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THE COMPOSITION OF OPPOSITES

COMMENTING on the merit of the recently published *Rudyard Kipling and his World,* a reviewer remarked that the author, Kingsley Amis, gives particular attention to Kipling's greatest gift: "the ability to see into states of mind where reason and intuition go together, states of mind not often understood." This seems very brief notice of a puzzle which spreads its opacity beneath the surface of very nearly every form of human excellence—not only the achievements in art and literature, but the discoveries of science and the sagacities of leadership as well. Yet the reviewer may be exhibiting essential good taste by saying little about the wonderful partnership between the skills of means and the selection of ends. We know virtually nothing about how these two are joined. While dozens or hundreds of volumes instruct in the rules and intricacies of reason, intuition is a faculty that can hardly be described without substituting something else in its place.

There is certainly nothing "scientific" to be said on the subject. As a *Britannica* article observes, the only conclusion about intuition on which all authorities are likely to agree is that it is a form of apprehension which excludes inference or discursive reasoning. It seems natural enough, therefore, that reason has no competence to give an account of intuition. This being the case, many expert reasoners have thought it best to ignore the intuition as either nonexistent or an unwelcome intruder. It seems almost as mysterious as the self, and as unamenable to capture in conceptual terms.

Intuition announces the presence of meaning, with all that this implies. It seems to reveal the self's inclinations, its purposes, bonds, and alliances. Yet we are able to speak of it confidently only in these general terms, since there is great hazard in offering examples or illustrations. A person needs to be shy in declaring his intuitions, for to go about claiming inspiration, or daring to identify what is intuitive truth and what is not, would be tantamount to starting a new religion. And as the *Britannica* article says, "the term is often used to cover beliefs or prejudices which one cannot justify or excuse."

Yet use the term we must, since those deep impressions of meaning come over us, and while we may not parade them, we nonetheless try to live by them. Where do they come from? Spinoza believed that there is a region of reality where everything is connected with everything else, and that there are moments when we have flashes of fleeting awareness at that level. How are such insights to be confirmed? It depends, perhaps, on what sort of insights they are. An intuition doesn't tell us everything, but something. Apparently there is an originating element of intuition in all science. Einstein believed that the physical theorist is a "tamed metaphysician" who has agreed to submit his intuitively generated theory to the test of experienced reality. The basis of physics, he said, is free invention, not "any inductive method," although the justification of its theory lies in sense experiences, while the relation between theory and verification "can be comprehended only intuitively."

There are other areas, however, where verification seems less feasible. Take the idea of immortality. The ancients, the anthropologists tell us, simply didn't believe in death. "Primitive man," Freud declared in *Reflections on War and Death*, "was as incapable of imagining and realizing his own death as any one of us today." And Freud's practice led him to conclude that "at bottom no one believes in his own death, which amounts to saying: in the unconscious every one of us is convinced of his immortality." Interestingly, the most eminent Freudian of the

present—if a somewhat freewheeling member of the psychoanalytic school—Erik Erikson, remarks in *Gandhi's Truth:*

> And let us face it: "deep down" nobody in his right mind *can* visualize his own existence without assuming that he has always lived and will live hereafter; and the religious world-views of old only endowed this psychological given with images and ideas which could be shared, transmitted and ritualized.

It hardly needs pointing out that the common intuition of immortal life has been muted—it can hardly be erased—by the present almost total neglect of the inward feelings of human beings, as though they had no place in life, no meaning but casual fancy or wishful self-deception. Freud, whose influence on modern thought has been immeasurable, was convinced that "contemplation of the corpse of the person he loved" became for primitive man "the basis for the assumption of other forms of existence and gave him the idea of a future life after apparent death." In fact, Freud maintained that "Contemplation of the corpse of the person loved gave birth not only to the theory of soul, the belief in immortality, and implanted the deep roots of the human sense of guilt, but it also created the first ethical laws." Freud was simply unable to attribute any human feeling to a high or noble origin. He insisted that all dreams are governed by "purely egotistic motives." It is as Binswanger says: "Everywhere in his [Freud's] writings, human spirituality arises out of instinctuality." Freud was not unaware of this outlook; one could say that it was deliberate. That the spirit in man may be a thing in itself, the source of his moral consciousness, the root of his awareness and sense of identity, was deliberately ignored by Freud, if not denied. There is no basis in his doctrine or theories for understanding the experience of an authentic intuition. As Yankelovich and Barrett say in *Ego and Instinct:*

> Freud tended to think of the ego as devoid of goals, needs, and purposes of its own. In Freud's work, the ego is regarded as a means only, it is a "servant" of id and superego. In his final statement in the *Outline of Psychoanalysis* (1940), Freud . . . repeats a conclusion that remained, with one exception, unchanged in his thinking for over fifty years: namely, that the pleasure principle, the regulating principle of the id, is the fundamental law of psychic life.

These writers, noting the weakness of the ego in Freudian psychology, remark that the idea of the human spirit has almost died out of common usage in modern times:

> The term is suspect to many of us, the notion of spirit has no place in science and it has all but disappeared from contemporary philosophy. The long-standing secular stance of our culture tends to make us regard the "spiritual" as a vestigial remain of sectarian religion.
>
> Yet Freud himself—in that conversation with Ludwig Binswanger which we have taken as a dramatic and pivotal episode for understanding the history of psychoanalysis—speaks of the "spiritual" (*geistige*). "Man has always known—that he has a spirit," he remarked to the younger psychiatrist, "it has been for me to show him that he is instinctual." Confronting the contemporary situation, we are hardly likely to agree with him that man today knows he has spirit. In fact, a large part of psychoanalytic ego psychology is devoted to recapturing qualities of the human person which Freud simply took for granted in his reference to spirit but which we can no longer take for granted today.

A similar admission by Freud, made in a letter to Binswanger, is quoted by Peter Abbs in *Tract* (Nos. 16 and 17):

> I've always lived only in the *parterre* [pit] and basement of the building. You claim that with a change of viewpoint one is able to see an upper storey which houses such distinguished guests as religion, art, etc. . . . If I had another lifetime of work before me, I have no doubt that I could find room for these noble guests in my little subterranean house. . . .

Freud, of course, had no idea of the demoralizing influence his emphasis on the physical, not to say the animal, would have on succeeding generations who accepted his ideas. But this influence remains to darken with pessimism and lack of inner resource the outlook of the present world. It is as Peter Abbs briefly summarizes:

> In Freudian theory culture and idealism are products of instinctual repression. . . . The high is explained in terms of the low; the commitment is all to descent, not ascent.

In another article in *Tract,* Mr. Abbs illustrates the broad effect, not only of Freud's doctrines, but of the generalized materialism which is all-pervasive in modern learning. He recalls a philosophy seminar in England in which a young woman student attempted to articulate the foundations of her religious belief:

> Naïvely she declared to the Oxford philosopher: "I know because I feel it in my heart." Such a proposition in such a context might well have secured the sympathy of a Pascal or a Kierkegaard, but not the twentieth-century English philosopher on the other side of the table. There was a palpable pause. The student waited. Then came the clinical reply, "In which ventricle may I ask?"

Another sort of illustration may be found in Bertrand Russell's account of the beliefs of his own son when a child. Russell wrote in *Education and the Good Life:*

> I find my boy still hardly able to grasp that there was a time when he did not exist; if I talk to him about the building of the Pyramids or some such topic, he always wants to know what he was doing then, and is merely puzzled when he is told he did not exist. Sooner or later he will want to know what "being born" means, and then we shall tell him.

We are considering the past. It may be the immediate past, but still the past, since there have been great changes in intellectual and moral mood since Russell's book was published, and changes even since *Ego and Instinct* appeared about ten years ago. While there is still no place in science (in its theory) for intuition, and therefore no generally accepted view of what it is or where it comes from, a general recovery of at least a common-sense view of the higher aspect of human life is now unfolding. Eventually the scientific spirit will have to come to terms with the autonomous moral or spiritual reality in human life, although how or when this will take place seems impossible to predict. The foundations for what might be termed a science of man erected on moral or ethical assumptions have nonetheless been laid by such pioneers as Michael Polanyi and A. H. Maslow, and by the investigations of several existentialist thinkers. Actually, the issues are hardly debatable any more. Mechanism in psychology and animalism in anthropology, while still dominating the schools, can accomplish little except to delay somewhat the course of change. The initiative is now in other hands, for the most part outside the universities, and with individuals who are, whatever their schooling, self-educated.

There are a number of manifest "givers" in human life which can no longer be denied. No matter how we rationalize it or explain it, humans have a moral sense. They think in terms of good and evil as well as in terms of process and function. Conscience is a reality. Conscience may have its distortions, reflections, and fraudulent pretensions, but it is *real* and bespeaks a kind of awareness in the human being which can only be described as spiritual or noetic. The sense of self, of being a self or unified center of awareness, is also real. It is not borrowed from either the train of sensations or the constellations of memory, although it is certainly colored by them. We are also purposive beings. While we live in the world and need to understand its laws and processes, we also are interpreters of the world and of our relations with it. We have a "creature" side, which enables us to exist in the world, but we also are the world's definers and comprehenders. Which is to say that there is a quality or power of transcendence in human beings. The boundaries of the world are not our boundaries. By identifying boundaries we go beyond them. We have minds which embrace the universe.

What may be most important of all, we have a sense of individual significance, of being ends in ourselves; and this conscious feeling of selfhood does not mean that we are basically isolates, set apart from others and all else, but that we are centers of networks of relationships which count for something, just as all the other centers—

selves, or souls, with their networks, variously interlaced with ours—count for something.

This "counting for something" enables us to understand our spontaneous sympathy and caring for people who are unjustly treated, no matter what their role or situation. We are ashamed when we are indifferent to human pain, when we discover that we might have been more thoughtful. We understand when someone cries out that he is not a "statistic," that his life and what happens to him cannot be explained away as part of some mechanical or other blandly impersonal process.

There are at least two sides to being human, and we realize our duality again and again, although usually without taking particular note of the fact. Somehow or other, we seem to be a mix of the finite and the infinite, although this, it must be confessed, seems a logical impossibility. What then would the infinite do, when cribbed, cabined and confined by the conditions of finite existence? It would *reach*, struggle, and attempt to create more stately mansions, better situations, freer relationships which allow the flow of aspiration to weave in and out of life with less denial and frustration. What is the role of the finite? It is to set limits. What is the role of the infinite? To break out of limits. Could there be a more precise account of the turmoil of human nature and life?

Why could we not say that intuition is the play within human awareness of some current of the infinite, seeking expression through some finite organ? Over a wide gamut of levels? There is the organic intuition of the body—call it instinct—and there is the subjective intuition of the soul, which sometimes declares itself articulately in consciousness, but has inchoate presence in the lives of every one. The idea of Hegel's was not so far-fetched, unpopular as the German metaphysician has been for several generations. He said in *Philosophy of History:*

> This vast congeries of volitions, interests and activities constitute the instruments and means of the WORLD SPIRIT for attaining its object; bringing it to consciousness and realizing it. And this aim is none other than finding itself—coming to itself—and contemplating itself in concrete actuality.

A thing, Hegel declared, can exist only through its opposite, and man is surely a composition of opposites—*conscious* opposites, one might say—which make both the struggle and the failure, and the glory of human life. And each human shapes his own focus for that struggle and has, however hidden from view, the dignity of the promethean mission. The problem, quite plainly, is one of orderly procession. To find a balance between the incommensurable potentiality we intuit and the objective dimensions of a world defined by limits which we must learn to measure and respect—this is a task requiring some genius, a practical art which converts measure and limit into stages of transcendence.

The labor is made doubly difficult by the constant temptation to reduce one's inward longing—the hungering of the infinite for freedom from confinement—to finite terms. We seem ever ready to explain ourselves away, to submit to Zeus or hire ourselves a Grand Inquisitor to devise a theology that will promise an easy time. But the easy theologies, the painless salvations, do not work. Human beings cannot be organized by belief into collectivist perfection. Spirit acts only through its natural units—individual human beings—and self-discovery can take place nowhere but privately in each one. Yet individuals, too, exist only through their opposites—the necessity of objectivizing consciousness—and this makes it seem natural to define ourselves in terms of our opposites. Galileo and Darwin and Freud had no corner on reductive simplification. A premature synthesis of opposites is behind every plausible system of belief, and is the shaping principle of every formula for freedom that holds out the rewards of self-discovery without the penalty of standing up alone.

What, then, are those states of mind where intuition and reason go together?

They are the places of spontaneously staged concerts joining the One and Many—performances which, for an interval, draw the timeless into the moment, making the self and the selves a unity of units. This is a balance born of opposition, with otherness both dissolved and perpetuated by the ratios of love.

A natural confidence pervades the lives of those in whom intuition and reason have discovered terms of private agreement—a compact subject to constant dissolutions and eternal renewals, and recorded in no city hall. There are reasons for keeping such agreements secret, since the imitation of their harmonies is always a siren's song. All the half-truths anon save and anon damn. There are words without content and silences pregnant with meaning, and intuition, when awakened by its own echoes to the mystery of its origins, must thread its way between the two. A heroic iconoclasm may hint at the truth beyond imagery; Plato told of a death which discloses shadowless fulfillment, but the verbal explication of such mysteries almost always becomes a counterfeiting betrayal, a celebration of the wrong pole of opposition.

Intuition is the god of the world of intimations, the Eros whose face can never be seen. Reason has its hall of mirrors; reason calculates the laws of reflection, and without the finite field that intellect constructs there would be no consciousness or knowledge, neither being nor any form or embodiment of self-aware life. The religions of the world seem records of spiritual nostalgias, altars made of remembered intuitions, captive versions of ancient peak experiences which repeat what forms cannot recreate, sound pitches octaves lower than their originals. Only the high religions whisper at low breath the law of their own inadequacy, figuring in paradox the portals which divide—and unite this world and the next.

"We are such stuff as dreams are made on," a sad and failing Hamlet declared. Can we believe it? Is this highborn Danish adolescent able to instruct us? Which are the intuitions that leave behind them an open road?

Blessed are the breakers—not the makers—of images, for they keep the faculty of intuition alive in human beings. They are disturbers of the peace of complacency. What columns of security are both shaken and restored by Kierkegaard, who said more than a hundred years ago:

> It is quite impossible for the community or the idea of association to save our age. On the contrary, association is the skepticism, which is necessary in order that the development of individuality may proceed uniformly, so that the individual will either be lost or, disciplined by such abstractions, will find himself religiously. Nowadays the principle of association (which at the most is only valid where material interests are concerned) is not positive but negative; it is an escape, a distraction, an illusion. Dialectically the position is this: the principle of association, by strengthening the individual, enervates: him; it strengthens numerically, but ethically that is a weakening. It is only after the individual has acquired an ethical outlook, in the face of the whole world, that there can be any suggestion of really joining together. Otherwise the association of individuals who are in themselves weak is just as disgusting and as harmful as the marriage of children.

Can we say that intuition is most safely identified when found in unaccustomed alliance with reason?

REVIEW
ONE MAN'S BRIDGE

THE letters of Max Plowman, published by Dakers in London in 1941, show how the experience of war may drive a man to question himself to the point of making a direct reversal in major decisions. Plowman first enlisted in the ambulance corps, but later became a lieutenant in the infantry. If the war was right, he wanted to fight. Then, in 1918, he decided he could no longer be an officer in the British army. He resigned, was court-martialled, and discharged. For the rest of his life he worked for peace, associating himself with Dick Sheppard's Peace Pledge Union and helping in the work of the Adelphi Center established by John Middleton Murry.

But this is only the bare bones of Plowman's story. Read in another way, *Bridge into the Future* (as this volume of letters is titled) shows that there were no really important changes at all in the life of Max Plowman. His basic motives, that is, did not alter; the changes were only in the way he saw and understood the world. First he was a conscientious soldier, then a conscientious objector. What was important to him from the beginning was the moral necessity of making up his own mind. He wrote in 1915:

> I know we have to make our individual consciences into National ones but every day we suffer something which may remind us of the disparity between individual and national conscience and we don't make our individual conscience law by refusing to recognize our responsibility for and toward national conscience. . . .
>
> We've got to go such a long way before we can persuade the whole world of the beauty of living and training to live. And here in one of the meantimes we come across a nation suffering from the gangrene of militarism and we must stop it—we must chop off their gangrenous limbs and however loathly it may be I cannot see how anyone can seriously question the necessity of the job. The real benefit of the War is that it is teaching the unimaginative conscience of Nations the awfulness and futility of arms. That is why at any and every cost we must teach Germany that war is not beneficial.

Having taken this position, Plowman became an instructor in bayonet combat. If fighting was necessary, he was willing to do the dirty work. No one, he maintained, ever won a half-hearted war or preserved a faint-hearted peace. Why did he change? Experiencing war at first hand for years, he realized that people who fight do not learn anything from war; they are only degraded by ugly events over which they have no control. And the managers of the war, secure behind the lines or at home, who learn even less, are unfitted to rule.

Plowman could think about the war only as an intelligent human being:

> Lord the whole thing's a bloody fool's travesty of life and excitement. Mechanism has knocked all the spice out of it, even for the bloodthirstiest adventurer. There's just the same feeling about it as there would be about walking through London during a violent earthquake. . . . Nowadays there's not enough adventure in it to redeem the overwhelming mass of bloodiness and sickness and disappointment and sheer idiot luck. There's really no sport about getting buried alive or blown to nothing by machinery 5 miles away, or for that matter, as our fellows were, mown down in long lines by machine guns. It's just ordinary and sickening.

He began to feel that he could be no more good to the army. He saw the reactions of the men around him—simple outrage at the stupidity of it all—and meanwhile the total silence in the national press, any national press, about what was really happening in the lives of the soldiers.

Plowman had other long thoughts:

> I do declare that unless we can remove the Western ideal of "prosperity' our civilization is doomed and damned. But even now no one seems to think of it. No statesman is great enough to say the desire for national wealth is a hellish will o' the wisp. No one has yet put into practice the knowledge that every one in the country may be "well off" and yet every life be parasitic and verminous. . . . things must be said clearly and unequivocally. Men must be told they've either to live for ideal and immaterial ends or be slaves to matter whose slavery becomes crueller

> every day we serve it. Knowledge must be re-tested in the light of essential experience and intellectual curiosity relegated to its proper insignificant place.—Blake's prophecies have come true.—There is a parting of the ways before us and there will be Nemesis for every atom of work laid on men's shoulders which by its burden denies men freedom of spiritual activity—more, which doesn't actually contribute to it. We've got to see life again as old Thoreau saw it: where the work is beneath the dignity of a man as such, it has got to go and our civilization be made to accommodate itself to the free passage of man's unfettered spirit.

The decision to leave the army could be only a matter of time for a man who had reached such conclusions. In December, 1917, he added this postscript to a letter to a friend:

> Can you answer this conundrum? Having proved to my own satisfaction that every man has a God-given right to his own life, how am I to remain a member of an organization which has the destruction of men's lives for its chief object?

In January, 1918, he wrote his letter of resignation as an officer, explaining:

> I have always held that (in the Prime Minister's words) war is "a relic of barbarism," but my opinion has gradually deepened into the fixed conviction that organized warfare of any kind is always organized murder. So wholly do I believe in the doctrine of Incarnation (that God indeed lives in every human body) that I believe that killing is always killing God.

In a statement read at his court martial, he repeated this conviction and added:

> Hence I believe that if I now continued to act as a soldier I should be guilty of the greatest crime it is possible for a human being to commit. Murder done in the heat of passion: rape committed through uncontrollable lust: treachery due to moral weakness, are venial sins compared with the crime of calmly resolving to destroy the lives of unknown persons whose individual characters—whether supremely good or evil—you have no means of knowing, but who, nevertheless, you must endeavor to kill for the solitary crime of being obedient to the laws of their own nation.
>
> The designed and intentional killing of any person against whose personal character you can make no charge is murder of the worst possible kind. Such murder betrays not the unreasoning passion of an animal, but the calculated and deliberate perversion of reason, and is therefore immoral to the last degree. . . .
>
> I am resigning my commission because I no longer believe that war can end war. War is a disorder and disorder cannot breed order. Doing evil that good may come is apparent folly. As the Inquisition proved, and this war is reaffirming, virtue cannot be imposed; it can only be encouraged by those who practice it.

Because of the perversions which war imposes on everyone, Max Plowman was wholly convinced that the rejection of war would have to be the first step in any change for the better in human affairs. As he put it in 1933:

> I know now that the pacifist issue is *primary.* It comes before all Marxism and all social reform. It's the first line of resistance. It's the real touchstone between the live and the dead. It's the something to which everybody must and will respond positively or negatively. It's the great dividing line.—*That's* where we want to concentrate *now.* Never mind about seeming negation. We've got to put up a stand against the threatening enemy *before* we go on to the work of social re-creation because the warmongers and all they stand for threaten not only socialism but civilization itself and unless their position is made insecure they can bomb us out of an earthly paradise itself.

Plowman believed that war resistance would have universal appeal because the ordinary citizen would never go off to war unless both lied to and compelled by law. The ordinary man, Plowman said, "fiercely resents being called upon by authority to behave towards people with whom he has no *personal* difference in a way he would not act even if he had the most violent quarrel with them." War resistance, he maintained, is now a normal human response:

> Naturally and normally, he strongly objects to the exploitation of his instinctive feeling in an unnatural manner that hasn't a shred of spontaneity in it. For he knows perfectly well that passion alone can justify passionate actions; that killing in cold blood is bloody murder, and all the sophistry in Europe will not persuade him that this instinctive knowledge of his is not the simple truth.

> The plain ordinary man has only to act upon that ordinary knowledge for the whole organization of war to break down. Therefore the best of all reasons for being a pacifist now is that the pacifist attitude is today nothing more than the instinctive feeling of the ordinary man made conscious and acted upon.
>
> Great changes come about slowly. . . . At present we are nearly all undifferentiated in considering ourselves compelled by tradition, custom, and society, to fight when those in authority tell us to fight—even when we haven't the slightest personal or instinctive desire to do so. Pacifism declares that it is time we stopped being so compelled. . . . There is no slave-driven crowd on earth—either in the wilds of Abyssinia, or at the doors of a Labor Bureau—as a modern army going into battle. So Pacifism is nothing but resistance to slavery in its most intense form. It is actually the creed of the common man finding expression at last.

Max Plowman was a lover of peace, of Shakespeare and William Blake. He was also a poet. The final stanza of a poem he wrote in 1913—in a moment of "spiritual autobiography," as the editor of these letters put it—may stand for his life:

> The earth is hard. I am not strong.
> Afar I hear your mocking laughter;
> But there is joy the whole day long
> In toil for those who shall come after.

COMMENTARY
GRASS-ROOTS CULTURE

THERE is more to the letter from Virginia Naeve quoted in this week's "Children." Her subject is really the death and rebirth of culture:

> On an educational level: One of the younger teachers in a school in our area, working with a special education class (children all below normal intelligence) became worried about the under-nourishing diet of his pupils. He ordered 25 lbs. of peanuts in their shells and 25 lbs. of sunflower seeds in their shells. If a pupil gave evidence of hunger, was unruly, or couldn't pay attention at all, the teacher started him shelling the peanuts and seeds and then eating them. This way the class was not disrupted and the protein-rich nuts and seeds helped to build up an inadequate diet. Since peanuts and sunflower seeds complement each other in amino acids, eating them together supplied the children with a complete protein.
>
> At our own farm we conduct a pottery during the warm summer months. We have an art gallery in the barn. In the fall we press apples into sweet cider and in the winter I give courses in cooking natural foods.
>
> There is really a tremendous upsurge of change in the way people live. A change just in food and eating habits is really a great leap, and meanwhile the cost of junk foods and foods in general is hastening people to look for intelligent alternatives. Such things are not unconnected with culture.
>
> When I think of the culture of the city, I think of plastic paintings of nothing, music too loud for human ears, labs figuring out devilish new medicines and weapons we don't need and shouldn't use. Then there're all those enormous energy-consuming trucks carrying around potato chips and soda pop—trucks, cars and more smoke, on into infinity.
>
> And that endless parade of books—we could stop printing most books right now. What about all the classics in pocket books?
>
> We had the classics before the pocket books . . . they were in the libraries. They're still in the libraries. . . And in libraries we're not exposed to certain bewilderments. What happens to the "right to choose" with all those thousands of titles, new and shiny on racks, saying *takeme, buyme, grabme?*
>
> Then there's that ridiculous item, the car. A million twists of spaghetti roads twining around and through cities like giant boa constrictors, constructed to accommodate the four-wheeled idiot box that passes the time for us in space. It is another kind of drug that takes you from space to space, and when you reach the other end, where are you?
>
> People ask me how I get so much done. My answer is, "I don't go to super markets. I haven't seen a commercial movie in a year, haven't been in an art gallery for six years, haven't looked at TV for two years, don't get in a car more than once in two weeks." . . . So, what have I missed?

CHILDREN
. . . and Ourselves
CROSS-SECTION

IN *Science* for March 19, an astronomer reviewing *The Nature of Scientific Discovery* (a symposium commemorating the sooth anniversary of the birth of Copernicus) finds "unexpected and remarkable" the break with scientific tradition in this volume's papers "on present knowledge of and outlook on the universe and our projections into the future." One contributor, the late Werner Heisenberg, says that the time has come for physicists to stop looking for "the fundamental elementary particle." No matter what we find, it will be capable of further subdivision. Heisenberg also says:

> We will have to abandon the philosophy of Democritos and the concept of fundamental particles. We should accept instead the concept of fundamental symmetries, which is a concept out of the philosophy of Plato.

The reviewer suggests that the contributions of Heisenberg and John Wheeler, a cosmologist, "raise the entire problem of knowledge and of the relationship of man to the universe in an acute sense." He concludes with these questions:

> Are physics and astronomy returning us to a belief in the partnership of the mind of man in the foundation of the universe? . . . Will the human race survive to solve this problem? Where lies the foundation of ethics? Is ethics created by man for the sake of survival, or is there a fundamental ethic inherent in our existence in the universe?

This disclosure concerning scientific thought is both stimulating and depressing. It is stimulating because it reveals the basis of a new beginning in natural philosophy, and even the possibility of a physics erected on metaphysical foundations. It is depressing in the sense that a vast task of re-education now confronts all those who, along with the editors of the *Encyclopedia Britannica*, have accepted the scientific dictum that Reality begins with Matter and Atoms.

There's not much point in blaming the scientists, to whom we gave immeasurable encouragement and praise. We all had a part in the enormous confidence placed in physical investigations, while accepting the assumption that only the material world is real. In a new book, *Root and Blossom* (London: Heineman, £3.80), on the teaching of English, Peter Abbs cogently indicates some of the consequences:

> From the eighteenth century forward we can trace the progressive rise of the scientific method, a growing insistence on verification, quantification and collaboration, with the consequent decline of the religious, the relentless pushing of poetic and metaphysical forms of knowledge, like stale rags, into the very corners of social life. At the same time and in intimate dependent relationship, we can observe the violent movement of the industrial revolution, the rapid growth in population and organization, in production and consumption. And now, in the latter half of the twentieth century, in the great industrial powers, in Russia, in America in Europe, we are witnessing a further stage of development, a transition from a gritty industrialism to smooth technocracy. This complex development involves the progressive merging of small units into large, a growing emphasis on expertise, management and methods of psychological manipulation, and the steady emergence of a new class, the rise of the man who carries computer paper, the middle man, the bureaucrat. And the whole system (not, as Marcuse has pointed out, essentially changed) held together by an ethic which recognizes no moral imperatives beyond "economic viability" and the "march of progress." . . . Ours is a society in which the growth of identity—the growth of culture—is made not only difficult but, to judge by the number of suicides, schizophrenics, addicts and limp "drop-outs," perilous.

A chapter, "Against the Counterfeit Culture," shows how older and even sublime conceptions of reality are made to do service in popularizing the externalities of physical life. It is this perversion of ideals against which the teacher of English must contend. Mr. Abbs writes:

> What we must do, in the first place, is to look at advertising as a symbolic system which, taken as a whole, dramatizes a limited number of responses to experience and conveys through the methods of

> poetry, not logic, a fairly consistent interpretation of man's nature. In its widest contours, advertising has to be interpreted as a complex counterfeit culture, generating art forms which, for commercial reasons spuriously answer such existential questions as *Who am I?* and *How should I live?* If we glance at the characteristic copy of most advertising we invariably encounter the sublime language of religion and of mystical and Romantic poetry. . . . As S. I. Hayakawa has said, "the task of the copywriter is the *poeticizing of consumer goods."* The experience of ecstacy, of creating, sharing, loving, is thus constantly and artificially connected to mass-produced objects: toothpaste, soap, razor-blades, cigarettes, chocolates cars, cosmetics: objects which, needless to say, cannot support the high associations they have been given. In this way the true language of cultural experience—particularly where it incarnates the feelings of love and tenderness, of mystery and exultation—becomes unutterably debased.

The author quotes from Hayakawa's *Language in Thought and Action:*

> The unsponsored poet of today works in a semantic environment in which almost all the poetry that ordinary people hear and read is the sponsored poetry of consumer goods. Poetic language is used so constantly and relentlessly for the purposes of salesmanship that it has become almost impossible to say anything with enthusiasm or joy or conviction without running into the danger of sounding as if you were selling something.

Root and Blossom is written to help the teachers of English language and literature to start another current going in the mental life of the young. What can be the cleansing tide for language and literature? Mr. Abbs' book suggests what teachers can do to help. He has chapters on how children can be stirred to write freely and imaginatively, with many examples of work done by children from about eleven to fourteen. But there is indeed another sort of tide rising in many lands—a spirit of starting afresh, of breaking with intellectual and moral pollutions as well as the physical ones. Virginia Naeve writes from her farm in Quebec:

> You turn on the radio and hear what a loss to science it will be if the labs don't get funded. . . . that funds are declining. Then you ask, "What are they doing in the labs?" More useless time-savers for us? Questionable drugs for medical treatment? Do we need them?
>
> While all this is going on there's a beehive of activity in other areas, not particularly in cities. There are books, films, and seminars trying to catch up with a multitude of interests. Take a look at the low-cost books put out by printers and small outfits—on cheese-making, sprouting, building your own house, making your own musical instruments, and nutritional studies on the balancing of foods for their optimum benefit. And just look at the books printed by people themselves that have something non-commercial to say.
>
> Here are some of the things going on that we know about. One of the best caligraphers in North America, who happens to be a Canadian and a woman, is printing fine art books with a hand press that are being collected and exhibited in museums. She lives on a farm, grows all her vegetables, cans, gardens, and prints her books right in the house. She lives 150-200 miles from a big city.
>
> About two years ago a group of young people around here started an English newspaper on a government grant. It became such competition to the local commercial paper that their grant was almost taken away. Only the efforts of readers got the grant renewed, and the paper was no longer able to accept advertisements. After a year in a college town the paper moved to a farm and did more on a social level than any commercial sheet. It saved from demolition for a freeway route the town pictured on the Canadian $2 bill, strengthened the co-op movement, exposed the problems of asbestos workers, and shored up the remaining English culture in the area.

Virginia Naeve goes on, describing the numerous forms of ingenuity, resourcefulness, and originality in her part of Canada. Similar things are going on, here and there, in the United States. These developments are unpredictable, grass-roots, and have the qualities of long-term endurance and self-regeneration in them. They are the germ cells of tomorrow's culture, making a natural matrix for the renewal of literature that Mr. Abbs is working for in the schools.

FRONTIERS

Inventions and Discoveries

THE mid-March issue of *Not Man Apart* reproduces a letter by Amory Lovins to the *New York Times* which says in part:

> The way to stop proliferation of bombs is not to sell more reactors, but to keep everyone from becoming dependent on nuclear technologies; not to continue to be a pusher telling other countries they need a nuclear fix, but to offer them wiser counsel, even therapy, instead. The cure begins at home. By improving our own energy efficiency (thus becoming better off with far less energy than we use today) while we deploy sophisticated transitional fossil-fuel technologies we can buy the fifty years or so that we need to switch to diverse technologies that use energy income, such as sun, wind, and organic conversion. New studies in several countries, including some as fuel-poor as Japan and Denmark, are showing that such a non-nuclear strategy is at least as quick, cheap and socially practicable as the present policy, and probably much more so. If less fortunate countries can do it, we can do it too—with a unique bonus. . . .
>
> A principled decision by the US (1) to phase out its nascent nuclear program and divert those resources to conservation and "soft" technologies; (2) to help others to do the same, and (3) to start to consider nonproliferation, control of civilian nuclear technology *and* strategic arms reduction as interrelated parts of the same problem, would, I believe, be irresistible and offers our best chance of transcending the hypocrisy that has stalled arms control.
>
> The US can still turn off nuclear power virtually everywhere, and thus turn on energy and foreign policies that our grandchildren can live with; but we must stop passing the buck before our clients start passing the bombs.

Happily, this is a proposal for switching to renewable energy sources that inventive, self-starting individuals can begin to put into practice without waiting for changes in government policy. Tristam Coffin's *Washington Spectator* for March 15 surveys the energy field from essentially the same viewpoint, starting with what individuals have already accomplished. For example, a man in Wild Rose, Wisc., David Kruschke, has made his own solar heating system out of twenty-eight old oil drums, polyethylene, styrofoam, and elbow grease. "It warms both his home and his greenhouse, so he has fresh vegetables all winter." Mr. Coffin's story continues:

> Seven thousand feet up in the New Mexico mountains, James DeKorne is nearly self-sufficient for heat, electricity and food. The sun and wind work for him. He, too, uses oil drums and cheap materials.
>
> A 19-passenger bus powered by hydrogen, produced from water, will operate experimentally on a 13-mile loop from Provo to Orem, Utah. It was developed by Roger Billings a 27-year-old chemist.
>
> A science teacher in a small town of South Cloud, Minn., built a solar heating system and cut his heating bill by more than half.
>
> America teems with ideas, gadgets and gizmos for beating the high cost of energy and heating and, in effect, living without Exxon and Con Ed. A simple device known as a "super flywheel" and a process that draws warmth from a well-insulated tank of water—both of these may revolutionize the energy business. (A spinning wheel stores mechanical energy, a principle used in thousands of ways. The super flywheel, made of fiber composites, is able to store inertial energy on a large scale. A scientist at Oak Ridge National Laboratory has created a way to store heat and cold, and thus save almost 80% of home heating and air conditioning.)
>
> Tie together the mechanical ingenuity of Americans like David Kruschke, new scientific knowledge, mass production on machinery and the old Yankee virtue of "waste not," and there will be enough energy for us all. This is the promise of the future—*if combined with a massive conservation program.*

For people wondering how to investigate this entire area of thought and action, the March 15 *Washington Spectator* would be a useful initial source (address: P.O. Box 3280, Washington, D.C. 20007).

Interestingly, the James DeKorne named above helped Michael Hackleman of Earthmind (Saugus, Calif.) to write the 194-page book, *The Homebuilt Wind-Generated Electricity Handbook* (published by Peace Press, 3828 Willat Ave., Culver City, Calif. 90230—$7.50). The claim

made for this book—supported by reviewers—is that with it you can actually build a low-cost windmill yourself, after deciding, on the basis of information supplied, what sort you need. An earlier book on windmills prepared by Earthmind is *Wind & Windspinners,* also available from Peace Press for $7.50. Both books have good bibliographies. Neither assumes much technical knowledge on the part of the reader. The two books supplement each other. The authors have built the machines they tell about and list pitfalls along with what they learned.

Another good source of material is Environmental Action Reprint Service (EARS), 2239 East Colfax Ave., Denver, Colo. 80206, which recently published *The Solar Resource: 14 Articles on Energy from the Sun* ($3.95). EARS issues a catalog of available reprints and books concerning solar and wind energy. This reprint service was begun in 1974 by Environmental Action of Colorado, a non-profit organization sponsored by University of Colorado in Denver, and dedicated to stopping nuclear power and developing solar energy. EARS supplies at reasonable cost reliable information on the feasibility of using solar energy. *The Solar Resource* provides articles from scientific, trade, technical, and architectural journals.

Meanwhile, along with all this upward-and-onward direction, there ought to be some notes about the frustrations of the dreamers who live in between the world as ii is and as they'd like it to be, and on what may happen to those who encounter, before they are ready, some of the hard facts of life. In the *Nation* for March 13, Wendell Berry speaks of the failures among the "young people who have returned to try to make a living in the country." A farmer himself, and knowing the difficulties, Berry remarks that success may require several generations. Yet some of these present-day "pioneers"—in New England, California, and Kentucky—"have now lived as farmers long enough to be taken seriously":

> They have some proof of themselves in their improvement of some old farms. I do not recommend that anyone do any such thing; people choose their lives for nearer reasons than someone else's recommendation. But I do understand what those young men and women have done, and value it, and applaud it. I would rather fail with them than "succeed" with Tenneco.

Then, in the *New York Times Magazine* for Feb. 29, Donald Pellman tells how he and wife Sally (with a new baby) came to terms with life on a rocky, high-priced, unproductive Vermont farm that turned out to be a "luxury" from any practical point of view, although a pleasant place to live. The point, however, is that the Pellmans are going to *stay* there, developing supplementary income to make possible a rural way of life "that will be one of balance—and not just compromise." (He writes, she weaves.) Living in the country, they discovered, "does not offer an escape from the world's complexities." What the Pellmans found out on their Vermont place is probably even more important than knowing about windmills and solar heating. If space allowed, we'd reprint Donald Pellman's article entire. Fortunately, a lot of libraries have the *New York Times Magazine.*