

Chapter VII:

A Psychological Approach to Modernization

In considering the problems of modernization, we must give some attention to the psychological processes which speed or delay changes in overt behavior, attitudes, and values. Every social scientist makes some assumptions about the laws of individual human behavior. On occasion, they may be very explicit statements about the nature of human motives and particularly how these motives are measured and modified. We have reviewed some of the theories of human behavior which investigators have applied to problems of directed cultural change, particularly those of McClelland (1969) and Hagen (1962). At this point we would like to suggest an orientation which has been used very little in research in this domain and which may lead to some new insights concerning acceptance of and resistance to change, and to some worthwhile steps in action programs. Any theoretical perspective is an attempt to account for *some* of the data gathered in research, not all; a single comprehensive theory is no more likely here than in social science as a whole.

For the most part, those who have examined or attempted to promote modernization have adopted a common-sense psychology which leads to many of the action programs which one sees. Usually, the psychological theory turns out to be superficially logical, moderately moralistic and evaluative, and not very rigorous. Here are some quasi-psychological explanations of behavior observed in pre-industrial settings with some associated implications for action programs:

1. The people are ignorant. Illiterate or lacking education, they need to know more and to acquire useful skills. It follows that schools are a top-priority need.
2. The people are resistant to change, inherently conservative. Programs must find ways to reduce resistance; possibly programs should concentrate on children and on people who have demonstrated a willingness to accept change.
3. Religious and traditional belief systems impede progress. For example, the author has been impressed with the extent to which cows impede

progress in India by expanding at a rate to eat all available grass and by giving little milk and no meat in return. Education and exposure to alternative values seems to be as good a solution as can be found.

4. The social structure of landlords or traditional chiefs stifles initiative and keeps people in perpetual submission. The leaders do not want changes which might threaten their status. One solution is to work through the leaders, trying to get them to accept the need to innovate and to persuade them that they also will benefit from change.
5. Poverty and lagging development are self-sustaining, especially with rising populations. With little money, the peasant is unable to apply capital such as fertilizer, sprays, or powered implements to the productive process. The result is low yields and little capital. This suggests that credit facilities are needed to break the cycle of poverty.
6. There is extensive corruption within the government. Resources are diverted. The people are discouraged and cynical, and are willing to produce only what they can use; they would lose a surplus anyway. Education, appeals, special training programs have been tried in attempts to encourage more devotion to duty on the part of officials and greater loyalty to the government among the peasants.

Each of these analyses can be at least partially correct and may lead to useful insights or effective programs. They are, however, very partial and they leave one with no increased understanding if programs derived from them fail—which is often the case. At the level of explanation, these persuasive formulations do not rule out alternatives. Other causes could be, and often are, suggested to account for the same conditions.

Faced with the unproductive activities of many individuals in a poorly developed area, one is often prompted to ask, "Why don't they . . .?" The answer often comes in a form which describes the behavior under consideration or invokes an inferred inner quality, "They don't because they are conservative, or ignorant, or poor." When we examine the matter further, we are led to conclude that there is no satisfactory answer to, "Why don't they . . .?" There is no way to rule out alternative answers. A question which can, at least theoretically, be answered is, "What changes need to be made so that they will . . .?" In this way, we are looking at behavior as determined by factors in the individual's history and his present environment. The latter, at least, can be manipulated in various ways to test the validity of an assertion that change in a given factor can lead to change in a specific cultural practice.

A Psychological Theory of Behavior Change

Traditionally, psychological theories of learning, or behavior change, have emphasized the process whereby a stimulus acquires the capacity to elicit a

response. A bell elicits salivation from a dog if the bell was rung at the time the dog received food. This is called *respondent behavior*. In addition, it has been found that if an organism is reinforced when he is doing something, the likelihood is increased that he will do the same thing in the future. This latter approach, *operant conditioning*, in which the behavior of the subject elicits the reinforcement, is much closer to the day-to-day experience of human beings who do much more than simply respond to the stimuli which impinge on them in the same way they responded in the past.

The approach of studying behavior through operant-conditioning techniques, developed by B. F. Skinner, has become a very influential and productive tradition in psychology during the past 25 years. Some of the most significant of Skinner's presentations appeared in 1938 and 1957, and a more popular presentation in 1953. There are now numerous expositions of his position and summaries of the research which he and others have done. We shall draw heavily on Staats and Staats (1966). Although Skinner (1948) has applied his principles to the development of and change in society, he has not been primarily concerned with social and cultural matters.

To begin the explanation with an example, let us place a pigeon in an operant-conditioning chamber or Skinner box. The box can be about 15 inches on a side with a plexiglass front. At one side is a small food tray into which pellets of food can be dropped by the experimenter. Above the tray is a button. Our purpose is to train the pigeon to peck the button. A hungry pigeon is placed in the box and a pellet of food is dropped into the tray. The pigeon finds the food in the course of moving around the box. With a click of the apparatus, a new pellet is offered and in two or three trials the pigeon moves toward the food tray repeatedly. The bird is trained to peck by offering reinforcements, pellets of food, for a progressively restricted range of behavior involving increasing orientation to the button. Since behavior varies, it is possible to reinforce closer and closer approximations of desired behavior in a process called *shaping*. When this procedure is followed, the pigeon learns very quickly to peck the button. By the same techniques—reinforcing random variations of behavior which come closer to the behavior sought by the experimenter—highly complex patterns of behavior can be built up. Pigeons, for instance, have been taught to pick out simple tunes on a toy piano.

Behavior such as pecking may be maintained after it has been learned through the use of different schedules of reinforcement. A correct response may be reinforced a given per cent (100 or less) of times in a ratio schedule. This will be expressed as 1:1, 1:4, or 1:20 where one reinforcement is given for each one, four, or twenty correct responses. Or the ratio may vary. Similarly, reinforcements may be offered on a fixed or variable time schedule so that only the first peck after a given interval of time will be rewarded. The patterns of

responses—frequency, rate, intensity, and persistence—are affected in predictable ways by the choice of schedule of reinforcement.

The schedule of reinforcement—fixed or variable ratio, fixed or variable interval—is controlled electronically, as is the recording of responses and reinforcements. The resulting charts are called cumulative response records in which responses are cumulated on the ordinate, and time on the abscissa. Response patterns of animals are sometimes described in terms of the trace of their responses on the recorder. High frequencies of response produce a rapid rise over a short period of time, irregular patterns of reinforcement produce a response record which does not rise smoothly. The important point to emphasize is that, by this technique, new behavior can be produced by selectively reinforcing closer and closer approximations of desired acts. These techniques can be applied to human beings. Instead of pellets of food, a human subject is reinforced with a nod of approval, points toward a total score or a token which can be cashed in later. Understanding and insight are not necessary for complex patterns of behavior to develop in either animals or human beings.

Theory of Motivation

Skinner's treatment of motivation involves a considerable shift from common sense or bazaar psychology. It is commonly said that individuals carry out certain actions because of specific motives, processes within the individual which are inferred from his activities. At this point there is an unfortunate tendency to consider the internal processes to be fixed personal attributes. The problem with this approach is that one tends to postulate a different motive for each behavior pattern, a tendency which leads to an endless list of motives. Furthermore, the method is unproductive since it involves circular reasoning—attaching a label to observed behavior and then invoking the label to account for the behavior. People do not accept new agricultural practices. This can be called peasant conservatism. Then later one learns that in order for an innovation to be accepted, peasant conservatism must be overcome.

Attempts have been made to reduce all motives to tissue, or physical, needs or to single sources of motivation. Under laboratory conditions, one can manipulate hunger in a rat by depriving it of food for varying periods of time. This manipulation of motivation provides a sort of model which is then extended implicitly to human activities of a more complex sort where tissue changes are more difficult, if not impossible, to demonstrate. Under these circumstances we find ourselves hard-pressed to deduce what needs are present and how apparently rewarding experiences reduce those needs.

Another single-source theory of motivation is the Freudian psychodynamic approach which suffers from the problem that much complex human behavior does not appear to spring from sexual motivation. In response to this problem, some psychoanalytic thinkers have defined sexual motivation more and more

broadly until it has come to mean so many things that its explanatory value is diminished and its predictive value or capacity to anticipate future behavior is nil.

An alternative to the reduction of all motives to a single source or a small number of sources is an approach which takes into account the observation that reinforcements are learned. Events which were previously neutral acquire the capacity to reinforce a given set of activities if they have occurred in conjunction with events which are already reinforcing. By this process, almost any set of stimuli—praise, prizes, attention, food, completion of a task—can become reinforcing, depending on the history of the individual. This can be demonstrated in the laboratory when the click, which occurs when a food pellet is delivered to a pigeon, acquires the capacity to reinforce the activities of a pigeon. But it must be pointed out that whether or not a given stimulus is reinforcing is determined by inspecting its effect on behavior and not by inspecting the stimulus itself.

From this approach, it is apparent that different complex sets of stimuli can acquire reinforcement properties in different cultures. Furthermore, the pattern of reinforcers an individual has acquired will have an important influence on his behavior. For example, the pattern of behavior which will be strengthened in a culture where money is a strong conditioned reinforcer will be different from that in a culture where peer approval or family approval are the dominant conditioned reinforcers. Within a single sub-culture there is sufficient homogeneity of conditioned reinforcers to enable an observer to identify shared sources of satisfaction, or in more behavioral terms, events which increase the likelihood of certain activities being shared by the members of the group.

Finally, an individual learns not only when he is reinforced but also when he observes others being reinforced. Bandura and Walters (1963) have summarized a highly creative line of research in which they demonstrated that human subjects are likely to learn or to avoid activities for which they have seen others rewarded or punished. This sounds like nothing more than the everyday term *imitation*. It is more than merely saying that someone does what he has seen others do; it is the demonstration that one is likely to do what he has seen others rewarded for doing. Furthermore, one can be rewarded himself for matching his behavior to that of another. In this case, an extensive repertoire of new behavior can be acquired without having to go through the step-by-step process of learning each element of an activity separately, as is implied in the process of shaping.

The principles of operant conditioning have been applied in a variety of situations in order to achieve changes in behavior. In classroom situations children have been placed on token economies, where the tokens can be exchanged for something the child wants, such as a toy. Tokens are given to

children, just as pellets of food are given to a pigeon whenever desired behavior is manifested, and withheld when undesired behavior is present. Under these circumstances, the children show increasing amounts of the desired behavior. This technique can be used to improve performance in reading, or to inculcate better habits of attention and study. It has also been used by clinical psychologists in the treatment of the mentally ill. In this application, careful attention is given to the situation in everyday life in which the patient's symptoms are being reinforced. It may be found that symptoms elicit special attention while symptom-free behavior is ignored. The clinician reverses the reinforcement contingencies so that prosocial or acceptable behavior is reinforced and disordered behavior is ignored. Under these circumstances, patients have shown remarkable reductions in symptoms and a return of normal behavior. In the classroom, tokens were used to reinforce; in the clinical situation, attention and approval. In both applications great care is taken to make sure that desired behavior is reinforced immediately, and that there is no reinforcement for the ineffective or symptomatic acts.

Application to Rural Life

At this point, one may ask what all this has to do with modernization in a Philippine community. There are a number of implications which may help us to understand the behavior patterns of rural Filipinos and which could possibly help in an action program designed to speed up social change.

From the perspective we have outlined, we can look upon individuals in our communities as having learned their present behavior patterns, just as citizens of other societies have learned other customs and attitudes. Much of the learning has come about through matching the behavior of others, or imitation, and is maintained by the approval of the group. Solidarity with the group has acquired strong conditioned reinforcement properties, while deviation is subject to the aversive, or negative, control of teasing and ridicule. In order for behavior patterns to change, reinforcement contingencies must change.

More specifically, if we wish to understand why a group of people maintain a given style of life, we must look for the reinforcements which maintain the current behavior patterns. These can be either positive reinforcements or avoidance of negative experiences. Behavior patterns are often acquired through imitation, so that it is not necessary for each individual to repeat the initial learning experiences of his predecessors. It is of utmost importance in an analysis of this sort to recognize that a given behavior pattern can be maintained by very infrequent reinforcements.

Understanding of a traditional behavior pattern is not really achieved until one can show that the understanding leads to testable implications. These can take the form either of steps to increase the occurrence of the behavior or steps which modify the behavior. For example, farmers do not grow an

improved variety of corn because they believe that they cannot sell it. We can test this explanation by finding out what happens when a market is guaranteed. This means that every farmer must find that there is a market since it takes only a few confirmations of the old belief to keep it very strong. Action programs which do not pay the closest attention to the reinforcement experiences of individual farmers are likely to result in failure, confirming the suspicions about the unreliability of outsiders which are widespread in rural areas. Furthermore, in a planned program of social change, one must be sure that the reinforcements offered are indeed reinforcing to the participants. What may sound fine to the outsider may have no reinforcement value to individual farmers.

While experimental work with Skinner's technique has emphasized shaping or the building up of complex behavior patterns by reinforcing closer and closer approximations of the desired behavior, it would appear that new behavior patterns are more likely to be acquired by human beings in the course of normal life situations through imitation. At the level of social action programs this could involve the creation of heroes who carry out successfully desired changes and find the change rewarding.

A moment's reflection will lead one to recognize this immediately as a technique which is used in advertisements. A good ad shows an individual who exemplifies many of the ideals of the target audience using the product of the advertiser and receiving a reward which the target audience would also like to receive. The advertising agency has a thorough understanding of the conditioned reinforcers of the audience and uses reinforcers which may not be related in any logical way to the product: use of a certain cigarette results in favorable attention from the opposite sex. Finally, there is no guessing in this business—if the sales do not increase, the strategy is changed. The same line of reasoning should be applied in social action programs. In part, this has happened in the past, except that the painstaking assessment of effectiveness has not been carried out. The place for intuition and hopeful thinking is in the development of a program, not in its execution nor in the evaluation of its effectiveness.

With this outline of a strategy of social change based on operant-conditioning principles, we will try to present some examples of the operation of these principles in rural Philippine communities. In Chapter 3 we discussed processes of leveling. In operant-conditioning terminology, one can look upon leveling as aversive control of variations in behavior, variations which in some cases could result in an improved standard of living. Someone may be teased or called proud who undertakes to grow a different crop or to change traditional practices with rice. Similarly, theft of chickens, fruit, or vegetables is another situation where reinforcement contingencies within the society work against chicken raising or gardening.

Conversely, education in the sense of having a diploma or a degree has acquired extraordinary conditioned reinforcing properties. Both as a link in the chain to improved economic conditions and as a conditioned reinforcement, education has a remarkable capacity to maintain a high level of activity. In contrast to material goals such as better crops or a higher income, to be a graduate is a reinforcement which cannot disappear or be taken away by stronger people.

Applying these concepts to the problem of introducing innovations, we would like to suggest that reinforcement contingencies are often stacked against innovation. The risks or potential aversive stimuli are great, while reinforcements may be lost to landlords, loan sharks, or eager relatives. The course of action which a rural Filipino tenant may adopt may appear to an outsider to be the product of ignorance, indifference, and extreme poverty. We suggest that he may be adopting an optimum strategy, given the reinforcement contingencies he faces; and that if someone wishes to change his behavior he must change the probabilities of various reinforcements and punishments which the rural Filipino faces.

In Chapter 3 we discussed the activities of political leaders who were reinforced by voter support for obtaining allocations from the national government. The oft-deplored dependency of citizens in the provinces on political leaders is in turn reinforced by the politicians' ability to obtain pork-barrel funds. The citizens make many and frequent requests for improvements such as roads, schools, and services. Occasionally the congressman or senator is able to arrange for a request to be met. In other words, the dependency of the rural people on politicians is on a variable ratio schedule, a schedule which is capable of maintaining a very high rate of dependent acts with very few actual reinforcements.

In our research and observations we were struck by the extensive changes in behavior patterns of rural Filipinos who migrated to Manila. The rural people were also aware of these changes and subjected some of the changes to a good deal of critical comment. For instance, a city dweller may change in his speech and clothing; he can also change in the degree to which he shares his earnings with his family. If we look upon the change in locale as a change in reinforcement contingencies, the modifications of behavior become more comprehensible. More important, this observation suggests the empirically verifiable theory that separating people from their previous models and reinforcement sources may be a better training device than the attempt to introduce new ways in old settings. Looking at this situation from the operant-conditioning perspective also accounts for traditional patterns. In one of our communities we had an agricultural high-school graduate who could still recall what he had learned at school. In the barrio, however, he farmed as his neighbors did, without using fertilizers or improved strains of seeds.

In experiments with animals and with human beings, it has been found that reinforcement must be presented immediately after the subject has emitted the desired behavior. Human beings can brook some delay, but acquisition of new responses is likely to be delayed if reinforcements are delayed. The implication of this finding for action programs is that some benefits of improved cultural practices should be made available immediately. A good example of the successful application of this principle can be seen in the development of vegetable plots in the mountains north of Baguio, a city high in the mountains of Northern Luzon, during the past decade. A major part of the success of this development was probably due to the fact that a marketing mechanism preceded the plots. Buyers patrolled the road leading from Baguio to Bontoc buying cabbages and other vegetables the day they were ready to be harvested and paying for them immediately. As Castillo has observed (1965*a*), tobacco production also increased when a reliable reinforcement schedule was introduced. From this perspective, one is led to suggest that programs designed to speed rural development might be more successful if they concentrate on scheduling reinforcements rather than on the preliminary activities of education and community organization. In short, if an agency wants to increase egg or vegetable production, it should concentrate on developing marketing mechanisms. The farmer should be paid, and paid immediately for his production. If the reinforcement is assured, the farmers will learn the techniques of fertilizing and spraying vegetables or proper feeding of chickens. A close examination of unsuccessful efforts would almost certainly reveal that there was not a reinforcement system for new practices which was strong enough to overcome the reinforcements which maintained already existing practices.

We have offered this brief and simplified outline of operant conditioning, a body of theory and experiments developed by Skinner and many others, in order to suggest a systematic orientation for observation and experiment in the study of modernization and the understanding of behavior in traditional societies. The theory has proven to be very productive in educational and clinical psychology; this is an attempt to extend it to research and action programs in other cultures. The orientation is strongly behavioristic in the sense that it deals with the individual's observable activities. It does not make use of covert processes such as character traits and other inherent qualities as explanatory devices.

One may suggest that extrapolating from a pigeon in a 15" × 15" cage to human beings and groups is an uncertain undertaking. People and pigeons are not the same. But the orientation has already been followed in work with mentally disturbed patients and with children in classrooms. It has led to novel treatment and training techniques, both of which have led to improved understanding and better results.

There are many implications which follow from an attempt to apply operant-conditioning principles to increase our understanding of a group of people:

1. One should seek to understand behavior in terms of observable events. This means that we begin with present behavior and determine the factors which are maintaining and reinforcing it. By varying these factors we can determine whether our analysis is correct.
2. One should avoid speculation about inner states such as aims or values; instead, one should examine behavior in terms of reinforcing and aversive stimulation.
3. It must be acknowledged that both behavior and reinforcements are complex in natural situations, but the solution to this problem does not lie in developing descriptions of behavior and then explaining the behavior by using the summarizing descriptive term as though it were something real.
4. The most important lesson we have learned from laboratory experiments is that reinforcement must follow immediately after the subject has done what we want him to do. Furthermore, reinforcement must not occur following acts which we are seeking to eliminate. The implication for an action program is that gains or reinforcements must occur as soon as possible after a new practice has been adopted. The benefits must be withheld when the new practice fails to appear.
5. Certain sources of reinforcement are likely to shape certain kinds of behavior. As Staats points out (1966: 291):

In school, for example, if the teacher's approval is reinforcing, one type of behavior . . . may be shaped, since the teacher's approval will ordinarily be contingent only upon that type of behavior. On the other hand, if the approval of a group of rebellious students in a class is more reinforcing, actions of opposing the teacher may be strengthened since the group's approval will be contingent upon such behavior.

This suggests that a good deal of attention needs to be given to identifying those whose opinions matter to a group which is the target of a program of change.

6. The nature of the reinforcement is also important:

The constitution of the system of reinforcers has important effects upon the characteristics of the individual's behavior. . . .

The nature of the effective reinforcers will to a large extent determine the class of behavior the individual will develop. . . . If the reinforcers effective for a group have been described, then a good deal may be suggested about the typical behavior which will be displayed by the individuals in that group (Staats 1966: 291-2).

This may sound the same as saying that members of groups have certain values in common. This is the case, except that formulating the matter

in this fashion directs us to a more experimental approach in which we try to observe the conditioned reinforcers and conditioned aversive stimuli. It also leads to verifiable implications. If we know the individual's or the group's reinforcers and aversive stimuli, we can use them to shape other behavior.

7. Adopting these concepts and this orientation may enable us to improve our understanding of resistance to change. A farmer continues an ineffective style of agriculture in spite of his knowledge of new techniques which would produce higher yields. Closer examination may reveal that higher yields might lead to an aversive response from landlords, tax collectors, or creditors. Besides, the familiar techniques elicit reinforcers from his neighbors.

8. Since imitation can play a significant role in change, it is important to offer models or heroes who are doing what we want our target audience to do. This strategy may be most needed in the field of health where there is a great delay between improved health practices and an improved sense of well-being. Experimental studies indicate that human subjects will imitate someone who is reinforced for a given pattern of behavior. It is not necessary that the subject himself be directly reinforced.

In human beings, conditioned reinforcers are of great significance. Inasmuch as members of different subcultures have different histories of reinforcement, we must expect that they will find different stimuli reinforcing. For example, while improved health, greater efficiency, or a more attractive home may be greatly desired by some people, these benefits may not be effective conditioned reinforcers for everyone. Enhanced sexual attractiveness, greater social acceptance, and being up-to-date could be conditioned reinforcers likely to shape behavior, at least in certain domains where improved health and greater efficiency have no effect. A program of change may fail because the benefits offered have no reinforcing value.

In this chapter we have outlined an operant-conditioning approach to social action programs in the rural Philippines. The strategy in an action program would be to make sure that desired behavior is followed promptly by reinforcement, and that reinforcement does not follow behavior that one is trying to eliminate. In many ways it sounds oversimplified and obvious. One virtue of the approach is that it deals only with observable behavior and with verifiable hunches about cause-and-effect relationships. Issues can be settled by collecting data, not by insisting that one explanation is better than another. Finally, in other applications, operant conditioning has worked. The merit of the technique in rural Philippine action programs can only be determined when the principles are systematically tested in the field.