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WHAT STANDS IN THE WAY?

A SUBSTANTIAL number of the people living in the world now try to orient their decisions and action in behalf of the common good. They are not a majority, nor do they have influence sufficient to determine the policies of nations, but they exercise increasing effect by what they say and do. Among them may be wide differences of opinion, yet they are united by the quality of their concern.

These persons, it seems just to say, are the bearers of civilization. They form the community of the dialogue. Such cultural advances as come about are made possible through their capacity for persuasion. Much of their thinking, therefore, is about the means of altering human attitudes for the better. It would be difficult to find a subject about which less is known.

Altering human attitudes for the better is not the same as the manipulation of opinion in the direction of predetermined ends. The modern world has acquired much skill in the arts of catering to appetite, weakness, fear, and self-interest—the areas of least resistance in human nature. In direct contrast, changes for the better depend upon the arousal of strength, courage, and unselfishness. The single adjective encompassing these qualities is *ethical.* We can say this for the reason that the most notable human examples of strength and courage, in relation to the achievement of common good, have been the great ethical leaders of history. Ethics embodies the *reasons* for acting in behalf of the common good; morality is the pattern of the resulting practice. Without ethical rationale, morals are reduced to custom, leading to collective self-righteousness and partisan egotism. There is no lasting morality without the guide of ethical principles.

It is no accident that the writers who have clear ethical ideas and are able to express them in appealing and persuasive ways are the ones we turn to, again and again, for support, confidence, and inspiration. They speak to our deep sense of need. Their thinking helps us to order our own, to make sense out of common problems. They reduce intellectual confusion by stating the recognizable priorities in efforts to solve these problems. Consider, for example, the following from Aldo Leopold's *A Sand County Almanac:*

> All ethics so far evolved rest upon a single premise: that the individual is a member of a community of interdependent parts. His instincts prompt him to compete for his place in that community, but his ethics prompt him also to cooperate (perhaps in order that there may be a place to compete for). . . .
>
> No important change in ethics was ever accomplished without an internal change in our intellectual emphasis, loyalties, affections, and convictions. The proof that conservation has not yet touched these foundations of conduct lies in the fact that philosophy and religion have not yet heard of it. In our attempt to make conservation easy, we have made it trivial.

Leopold means here, of course, that the sort of philosophy and religion accepted and practiced in his time (he wrote in 1948) knew and said little about conservation, although there is plenty on the subject, if only by implication, in the high religions. But taking these five sentences as a brief treatise on ethics, we see that they define the problem and identify the means of ethical achievement in relation to the obstacles it confronts. Ethics declares that we are parts of one another, suggests that all are inwardly joined in some primary beinghood, while for the diversities of existence that original unity becomes the law of harmonious and mutually beneficial relationships. Since there are both spatial and psychic distances which establish formal

individuality, so there are hierarchical harmonies which reveal the combinations appropriate at each radius of objective separation. Ethical growth comes from the extension of ethical awareness. Ethical lag is the source of disorder, isolation, and extinction. Nature is the instructor of ethics in spatial relationships, while conscience or intuition is the teacher in psychical relationships; and mind, with its measuring and integrating faculties, is the rationalizer of all the relativities involved.

For human growth, then, attention must be given to the possibilities of "an internal change in our intellectual emphasis, loyalties, affections, and convictions." What stands in the way of that change?

The customary and familiar reply to this question is to point to the major institutions of our time. The industrial and commercial corporation is a chief target. Of course, behind the corporations are the persons who run them, yet the corporation, being a pseudo-person, has acquired a pseudo-moral authority from being constituted of certain limited purposes claimed to be good. The activities of corporations have created habitual patterns of action enjoying traditional justifications. This may be seen in material which appeared in the July/September *Living Wilderness*—a dialogue between a Washington journalist, Charles N. Conconi, and Thomas A. Murphy, chairman of the General Motors Corporation, one of the biggest and most powerful corporations in the world. The conversation between these two, about energy and the energy shortage, soon got around to the question of cars. Shouldn't Americans drive automobiles that use less fuel? the reporter asked. Mr. Murphy's reply began the following interchange:

> MURPHY: First of all, everything has to be in some relativity to something else. I think one of the problems that has crept into this particular situation is some belief that manufacturers are making automobiles in the sizes and the shapes and with the equipment on because that's what we wanted to do.

CONCONI: Well, that s where your big profits are.

MURPHY: But we were making them because we could sell them and we have never been able, in spite of the myth that has grown, to sell the public what we wanted to make. The first Mr. Ford tried that. He had an idea and it was a good one.

CONCONI: But Alfred P. Sloan of General Motors changed that.

MURPHY: It wasn't Mr. Sloan that did it. It was the American public that did it. The public started the change. The public said to Mr. Ford, "I want something different. Make it in different colors and make it in different shapes." And Mr. Ford said, "I'm not interested in doing that."

CONCONI: Sloan has always been credited with bringing about the concept of annual style change.

MURPHY: Sloan happened to be on the scene at the time. When the public began to turn from Mr. Ford and indicate that they were interested in more variety than Mr. Ford was willing to give them, General Motors was there to give them that option.

CONCONI: Didn't the auto industry go to the other extreme? Didn't they go too far?

MURPHY: I don't think so, because when I look at the automobile market today and I look at the fact that imports in the first quarter of this year were accounting for 20 per cent of that market, then I would say no, obviously the American manufacturer did not go far enough, because otherwise there wouldn't be 20 per cent of the business in the first quarter of this year—

CONCONI: That's what I mean. They went so far the other way, away from the economical, monocolor model T Ford that they left a big gap so that Europe, with economy cars like Volkswagen and Fiat, could come in and take a significant part of the American market. . . . is there any American car that was being made at that time that was comparable to the VW in gasoline mileage efficiency, price, and just less complexity?

MURPHY: There have been cars like it. The Henry J., if you remember, that and the Willys of that generation, were Plain Jane types of vehicles, no-nonsense vehicles. They were fuel-efficient. And they didn't sell very well. . . .

> CONCONI: What the American public wants and the wants automotive advertising creates is probably something you and I could argue all day. . .

Mr. Conconi here terminated a fruitless line of debate. But if, as dozens of intelligent critics claim, the manufacturers *have* manipulated people into expressing preference for "annual style" changes and other costly and even dangerous (see Ralph Nader's books) features, then what can be done about it?

Periodically, the American people—some of them, that is—discover that they have been lied to, exploited, and gulled through the public prints and other media. Their response is mostly indignant complaint, but they have a simple remedy. It would be to demand and support newspapers and magazines which do not depend upon advertising revenue for their support. Quite evidently, the ostensible bargain of a paper whose costs are defrayed by advertising is more important to them than the long-term benefit that would come from truly independent journalism.

Well, what do you do when not enough people are ready to make an internal change in their allegiances and resulting everyday practice? You keep on showing why the change is desirable and necessary.

What else can be done? Very little, by direct means. But corporations are no more than creatures of the market, which lately they have also been able to dominate and manage. Yet the market nonetheless sets their pace, and so long as the market reflects the rule of senseless fashion and ostentatious display, so long will corporations continue in their present character and tendencies. And so long will shrewd men with little moral imagination be glad to give corporate structures their loyalties ,and skills. We are still a long way, in our business community, from responding to Karl Polanyi's plea "for the restoration of that unity of motives which should inform man in his everyday activity as a producer, for the reabsorption of the economic system in society." The people will have to start *living up to* Mr. Murphy's claims of their independence of the manufacturers' wiles. This, incidentally, is a sort of freedom no social contract can guarantee or provide.

But meanwhile, those who belong to the community of the dialogue keep on wearing away at the assumptions which make it seem desirable to cling to old economic structures. Christopher Stone's new book, *Where the Law Ends*, is a good example of how this "wearing away" process proceeds. Richard Goodwin's *The American Condition* is another. The ephemeral, loose-jointed, buying and selling institutions brought into being by the counter culture represent another aspect of transition. State governors may not be change agents of decisive importance, but they are possibly weathervanes of altering opinion. The present governor of California waves a copy of *Small Is Beautiful* at interviewing reporters. A previous governor of Oregon had a staff of consultants who tried to apply the ideas of Howard Odum, perhaps the most influential ecologist of our time. The governor of Colorado is said to have related interests and concerns. These officials may be reflecting changes in assumptions and attitudes that are cumulative in effect. At work, then, in quiet, unostentatious ways, are those "invisible molecular moral forces" spoken of by William James, "that work from individual to individual, stealing in through the crannies of the world like so many soft rootless, or like the capillary oozing of water, and yet rending the hardest monuments of man's pride, if you give them time."

What makes us impatient—unwilling to "give them time"—is not the hard monuments themselves so much as the stubborn attitudes of the men who still cherish them. We think they ought to give up beliefs which no longer make much sense. But overlooked, perhaps, by this impatience is the fact that the people who resist change most noticeably are usually men of some personal achievement. Their opinions are fortified by the strength of their past accomplishments,

which once, it is even possible, we have admired. Far-reaching change is much more difficult for such people. They say that it can't be done and that it won't work. For example, in the November *Reader's Digest,* Isaac Asimov, teacher of biochemistry and well-known author of science fiction, informs the enormous readership of that magazine that "There's No Way To Go But Ahead." He means by this that we must follow the lead and conform to the imperatives of scientific and technological advance. While technology has brought new problems, we must solve them, he says, as we have in the past, with more technology. Using a dated rhetoric of rapidly diminishing appeal, Mr. Asimov continues:

> If there is a shortage of gasoline, can't we in a pinch abandon our automobiles and go back to horse-and-wagon? Give up our oil furnace for the fireplace? Give up electric lights and use candles?
>
> No, we can't. There are no longer enough horses to move us about, or enough wood to warm us, or enough candles to light our way. Besides, if we try it for long, we will quickly find that the simple life just won't do.
>
> In 1800, when the earth was still supported almost entirely by non-industrial methods, the population of the planet was 900 million. Now it is pushing four billion. Where does the food come from to support the extra three billion? It comes from the industrialization of the farm: from the use of high-energy machinery to plow and seed and weed and reap. It comes from fertilizers and insecticides produced by sophisticated high-energy chemical factories.
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> We can't abandon industrialization, if only because our food supply depends on it. You can talk about "natural" food all you want, but if everyone decided to grow food without chemical fertilizers or insecticides or machinery it would mean that only one quarter of the world population could be fed.
>
> Can we abandon some of our industrial technology and hold onto the rest? That would be very difficult, since it all hangs together.
>
> We can save, conserve, cut out waste, but what we have we must keep. The only solution, as always in the history of mankind, is to solve problems by still further advances in technology.

There is an element of truth in what Mr. Asimov says, but it's always half-truth. He implies that there is no way to use technology except the way we have used it in the past—which certainly isn't true. What is true is that there can be no *sudden* large-scale changes in our diet, housing, transport, communications, and employment, to adapt to reformed technological arrangements. Given the hold of habit and the reluctance to change of human beings generally, a ruthlessly sudden alteration of the countless economic relationships of hundreds of millions of people would indeed be catastrophic, and cause much suffering, even death.

Yet to say that we can't abandon *"some* of our industrial technology" is grossly misleading, amounting to a flat denial of the extraordinary ingenuities which lie behind much of the material progress achieved by Americans. It happens, for example, that in the *Atlantic* for last December Donald E. Carr, writing on "The Lost Art of Conservation," lists a number of practical alterations and reductions in the use of technology (to consume less energy) which are either plainly feasible or *already* under way in the United States. Most of the changes have to do with architecture and transport. Nor are we without expert guidance for certain major steps of self-reform. Citing the Ford Foundation's study of possible changes in the consumption of energy, and the Fuel and Energy Administration's *Project Independence Blueprint,* Mr. Carr ends his discussion by saying that the methods of conservation now known and available could assure that ten years from now "the consumption of energy in the United States would be 12 quadrillion BTUs less than at the present rate of burning things."

It would have involved very small effort on Mr. Asimov's part—only an open mind—to have told his audience to look up the analyses of Howard Odum, the ecologist whose books and articles have put the need, necessity, and inevitability of transition from growth to steady-

state economics on a scientific basis; and urged them to inspect the quite readable *Small Is Beautiful*, by E. F. Schumacher. Mr. Schumacher is an economist who points to the fact that there are countless ways in which sophisticated technology can be turned to the service of changed and reformed industrial enterprise. Happily, he is at last obtaining serious attention. While master of the expertise in the dull and clouded area of economics, he is well able and prefers to speak to the general public in everyday language. His work is indeed helping to bring about "an internal change in our intellectual emphasis, loyalties, affections, and convictions."

Of central importance is the fact that social and cultural institutions are not all-powerful. Their strength and influence depend upon the momentum of past enthusiasms, opinions, and successes. For a time they embody the "binding observances" of which Ortega speaks in *Man and People*. But eventually binding observances give way under the pressure of intelligent innovation and increasingly manifest common sense. This is indeed the "law of progress," brilliantly formulated in the last century by both Buckle and Lecky, but neglected in our own time.

What is to be concluded from the material we have assembled here? It seems to say: Don't waste time tinkering with the big institutions brought forward from the past. The minds of the persons managing these old structures are too much in the grip of habit, too involved in memory of successes and rewards which, even though now turning to ashes, still seem important to persons brought up and trained in the optimistic atmosphere they proceeded to spread all over the country.

The task is rather to create alternatives on a small scale—the scale that will be necessary in the future and to show their practicality, their desirability, and the kind of pleasure in life which comes naturally from efforts in this direction. Big institutions can be changed, but only at a comparatively slow rate. Involved in them are people who are constitutionally limited by faithfulness to old ideas, or who are bound by habits of dependency and conformity. Adaptation to change is very difficult for these people. They are easily frightened and often become prey to paranoid fears and hostilities.

Meanwhile, it is no accident that the emergence of the counter culture is a generational happening. Young minds are free and able to see new possibilities. The deep-flowing current of ethical intent comes to the surface more easily in the young. Increasingly among the now maturing generation are those who recognize that the future must be created step by step, by continuous effort, and who see that, with each step of progress, others who have been fearful or upset by the threat of change begin to recognize the friendly intelligence of constructive innovation, and to see widening benefits of work with nature instead of continuing the brazenly exploitive policies of the past.

REVIEW
ARTIST, HISTORIAN, TEACHER

THERE is an enigmatic current in the life of Lewis Mumford which makes it difficult to characterize his work. Any brief statement about him is likely to be inadequate and misleading. One could say that he has kept alive in American life a mellow, sophisticated humanism—and under provocation a militant humanism—that has nourished countless younger people for two or three generations. He is a scholar who knows a great deal about the history and evolution of cities, and his books have given much vigor and insight to the body of literature on the subject. He is often called a historian of technology, but this may neglect the fact that he is also a major philosophic critic of the assumptions and attitudes that underlie industrial civilization. He is an essayist on art and architecture, but also a critic and practitioner of literature.

Mumford is most of all a teacher, and he thinks of himself as a teacher. How shall we understand the role of teacher, in a field as broad as that encompassed by the life of Lewis Mumford? There are some teachers—philosophers and religious reformers—who seem so far in advance of ordinary humans that they are like visitors from some other world—hardly the product of our struggles and confusions. They enter our world but they don't submit to its illusions, nor do they embrace its goals. They come, are only partly understood, and they go, leaving a deposit of what we later admit is wisdom.

But there is also the teacher who is in some sense a child of his time. It is fair to call a teacher any person who has the sort of enigmatic quality we spoke of at the beginning, making him unwilling to accept the standards and beliefs of his time. Such a man finds independent reference-points in himself. He has, or develops, an independent center of gravity. If, in addition, he has a good mind he exercises major leverage in human thought. He raises and deals with questions that need examination. He composes necessary tracts for the times. In the field of teaching, he is like the man in industry who is called a working foreman.

This is the view we have of Lewis Mumford. It developed, bit by bit, from reading his latest book, *Findings and Keepings* (Harcourt Brace Jovanovich, 1975), issued when he reached his eightieth year. The book is a collection of oddly diverse material drawn from writings throughout his life. This doesn't matter. His brief pieces are as valuable as his major works. He seemed to find solid ground to stand on when still a young man. In 1998 he wrote this about Vincent van Gogh for the magazine *Architecture:*

> Now what was there remarkable in Van Gogh's life and art? What was remarkable was his capacity to absorb the most devastating experiences without losing his own vitality and faith. He achieved in sorrow and discouragement and ridicule and degradation what other men sometimes achieve out of health and fine adventure: one feels in his paintings and his letters that things went well with him, no matter how badly. This natural animal faith retreats sometimes in shipwreck and disaster, when men ding to phantoms whose existence they renounce in fair weather; but in Van Gogh it steadily gained strength. "For you, too," he writes to Theo, "there will come a moment that you will know *for sure* all chance of material happiness is lost, fatally and irrevocably. I feel sure of it, but also know that at the same moment there will be a certain compensation in feeling in one's self the power to work."
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> Vincent van Gogh was a great lover of art: he loved Rembrandt, Corot, Ruysdael, Millet, Delacroix: but he was a poor critic of art, because he loved life more, and included in his embrace men like Luke Fildes and Frank Holl because they made up for him in human compassion what they lacked in color or design. No artist of his time was more fully absorbed in the thought of his own age: he read Dickens, Hugo, Zola, Michelet, Renan, Carlyle: and no one succeeded better than he did, I think, in escaping the limitations of his time and in reaching, in thought and art, toward a new generation which would be "able to breathe more freely." He purchased his faith, not cheaply, by day-to-day living. The miner, the peasant, the weaver, the prostitute, whose lives he shared, were all outcasts in bourgeois society; and he was an outcast, too. But van Gogh knew what honest work was; and he lived by it; and if his pictures are still most talked about in salons and art galleries that irony is not without its parallels in history. I know scarcely a single figure since St. Francis, whose life lays such a hold on the imagination. If he lived tragically, he also lived to a purpose. The moral is incommunicable perhaps; but it lies open on every page of his letters.

Mumford looks into van Gogh's life, comes very close to its meaning, and conjures for it a symmetry we need to make comparison with our own experience. This is typical of Mumford's work. Even brief expressions have dramatic unity.

This understood unity, one could say, is essential in all valuable communication. No writer will ever say exactly what another says; he will say it according to his own insight and craft, and it will not be a duplicate of anyone else's perception, yet, somehow, the better it is, the more resonances it will have with what other good writers have said. This is the puzzle of individuality—the more complete and perfected its unique expression, the more it seems to strike universal chords.

Mr. Mumford quotes from John Jay Chapman, who said: "The Truth about religion and the fine arts can only be expressed in terms of religion and the fine arts," a rule which has frequent confirmation in this book. The discussion of Melville, set down nearly fifty years ago, is a good example:

> He [Melville] lives for us not because he painted South Sea rainbows, or rectified abuses in authority in the United States Navy: he lives because he grappled with certain great dilemmas in man's spiritual life, and in seeking to answer them, sounded bottom. He left the clothed and carpeted world of convention, and faced the nakedness of life, death, energy, evil, love, eternity: he drew back the cosy hangings of Victorian parlors, and disclosed the black night outside, dimly lighted with the lights of ancient stars. Had he been a romantic, he would have lived a happy life, buttering his bread with feeble dreams, and swallowing down his regrets with consolatory port: he who wishes to escape the elemental stings of existence need only grasp the outstretched hands of his contemporaries, accepting the subterfuge goals they call success in business or journalism, and shrink by means of a padded physical apparatus from the thorny reality of human experience.
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> But Melville was a realist, in the sense the great religious teachers are realists. He saw that horsehair stuffing did not make the universe kinder, and that the oblivion of drink did not make the thing that was forgotten more palatable. His perplexities, his defiances, his torments, his questions, even his failures, all have a meaning for us: whether we renounce the world completely, affirm a future transcendence in heaven, or, like Walt Whitman, embrace its mingled good-and-evilness, our choice cannot be called enlightened until it has faced the gritty, unassimilable substratum Melville explored. Melville left a happy and successful career behind him, and plunged into the cold black depths of the spirit, the depths of the sunless ocean, the blackness of interstellar space, and though he proved that life could not be lived under those conditions, he brought back into the petty triumphs of the age the one element that it completely lacked: the tragic sense of life: the sense that the highest human flight is sustained over an unconquered and perhaps unconquerable abyss.

Some space remains for notice of his review of Karl Vossler's study of Dante's *Divine Comedy* (published in America in 1999 as *Medieval Culture)*, which, Mumford says, "makes one a citizen of Dante's world." These observations come toward the end:

> We have lost faith in the formal powers of the mind, not, as some suppose, because our universe is too difficult to grasp, but because we lack the inner principle of order. If the author of "The Divine Comedy" does nothing else for us, he should restore our belief in the efficacy of the mind. . . . By examining the stuff that pours into Dante's poem, we can convince ourselves that another Divine Comedy will not be produced in our own day by those who dream tepidly of such a humanism as may be achieved, without further contact or strife or effort, in the decorous isolation of a classical college. Dante the municipal ruler, Dante the technician familiar with the construction of public works, if not the designer of them, Dante the amateur artist and friend of Giotto, Dante the diplomat, the author of "De Monarchia," are as necessary to the composition of this poem as the youthful follower of Cavalcanti and Folquet of Marseilles, or the student of Thomas Aquinas. Before the poet can create a work which will be approved by later academic critics, he may, perhaps, have to live a life from which they would shrink, smugly horrified. It was not the studious disciple of the inner check who discovered that the perfect hell for Paolo and Francesca would be an eternity of dovelike rapture: Dante must have known what a week of such a hell was like.

It should not be too embarrassing to Mr. Mumford for us to say that his work is the fruit of just such a cosmopolitan background and diversely active life.

COMMENTARY
MOST SIGNIFICANT, YET UNRECOGNIZED

WHILE the Biogenetic Law (ontogeny recapitulates phylogeny) has nothing like the authority it enjoyed in the nineteenth century, this week's "Children" article by Frederick Burk seems to suggest its validity.

"Logical knowing," it seems apparent, does not come first. It does not come first in individual human life, and it did not come first in human history. Even in adult life, if we accept what Michael Polanyi says in *The Tacit Dimension,* it does not come first. Some sort of intuitive or instinctive knowing comes before logical knowing, and this initial knowing is the foundation of all the rest, no matter how indispensable logic and rationality have become. In *The Preconscious Foundations of Human Experience* (Basic Books, 1964), Trigant Burrow says:

> The evidence has steadily grown more convincing that this preconscious matrix of personality persists as a sort of background of consciousness, representing a biologically permanent mode that is inherent in human development. Where this trend predominates, we find a native simplicity, an ineradicable longing for the beautiful and harmonious, a steadfast love of truth; a deep sense of sympathy, helpfulness, and human fellowship. The preconscious type of personality is sensitive, inspirational, intuitive, and creative. As I have said, the essential characteristic of this most significant but as yet unrecognized type of human functioning is an innate consonance of feeling. . . .
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> My thesis is that, since this inherent harmony—which in the artist is sublimated through his creative genius into an expression of beauty—is an inspiration toward truth the impulse of the artist represents a vitally *moral* trend.

This, surely, is the tacit knowing of which Polanyi speaks, making it the prerequisite of the analytical, objective knowing we term "scientific."

What then is the "purpose" of logical knowing? What is its natural part in human life, and why has it gained such exaggerated importance in modern times? Is analytical intellectuality some sort of intense and even violent "adolescence" through which the human race must pass, on its way toward wisdom, balance, and maturity? Is it a part of growing toward maturity, yet by no means the whole of maturity, as we have supposed for some two or three hundred years?

CHILDREN
. . . and Ourselves
TWO ORDERS OF LEARNING

[Frederick Burk, the founding father and president of San Francisco State College from 1899 to 1924—a period when it was known as a "normal school" for teachers—contributed to the *Pedagogical Seminary* for September, 1902, an article, "The Genetic Versus the Logical Order in Drawing," which we reprint below.]

IT has been evident from the first, that the point of view of child study was likely to prove interesting in the pedagogical field. For the movement started from a standpoint diametrically antipodal to that which has been the established basis of school practice. It has started from the standpoint of the child at his beginning, even in his remote ancestors, and has worked forward on a basis of internal development. Present school systems start from the adult, and work backward on a basis of adult thinking. It has been the interesting speculation from the first whether or not, as in the case of two gangs of workmen starting to dig a tunnel from opposite sides of a mountain, they would meet in the middle. There are, to begin with, then, two opposite viewpoints for regarding the education of the child: one, that his thinking power develops in the same logical order in which adults do their thinking; the other, that he develops his thinking in a different order,—an order which we may call "genetic." It may be, it is true, that if we analyze the knowledge and training of adults according to the logical order, and then follow the child genetically and watch how he acquires knowledge, we shall find that he follows the logical order, that the genetic order is identical with the logical order as all past systems of education, without investigation, have assumed. But on the other hand, careful investigation may show that the child's method of acquiring knowledge depends upon factors essentially different from those by which the adult thinks; the child may lack certain essential factors which the adult possesses; the logical order may be different from the genetic order and we may be attempting to teach him by an order which is not possible.

THE LOGICAL ORDER	THE GENETIC ORDER
The child's mind is a *tabula rasa* upon which anything considered by the educator desirable may be written at the will of the educator. It is the business of the educator to select and write the knowledge most desirable and in an order determined by a logical analysis of the subject.	The mind of a child shows, in some fields at least, which have been investigated, distinct generic tendencies to select certain material and methods for its education and reject other material and methods. It is the business of the educator to make use of these generic tendencies as interests and to subordinate instruction to them.
Childhood should be shortened to its lowest possible limits and as rapidly as possible the child should be inducted to put away childish things.	Investigations point to the probability that the child who is most the child, as a child, will be most the man, as a man; therefore let childhood ripen in children.
The child is a little adult. If we take cross sections of the human mind at various levels from birth to adult life we shall find that the ways of thinking are identical in kind and character.	The child is not a little adult. Investigation indicates that he grows in spots. Cross sections show changes, in kind, in the ways of thinking though these successive layers show causal relations, one with another, just as, while the bud is not a leaf, yet there is a causal relation between the two, and healthy and mature functioning of the bud is essential to the best activity of the leaf.
The steps by which a child learns a body of knowledge or training, as, for example, accurately to represent in drawing, are identical with the processes by which a full grown man logically thinks them.	In certain essential respects, at least, there is evidence to show that the steps by which a child learns to represent in drawing are radically different from the processes by which a full grown adult thinks them.
THE LOGICAL ORDER	THE GENETIC ORDER
The determining principle in forming a course of study in drawing should be that of the synthetic combination of the parts obtained by analysis of the subject matter concerned, in a logical way, according to inherent relations existing	The determining principle in forming a course of study in drawing must be that of the child's generic tendencies or interests, modified by individual interests. Investigation indicates that these interests require an order of

between these parts.	instruction more nearly the reverse of the logical order than identical with it.
These parts thus obtained by analysis will be the abstract geometrical simples of forms divorced from all matter or distracting ideas and these the child should be taught to recombine and finally he may be led to natural objects in which both matter and form appear.	The child's generic interst shows that he should commence drawing with man and the things that men do or have about them—the human figure, the house he lives in, animals he sees or fears. Matter and form are therefore inseparable in childhood and the progress is toward a separation; hence, abstract geometric forms will come last, not first.
The child should be taught fully and completely the mechanism of how to draw before he is allowed to draw from his own ideas.	The child should be allowed to draw from ideas and in doing so, and under the influence of the interest, . . . mechanism should appear as a subordinate factor.
The first essential step in drawing is that of accuracy, for this is the prime requisite of mechanism. All success will depend upon forcing the child into habits of accuracy of sight and movement.	Accuracy is a power dependent upon physiological maturity; the first consideration should be prevention of physiological injury; the time for drill and accuracy is indicated by the time interest develops in it. By reversing the relative order of mechanics and drawing from ideas, the essential place of accuracy is also reversed.
THE LOGICAL ORDER	THE GENETIC ORDER
Drawings should originate and cultivate artistic instincts.	Instincts cannot be originated. They are probably determined for us by ancestral tendencies and have a genetic order of development in the individual. The child shows practically little of what is ordinarily meant by artistic instinct and it is not ready for formal expression.
The matieral best suited for originating art instinct consists of the dislocated parts of conventional designs and the typical geometrical forms divested of all that would interest the child and thereby distract his attention	The child has practically no interest in conventional designs nor in abstract geometrical forms; such instruction should at least be postponed.
Drawing to the child should be made to deal with form exclusively	Drawing to the child is language for the expression of his ideas; and form, pure and simple, constitutes a very small modicum in his interest. It is not possible to segregate form in the child's mind in an intelligent manner to him.

John Keel, professor of art education at San Francisco State, discovered this article by Frederick Burk about twelve years ago, and was impressed by its pioneering quality. Apparently, Burk wrote nothing further on the subject, but the attitude expressed here characterized all that he did at the College. Mr. Keel spoke of this in an interview which appeared in a campus paper:

> Another term for genetic education is "individualized instruction." "Burk's major efforts as president were to develop a system of individualized instruction here," said Keel. "He became nationally known for his work on this idea. Burk's teaching innovations had a lot of influence on the Progressive Education movement during the 1920s, and the idea is still very much with us."
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> Keel describes Burk as a vital link between the New Education of the late 1890s and the Progressive education movement of the 20s. Burk's main ideas on education are summed up in a portion of a letter he wrote to a colleague: "There should be less method and straining for expression whether in language, drawing, or music, until the child is ten years old. The attempt to force education immaturely above consciousness, to compel expression in school terms is stunting; give the children variety of food in large quantities and leave it for hidden instinct to assimilate properly."

FRONTIERS

Trees, Trees, Trees

THE impulse to plant trees goes back to Johnny Appleseed in American history, and to the early Buddhists—who followed their teacher's injunction—in world history. Tree-planting is an act filled with symbolic meaning, and it also leads to much practical good, as foresters have been telling us for centuries. The best brief account of Johnny Appleseed we know of is the third chapter of Louis Bromfield's *Pleasant Valley* (Ballantine paperback). The novelist's Great-Aunt Mattie, born in 1826, remembered him and repeated the lore of his wanderings along with her personal recollections. Her own father, she said, saved appleseeds from his orchard to give to Johnny when he came on one of his overnight visits to their Ohio farm. He didn't plant just appleseeds. According to Bromfield's Aunt Mattie, he "scattered fennel seed all through our Ohio country, for when the trees were first cleared and the land plowed up, the mosquitos increased and malaria spread from family to family." Fennel tea was a remedy for "fever and ague" which the mosquitos spread.

> Some people said that he carried flower seeds with him to distribute among the lonely women who lived in cabins in clearings in the vast forest and that today the great red day lilies which grow along the roadsides or on the sites of old cabins, long disappeared, were spread by Jolmny. They say also that Johnny sometimes carried in his "poke" as gifts tiny seedlings of Norway spruce which he gave to frontier wives to plant before their cabins. Both stories may be true for in our part of Ohio there is nearly always a pair of spruce well over a hundred years old in the dooryard of every old house, and the red day lilies have gone wild in the fields, on roadsides and along hedgerows.

Johnny was well known to the Indians of that time, who trusted and revered him, and they bore him no ill will when he warned settlers of a coming Indian attack. He preached brotherhood until there were no Indians left in the region, and Johnny at last died "in a hedgerow in Indiana."

The next, equally engrossing epic of tree-planting is the extraordinary career of Elzéard Bouffier, the French peasant who began planting acorns in the desolate Durance Valley in 1910. For thirty years Bouffier planted oaks and beech and other trees in this part of Provence, transforming into a fertile area able to support ten thousand people a region that had been barren desert. (See MANAS, Feb. 5, 1975.)

Then, in 1959, an Englishwoman working for a lumber company heard that trees, carefully planted and nourished for a few years, could reclaim deserts. Unable to resist the promise of this idea, she went to Africa and at her own expense turned an Algerian military dump covered with refuse into a garden spot. Now she is helping other North African countries to protect their land from the spread of the Sahara, and is guiding the beginning of a conquest of the great desert area with trees for troops. "You can plant pretty well across the Sahara," she says. When big enough the trees alter the climate of the surrounding area so that crops can be grown. (MANAS, Nov. 19, 1975.)

An American tree-planting campaign was begun by Andy Lipkis at fifteen, five years ago, when high-school nature-study made him realize that the smog afflicting Southern California was killing the pine trees in the San Bernardino National Forest. Three years later he was able to start replanting trees in areas where smog-resistant species were most needed. He gained the cooperation of the State Forestry Division, which supplied seedlings, and secured practical assistance from several large companies willing to help. During recent years he has recruited some five thousand school children and youth groups every summer to work at renewing the forests of Southern California. Since the trees may be dying at the rate of fifty thousand a year, a vast replanting program remains to be developed—unless Californians discover a way to put an end to smog. (See MANAS, Oct. 9, 1974, and more recent issues for reports of the ongoing tree-

planting project staffed by Andy and his associates.)

Another one-man achievement in tree-planting, recalling Bouffier's work, is reported in *National Wildlife* for October-November, 1975. In 1947 a young man named Paul Rokich went looking for a lost horse in the Oquirrhs (pronounced o-kers) region of Utah—"a rugged range of rocky hills between Salt Lake and Toole counties." He saw that the northern end of this range "was a lifeless moonscape, ravaged by careless logging, torn by floods and powdered with sooty tailings from a nearby copper smelter." As the *National Wildlife* story relates:

> "I'll never forget how stark it was in there," Rokich recalls. "There was not a sound. Nothing was alive. I decided, then, to do something about it." Later, as a botany student at the University of Utah, Rokich read John Muir's descriptions of wildlife and lush vegetation in the Oquirrhs and his determination was refueled.
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> The son of a Yugoslavian immigrant, Rokich embarked upon his life's avocation in 1959. Parking his car on the edge of Highway 40, in the dead of night, he toted seedlings up the steep hills for 16 hours at a stretch. In effect he was trespassing on Kennecott [Copper] land, but Rokich didn't look at it that way. Over the years, he borrowed money from relatives to help finance his seed and tree purchases. All the while, he was working as a construction laborer and once he discovered that his family was down to $10, with days until the next paycheck. "One of the boys was sick," his wife Anne remembers, "and so Paul spent $5 on medicine. He spent the other $5 on trees."

Apparently, no one can work for the common good without having to pick up undeserved tabs. When you undertake things that human indifference has let go for centuries, the indifference keeps on crowding at you, reducing your effectiveness:

> In 1960, after planting 3,000 Douglas firs and Ponderosa pines that seemed to be thriving, Rokich found that a careless sheepman had burned off the whole mountainside. "I just stood there and cried," he says. But the soft-spoken Rokich persevered, risking flash floods, snake bites and rock slides, and gradually the fruits of his labor began to flower. "Paul has established swards of grass, groves of trees and thickets of shelter and food," marveled botanist Kimball Harper of Brigham Young University. "Few professionals can show more proof of success." Further proof came as wildlife gradually began returning to the area: deer, elk and squirrels; chukar partridge and golden eagles; rabbits, mice and songhirds.

While Paul Rokich cared no more than the French peasant Bouffier who *owned* the land—planting trees where they are needed was the thing—the Kennecott Copper Corporation has seen the light and has hired Rokich, teaming him with a professional forester, to keep on planting trees.