "it is a civil war." "Don't play word games with me!" snapped the Assistant Secretary.

It seems clear enough that Mr. McNamara *wanted* to think we were winning, and went on with this wanting for a long time. So objectivity became the servant of subjective inclinations, with various selections and even falsifications of evidence provided to decision-makers.

The point is that no one can get rid of the subjective factor in making up one's mind. The seasoned objectivist always redefines his inner inclinations in objective terms, overlooking that this may result in distortion or misrepresentation. When confronted by such possibilities, he is likely to get mad. His "morality" explodes all over the place. How can anyone question what is so *obvious!* ("Don't play word games with me!") Who needs scientific method to know that we ought to win a war! Science will show us how. And so on.

Back to Mr. Taylor:

> The sense of what I'm recommending was well conveyed by James Agee in explaining the reason for his approach ("to speak carefully and as nearly truly as I am able") to reporting the daily lives of white tenant farmers in the Deep South in 1939 (Let Us *Now Praise Famous Men*): "For in the immediate world, everything is to be discerned for him who can discern it, and centrally and simply, without either dissection into science, or digestion into art, but with the whole of consciousness, seeking to perceive it as it stands: so that the aspect of a street in sunlight can roar in the heart of itself as a symphony, perhaps as no symphony can: and all of consciousness is shifted from the imagined, the revisive, to the effort to perceive, simply the cruel radiance of what is.

What has happened here? You could say that for James Agee a reversal of history has taken place: That the quantitative and the qualitative have been restored to unity and spontaneous collaboration. How did they get separated? Was it useful or necessary to do so? Galileo made one argument for the separation, Descartes another. If you want to be exact, they both said in effect, leave the subjective out of consideration. Ignore it, get rid of it. But they neglected to add that if you do, you limit your investigations to areas where ambiguity does not exist, where what we call morality has no voice, and where only inanimate certainty can be established.

Naturally enough, the canon of Objectivity and *only* Objectivity has a fascination for driving, impatient seekers after truth. The public truths of objective science can be used as a bludgeon on resisting souls who plead that they have strong intuitions to the contrary. And the fact is that all through history there have been people, lots of them, who prefer feeling to fact, emotional loyalty to justice, self-interest to impartiality. So the reason for advocating objectivity as indispensable criticism is clear. It is the only available corrective for partisan subjectivity. But by a party of reasoning, the moral sense, including the symmetries implied by intuition, is the initial and primary corrective for partisan objectivity. We separate the two only in order to put them together again more fruitfully. And the only instruction we can have in this crucial, inevitable, unifying capacity of human beings is *examples*, after the fact. Formulas are impossible, because of the unique individuality of subjective intelligence.

In a recent letter (unpublished), John Holt gets at this question in another way:

> When will we ever learn that reading and writing are not *skills* which we learn so that we may use them to do something else, but *activities*, complete in themselves, which is to say, things that we do for an immediate reason and purpose.
>
> We talk, listen, write and read because we have something that we want to say to others or because we want to hear and understand what someone else is trying to say to us. We don't talk, etc., so that *some day*, when we have something to say, we may be able to say it, and nobody ever learns to talk, etc., that way.
>
> I suspect in this matter some teachers practice better than they preach [advocating acquisition of "skills"]. That is, I suspect that in their classes most of the talking, listening, writing, and reading that students do they do because there is something they want to say or hear, right now. In short, I suspect that reading, writing, etc., in the school are taught and done as activities rather than skills, neutral tools to be used, presumably, later on for serious and real purposes.
>
> Still, words are important, and using them inaccurately and improperly to describe what we think and do can in time lead us into trouble. We can say that reading, like any activity, involves and requires skills, and we can say that some readers are more skilled than others—that is, they can read faster, and with more and deeper understanding, from a wider variety of materials. But that does not make reading a *skill*.
>
> We who are interested in teaching and learning will gain a lot when we finally understand this.

Some years ago a MANAS writer said: "Technique is the worst enemy of art, but there is no art without technique." Technique, which is "objective," and which can be taught, when given exclusive importance, develops its own (technical) ends, which may turn out to be anti-human and anti-life. Separated from motive, technique is only a hired man. Separating the two in practice is always dangerous, although necessary in theory, if we are to understand ourselves.

FRONTIERS

The Changing Scene

TELL me, a distinguished psychologist once said, what a people joke about, the songs they sing, and what they dream about, and I will tell you what kind of people they are. You could call this reading a culture according to the signs it reveals. Ivan Illich, in an article in *Gandhi Marg* for last September, makes a reading which is easier to follow, using visual materials.

What is "development"? It used to mean, Illich says, something fairly simple like "evolutionary" development, or projects undertaken by real estate promoters, but today it means "modernization," involving mass production techniques and raising consumer appetites. "Now is the time," he says, "to dig out the axioms hidden by the idea of development itself."

> Fundamentally, development implies the replacement of general competence and abundant subsistence activities by the use and consumption of commodities. Development implies the monopoly of wage-labour over all other work. It implies the definition of needs in terms of goods and services produced on a mass basis according to expert design. Finally, development implies the rearrangement of the environment in such a fashion that space, time, materials, and design favour production and consumption while they degrade or paralyze use-value oriented activities that satisfy need directly. And all such worldwide homogeneous changes and processes are valued as inevitable and good. The Mexican muralists dramatically portrayed the typical figures before the theorists outlined the stages. On these walls, one sees the ideal type of human being as the male in overalls behind a machine or in a white coat over a microscope. He tunnels mountains, guides tractors, fuels smoking chimneys. Women give him birth, nurse, and teach him. In striking contrast to Aztec subsistence, Rivera and Orozco visualize industrial work as the sole source of all the goods needed for life and progress.

Those great wall paintings, as we recall, were done in the 1930s, and often reprinted in color in American magazines. Stark and ruthless vigor was joined with revolutionary ardor in those sturdy peasant bodies, made into symbols of "liberated" industrial man. The "consumer" side of the imagery—which we have in *Good Housekeeping* and *Vogue* and *Better Homes and Gardens*—would come later, after the factories were built and were pouring out their delectable commodities in never-ending stream. But we didn't make such anticipations in the thirties—we just admired the primitive power of the paintings, feeling that Rivera had caught the spirit of the times. He had of course done just that.

Today the times have changed. As Illich says:

> . . . this ideal of industrial man now dims. Taboos weaken. Slogans about the dignity and joy of wage-labour sound dated. Unemployment, a term first introduced in 1898 to designate people without a fixed income, is now recognized as the condition in which most of the world's people live anyway—even at the height of industrial booms. In Eastern Europe especially, but also in China, people now see that, since 1950, the term "working class" was used mainly as a cover to claim privileges for a new bourgeoisie and its managers bent upon replacing the old. The need to create employment and stimulate growth, by which the old self-appointed paladins of the poorest have so far squashed any consideration of alternatives to development, now appears much less real.

In short, the case for "development" is losing its force.

> The challenges to development take multiple forms. In Germany alone, some 15,000 groups experiment, each differently, with what they believe to be alternatives to an industrial existence. The majority come from blue-collar homes. For most of them, there is no dignity left in earning livelihood by a wage. Like some slum-dwellers in South Chicago, they try to "unplug" themselves from consumption. In the United States, at least four million people live in the core of tiny and highly differentiated communities of this kind, with at least seven times as many sharing their lives—women seek alternatives to gynecology; parents alternatives to schools; home-builders alternatives to the flush toilet. In Trivandrum (South India), I have seen one of the most successful alternatives to a special kind of commodity-dependence: to instruction and certification as the privileged forms of learning. One thousand seven hundred villages have installed

> libraries, each containing at least a thousand titles. This is the minimum equipment they need to be full members of Kerala Shastra Sahitya Parishad, and they may retain their membership only as long as they loan at least three thousand volumes per year.
>
> I was immensely encouraged to see that, at least in South India, village-based and village-financed libraries have turned schools into adjuncts to libraries, while elsewhere libraries during these last ten years have increasingly become mere deposits for teaching materials used under the instruction of teachers. Also in India, Medico International represents a grassroots-based attempt to demedicalize health care (in Bihar), without falling into the trap of the Chinese barefooted doctor, who has become the lowest level lackey in a national hierarchy of big-control.

There are other good signs: In a national referendum in Austria, the people by absolute majority "refused permission to Chancellor Kreisky, politically in control of the electorate, to open a finished atomic generator." Grassroots movements are challenging not only the idea of "development," but also the Western notion of "progress."

Illich's indictment of what these movements hope to put an end to is a rhetorical masterpiece:

> Development based on high per capita energy quanta and on intense, individual professional care looks in retrospect like the most deleterious missionary effort ever undertaken by the West. Investments for this project were guided by an ecologically unfeasible conception of human control over nature, and by an anthropologically vicious attempt to replace the nests and snakepits of culture by sterile wards for professional service. The hospitals that spew out the newborn and reabsorb the dying, the schools run to busy the unemployed before, between, and after jobs, the apartment towers where people are stored between trips to the supermarkets, the highways connecting the garages form a pattern tattooed into the landscape during the short development spree. These institutions, designed for life-long bottle babies wheeled from udder to udder, begin now to look as outdated as cathedrals, albeit unredeemed by any aesthetic charm.

All this, Illich's article implies, has got to go, and is on the way out. He writes to warn against the compromising hazards faced by those who are finding alternatives, choosing the soft path, who believe and practice subsistence economics, and who place use value far above commodity value. These dangers are several and complex, but cannot be considered here. See *Gandhi Marg* for last September: Gandhi Peace Foundation, 221/223 Deen Dayal Upadhyaya Marg, New Delhi, India 110002—single copy $1.25