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TOWARD A REDEFINITION OF SCIENCE

TWO recent letters of comment are concerned with the meaning and role of "Science." The first comes as a criticism of the Review article in MANAS for Jan. 15, on the special (Jan. 4) issue of the *Nation* containing J. Bronowski's essay, "The Abacus and the Rose." This reader objects to the citation of Dr. Einstein's conception of science as meaning study of the external world, seen as "independent of the percipient subject." She writes:

> To draw from this the conclusion that "the world of the percipient subject is not included in scientific inquiry" is to me untenable. I should like to know what Einstein really meant by the word "independent" in this context. As it stands, the quotation plays into the assumption that "man" and "nature" are divisible—a complete contradiction, it seems to me, to the concept of life as a *field,* a continuum in which everything affects everything else. If I am not mistaken, Einstein was himself the innovator here, the creator of this new vision in science. This is certainly what Bronowski is talking about. And this is what I have deep personal experience of through my work as therapist: One perceives; through a process of abstraction one makes choices; one judges what is *there;* and out of this one creates a vision of life, of man or whatever, and all the while the life in oneself is coloring one's choices and judgments. To put it more simply: This process that one is aware of is completely *one* with the awesome and complex process of life going on inside one's own skin. And this is so, whatever a human being is "doing," whatever the "subject" is—art, science, etc. Man is by nature an "interpreter." His nervous system, his organism, is constructed that way. He can't help it.
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> In no way does this rule out the usefulness of such terms as "object" and "subject." What is needed is awareness that these are relative terms, as is also the term "descriptive"—a real revelation to me through Bronowski—relative to an antiquated vision of life! I have found it very worth while to obtain words and expressions which are less likely to hold the channels of my thinking and feelings in the ruts made by an earlier scientific vision. . . .

We have no quarrel with the feeling-tone of this correspondent's thinking—something far more important than definitions of "science." All that we can possibly object to is the turning of intuitive ardor into a justification for redefinition of science without any notice of the abyss this digs under the theoretical foundations of very nearly all the conventional scientific disciplines. For about a half a century, the watchdogs of scientific method and the prevailing forms of the philosophy of science have been zealously on guard against this sort of subversion, and they deserve at least the courtesy of an explanation, or logical justification, in terms they can understand. Yet our therapist-reader might easily qualify as a kind of Madame Roland in the scientific revolution: "The atheist is seeking for a syllogism, while I am offering up my thanksgiving!"

The other letter of comment, which is more historically-minded, gives light on this general point:

> I believe that progress in the social sciences must be the prolegomenon to a resumption of the moral dialogue. The Cartesian error was to separate fact from value in an effort to avoid the wrath of the Catholic Church. The problems of the next hundred years will be to work toward the recontracting of the necessary partnership between these two. In the social sciences, fact, theory, and experimental design must not be adulterated by considerations of value and morality. They must not be admixed. But they must have a subordinate relationship—one in which our findings are always made relevant to the sixty-four-dollar question of all time, namely, What is the Good Life?
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> It is only the narrow type of social scientist—one who operates only in the rational dimension, neglecting the dimensions of feeling, intuiting, sensing (in Jungian terms)—who is too blind to recognize the over-arching importance of morality and problems of value. There are outstanding social scientists, however, who, as you put it, are trying to resume the moral dialogue in the social sciences.

> And there are outstanding social scientists who refuse to separate problems of fact and social research from problems of value. Typical examples of figures significant in this second connection are Michael Polanyi, Gunnar Myrdal, and the late C. Wright Mills. . . .

From these communications, certain questions arise. To what extent is the dichotomy between subject and object necessary to the practice of science? Can subjects—human beings—be studied scientifically without converting them into objects (turning man into a "thing")? Is it dangerous to meddle with the classical meaning of scientific method and knowledge? Should we attempt to broaden that meaning, nonetheless? What could be gained? What might be risked, or irrecoverably lost? To what extent is the now generally accepted meaning of science a historically conditioned, and therefore unnecessarily limited, conception? Is there also a timeless intuition of truth in the going conception of science, which inhibits fooling with it?

Well, let us try to make some currently acceptable definitions of science. First of all, science is an impartial quest for certainty. It is also a rigorous quest; it develops all the checks that can be devised on scientific findings. It tests every conclusion.

Second, the scientific theory of knowledge is pluralistic. It contends that you can know something accurately without knowing everything. This may be a weakening claim, today, but it has been vigorously defended as necessary to any sort of beginning in scientific knowledge. You can hardly give up pluralism in the various departments of science without subordinating them all to Philosophy, and for the scientific practitioner this is begging the whole question. He would remind you that science was born in stubborn contest with theological imperialism. Science developed its particular findings (Galileo's spots on the sun) and used them to undermine the authority of the dogmatic substitutes for knowledge. Pretty soon the walls came tumbling down. In time, and from the impressiveness and usefulness of scientific discoveries, we came to accept the full-dress theory of objective "reality" as the basis of all science (and then of all "knowledge"). E. A. Burtt sums up the general consequences of assiduous scientific pluralism, practiced by Galileo and others, in his *Metaphysical Foundations of Modern Physical Science:*

> Physical space was assumed to be identical with the realm of geometry, and physical motion was acquiring the character of a pure mathematical concept. Hence, in the metaphysics of Galileo, space (or distance) and time became fundamental categories. *The real world is the world of bodies in mathematically reducible motions, and this means that the real world is a world of bodies moving in time and space* . . . Teleology as an ultimate principle of explanation he set aside, depriving of their foundation those convictions about man's determinative relation to nature which rested on it. The natural world was portrayed as a vast, self-contained mathematical machine, consisting of motions of matter in space and time, and man with his purposes, feelings, and secondary qualities was shoved apart as an unimportant spectator and semi-real effect of the great mathematical drama outside.

All the sciences were born in the matrix of this sort of thinking. Insistence on the Galilean world-view has seemed important for two reasons. First, arguments from the Divine will must be made irrelevant; they may be offered, but they need not be noticed unless some physical (or mathematical) cause can be substituted for the supposed influence of the Deity. This way, men keep control of what they consider to be knowledge. It remains *theirs.* Science must not be subjected to the unfathomable whims of a supernatural being, since this would at once destroy the whole meaning of scientific inquiry.

The independence of science is important intellectually or rationally, but it is also important politically (and socially, in terms of power). God's word about the world and the people in it too often comes from men who use this spiritual authority to control and manipulate people's lives. Thus, putting an end to divine authority meant

disarming theocracy. Eliminating God as a cause was intended to make the revival of religious tyranny impossible. God was the chief "subject" of prescientific ideas of reality, and men (or their souls) were lesser subjects. All the subjects had to go, in the name of intellectual freedom to know and define reality; in the name of human freedom from religious manipulation and religious support of social injustice.

It was through these rational and socio-moral justifications that the idea of objective reality became the rock upon which the house of scientific knowledge was built.

Even if the threat of theological authority has almost disappeared, it might, if allowed to claim only a tiny soft place on the rock, spread a morass of uncertainty under all the sciences. And if objectivity be lost, what will happen to rigor in checking results? One of the characteristics of scientific knowledge is its open accessibility and precise definition. Disagreements about dimensions can be settled by making measurements. Experiments can be repeated. Scientific truth is *public*. Science is demonstration. Deceptions and mistakes can be found out and exposed. Honesty and accuracy are methodologically built-in virtues of the practice of science. These virtues are preserved by insisting upon the criterion of objectivity.

However, with the growth of science to its present and more or less unmanageable proportion, and its proliferation into almost countless branches and specialties, including the progressive invasion of certain areas (such as human behavior) where the reality of subjects becomes difficult to ignore, sophisticated tools were required to continue the "objective" approach to phenomena. These tools have been almost entirely variations of mathematical techniques. To what extent, for example, does the "objectivity" of the social sciences depend upon statistics?

Yet, interestingly enough, consistent and increasing reliance on mathematics in the physical sciences led to the gradual transformation of these disciplines from mechanistic to almost Pythagorean undertakings. The first steps in this process were taken by Isaac Newton:

> From the triumph of this purely mathematical achievement [Newton's demonstration of gravity] there was curiously developed a new physics. Let us observe that a purely mathematical connection between two phenomena, such as the fall of bodies and the motion of the moon, could only lead to that great generalization in so far as there was presupposed a common and everywhere operative material cause of the phenomena. *The course of history has eliminated this unknown material cause, and has placed the mathematical law itself in the rank of physical causes.* The collision of the atoms shifted into an idea of unity, which as such rules the world without any material mediation. (F. A. Lange, *History of Materialism*, Harcourt, Brace, 1925,)

This scientific apotheosis of mathematics did not disturb the popular sense of "objective reality," however, until, with the coming of the new physics, the old world-machine analogue gave way to a network of incomprehensible equations. *Then* we began to wonder in all seriousness what good there was in an objectivity that could be grasped only by Dr. Einstein and eleven other exceedingly smart men. And we were treated to a generation of physicists who did nothing but Platonize in their free time. If you read Sir James Jeans, Niels Bohr, Arthur Eddington, Arthur Holly Compton, Max Planck, and Erwin Schroedinger, you began to think that a chastened and well-behaved Prime Mover had been allowed to resume occupancy of a universe constructed out of neo-Pythagorean mathematical necessity. It was quite a switch, but of purely "cosmic" significance—concerned with things "out there"—since the restored geometrizing deity and the emancipated electron (which waved where it listed) did not come under the notice of either the psychologists or the sociologists. People, however complicated, remained machines.

There were those, however, who now felt freer to think and speculate about specifically human meanings than they had before, and even

some scientists were infected. Dr. Carrel published his *Man the Unknown* about 1930, beginning a great ground swell of longing; people wanted their subjective identity back from the tough-minded mechanists, who had had it for a long time, and offered us nothing but Pavlovian fun and games. Now there was Dr. Rhine, whose far better games with cards were filled with promising possibilities.

Meanwhile, those influential off-campus psychologists, the Freudians, were daily experiencing direct confrontation of *human subjects,* in their professional lives. The story of the psychoanalytical rediscovery of subjective reality is well told by Ira Progoff in *The Death and Rebirth of Psychology;* and the general turn in modern psychology was called, back in 1940, by Dr. Henry Murray, of Harvard, in an article in the (April) *Journal of Abnormal and Social Psychology,* entitled "What Should Psychologists Do about Psycho-Analysis?" His meaning soon became plain:

> The analysts spend eight or more hours of the day observing, listening to what a variety of patients say about the most intimate and telling experiences of their lives. . . . The professorial personologist, on the other hand . . . labors over apparatus, devises questionaires, calculates coefficients, writes lectures based on what other anchorites have said, attends committee meetings, and occasionally supervises an experiment on that non-existent entity, Average Man. . . .

Dr. Murray also renewed the Jungian challenge to the Freudians:

> Freud's theory, I submit, is an utterly analytic instrument which reduces a complex individual to a few primitive ingredients and leaves him so. . . . This is the flaw which Jung was the quickest to detect and remedy, by directing his therapeutic efforts to an understanding of the forward, rather than to the backward, movements of the psyche. . . .

Then, a general challenge:

> What is Mind today? Nothing but the butler and procurer of the body. The fallen angel theory has been put to rout by the starker theory of the soulless fallen man, as a result—as Adam, the father of philosophy, demonstrated for all time—of experiencing and viewing love as a mere cluster of sensations. Little man, what now?

Upon encountering the doctrines of Behaviorism, a German academician is said to have remarked that Psychology long ago lost its soul and was now apparently losing its mind. But by 1940 the tide had changed its direction and the subjects inside even psychologists were making themselves heard. The denatured version of the Average Man's inner life made available by the filter of statistics—with statistics you could take the psychological behaviors of people suspected of trying to be "individuals" and make them real by objectifying them in formulas, etc.—was increasingly dissatisfying and, after all, the moral condition of the world had become rather frightful. Something had to be done. Came the Neo-Freudians, and after them the Self or Humanistic psychologists. In a short twenty years or so, the entire picture in modern psychology was changed. In the world of philosophy, Whitehead made a preparatory contribution, and the earlier, free-wheeling investigations of William James began to be seen in a new light. Two other forms of direct encounter with the subject-aspect of human beings began to occupy the attention of people sensitive to the needs of the times—Existentialist philosophy and Zen Buddhism. By 1960 it was plain indeed that the subject in man was no longer to be ignored, the subjective fruits of his awareness no longer to be suppressed.

The new psychologists have been quite polite to the gradually eclipsed mechanist fraternity—after all, while the mechanists had lost the ball, the game was still being played on their field; and the controlling consensus on the meaning of science had been expressed in the currency of mechanist thinking for several generations. But politeness is not conformity. These psychologists set about creating the atmosphere of a new consensus—a new universe of scientific discourse concerning the nature of man. The most distinguished pioneer of this movement was undoubtedly Carl Jung. Karen Horney is an intermediate figure, and

Erich Fromm was among the first to break the rules established by the mechanists.and to assert the presence of some kind of self-moving unit in human beings. There seem to be three definable stages in a transition of this sort. The initial stage is marked by a decline in scientific insistence that man is "nothing but" the product of various determinisms. The assumption is still there, but it becomes tacit instead of aggressively explicit. Then there is a period in which investigators try to work around it. The assumption no longer seems important or fruitful to them, and they cultivate other parts of the psychological garden. At the beginning of the third stage, the assumption is tacitly rejected instead of tacitly accepted. There is not yet open denial, but the insights which mark the progress of the science would have little promise or meaning without the denial. Finally, there is the thumping announcement: *Man is not a Thing.* The psychologists cross their metaphysical Rubicon; at last they have their sovereignty; which is to say, they have a subject-matter of their own.

And now, the lively airs of the new consensus are blowing briskly in all directions. Literature, a colleague and even a mentor in these developments, has helped to establish reference-points of reality for individual human beings. A thousand and one little influences—a pluralistic cultural bubbling, the coming to the surface of countless tiny springs in people who sense their deep need and the friendliness of the hour—begin to contribute to the atmosphere. Suddenly the fact of various "layers" in the culture becomes manifest: the bottom layer is passive, thick and sluggish, and represents the past; the middle layer is beginning to exhibit nervous twitches and responds to strange currents of questioning; and the top layer, while thin and still patchy, has already evolved its own language of value-communication and a kind of psychological radar which is hypersensitive to the self-actualizing trend. (In illustration, there is the mailing list of like-minded spirits maintained by A. H. Maslow until a few years ago. This list started out quite short, but grew so rapidly that Dr. Maslow had to keep on getting out "new editions" so that people could be sure of reaching all interested parties for the exchange of papers, etc. Finally, the list dissolved into the readership of the *Journal of Humanistic Psychology.* The extraordinary popularity of modest little dittoed extracts from Carl Rogers is a further illustration of the way the new psychology spreads its influence. Adult education teachers bring them to night classes and read them to the students. The names of men like Rogers, Maslow, and Frankl are magic words; people warm and converse excitedly when they are mentioned. There is a joy of recognition in these exchanges.)

Well, fine, we say; the new cultural consensus is on the way; and if we can get going some constructive ideas about what it means to be human, maybe people will begin to behave differently. After all, we need something to live up to. We say this, but we still need to answer the fundamental question: Are these new findings about Man "scientific"? Do they have "objectivity"? How would you go about testing these wonderful theories?

We shall make an attempt to answer this last question, not by trying to invent tricky techniques for capturing the shadowy images of subjects as they flit through psychological cloud chambers, but by adopting the view of our first correspondent, to the effect that "objectivity" is a relative affair, and not fixed for all time by what Galileo found to be an expedient division for *his* researches.

It seems apparent that modern physical science is able to preserve its claim of objectivity mostly by reason of the prestige of its practical accomplishments. Or, you could say that the acceptable objectivity of this parent field of science is now *conceptual* rather than physical. Peter Abelard has become the prophet of scientific epistemology. Writing for the *Scientific Monthly* for October, 1937, a biologist, Francis B. Sumner, remarked:

> In general, the illustrative "experiments" by which the principles of relativity are justified to the reader are purely imaginary ones, involving such things as the observer's moving through space at the velocity of light or moving at an accelerated motion, corresponding to the acceleration of gravity, or involving his ability to read another man's clock or measuring rod, while one or both of the parties are traveling at these furious speeds. . . . A disembodied equation may be highly interesting and valuable when we are concerned with pure mathematics, but it hardly serves as a substitute for a description when we are concerned with the phenomena of the physical world. . . . There would seem to be a vast inconsistency between the traditional notion of the man of science, with his uncompromising insistence on evidence and his lofty scorn of guesses and unproved assumptions, and the quasi-mystic who tells us all these strange things about space and time and infinity and who describes with such assurance the detailed intricacies of an infinitesimal world forever beyond the range of human observation. . . . What some of us would like to find is first of all a clear description of what the experimenter really does and sees, and *after that* an account of his theoretical interpretations. We are apt to read about "bombarding the atom," "smashing the nucleus," "weighing the electron," and the like, with commonly but the faintest intimation of how all this is done and why these effects are inferred. As Swann pointedly remarks: "We say that we set up apparatus and measure the number of electrons going through a certain hole. We do no such thing. We make settings of certain electrical instruments, and we make readings of others. From our readings ant settings we *calculate* these visions of electrons going through holes, and the like." It is unfortunate that this realistic view-point is not more constantly kept in mind by the popular expositor of recent scientific developments, biological as well as physical.

In the same year (in the *Atlantic* for July, 1937), Prof. Herbert Dingle, a professor of astrophysics, voiced his objections to the "authority" of the new physics in the form of a satirical dialogue, asking a first question:

> "Why do you speak so contemptuously of the old science, which we understood in some measure, and say it is superseded by a great new revelation?" "Because we have found that, at bottom, everything is mathematics." "What, then, is mathematics?" "Why, my dear fellow, mathematics is the one sole characteristic of the Creator: would you presume to understand that? If you knew mathematics you would know everything; a mathematical formula, and nothing else, expresses the ultimate reality. You yourself are simply a mathematical formula—a mathematical thought in the mind of a perfect Mathematician. Is not that sufficient justification for contempt of a mere system of screws and flywheels which the last century talked about?" "Well, yes, I suppose, but I don't see how you have found out that everything is mathematics." "Why, by mathematics, of course; how else, since mathematics is everything? The system of physics is a closed system.

From this not inaccurate, if somewhat sardonic, estimate of present-day scientific objectivity in physics, we turn to a passage in an article by Prof. George D. Birkhoff, in *Science* for Dec. 30, 1938:

> As between two or more opposing concepts, mathematics is strictly neutral—the only thing in the whole wide world, perhaps, that can on any subject maintain a strict neutrality consonantly with its own nature, without detriment to itself and with benefit to others. Because of the essential neutrality of mathematics, only confusion results when specific mathematical formulations are introduced as arguments on behalf of special cosmological doctrines. Mathematical formulations can be made to support *any* cosmology. Hence mathematics must be put to one side as incompetent to determine, and irrelevant for the settling of, cosmological issues.

Well, these are a few strands in the case for allowing the introspective psychologists the right to establish their own sort of consensus concerning the "objectivity" proper in their field. It might as well be admitted that whenever you get to matters which are vital to human beings *as* human beings, you are involved with realities and values which have substance only in the field of *concepts* and *ethical longings*. The consensus, whatever it is, must be established here. For Man is here. He is elsewhere, too, of course, but his good, his essence, his meaning, and his promise are here. The criteria in this field include all the tools of psychology, ethics, and metaphysics.

What will make the undertaking "scientific"? Only a spirit of absolute impartiality and the determination to *know*. How will practitioners in

this field check up on one another? They will check subjective matters by their own subjective experience, and with such comparisons as may be possible and useful.

Is this a sure-thing sort of science, providing an open-and-shut kind of objective trial? It is not, and cannot be, for the reason that human beings are foci of incommensurable reality and cannot be fed into the hoppers of finite measurement. What, then, is the difference between such "philosophical" science and the kind of religion which rejects hear-say testimony concerning ultimate truth? Very little, so far as we can see, although the history and antecedents of scientific inquiry create needed safeguards against the familiar weaknesses of the religious temperament and its excesses in the will to believe. It can hardly matter that there should be such close resemblances between two forms of human cognition—resemblances which grow almost to identity as the cognitions rise to higher levels of perception. A man, after all, is not a collection of divided institutions. At his best he is whole and one.

REVIEW
PHILOSOPHY AND THE POLICEMAN

RICHARD DOUGHERTY'S *The Commissioner* (Doubleday, and a pocket-book reprint) is a reflective and enjoyable novel. Mr. Dougherty served for two years as a Deputy Commissioner of the New York City Police Department. He wrote this book because, working for the Department, he began "to get to know cops themselves intimately," and "to develop theories as to why cops are different from the rest of us—and they really are—and speculations as to how they got that way." The leading character is of course the Commissioner, Anthony Russell—a man of disciplined ambition, but capable of growth as a human being while engaged in the complicated tasks of public service. At fifty-five, he looks back upon his career and himself dispassionately, then projects his career into the future, more or less as a practical philosopher making up his mind. His childhood relation to the church, bringing, as he grew older, his departure from the ranks of believers, leads to a good deal of reading, and finally to a central paradox of his own nature. The Commissioner remembers:

> In time, the reading of Ingersoll and anonymous tracts on agnosticism and atheism freed him from his agonies. It was the Church, not he, which was in error; the denial of the flesh was the denial of the "life force"; the Church's disciplines were against nature; man was, after all, an animal, as modern science had proved beyond doubt. Years later he would, in telling Tricia of this period, mark this point—this break with the Church—as the beginning of a wholly impossible attempt to come to virtue through vice. She had laughed at this and he had not pursued the subject but what he had meant was that virtue must always escape him, for the reason that he would never be able to regret the way he had tried to come to it. In effect, he could not repudiate his sins even after he had reached the conclusion that they were precisely that. So far as he could measure and weigh them, his sins had all played a part in his struggle to gain what mastery he had over the world and himself. He had greater power over his conduct as a result of his experience than he could have had had his curiosities gone unanswered.
>
> Thus he was a stronger man than he might otherwise have been, but he was also, of necessity, a jaded man whose triumph rested on little more than his having established to his own satisfaction that sin could be a bore. So his strength was hardly the strength of heroes, and his position, as he recognized, was at best only in the remote neighborhood of virtue rather than at the thing itself. It was a position, too, about which there was an aura of nostalgia—a nostalgia for his own innocence.

Mr. Dougherty's humor is many-faceted and often engaging. For sheer enjoyment we reproduce a soliloquy indulged in by the Commissioner's best friend and assistant, Charley Kane—a man who violated the integrity of the Department by making a "deal" to save his son from disgrace, and who now faces the end of his career. A "judge" imagined by Kane puts the first central question, and then the dialogue proceeds:

> Question: Are you or are you not the aforementioned Charles Aloysius Kane and are you not a blowhard, a drunk, and a coward?
>
> Yes, your honor. I answer yes to all counts of the indictment but with an explanation.
>
> Oh, no, Charley. None of that me boy. We'll brook no explanation from the likes of you because you're a mushhead that could only confuse the issues before us. I hope you understand that?
>
> Of course, your honor, and I think your honor put it very delicate if I may say so.
>
> Not at all. Now, then question: Did you or did you not as alleged by the Police Commissioner of the City of New York betray the trust of said Commissioner who appears here today both as plaintiff and amicus curiae of the court?
>
> In a certain sense, yes, your honor, and in a certain sense no but more I would say in the yes-sense than the no-sense and furthermore I'd do it again the same circumstances prevailing.
>
> Now, now, Charley. Never mind the fancy talk and the complications and your little attempts to sway the court with your crude Irish charms. Charley, I don't like at all to see a man like you in a pickle of this order and magnitude and I'm going to try to lean over backwards to give you a fair hearing and help you in every possible manner that is at my command.
>
> Thank you, your honor.

There's a kind of pathetic and appealing quality to you, Charley, that goes right to the heart of a man and disposes him to be lenient with you because it is palpably patent and clear beyond doubt that you are not quite competent in the affairs of the great world. In fact, the truth be known, Charley, a case of this sort ought to be heard in Children's Court.

Thank you, your honor. Thank you for them very kind words and I'll just have another little tap while the bottle happens to be close at hand.

Good health to you, Charley. I just wanted to make a few of them things clear to you before sentence is imposed and the grim wheels of Justice begin moving down on you, poor thing that you are and not unlikable in your childlike way, bless your heart.

I was just thinking to myself sitting here and observing your actions and fine manner of speaking and uttering noble thoughts the way you do, Charley, that it was a great pity that you didn't seek your fortune in the theater.

Yes, your honor. How curious that you should bring that up because it so happens that a great many of my friends have long urged me to stop wasting my talents in police work and have said: Charley, why don't you go on the stage and bring a little joy and happiness into the sad lives of the world and stop sacrificing yourself to a man who will one day turn on you like a mad dog and to hell with you and all you've done for him and the advancement of his wicked ambitions.

Or so they have said, your honor, expressing themselves in that wise and so on and so forth, and I have said: no, my friends, thank you one and all for your generous words and high opinion and for urging this particular course of action on me which is very tempting and all that, but I have said no, no, my friends, I may not do that much as I would like to because I am needed here. . . .

The most memorable passage in *The Commissioner* occurs when that troubled man is pondering his own profound disturbance at the death of one of his detectives:

He had, after all, seen cops killed before, a few of whom he had known better than he had known Dan Madigan and whom he had respected more than Madigan. Why should there be this sense of loss at the death of a man who, however brave in death, had lived an indifferent life? What was it between him and Madigan? What had there always been about the younger man which from the time of their first meeting had acted to upset him, to stir odd combinations of contempt and envy, liking and disliking, annoyance and admiration, anger and a kind of uneasy fear? Something about Madigan had always seemed to invite him to despair. . . . Why? What was it he had done? How had he wronged Madigan, or failed him?

Was it that he had categorized him falsely or unfairly, or—more to the point—was it that he had categorized him at all? Couldn't it be that the most unjust thing one man could do to another was to put a label on him, to simplify him, to rob him of his complexity? That was not what a man did with friends, for example, with people he loved. He allowed them, or better wanted them to have, their essential mystery. And wasn't that what it was to be friends, to love someone? Wasn't a man, in doing that, giving up a kind of power over them—granting them, in effect, the right to be entirely themselves even in his own mind? . . .

If that were so then he had wronged Madigan twice, first by having denied the man's everpresent, unspoken plea to be recognized as a kinsman, and, second, by having denied him his complexity. Of course in the ordinary activity of life it was necessary that men be judged and, on the evidence available, labeled. Not to do this would be to render one's self incapable of decision, action, to make one's self unworthy of responsibility. But this was not true of friends—what one did with them was to free them and, in freeing them, to relinquish the conventional powers, the practical methods of dealing with people and the world. Friendship was a kind of abdication; it was an act of one's reason and heart which extended beyond mere compassion. Compassion belonged to, and was an element of judging, of assessing and typing a man. But friends were not judgeable in the same way. It was, in fact, the duty and work of friendship that one not judge the other, or mark one down as one thing or another, until the whole course was run. So now, in this belated recognition, he could judge Madigan, whereas he had been wrong to do so before. Madigan dead could now be marked and the mark was very high.

COMMENTARY
"A REAL UNIT BEING"

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be reaching—on a return arc of the cycle—the

of psychology of about a century ago, Dr. George Ladd, who taught at Yale University. A *Elements of Physiological* provides a criticism of what was then

supplemented by a view which could easily be

contemporary humanistic psychologists:

> development of the mind to the evolution of the mechanical causes. This attempt . . . denies that any as undergoing a process of development according to account for the orderly increase in complexity and tracing the physical evolution of the brain are wholly experience which show a correspondence in the order certain necessary dependence of the latter upon the equally compatible with another view of the mind's advantage that it makes room for many other facts of any materialistic theory. On the whole, the history of assumption that a real unit-being (a Mind) is

the changing condition or evolution of the brain, and

Ladd, it might be remarked, had a discernible

ground-work for recognition of a "real unit-being" *The* which was titled

CHILDREN
. . . and Ourselves

FRONTIERS

"The Brain vs. the Machine"

WRITING on this subject in the *Saturday Review* for Jan. 18, Joseph Wood Krutch explains a central philosophical issue of our time. The key point is as follows:

> A good deal has been said about the fact that man is becoming the victim of his machines, but to become the victim of mechanism is a worse fate, and one from which there is no escape.
>
> Perhaps the reader wonders why a mere lay essayist should be wading in over his depth to take part in a controversy that is none of his business. In fact, it is or ought to be the business of everyone, layman or expert. Much of the climate of opinion in the age we live in will depend upon current notions concerning the nature of man and the extent of his powers. As the late Richard Weaver put it, "Ideas have consequences."
>
> If the machine can be a brain more efficient than the one we were born with, then we should turn more and more of our decisions over to it, and if our brains are machines then we are indeed no more than what the extreme Marxists say we are—helpless products of an evolving social and technological system that we only seem to direct. If this is true, then adjustment to things as they are turning out to be is the only wisdom.

A counterview depends upon subjective evidence:

> As in the nineteenth century, attempts to make man a pure machine come up against the stubborn fact of consciousness—a unique phenomenon as undiscoverable as "the soul" in any test tube. The mechanical brain exists only because a real brain creates and manipulates it.

This is obviously an area of more than theoretical concern. Ideas do have consequences, and one consequence of the mechanical model of man has been the development of social systems to which we have delegated "more and more of our decisions." An article by Andrea Caffi, included by Dwight Macdonald as an appendix to *The Root 1s Man*, deals effectively with the "computer ethos." Mr. Caffi wrote:

> What distinguishes "mass politics" is the fact that it reduces human beings and their occasional spontaneity to the function of undifferentiated and interchangeable particles of energy of which the only thing that matters is how quickly they can be agglomerated into large numbers and "big battalions."
>
> As everybody knows, the Moscow apparatus succeeds in exploiting for the sake of "mass operations" the strongest and the noblest qualities of the individual. The consistency, and hence the superior effectiveness, of the Communist leadership stems from the fact that it inculcates in the minds subjected to it the explicit conviction that a man has neither existence nor value outside of the mass, and that any contemptible "free will" must be suppressed in favor of a vigorously disciplined unanimity, which the Communists extol as the supreme, and final, state of the human kind.
>
> If the preceding considerations are at all relevant, we must conclude that the first thing to do, in order to get to the point where "politics of the people" will be more than a phrase, is to begin from the beginning, that is: with the rescue of individuals from the mass that mechanizes and dehumanizes them. We must find again the direct language, the genuine feelings, the clear notions, the limpid images through which we can establish a true communication with the "people."

One does not have to be a devotee of religion to believe that "the direct language" which Mr. Caffi describes is a "language of the soul," rather than a language of politics. If men are submissive to the machines they have created, this can only be because they have already capitulated to the belief that things and conditions manage people rather than the reverse, and from this surrender there is only a short step to the disavowal of all individual responsibility for existing situations. Somehow, with the ascendancy of the machine, mechanical conformity has become almost a rule of life for modern man. To remain morally neutral in this situation is a further surrender, and the protest of innocence can only be made with bad conscience. If we were fully innocent, we would not be human beings. A passage from Arthur Miller's recent *Life* article (Feb. 7) speaks to this point:

> It is, always and forever, the same struggle: to perceive somehow our own complicity with evil is a

> horror not to be borne. Much more reassuring to see the world in terms of totally innocent victims and totally evil instigators of the monstrous violence we see all about us. At all costs, never disturb our innocence.
>
> But what is the most innocent place in any country? Is it not the insane asylum? There people drift through life truly innocent, unable to see into themselves at all. The perfection of innocence, indeed, is madness.

These issues are all implicit in Mr. Krutch's discussion. An earlier article by Mr. Krutch in the *Saturday Review* (Sept. 21, 1963) concluded with this passage:

> I do not want to be a termite, to be wound up like a clock, or to live in a Walden II. I hope that the species to which I am proud to belong will not come to be so obsessed with survival and efficiency that it forgets what makes survival and efficiency worthwhile and, to me at least, that includes a chance to be intelligent and aware.
>
> Do more and more men refuse to share my preferences? Do more and more of them want to be wound up like clocks and thus spared the pain as well as the rewards of being men?

We are contending, in other words, with an adverse philosophy, one which asks us to accept the proposition that after machines have become more and more like men, and men have become more and more like machines, we will have gained perfect control over both our environment and our lives. But to match ourselves with the machines, for the sake of a convenient predictability, would be to dehumanize ourselves without the persuasions of communist ideology. The real issues do not lie in politics, but in underlying and prior ideas about the nature of man.