

PSYCHOLOGY AS A MEANS OF PROMOTING HUMAN WELFARE¹

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THE most urgent problems of our world today are the problems we have made for ourselves. They have not been caused by some heedless or malicious inanimate Nature, nor have they been imposed on us as punishment by the will of God. They are human problems whose solutions will require us to change our behavior and our social institutions.

As a science directly concerned with behavioral and social processes, psychology might be expected to provide intellectual leadership in the search for new and better personal and social arrangements. In fact, however, we psychologists have contributed relatively little of real importance—even less than our rather modest understanding of behavior might justify. We should have contributed more; although our scientific base for valid contributions is far from comprehensive, certainly more is known than has been used intelligently.

This is the social challenge that psychologists face. In the years immediately ahead we must not only extend and deepen our understanding of mental and behavioral phenomena, but we must somehow incorporate our hard-won knowledge more effectively into the vast social changes that we all know are coming. It is both important and appropriate for us, on occasions such as this, to consider how best to meet this social challenge.

In opening such a discussion, however, we should keep clearly in mind that society has not com-

missioned us to cure its ills; a challenge is not a mandate. Moreover, there is nothing in the definition of psychology that dedicates our science to the solution of social problems. Our inability to solve the pressing problems of the day cannot be interpreted as an indictment of the scientific validity of our psychological theories. As scientists we are obliged to communicate what we know, but we have no special obligation to solve social problems.

Our obligations as citizens, however, are considerably broader than our obligations as scientists. When psychological issues are raised in this broader context, we cannot evade them by complaining that they are unscientific. If we have something of practical value to contribute, we should make every effort to insure that it is implemented.

I believe that the majority of American psychologists have accepted this broader interpretation of our responsibilities and have been eager—perhaps, sometimes, overly eager—to apply our science to social problems. We have not been aloof or insensitive; the bulk of our profession works full time on exactly such problems. And I do not wish to discount the many and often successful efforts toward application that we have made already. Yet I cannot escape the impression that we have been less effective than we might have been. “Why” and “what more might be done” are questions that have troubled me increasingly in recent years.

First, however, I would like to raise a somewhat parochial question.

ROLE OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

If we accept this challenge to use psychology to solve social problems, what role should we expect the American Psychological Association to play? I raise this question because my experience as an officer of APA has taught me that many of our members look to their national organization for leadership in insuring that our scientific and professional activities have greater social relevance.

¹ Presidential Address to the American Psychological Association in Washington, D. C., September 1969. It is customary on this occasion to summarize one's own research. Although that would be a more comfortable role, I have decided instead to take this opportunity to express some personal opinions about the current state of our discipline and its potential role in meeting the human problems of our society. This departure from tradition is intended to honor the theme of the 1969 Convention, “Psychology and the Problems of Society.” I am indebted to several friends, and especially to J. A. Varela, for critical comments on earlier drafts.

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Psychologists have been well represented among those who sign petitions of political protest (Ladd, 1969), and they have not failed to make their opinions heard in their own national headquarters. Scarcely a meeting of the Board of Directors in recent years has not featured one or more petitions from concerned members, committees, boards, divisions, or state associations requesting some action related to public affairs. These matters range all the way from the proper use of psychological tests, where APA usually has something to say, to the endorsement of particular political candidates, where APA usually does not.

These demands have imposed considerable strain on the Association, which was not created to be an instrument for social action and which responds hesitantly to any suggestion that it should become something more than a scientific and professional organization. But it does respond. I was surprised to discover how seriously APA regards any legitimate request from its membership, and how sensitive it is to the social implications of its actions, policies, and communications. Some members wish APA would do more, some less. On balance, I think APA has reflected reasonably accurately the general consensus of its members with respect to its role in public affairs.

It is not my intention to raise here any of the specific issues of public policy that have concerned the Board of Directors and the Council of Representatives, or even to offer a general formula for deciding what the public role of the APA should be. Procedurally, I am willing to stand on the thoughtful recommendations of the ad hoc Committee on Public Affairs (Tyler, 1969).

A point of general interest, however, and one that relates more directly to the theme I wish to discuss, is the frequently heard argument that APA should take some action or other because the first article of our Bylaws states that the Association shall have as its object to promote human welfare, a goal that is echoed in our statement of the *Ethical Standards of Psychologists*.

This argument is usually made by those who recommend that APA should publicly advocate some particular social reform. When these recommendations are appropriate, the action is adopted—the necessary letters are written, public statements are released to the press, etc. But not every recommendation is acceptable. It has been my impression that the less related the issue is to the

scientific and professional interests of our membership, the greater is the likelihood that the promotion of human welfare will be invoked in the course of the discussion.

In most cases this argument has not persuaded me; I have traced my skepticism to two sources.

First, even the most cursory study of welfare economics will show that human welfare has never been operationally defined as a social concept. If there is such a thing as human welfare in the general sense, it must be some kind of weighted average. In difficult cases, where disagreement is most probable, something that advances the welfare of one group may disadvantage another group. The problem is to decide whose welfare we wish to promote. The APA is committed to advancing the welfare of psychologists, of course, but we dare not assume blindly that whatever is good for psychology must always be good for humanity.

Vague appeals to human welfare seldom answer specific questions because we seldom have sufficient information to decide which actions will have the desired result. And even when we do have sufficient wisdom to know in advance which actions will promote human welfare most effectively, we still face the ethical question of whether such actions are morally permissible.

My first reason for distrusting appeals to human welfare, therefore, is that they do little to clarify the logical, informational, or ethical bases for making difficult decisions. Something more is required than a sincere declaration that our heart is in the right place.

My second reason has to do with the fact that the phrase is usually quoted out of context. At the risk of losing your attention, therefore, I would like to state Article I of our Bylaws in full:

The objects of the American Psychological Association shall be to advance psychology as a science and as a means of promoting human welfare by the encouragement of psychology in all its branches in the broadest and most liberal manner; by the promotion of research in psychology and the improvement of research methods and conditions; by the improvement of the qualifications and usefulness of psychologists through high standards of professional ethics, conduct, education, and achievement; by the increase and diffusion of psychological knowledge through meetings, professional contacts, reports, papers, discussions, and publications; thereby to advance scientific interests and inquiry, and the application of research findings to the promotion of the public welfare [APA, 1968, xii].

As I understand Article I, our corporate aim is to promote psychology. We justify that aim by our belief that psychology can be used for the public good. I do not understand Article I as a general license to endorse social actions or positions, however meritorious on other grounds, that do not advance psychology as a science and as a means of promoting human welfare. The APA is our own creature, of course; we can change our Bylaws any way we like. As presently conceived, however, APA does not have a charter to intervene on behalf of every good cause that comes along.

There are many things of social value that APA can do, and many that it has already done. If your officers have not always seemed hungry for innovation, eager to reshape APA to meet every new social issue, they have certainly been open to constructive change within the scope of our charter. I believe they have reflected the wishes of the bulk of the membership, and I feel no need to apologize for what has been accomplished. The APA has been doing what its membership wanted to do, and doing it rather well.

Of course, the membership has been far from unanimous in these matters. For example, there has been a running debate in recent years concerning the proper role for individual psychologists to play in the initiation of social reforms. We have been divided as to whether psychologists should remain expert advisers or should take a more active, participatory responsibility for determining public policy. An adviser is expected to summarize the arguments pro and con, but to leave the policy decisions to others; a participant wants to make the policy decisions himself.

Those who favor more active participation by individual psychologists tend to argue that APA should also become directly involved in advocating particular social policies. This whole debate seems to presuppose, however, that social reforms can occur only as a result of policy decisions by government or industry. This presupposition should not go unchallenged. Perhaps our options for promoting human welfare are broader than this debate would suggest.

It was E. G. Boring who first impressed on me the importance of a clear distinction between Psychology with a capital P and psychology with a small p. Capital-P Psychology refers to our associations, departments, laboratories, and the like. Small-p psychology refers to the discipline itself.

Capital-P Psychology can do little to promote human welfare, outside of its faithful promotion of small-p psychology. We should not, through impatience or bad judgment, try to use capital-P Psychology where only small-p psychology could succeed. Let us by all means do everything we can to promote human welfare, but let us not forget that our real strength in that cause will come from our scientific knowledge, not from our national Association.

In my opinion, our Association can never play more than a supporting role in the promotion of social change. I do not conclude from this that APA has become irrelevant or useless, or, even worse, that it has tacitly endorsed a political bureaucracy that presides over the inequitable distribution of health, wealth, and wisdom in our society. The fact that APA has not reformed society does not mean that it approves the status quo; it means simply that there is relatively little such an association can do. When one considers the magnitude and urgency of the problems mankind faces, the question of what positions APA takes is, after all, a minor matter.

The important question, to my mind, is not what APA is doing, but what psychologists are doing. What Psychology can do as an association depends directly on the base provided by psychology as a science. It is our science that provides our real means for promoting human welfare.

So let me turn now to broader aspects of my topic.

REVOLUTIONARY POTENTIAL OF PSYCHOLOGY

I will begin by stating publicly something that I think psychologists all feel, but seldom talk about. In my opinion, scientific psychology is potentially one of the most revolutionary intellectual enterprises ever conceived by the mind of man. If we were ever to achieve substantial progress toward our stated aim—toward the understanding, prediction, and control of mental and behavioral phenomena—the implications for every aspect of society would make brave men tremble.

Responsible spokesmen for psychology seldom emphasize this revolutionary possibility. One reason is that the general public is all too ready to believe it, and public resistance to psychology would be all too easy to mobilize. Faced with the possibility that revolutionary pronouncements

might easily do more harm than good, a prudent spokesman finds other drums to march to.

Regardless of whether we agree that prudence is always the best policy, I believe there is another reason for our public modesty. Anyone who claims that psychology is a revolutionary enterprise will face a demand from his scientific colleagues to put up or shut up. Nothing that psychology has done so far, they will say, is very revolutionary. They will admit that psychometric tests, psychoanalysis, conditioned reflexes, sensory thresholds, implanted electrodes, and factor analysis are all quite admirable, but they can scarcely be compared to gunpowder, the steam engine, organic chemistry, radio-telephony, computers, atom bombs, or genetic surgery in their revolutionary consequences for society. Our enthusiastic spokesman would have to retire in confused embarrassment.

Since I know that rash statements about the revolutionary potential of psychology may lead to public rejection and scientific ridicule, why do I take such risks on this occasion? My reason is that I do not believe the psychological revolution is still pie in the sky. It has already begun.

One reason the psychological revolution is not more obvious may be that we have been looking for it in the wrong place. We have assumed that psychology should provide new technological options, and that a psychological revolution will not occur until someone in authority exercises those options to attain socially desirable goals. One reason for this assumption, perhaps, is that it follows the model we have inherited from previous applications of science to practical problems. An applied scientist is supposed to provide instrumentalities for modifying the environment—instrumentalities that can then, under public regulation, be used by wealthy and powerful interests to achieve certain goals. The psychological revolution, when it comes, may follow a very different course, at least in its initial stages.

Davis (1966) has explained the difference between applied social science and applied natural science in the following way:

Applied science, by definition, is instrumental. When the human goal is given, it seeks a solution by finding what effective means can be manipulated in the required way. Its function is to satisfy human desires and wants; otherwise nobody would bother. But when the science is concerned with human beings—not just as organisms but as goal-seeking individuals and members of groups—then it

cannot be instrumental in this way, because the object of observation has a say in what is going on and, above all, is not willing to be treated as a pure instrumentality. Most so-called social problems are problems because people want certain things or because there is a conflict of desires or interests [p. 26].

Davis goes on to argue that once conflicts of interest have developed, applied social science is helpless; that it is only when people are agreed on their goals that our information can be usefully applied.

Although I agree with Davis that behavioral and social sciences cannot be applied to people and institutions in the same way physical and biological sciences are applied to objects and organisms, I do not agree with his view that we must remain impotent in the face of conflict. We know a great deal about the prevention and resolution of conflicts, and that information could certainly be put to better use than it has been. Indeed, sometimes what is needed is not to resolve conflict but to foster it, as when entrenched interests threaten segments of the public that have no organizational identity. And there, in turn, we know a great deal about the creation of appropriate constituencies to defend their common interests. Behavioral and social scientists are far from helpless in such situations.

More important, however, I believe that the real impact of psychology will be felt, not through the technological products it places in the hands of powerful men, but through its effects on the public at large, through a new and different public conception of what is humanly possible and what is humanly desirable.

I believe that any broad and successful application of psychological knowledge to human problems will necessarily entail a change in our conception of ourselves and of how we live and love and work together. Instead of inventing some new technique for modifying the environment, or some new product for society to adapt itself to however it can, we are proposing to tamper with the adaptive process itself. Such an innovation is quite different from a "technological fix." I see little reason to believe that the traditional model for scientific revolutions should be appropriate.

Consider, for example, the effect that Freudian psychology has already had on Western society. It is obvious that its effects, though limited to certain segments of society, have been profound, yet I do not believe that one can argue that those

effects were achieved by providing new instrumentalities for achieving goals socially agreed upon. As a method of therapy, psychoanalysis has had limited success even for those who can afford it. It has been more successful as a method of investigation, perhaps, but even there it has been only one of several available methods. The impact of Freud's thought has been due far less to the instrumentalities he provided than to the changed conception of ourselves that he inspired. The wider range of psychological problems that Freud opened up for professional psychologists is only part of his contribution. More important in the scale of history has been his effect on the broader intellectual community and, through it, on the public at large. Today we are much more aware of the irrational components of human nature and much better able to accept the reality of our unconscious impulses. The importance of Freudian psychology derives far less from its scientific validity than from the effects it has had on our shared image of man himself.

I realize that one might argue that changes in man's conception of himself under the impact of advances in scientific knowledge are neither novel nor revolutionary. For example, Darwin's theory changed our conception of ourselves, but not until the past decade has it been possible to mount a truly scientific revolution based on biological science. One might argue that we are now only at the Darwinian stage in psychology, and that the real psychological revolution is still a century or more in the future. I do not find this analogy appropriate, however.

To discover that we are not at the center of the universe, or that our remote ancestors lived in a tree, does indeed change our conception of man and society, but such new conceptions can have little effect on the way we behave in our daily affairs and in our institutional contexts. A new conception of man based on psychology, however, would have immediate implications for the most intimate details of our social and personal lives. This fact is unprecedented in any earlier stage of the Industrial Revolution.

The heart of the psychological revolution will be a new and scientifically based conception of man as an individual and as a social creature. When I say that the psychological revolution is already upon us, what I mean is that we have already begun to change man's self-conception. If we want to further that revolution, not only must we

strengthen its scientific base, but we must also try to communicate it to our students and to the public. It is not the industrialist or the politician who should exploit it, but Everyman, every day.

The enrichment of public psychology by scientific psychology constitutes the most direct and important application of our science to the promotion of human welfare. Instead of trying to foresee new psychological products that might disrupt our existing social arrangements, therefore, we should be self-consciously analyzing the general effect that our scientific psychology may have on popular psychology. As I try to perform this analysis for myself, I must confess that I am not altogether pleased with the results.

I would like now to consider briefly some of the effects we are having and where, in my view, our influence is leading at the present time. Let me begin with a thumbnail sketch of one major message that many scientific psychologists are trying to communicate to the public.

CONTROL OF BEHAVIOR

One of the most admired truisms of modern psychology is that some stimuli can serve to reinforce the behavior that produces them. The practical significance of this familiar principle arises from the implication that if you can control the occurrence of these reinforcing stimuli, then you can control the occurrence of adaptive behavior intended to achieve or avoid them. This contingency between behavior and its consequences has been demonstrated in many studies of animal behavior, where environmental conditions can be controlled, or at least specified, and where the results can be measured with some precision.

Something similar holds for the human animal, of course, although it is complicated by man's symbolic proclivities and by the fact that the disparity between experimenter and subject changes when the subject is also a man. Between men, reinforcement is usually a mutual relation and each person controls the other to some extent. This relation of mutual reinforcement, which man's genius for symbols has generalized in terms of money or the promise of money, provides the psychological basis for our economic system of exchange. Psychologists did not create this economic system for controlling behavior, of course. What we have tried to do is to describe its psychological basis and its limits in terms sufficiently general to hold

across different species, and to suggest how the technique might be extended to educational, rehabilitative, therapeutic, or even political situations in which economic rewards and punishments would not normally be appropriate. Once a problem of behavior control has been phrased in these terms, we may then try to discover the most effective schedule of reinforcements.

My present concern has nothing to do with the validity of these ideas. I am concerned with their effect on the public at large, for it is there, if I am right, that we are most likely to achieve a psychological revolution.

In the public view, I suspect, all this talk about controlling behavior comes across as unpleasant, if not actually threatening. Freud has already established in the public mind a general belief that all behavior is motivated. The current message says that psychologists now know how to use this motivation to control what people will do. When they hear this, of course, our scientific colleagues are likely to accuse us of pseudoscientific claims; less scientific segments of the public are likely to resent what they perceive as a threat to their personal freedom. Neither reaction is completely just, but neither is completely unjustifiable.

I believe these critics see an important truth, one that a myopic concentration on techniques of behavior control may cause us to overlook. At best, control is but one component in any program for personal improvement or social reform. Changing behavior is pointless in the absence of any coherent plan for how it should be changed. It is our plan for using control that the public wants to know about. Too often, I fear, psychologists have implied that acceptable uses for behavior control are either self-evident or can be safely left to the wisdom and benevolence of powerful men. Psychologists must not surrender the planning function so easily. Humane applications of behavior control must be based on intelligent diagnosis of the personal and social problems we are trying to solve. Psychology has at least as much, probably more, to contribute to the diagnosis of personal and social problems as it has to the control of behavior.

Regardless of whether we have actually achieved new scientific techniques of behavior control that are effective with human beings, and regardless of whether control is of any value in the absence of diagnosis and planning for its use, the simple fact that so many psychologists keep talking about

control is having an effect on public psychology. The average citizen is predisposed to believe it. Control has been the practical payoff from the other sciences. Control must be what psychologists are after, too. Moreover, since science is notoriously successful, behavior control must be inevitable. Thus the layman forms an impression that control is the name of the road we are traveling, and that the experts are simply quibbling about how far down that road we have managed to go.

Closely related to this emphasis on control is the frequently repeated claim that living organisms are nothing but machines. A scientist recognizes, of course, that this claim says far more about our rapidly evolving conception of machines than it says about living organisms, but this interpretation is usually lost when the message reaches public ears. The public idea of a machine is something like an automobile, a mechanical device controlled by its operator. If people are machines, they can be driven like automobiles. The analogy is absurd, of course, but it illustrates the kind of distortion that can occur.

If the assumption that behavior control is feasible in some precise scientific sense becomes firmly rooted in public psychology, it could have unfortunate consequences, particularly if it is coupled with an assumption that control should be exercised by an industrial or bureaucratic elite. Psychologists must always respect and advocate the principle of *habeas mentem*—the right of a man to his own mind (Sanford, 1955). If we really did have a new scientific way to control human behavior, it would be highly immoral to let it fall into the hands of some small group of men, even if they were psychologists.

Perhaps a historical analogy would be appropriate. When the evolution of species was a new and exciting idea in biology, various social theorists took it up and interpreted it to mean that capitalistic competition, like the competition between species, was the source of all progress, so the great wealth of the new industrialists was a scientifically necessary consequence of the law of the survival of the fittest. This argument, called "social Darwinism," had unfortunate consequences, both for social science and for society generally (Hofstadter, 1944).

If the notion should now be accepted that it is a scientifically necessary consequence of the law of reinforcement that industrialists or bureaucrats

must be allowed the same control over people that an experimenter has over his laboratory animals, I fear that a similar period of intolerable exploitation might ensue—if, indeed, it has not already begun.

The dangers that accompany a science of behavior control have been pointed out many times. Psychologists who study motivation scientifically are usually puzzled by this widespread apprehension that they might be successful. Control is not something invented by psychologists. Everyone is "controlled" all the time by something or other. All we want is to discover how the controls work. Once we understand that, society can use the knowledge in whatever manner seems socially advantageous. Our critics, on the other hand, want to know who will diagnose our problems, who will set our social goals, and who will administer the rewards and punishments.

All that I have tried to add to this familiar dialogue is the observation that the social dangers involved need not await the success of the scientific enterprise. Behavior control could easily become a self-fulfilling prophecy. If people generally should come to believe in the scientific control of behavior, proponents of coercive social programs would surely exploit that belief by dressing their proposals in scientific costumes. If our new public conception of human nature is that man's behavior can be scientifically controlled by those in positions of power, governments will quickly conform to that conception. Thus, when I try to discern what direction our psychological revolution has been taking, some aspects of it disturb me deeply and lead me to question whether in the long run these developments will really promote human welfare.

This is a serious charge. If there is any truth to it, we should ask whether any other approaches are open to us.

Personally, I believe there is a better way to advertise psychology and to relate it to social problems. Reinforcement is only one of many important ideas that we have to offer. Instead of repeating constantly that reinforcement leads to control, I would prefer to emphasize that reinforcement can lead to satisfaction and competence. And I would prefer to speak of understanding and prediction as our major scientific goals.

In the space remaining, therefore, I want to try to make the case that understanding and prediction are better goals for psychology than is control—

better both for psychology and for the promotion of human welfare—because they lead us to think, not in terms of coercion by a powerful elite, but in terms of the diagnosis of problems and the development of programs that can enrich the lives of every citizen.

PUBLIC PSYCHOLOGY: TWO PARADIGMS

It should be obvious by now that I have somewhere in the back of my mind two alternative images of what the popular conception of human nature might become under the impact of scientific advances in psychology. One of these images is unfortunate, even threatening; the other is vaguer, but full of promise. Let me try to make these ideas more concrete.

The first image is the one I have been describing. It has great appeal to an authoritarian mind, and fits well with our traditional competitive ideology based on coercion, punishment, and retribution. The fact that it represents a serious distortion of scientific psychology is exactly my point. In my opinion, we have made a mistake by trying to apply our ideas to social problems and to gain acceptance for our science within the framework of this ideology.

The second image rests on the same psychological foundation, but reflects it more accurately; it allows no compromise with our traditional social ideology. It is assumed, vaguely but optimistically, that this ideology can be modified so as to be more receptive to a truer conception of human nature. How this modification can be achieved is one of the problems we face; I believe it will not be achieved if we continue to advertise the control of behavior through reinforcement as our major contribution to the solution of social problems. I would not wish to give anyone the impression that I have formulated a well-defined social alternative, but I would at least like to open a discussion and make some suggestions.

My two images are not very different from what McGregor (1960) once called Theory X and Theory Y. Theory X is the traditional theory which holds that because people dislike work, they must be coerced, controlled, directed, and threatened with punishment before they will do it. People tolerate being directed, and many even prefer it, because they have little ambition and want to avoid responsibility. McGregor's alternative Theory Y, based on social science, holds that work is as

natural as play or rest. External control and threats are not the only means for inspiring people to work. People will exercise self-direction and self-control in the service of objectives to which they are committed; their commitment is a function of the rewards associated with the achievement of their objectives. People can learn not only to accept but to seek responsibility. Imagination, ingenuity, and creativity are widely distributed in the population, although these intellectual potentialities are poorly utilized under the conditions of modern industrial life.

McGregor's Theory X and Theory Y evolved in the context of his studies of industrial management. They are rival theories held by industrial managers about how best to achieve their institutional goals. A somewhat broader view is needed if we are to talk about public psychology generally, and not merely the managerial manifestations of public psychology. So let me amplify McGregor's distinction by referring to the ideas of Varela, a very remarkable engineer in Montevideo, Uruguay, who uses scientific psychology in the solution of a wide range of personal and social problems.

Varela (1970, *in press*) contrasts two conceptions of the social nature of man. Following Kuhn's (1962) discussion of scientific revolutions, he refers to these two conceptions as "paradigms." The first paradigm is a set of assumptions on which our social institutions are presently based. The second is a contrasting paradigm based on psychological research. Let me outline them for you very briefly.

Our current social paradigm is characterized as follows: All men are created equal. Most behavior is motivated by economic competition, and conflict is inevitable. One truth underlies all controversy, and unreasonableness is best countered by facts and logic. When something goes wrong, someone is to blame, and every effort must be made to establish his guilt so that he can be punished. The guilty person is responsible for his own misbehavior and for his own rehabilitation. His teachers and supervisors are too busy to become experts in social science; their role is to devise solutions and see to it that their students or subordinates do what they are told.

For comparison, Varela offers a paradigm based on psychological research: There are large individual differences among people, both in ability and personality. Human motivation is complex and no one ever acts as he does for any single reason, but,

in general, positive incentives are more effective than threats or punishments. Conflict is no more inevitable than disease and can be resolved or, still better, prevented. Time and resources for resolving social problems are strictly limited. When something goes wrong, how a person perceives the situation is more important to him than the "true facts," and he cannot reason about the situation until his irrational feelings have been toned down. Social problems are solved by correcting causes, not symptoms, and this can be done more effectively in groups than individually. Teachers and supervisors must be experts in social science because they are responsible for the cooperation and individual improvement of their students or subordinates.

No doubt other psychologists would draw the picture somewhat differently. Without reviewing the psychological evidence on which such generalizations are based, of course, I cannot argue their validity. But I think most of you will recognize the lines of research on which McGregor's Theory Y and Varela's second paradigm are based. Moreover, these psychologically based paradigms are incompatible in several respects with the prevailing ideology of our society.

Here, then, is the real challenge: How can we foster a social climate in which some such new public conception of man based on psychology can take root and flourish? In my opinion, this is the proper translation of our more familiar question about how psychology might contribute to the promotion of human welfare.

I cannot pretend to have an answer to this question, even in its translated form, but I believe that part of the answer is that psychology must be practiced by nonpsychologists. We are not physicians; the secrets of our trade need not be reserved for highly trained specialists. Psychological facts should be passed out freely to all who need and can use them. And from successful applications of psychological principles the public may gain a better appreciation for the power of the new conception of man that is emerging from our science.

If we take seriously the idea of a peaceful revolution based on a new conception of human nature, our scientific results will have to be instilled in the public consciousness in a practical and usable form so that what we know can be applied by ordinary people. There simply are not enough psychologists, even including nonprofessionals, to meet every

need for psychological services. The people at large will have to be their own psychologists, and make their own applications of the principles that we establish.

Of course, everyone practices psychology, just as everyone who cooks is a chemist, everyone who reads a clock is an astronomer, everyone who drives a car is an engineer. I am not suggesting any radical departure when I say that nonpsychologists must practice psychology. I am simply proposing that we should teach them to practice it better, to make use self-consciously of what we believe to be scientifically valid principles.

Our responsibility is less to assume the role of experts and try to apply psychology ourselves than to give it away to the people who really need it—and that includes everyone. The practice of valid psychology by nonpsychologists will inevitably change people's conception of themselves and what they can do. When we have accomplished that, we will really have caused a psychological revolution.

HOW TO GIVE PSYCHOLOGY AWAY

I am keenly aware that giving psychology away will be no simple task. In our society there are depths of resistance to psychological innovations that have to be experienced to be believed (Graziano, 1969).

Solving social problems is generally considered to be more difficult than solving scientific problems. A social problem usually involves many more independent variables, and it cannot be finally solved until society has been persuaded to adopt the solution. Many who have tried to introduce sound psychological practices into schools, clinics, hospitals, prisons, or industries have been forced to retreat in dismay. They complain, and with good reason, that they were unable to buck the "System," and often their reactions are more violent than sensible. The System, they say, refuses to change even when it does not work.

This experience has been so common that in my pessimistic moments I have been led to wonder whether anything less than complete reform is possible.

Deutsch (1969) has made an interesting case that competitive and cooperative social relationships tend to be mutually exclusive. He summarizes the result of considerable research in the following terms:

The strategy of power and the tactics of coercion, threat, and deception result from and also result in a competitive relationship. Similarly, the strategy of mutual problem solving and the tactics of persuasion, openness, and mutual enhancement elicit and also are elicited by a cooperative orientation [p. 4].

Each orientation has its own internal consistency; elements of one are not easily injected into the other.

Perhaps a similar pressure toward internal coherence lies at the root of public resistance to many of our innovative suggestions. It often seems that any one of our ideas taken alone is inadequate. Injected into the existing social paradigm it is either a foreign body, incompatible with the other presuppositions that shape our social institutions, or it is distorted and trivialized to fit the preexisting paradigm.

One of the most basic ideas in all the social sciences is the concept of culture. Social anthropologists have developed a conception of culture as an organic whole, in which each particular value, practice, or assumption must be understood in the context of the total system. They tell terrible tales about the consequences of introducing Western reforms into aboriginal cultures without understanding the social equilibria that would be upset.

Perhaps cultural integrity is not limited to primitive cultures, but applies also to our own society here and now. If so, then our attempts at piecemeal innovation may be doomed either to fail or to be rejected outright.

I label these thoughts pessimistic because they imply a need for drastic changes throughout the whole system, changes that could only be imposed by someone with dangerous power over the lives of others. And that, I have argued, is not the way our psychological revolution should proceed.

In my more optimistic moments, however, I recognize that you do not need complete authority over a social organization in order to reform it. The important thing is not to control the system, but to understand it. Someone who has a valid conception of the system as a whole can often introduce relatively minor changes that have extensive consequences throughout the entire organization. Lacking such a conception, worthwhile innovations may be total failures.

For example, if you institute a schedule of rewards and punishments in the psychiatric ward of a Veterans Hospital, you should not be indignant

when the American Legion objects on the grounds that you cannot withhold food and clothing from veterans. If you had had a more adequate understanding of the hospital as a social system, you would have included the interests and influence of the American Legion in your diagnosis of the problem, and you would have formulated a plan to gain their endorsement as part of your task as a social engineer. You should not demand inordinate power just because you made an inadequate diagnosis of the problem. Understanding must come first.

In my optimistic moments I am able to convince myself that understanding is attainable and that social science is already at a stage where successful applications are possible. Careful diagnosis and astute planning based on what we already know can often resolve problems that at first glance seemed insurmountable. Many social, clinical, and industrial psychologists have already demonstrated the power of diagnosis and planning based on sound psychological principles.

Varela has illustrated such applications by his work in Uruguay. Diagnosis involves not only a detailed analysis of the social organization and of the perceptions and goals of all the people caught up in the problem, but also the description of their abilities and personalities. Planning involves the explicit formulation of a series of steps that will lead these people to consider the problem together and will help them to discover a solution that respects everyone's hopes and aspirations. If, in the course of this plan, it becomes necessary to persuade someone, this is not to be accomplished by coercion or by marshaling facts, but by a gradual, step-by-step process that enables him to reduce his reactance little by little as he convinces himself of the virtues of the alternative view and broadens his conception of the range of acceptable solutions (Zimbardo & Ebbeson, 1969, pp. 114-121). This is not the place and I am not the person to describe the ingenuity with which Varela has constructed such plans and carried them out, but such applications give me some reason for optimism.

Diagnosing practical problems and developing detailed plans to deal with them may or may not be more difficult than solving scientific problems, but it is certainly different. Many psychologists, trained in an empiricist, experimental tradition, have tried to serve two masters at once. That is

to say, they have tried to solve practical problems and simultaneously to collect data of scientific value on the effects of their interventions. Other fields, however, maintain a more equitable division of labor between scientist and engineer. Scientists are responsible for the validity of the principles; engineers accept them and try to use them to solve practical problems.

Although I recognize the importance of evaluating an engineer's product, in this domain it is no easy thing to do. Assessing social innovations is a whole art in itself, one that we are only beginning to develop. Economic considerations are relevant, of course, but we must also learn to evaluate the subtler psychological and social implications of our new solutions (Bauer, 1966). Technological assessment in this sense will not be achieved by insisting that every reform should resemble a well-designed experiment. In particular, the need for assessment should not be allowed to discourage those who enjoy and have a talent for social engineering.

We are in serious need of many more psychological technologists who can apply our science to the personal and social problems of the general public, for it is through them that the public will eventually discover the new paradigm that psychologists are developing. That is to say, it is through the success of such practical applications that we have our best hope for revolutionizing public psychology.

Obviously, we must avoid the evils of superficiality; we must continue as scientists to refine, clarify, and integrate our new paradigm. Most importantly, we must self-consciously recognize that it is a new and revolutionary conception that we are working toward, so that isolated discoveries can be related to and evaluated in terms of that larger context. But all that would be futile, of course, if the general public did not accept it, or if public psychology were not altered by it.

There is no possibility of legislating the changes I have in mind. Passing laws that people must change their conceptions of themselves and others is precisely the opposite of what we need. Education would seem to be our only possibility. I do not mean only education in the schoolroom, although that is probably the best communication channel presently at our disposal. I have in mind a more ambitious program of educating the general public.

It is critically important to shape this education to fit the perceived needs of the people who receive

it. Lectures suitable for graduate seminars are seldom suitable for laymen, and for a layman facing a concrete problem they are usually worse than useless. In order to get a factory supervisor or a ghetto mother involved, we must give them something they can use. Abstract theories, however elegant, or sensitivity training, however insightful, are too remote from the specific troubles they face. In order to get started, we must begin with people where they are, not assume we know where they should be. If a supervisor is having trouble with his men, perhaps we should teach him how to write a job description and how to evaluate the abilities and personalities of those who fill the job; perhaps we should teach him the art of persuasion, or the time and place for positive reinforcement. If a ghetto mother is not giving her children sufficient intellectual challenge, perhaps we should teach her how to encourage their motor, perceptual, and linguistic skills. The techniques involved are not some esoteric branch of witchcraft that must be reserved for those with PhD degrees in psychology. When the ideas are made sufficiently concrete and explicit, the scientific foundations of psychology can be grasped by sixth-grade children.

There are many obvious and useful suggestions that we could make and that nonpsychologists could exploit. Not every psychological problem in human engineering has to be solved by a professional psychologist; engineers can rapidly assimilate psychological facts and theories that are relevant to their own work. Not every teaching program has to be written by a learning theorist; principles governing the design and evaluation of programmed materials can be learned by content specialists. Not every personnel decision has to be made by a psychometrician; not every interview has to be conducted by a clinical psychologist; not every problem has to be solved by a cognitive psychologist; not every reinforcement has to be supervised by a student of conditioning. Psychological principles and techniques can be usefully applied by everyone. If our suggestions actually work, people should be eager to learn more. If they do not work, we should improve them. But we should not try to give people something whose value they cannot recognize, then complain when they do not return for a second meeting.

Consider the teaching of reading, for example. Here is an obviously appropriate area for the application of psychological principles. So what do

we do? We assemble experts who decide what words children know, and in what order they should learn to read them; then we write stories with those words and teachers make the children read them, or we use them in programmed instruction that exploits the principles of reinforcement. But all too often the children fail to recognize the value of learning these carefully constructed lessons.

Personally, I have been much impressed with the approach of Ashton-Warner (1963), who begins by asking a child what words he wants. Mummy, daddy, kiss, frightened, ghost, their own names—these are the words children ask for, words that are bound up with their own loves and fears. She writes each child's word on a large, tough card and gives it to him. If a child wants words like police, butcher, knife, kill, jail, and bomb, he gets them. And he learns to read them almost immediately. It is *his* word, and each morning he retrieves his own words from the pile collected each night by the teacher. These are not dead words of an expert's choosing, but words that live in a child's own experience. Given this start, children begin to write, using their own words, and from there the teaching of reading follows naturally. Under this regimen, a word is not an imposed task to be learned with reinforcements borrowed from some external source of motivation. Learning the word is itself reinforcing; it gives the child something he wants, a new way to cope with a desire or fear. Each child decides where he wants to start, and each child receives something whose value he can recognize.

Could we generalize this technique discovered by an inspired teacher in a small New Zealand school? In my own thinking I have linked it with something that White (1959) has called competence motivation. In order to tap this motivational system we must use psychology to give people skills that will satisfy their urge to feel more effective. Feeling effective is a very personal thing, for it must be a feeling of effectiveness in coping with personal problems in one's own life. From that beginning some might want to learn more about the science that helped them increase their competence, and then perhaps we could afford to be more abstract. But in the beginning we must try to diagnose and solve the problems people think they have, not the problems we experts think they ought to have, and we must learn to understand those problems in the social and institutional con-

texts that define them. With this approach we might do something practical for nurses, policemen, prison guards, salesmen—for people in many different walks of life. That, I believe, is what we should mean when we talk about applying psychology to the promotion of human welfare.

If you tell me that such a program is too ambitious or too foreign to our conception of ourselves as scientists and practitioners, I must agree that I do not know where to place our fulcrum to move the world. My goal is to persuade you that this is the problem we face, and that we dare not leave it for bureaucrats or businessmen to solve. We will have to cope with it however we can, and I hope that someone has better ideas than I about how to do it.

I can see some promise for innovations in particular subcultures. If we apply our new paradigm in particular institutions—in schools, hospitals, prisons, industries—we can perhaps test its validity and demonstrate its superiority. Many such social experiments are already in progress, of course. And much of the recent surge of interest in community psychology (Bennett, 1966) has been stimulated by the realization that we really do have something to contribute to community life. Perhaps all this work will eventually have a cumulative effect.

One trouble, of course, is that we are trying to reverse the natural direction of influence. Ordinarily, an institution or a community models its own subculture more or less automatically after the larger culture in which it is embedded, and new members require little indoctrination in order to understand the tacit assumptions on which the institution is based. Whether the new paradigm will be powerful enough to reverse this direction is, I suppose, a matter for pure speculation at the present time. It seems unlikely that we will succeed, however, if each application of the new paradigm is viewed as unrelated to every other, and no attempt is made to integrate these experiments into a paradigm for society as a whole.

It is possible, however, that our society may not be quite as resistant as we anticipate. The demand for social relevance that we have been voicing as psychologists is only one aspect of a general dissatisfaction with the current state of our society. On every hand we hear complaints about the old paradigm. People are growing increasingly alienated from a society in which a few wise men behind

closed doors decide what is good for everyone. Our system of justice based on punishment and retribution is not working. Even those most blessed by economic rewards are asking for something more satisfying to fill their lives. We desperately need techniques for resolving conflicts, and for preventing them from becoming public confrontations from which reasonable retreat is impossible. Anyone who reads the newspapers must realize that vast social changes are in the making, that they must occur if civilized society is to survive.

Vested interests will oppose these changes, of course, but as someone once said, vested interests, however powerful, cannot withstand the gradual encroachment of new ideas. If we psychologists are ready for it, we may be able to contribute a coherent and workable philosophy, based on the science of psychology, that will make this general agitation less negative, that will make it a positive search for something new.

I recognize that many of you will note these ambitions as little more than empty rhetoric. Psychologists will never be up to it, you will say. We should stay in our laboratories and do our own thing. The public will work out its own paradigms without us. Perhaps such skepticism is justified.

On the other hand, difficulty is no excuse for surrender. There is a sense in which the unattainable is the best goal to pursue. So let us continue our struggle to advance psychology as a means of promoting human welfare, each in our own way. For myself, however, I can imagine nothing we could do that would be more relevant to human welfare, and nothing that could pose a greater challenge to the next generation of psychologists, than to discover how best to give psychology away.

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