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Reciprocal

Determinism

### Interdependence of Personal and Environmental Influences

As a short-hand convenience for the present discussion, the influence exerted by the individual and by his or her behavior will be designated together as the personal determinant. As we know, internal personal factors and behavior also operate as reciprocal determinants of each other. To take one example, people's expectations influence how they behave, and the outcomes of their behavior change their expectations. The major weakness of the traditional formulations is that they treat behavioral dispositions and the environment as separate entities when in fact, each determines the operation of the other. For the most part, the environment is only a potentiality until actualized by appropriate actions; it is not a fixed property that inevitably impinges upon individuals. Lecturers do not influence students unless they attend their classes, books do not affect people unless they select and read them, fires do not burn people unless they touch them, and rewarding and punishing influences remain in abeyance until activated by conditional performances. Similarly, personal determinants are only potentialities that do not operate as influences unless they are activated. People who can converse knowledgeably about certain issues can affect others if they speak but not if they remain silent, even though they possess the means to do so. Thus, behavior partly determines which of the many potential environmental influences will come into play and what forms they will take; environmental influences, in turn, partly determine which behavioral repertoires are developed and activated. In this two-way influence process, the environment is influenceable, as is the behavior it regulates.

#### SELECTIVE ACTIVATION OF POTENTIAL INFLUENCES

The way in which behavioral and environmental influences affect each other is evident even in simple experimental

FROM THE SOCIAL LEARNING PERSPECTIVE, psychological functioning is a continuous reciprocal interaction between personal, behavioral, and environmental determinants. The term reciprocal is used in the sense of mutual action between events rather than in the narrower meaning of similar or opposite counterreactions. As mentioned briefly before, theories that have attempted to incorporate both personal and environmental determinants usually depict behavior as resulting from the joint influence of these two factors. In studying the determinants of behavior within this paradigm, the responses of individuals are measured under varying situational conditions. The data are then analyzed to determine how much of the variation in behavior is due to personal characteristics, how much to situational conditions, and how much to their joint effects. The efforts to gauge the relative importance of these factors, have not been especially informative because one can obtain almost any pattern of results depending upon the types of persons, behavior, and situations selected. For example, in deciding which movie to attend from many alternatives in a large city there are few constraints on the individual so that personal preferences emerge as the predominant determinants. In contrast, if people are immersed in a deep pool of water their behavior will be remarkably similar however uniquely varied they might be in their cognitive and behavioral make-up.

situations in which fixed environments are imposed on animals. Consider a standard experiment in defensive learning in which shocks are scheduled to occur every minute, but each bar press forestalls the shock for 30 seconds, thus enabling the animals to determine the punitiveness of their environment by their actions. Those who quickly learn the controlling behavior can create an environment for themselves that is essentially free of punishment. Others who, for one reason or another, are slow in acquiring the requisite coping skill experience a highly unpleasant milieu.

Though the *potential environment* is identical for all animals, the *actual environment* depends upon their behavior. Is the animal controlling the environment or is the environment controlling the animal? What we have here is a two-way regulatory system in which the organism appears either as an object or an agent of control, depending upon which side of the reciprocal process one chooses to examine. When the rate of self-protective responses is measured, the environmental contingencies appear to be the controllers of behavior. If, instead, one measures the amount of punishment brought about by each animal, then it is the environment that is controlled and modified by behavior. The punitiveness of the environment can, therefore, vary considerably for different animals and at different times for the same animal. In examining how behavior determines the environment, one might test drunk and sober animals in the same programmed situation and compare the aversiveness of the environments animals create for themselves under intoxicated and under sober conditions.

The rewards of an environment are also only potentialities until actualized by appropriate behavior. A researcher once studied schizophrenic and normal children in a setting containing an extraordinary variety of attractive devices, including television sets, phonographs, pinball machines, electric trains, picture viewers, and electric organs. To activate these playthings, children had simply to deposit available coins, but only when a light on the device was turned on; coins deposited when the light was off increased the period that the device would remain inoperative. Normal children

rapidly learned how to take advantage of what the environment had to offer and created unusually rewarding conditions for themselves. By contrast, schizophrenic children, who failed to master the simple controlling skill, experienced the same potentially rewarding environment as a depriving, unpleasant place.

In the preceding examples, the potential environment is fixed so that behavior determines only the extent to which it impinges on the organism. Behavior can create environmental conditions, as well as regulate their impact. Social environments provide an especially wide latitude for creating contingencies that reciprocally affect one's own behavior. People can converse on many topics, they can engage in a variety of activities, and their potential responsiveness is exceedingly diverse in other ways. In social interactions the behavior of each participant governs which aspects of their potential repertoires are actualized and which remain unexpressed. We are all acquainted with problem-prone individuals who, through their obnoxious conduct, predictably breed negative social climates wherever they go. Others are equally skilled at bringing out the best in those with whom they interact.

At the organizational level, people play an influential role through their collective action in creating social conditions that affect the course and quality of their lives. Labor unions, for example, negotiate the working conditions and pay schedules they favor. Other groups similarly use the power of collective pressure to change social practices in ways that improve their life situation.

Because personal and environmental sources of influence function as interdependent rather than separate determinants, research aimed at estimating what percentage of behavioral variation is due to persons and which to situations does not throw much light on the interactive aspects of regulatory processes. Nor is evidence that much of the variation is usually due to the joint effects of personal characteristics and situational conditions especially instructive. Rather, to elucidate the process of reciprocal interaction between personal and environmental influences, one must analyze how each is conditional on that of the other. The methodology best suited

for this purpose specifies the conditional probabilities that the interacting factors will affect the likelihood of the occurrence of each other in an on-going sequence.

Analysis of sequential interchanges in social relationships provides one example of reciprocal influence processes. Studies of dyadic exchanges document how the behavior of one member activates particular responses from the repertoire of the other member which, in turn, prompt reciprocal counteractions that mutually shape the social milieu in a predictable direction (Bandura, Lipsher, & Miller, 1960). Raush and his associates have similarly shown that the antecedent acts of one person strongly influence how others respond, thus determining the course of the interaction (Raush, 1965; Raush, Barry, Hertel, & Swain, 1974). Hostile acts generally draw aggressive counterresponses from others, whereas cordial antecedent acts seldom do. Aggressive children thus create through their actions a hostile environment, while children who favor friendly modes of response generate an amicable social milieu.

Reciprocal processes are not governed solely by momentary behavioral contingencies. Counterresponses to antecedent actions are also influenced by judgments of later consequences of responding in a particular manner. Children who are well trained in coercive behavior will maintain, or even escalate, aversive conduct in the face of immediate punishment when persistence is expected to eventually get them what they want. The same momentary punishment will serve as an inhibitor rather than as an enhancer when continuance of aversive conduct is known to be ineffective. Aggression in interactions between adults may similarly elicit counteraggression, or conciliation, or some other response depending on the later effects anticipated for these alternative courses of action. The predictive power of momentary reciprocal effects therefore derives partly from changes in the consequences anticipated over the course of sequential interchanges.

When the predictors of likely consequences are personal characteristics, individuals can set in motion certain reciprocal sequences of interaction through their stimulus value alone. The research cited earlier showing that the mere appearance of adults elicits different amounts of cooperativeness depending on whether they had previously reinforced such behavior is a good example of this process. In addition, role

prescriptions, specifying how people are supposed to behave in carrying out their assigned roles, serve as structuring influences on the nature of reciprocal exchanges. For instance, expected behaviors toward the same person in the same setting will differ for the roles of work supervisor and confidante. Therefore in analyzing how the behavior of one person affects the counterreactions of another, one must consider, in addition to immediate effects of each action, the anticipated changes in mutual consequences over time, predictive cues, and the socially structured constraints on behavior of roles and circumstances.

The preceding discussion is not meant to imply that all research should use reciprocal influence paradigms. On the contrary. It is important to understand how certain determinants produce change in the first place regardless of how the resultant changes, in turn, affect the subsequent operation of the determinants. To continue with the aggression example, the question of how environmental influences induce and initiate aggression requires a separate analysis apart from how the resultant aggression changes the environment. The study of initial and of reciprocal effects are separable and require different experimental procedures. Both approaches are needed for a full understanding of behavior. It should also be noted that not all reciprocal processes operate at the level of direct interpersonal exchanges. Many influences impinge on people and produce cognitive changes which, in turn, affect selection and symbolic processing of subsequent influences.

It might be argued that if individuals partly create their own environments, then there is no one remaining to be influenced. One's behavior, of course, is not the sole determinant of subsequent events. As we have seen, situational constraints, the roles people occupy, and many other factors partly determine what one can or cannot do in response to the actions of others. Moreover, it is precisely because influences are altered by their reciprocal effects that unidirectional control rarely exists. Rather, counterinfluences undergo reciprocal adjustments in ongoing sequences of interaction.

The operation of reciprocal reinforcement processes in the inadvertent production of coercive conduct in children is a familiar illustration of how the interdependent influences

change through successive feedback. Children's mild requests often go unheeded because the parent is disinterested or preoccupied with other matters. If further bids for attention go unrewarded, children generally intensify their behavior until it becomes aversive to the parent. At this stage in the interaction sequence the child is exercising coercive control over the parent. Eventually the parent is forced to terminate the aversive behavior by attending to the child, thereby reinforcing such behavior. The parent's reactions thus selectively train the child to use coercive techniques. Since the child gains parental attention and the parent gains temporary peace, the behavior of both participants is reinforced, although the long-term effects benefit neither.

Detrimental reciprocal systems are readily created and mutually sustained when unfavorable social practices evoke coercive behavior, which, due to its aversive properties, creates the reinforcement conditions likely to perpetuate it. Analyses of the sequential probabilities of behavior in family interactions by Patterson and his colleagues (Patterson & Cobb, 1971) reveal how family members become, through interlocking contingencies, both developers and victims of coercive relationships. This pattern is most evident in families in which the members have trained each other to use painful control techniques. Antagonistic behavior rapidly accelerates aggressive counteractions in an escalating power struggle. By escalating reciprocal aggression each member provides aversive instigation for each other, and each member is periodically reinforced for behaving coercively by overpowering the other through more painful counteractions. Harmful reciprocal systems of this sort can be converted to wholesome ones by reducing the reinforcement supporting coercive conduct and developing more constructive means of securing desired responsiveness from others (Patterson, 1975).

### Reciprocal Influence and the Exercise of Self-Direction

Discussion of causal processes raises the fundamental issue of determinism and personal freedom. In examining these questions it is essential to distinguish between the met-

aphysical and the social aspects of freedom. Many of the disputes on this topic arise as much, if not more, from ambiguities about the dimensions of freedom being discussed as from disagreements over the doctrine of determinism.

Let us first consider freedom in the social sense. Whether freedom is an illusion, as some writers maintain, or a social reality of considerable importance depends upon the meaning given to it. Within the social learning framework, freedom is defined in terms of the number of options available to people and the right to exercise them. The more behavioral alternatives and prerogatives people have, the greater is their freedom of action.

### CONSTRAINTS ON PERSONAL FREEDOM.

Personal freedom can be limited in many different ways. Behavioral deficiencies restrict one's possible choices and otherwise curtail opportunities to realize one's preferences. Freedom can therefore be fostered by cultivating competencies. In addition, self-restraints resulting from unwarranted fears and excessive self-censure restrict the range of activities that individuals can engage in or even contemplate. Here freedom is enhanced by eliminating dysfunctional self-restraints.

In maximizing freedom a society must place some limits on conduct because complete license for any individual will encroach on the freedom of others. Societal prohibitions against behavior that is socially injurious create additional curbs on conduct. There are few disagreements about placing limits on behavior that directly injures or seriously infringes on the rights of others. Conflicts often arise, however, over behavioral restrictions when many members of society question conventional customs and when legal sanctions are used more to enforce a particular brand of morality than to prohibit socially detrimental conduct.

The issue of whether individuals should be allowed to engage in activities that are self-injurious but are not detrimental to society has been debated vigorously over the years. Prohibitionists argue that it is difficult for anyone, other than a recluse, to impair him or herself without inflicting sec-

ondary harm on others. Should self-injury produce incapacities, society usually ends up bearing the costs of treatment and subsistence. Libertarians do not find such arguments sufficiently convincing to justify a specific prohibition, for some of the self-injurious activities that society approves may be as bad or worse than those it outlaws. Normative changes over time regarding private conduct tend to favor an individualistic ethic. Consequently, many of the activities that were formerly prohibited by law have now been exempted from legal sanctions.

The freedom of some groups of people is curtailed by socially condoned discrimination. Here, the alternatives available to a person are limited by skin color, sex, religion, ethnic background, or social class, regardless of capabilities. When self-determination is restricted by prejudice, those who are affected attempt to remove inequities by altering practices that compromise or temporize the professed equality values of society.

The exercise of freedom involves rights as well as options and behavioral restraints. Struggles for freedom are principally aimed at structuring societal contingencies so that certain forms of behavior are exempted from aversive control. After protective laws are built into the system, there are certain things that a society may not do to individuals who challenge conventional values or vested interests, however much it might like to. Legal prohibitions against unauthorized societal control create freedoms that are realities, not simply feelings or states of mind. Societies differ in their institutions of freedom and in the number and types of behaviors that are officially exempted from punitive control. Social systems that protect journalists from criminal sanctions for criticizing government officials, for example, are freer than those that allow authoritative power to be used to silence critics or their vehicles of expression. Societies that possess a judiciary independent of other government institutions ensure greater social freedom than those that do not.

#### FREEDOM AND DETERMINISM.

In philosophical discourses, freedom is often considered antithetical to determinism. When freedom is defined in

terms of options and rights, there is no incompatibility between freedom and determinism. From this perspective, freedom is not conceived negatively as the absence of influences or simply the lack of external constraints. Rather, it is defined positively in terms of the skills at one's command and the exercise of self-influence which choice of action requires. Given the same environmental constraints, individuals who have many behavioral options and are adept at regulating their own behavior will experience greater freedom than will individuals whose personal resources are limited.

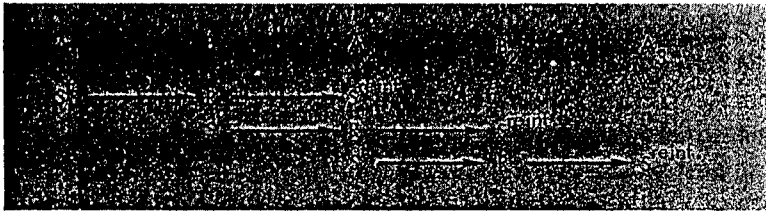
Psychological analyses of freedom eventually lead to discourses on the metaphysics of determinism. Are people partial determiners of their own behavior, or are they ruled exclusively by forces beyond their control? The long-standing debate over this issue has been enlivened by Skinner's (1971) contention that, apart from genetic contributions, human behavior is controlled solely by environmental contingencies (e.g., "A person does not act upon the world, the world acts upon him," p. 211). A major problem with this type of analysis is that it depicts the environment as an autonomous force that automatically shapes and controls behavior.

Environments have causes, as do behaviors. It is true that behavior is regulated by its contingencies, but the contingencies are partly of a person's own making. By their actions, people play an active role in producing the reinforcing contingencies that impinge upon them. As was previously shown, behavior partly creates the environment, and the environment influences the behavior in a reciprocal fashion. To the oft-repeated dictum, "change contingencies and you change behavior," should be added the reciprocal side, "change behavior and you change the contingencies." In the regress of prior causes, for every chicken discovered by a unidirectional environmentalist, a social learning theorist can identify a prior egg.

The image of people's efficacy that emerges from psychological research depends upon which aspect of the reciprocal influence system is selected for analysis. In the paradigm favoring *environmental determinism*, investigators analyze how environmental influences change behavior [ $B = f(E)$ ]. The paradigm that lends itself to the study of *personal determinism* examines how behavior determines the environment

[ $E = f(B)$ ]. Behavior is the effect in the former case, and the cause in the latter.

Social learning theory conceives of regulatory processes in terms of *reciprocal determinism* [ $B \leftrightarrow P \leftrightarrow E$ ]. Although the reciprocal sources of influence are separable for experimental purposes, in everyday life two-way control operates concurrently. In ongoing interchanges, one and the same event can thus be a stimulus, a response, or an environmental reinforcer depending upon the place in the sequence at which the analysis arbitrarily begins. Figure 8, which represents a sequence of reactions of two persons (A and B), shows how the same actions change their status from stimuli to responses to reinforcers at varying entry points in the flow of the interaction.



**Figure 8** Illustration of how the same social behavior can be a stimulus, a response, or a reinforcer depending on where one begins the analysis in the continuous flow of a social interaction. The A's are successive responses by one person, and the B's are successive responses by the second person in the dual interaction;  $S^t$  represents stimulus; R represents response; and  $S^{rein}$  represents reinforcer.

A survey of the scope of research on causal processes confirms the heavy reliance upon a one-sided paradigm to map a bidirectional process. Environmental control is minutely analyzed, whereas personal control has been relatively neglected. To cite one example, there exist countless demonstrations of how behavior varies under different schedules of reinforcement, but one looks in vain for studies of how people succeed, either individually or by collective action, in negotiating the reinforcement schedules to their own liking. The scarcity of research on personal control is not because people exert no influence on their environment or because such ef-

forts are without effect. Quite the contrary; behavior is one of the more influential determinants of future contingencies.

It should be noted that some theories that assign preeminent control to the environment are ultimately qualified by acknowledging that individuals exercise some measure of countercontrol (Skinner, 1971). The notion of reciprocal determinism, however, goes considerably beyond the concept of countercontrol. Countercontrol portrays the environment as an instigating force to which individuals react. As we have already seen, people activate and create environments as well as rebut them.

People may be considered partially free insofar as they can influence future conditions by managing their own behavior. Granted that selection of particular courses of action from available alternatives is itself determined, individuals can nevertheless exert some control over the factors that govern their choices. In philosophical analyses, all events can be submitted to an infinite regression of causes. Such discussions usually emphasize how people's actions are determined by prior conditions but neglect the reciprocal part of the process showing that the conditions themselves are partly determined by people's actions. Applications of self-control practices demonstrate that people are able to direct their courses of action toward valued goals by arranging the environmental conditions most likely to elicit appropriate behavior and by creating cognitive aids and self-reinforcing consequences to sustain it. Individuals may be told how to go about this process and be given some initial external support for their efforts, but that does not argue against the fact that self-produced influences contribute significantly to future goal attainment. Any account of the determinants of human behavior must therefore include self-generated influences as a contributing factor.

To contend, as environmental determinists often do, that people are controlled by external forces and then to advocate that they redesign society by applying psychotechnology undermines the basic premise of the argument. If humans were, in fact, incapable of influencing their own actions, they might describe and predict environmental events but they could hardly exercise any intentional control over them. When it

comes to advocacy of social change, however, thoroughgoing environmental determinists become ardent advocates of people's power to transform environments in pursuit of a better life.

In backward causal analyses, environmental conditions are usually portrayed as ruling people, whereas forward deterministic analyses of the goals people set for themselves and their later attainments reveal how people can shape conditions for their own purposes. Some are better at it than others. The greater their foresight, proficiency, and self-influence, all of which are acquirable skills, the greater the progress toward their goals. Because of the capacity for reciprocal influence, people are at least partial architects of their own destinies. It is not determinism that is in dispute, but whether determinism should be treated as a one-way or a two-way control process. Due to the interdependence of behavior and environmental conditions, determinism does not imply the fatalistic view that individuals are only pawns of external influences.

Psychological perspectives on determinism, like other aspects of theorizing, influence the nature and scope of social practice. Environmental determinists are apt to use their methods primarily in the service of institutionally prescribed patterns of behavior. Personal determinists are more inclined to cultivate self-directing potentialities. The latter behavioral approach and humanism have much in common. Behavior theorists, however, recognize that "self-actualization" is by no means confined to human virtues. People have numerous potentialities that can be actualized for good or ill. Over the years, many have suffered considerably, and will continue to do so, at the hands of self-actualized tyrants. A self-centered ethic of self-realization must therefore be tempered by concern for the social consequences of one's conduct. Behaviorists generally emphasize environmental sources of control, whereas humanists tend to restrict their interest to personal control. Social learning encompasses both aspects of the bidirectional influence process.

When the environment is regarded as an autonomous

rather than as an influenceable determinant of behavior, valuation of dignifying human qualities and accomplishments is diminished. If inventiveness stems from external circumstances, it is environments that should be credited for people's achievements and blamed for their failings or inhumanities. Contrary to the unidirectional view, human accomplishments result from reciprocal interaction of external circumstances with a host of personal determinants, including endowed potentialities, acquired competencies, reflective thought, and a high level of self-initiative.

Composers, for example, help to shape tastes by their creative efforts, and the public in turn supports their performances until advocates of new musical styles generate new public preferences. Each succeeding form of artistry results from a similar two-way influence process for which neither artisans nor circumstances deserve sole credit.

Superior accomplishments, whatever the field, require considerable self-disciplined application. After individuals adopt evaluative standards, they spend large amounts of time, on their own, improving their performances to the point of self-satisfaction. At this level of functioning, persistence in an endeavor is extensively under self-reinforcement control. Skills are perfected as much, or more, to please oneself as to please the public.

Without self-generated influences, most innovative efforts would be difficult to sustain. This is because the unconventional is initially resisted and is accepted gradually only as it proves functionally valuable or wins prestigious advocates. As a result, the early efforts of innovators generally bring rebuffs rather than rewards or recognition. In the history of creative endeavors, it is not uncommon for artists and composers to be scorned when they depart markedly from conventional forms and styles. Some gain recognition later in their careers. Others are sufficiently convinced of the worth of their work that they labor tirelessly even though their productions are negatively received throughout their lifetimes. Ideological and, to a lesser extent, technological changes follow similar courses. While innovative endeavors may receive oc-



casional social support in early phases, environmental conditions alone are not especially conducive to unconventional endeavors.

### **Reciprocal Influence and the Limits of Social Control**

The operation of reciprocal influence also has bearing on the public's concern that advances in psychological knowledge will produce an increase in the calculated manipulation and control of people. A common response to such fears is that all behavior is inevitably controlled. Social influence, therefore, does not entail imposing controls where none existed before. This type of argument is valid in the sense that every act has a cause. But it is not the principle of causality that worries people. At the societal level, their misgivings center on the distribution of controlling power, the means and purposes for which it is used, and the availability of mechanisms for exercising reciprocal control over institutional practices. At the individual level, they are uneasy about the implications of psychotechnology for programming human relations.

#### INDIVIDUAL SAFEGUARDS

Possible remedies for exploitative use of psychological techniques are usually discussed in terms of individual safeguards. Increasing people's knowledge about modes of influence is prescribed as the best defense against such manipulation. When people are informed about how behavior can be controlled, they tend to resist evident attempts at influence, thus making manipulation more difficult. Awareness alone, however, is a weak countervalue. Most people are quite aware that advertisers attempt to influence their behavior by exaggerated claims, modeled testimonials, pseudo-experiments demonstrating the superiority of their products, paired association of events, and portrayal of benefits accruing to product users. Such knowledge does not make people immune to advertising influences. The same is true of persuasion through response consequences. Coercion can extract

compliance and rewards can induce accommodating behavior, even though people recognize that the incentives are prompting their actions.

Exploitation was successfully thwarted long before the discipline of psychology existed to formulate principles and practices of behavior change. The most reliable source of opposition to manipulative control resides in the reciprocal consequences of human interactions. People resist being taken advantage of, and will continue to do so in the future, because compliant behavior produces unfavorable consequences for them. Sophisticated efforts at influence in no way reduce the aversiveness of yielding that is personally disadvantageous. Because of reciprocal consequences, no one is able to manipulate others at will, and everyone experiences some feeling of powerlessness in getting what they want. This is true at all levels of functioning, both individual and collective. Parents cannot get their children to follow all their wishes, while children feel constrained by their parents in doing what they desire. At universities, the administrators, faculty, students, and alumni each feel that the other constituencies are unduly influential in promoting their self-interests but that they themselves have insufficient power to alter the institutional practices. In the political arena, Congress feels that the executive branch possesses excessive power, and conversely the executive branch feels thwarted in implementing its policies by congressional counteraction.

#### SOCIAL SAFEGUARDS.

If protection against exploitation relied solely upon individual safeguards, people would be continually subjected to the most unscrupulous and coercive pressures. Accordingly, they create institutional sanctions which set limits on the control of human behavior. The integrity of individuals is largely secured by societal safeguards that place constraints on improper means and foster reciprocity through balancing of interests. This is achieved by establishing formal mechanisms for exercising reciprocal influence over organizational practices through legal systems, regulatory agencies, and due process and elective procedures. Institutional reciprocal

mechanisms not only safeguard against arbitrary or unwarranted control, they provide the means for changing institutions and the conditions of life. The limits set by law and social rules on the degree and form of control people can exercise over each other tends to be overlooked in discussions of the implications of psychological knowledge.

Because individuals are conversant with psychological techniques does not grant them license to impose them on others. Industrialists, for example, know full well that productivity is higher when payment is made for amount of work completed rather than for length of time at work. Nevertheless, they cannot use the reinforcement system most advantageous to them. When industrialists commanded exclusive power, they paid workers at a piece-rate basis and hired and fired them at will. Reductions in the disparity of power between employers and employees resulted in a gradual change in the nature of the contingency contracts. As workers gained coercive economic strength through collective action, they were able to negotiate guaranteed wages on a daily, weekly, monthly, and eventually on an annual basis. At periodic intervals new contractual contingencies are adopted that are mutually acceptable. In the course of time, as better means of collective action are developed, other constituents will use their influence to modify arrangements that benefit certain segments of labor and industry but may adversely affect the quality of life for other sectors of society.

As the previous example illustrates, improved knowledge of how to influence behavior does not necessarily raise the level of social control. If anything, recent years have witnessed the diffusion of power, creating increased opportunities for reciprocal influence. This has enabled people to challenge social inequities, to effect changes in institutional practices, to counteract infringements on their rights, and to extend grievance procedures and due process of law to activities in social contexts that hitherto operated under unilateral control. The fact that more people wield power does not in and of itself ensure a humane society. In the final analysis, the important consideration is the purposes that power serves, however it might be distributed. Nor does knowledge about means of psychological influence necessarily produce me-

chanical responsiveness in personal relations. Whatever their orientations, people model, expound, and reinforce what they value. Behavior arising out of purpose and commitment is no less genuine than improvised action.

Novels depicting authoritarian systems and utopian societies based on behavioral principles generate public fears that a particular mode of life may be imposed on everyone. Advocates of utopian societies prescribe the lifestyles they like. Since personal preferences differ widely, most people question the values reflected either in specific prescriptions of a particular utopia or in the value orientation of the whole design. Even those who regard the guiding values as acceptable, nevertheless express concern over the homogenization of life within a single social arrangement. Others fear that should the instruments of influence fall into the wrong hands, they could be used to engineer public consent for authoritarian rule or benevolent despotism. What is intended as a visionary process for an experimenting society, thus becomes a frightening prospect.

When only a single form of utopian social living is presented as founded on behavioral principles, as in *Walden Two* (Skinner, 1948), the general techniques for developing better social systems get confounded with the particular brand of lifestyle that is promulgated. As a result, procedures for achieving human ideals are repudiated because the advocated mode of life may be uninviting. Principles can be separated from social practices by providing alternative types of social living founded on the same behavioral principles. Under pluralistic arrangements, people have options as to the lifestyles they wish to pursue. Those who do not find a particular form of life to their liking can try other forms. Wholesale manipulation is difficult to achieve because the value preferences and networks of influences differ across groups. Given the appropriate value commitments, social learning principles can be used effectively to cultivate diversity.

The cliché of the futuristic nightmare of Orwell's *1984* and its more recent kin diverts public attention from less sensational regulative influences that pose continual threats to human welfare. Most societies have instituted reciprocal systems that are protected by rules of law or social regula-

tions to prohibit such imperious control of human behavior. Although abuses of institutional power arise from time to time, it is not totalitarian rule that constitutes the impending peril. The hazards lie more in the intentional pursuit of personal gain, whether material or otherwise, than in control by coercion. Detrimental social practices occur and resist change, even within an open society, when many people benefit from them. To take a prevalent example, inequitable treatment of disadvantaged groups for private gain can enjoy public support without requiring despotic rule.

People, of course, have more to contend with than inhumane treatment at the hands of others. When the aversive consequences of otherwise rewarding lifestyles are delayed and accumulate imperceptibly, people can become willful agents of their own self-destruction. Thus, if enough people benefit from activities that progressively degrade their environment, then, barring contravening influences, they will eventually destroy their environment.

With growing populations and the spread of lifestyles emphasizing material consumption, both of which tax finite resources, people will have to learn to cope with new realities of existence. Widespread pursuit of activities that maximize personal rewards can produce harmful consequences that must be borne by all. These new realities will require a greater consideration of, and a heightened sense of responsibility for, the social consequences of one's behavior. Pressures will mount to subordinate individual choices to collective interests. The challenge ahead is the development of social practices which promote the common good in ways that still preserve the greatest possible individual freedom.

Modification of common practices that are immediately rewarding but detrimental in the long run does not necessarily require curtailing freedom of choice. Behavior is modified far more effectively by providing better alternatives than by imposing prohibitions. Birth rates, for example, have been substantially reduced through economic development, public enlightenment about the perils of overpopulation, family planning and the development of birth control devices—without resorting to the restriction of sexual activities or the imposition of breeding quotas. In this case, broader societal

interests coincide with individual ones. In other instances, detrimental practices would also be rapidly discarded in favor of beneficial ones if their development were not resisted by vested interests. Heavy reliance on polluting automobiles, which also consume large quantities of materials, could be diminished faster by providing convenient and economical rapid-transit systems than by continuing to produce millions of automobiles yearly, constructing more freeways, and then increasing the costs and aversiveness of driving cars. Because large numbers of people benefit financially, either directly or indirectly, from the profusion of automobiles, the restriction of choice to alternatives that produce detrimental effects secures wide public support.

These are but a few examples of how collective survival practices are best promoted by expanding rather than curtailing individual choice. Change is achieved most rapidly both by providing advantageous options and by raising the costs of traditional practices that produce adverse delayed consequences. When alternative means of obtaining benefits are lacking, people are slow to abandon behavior that operates against their long-term welfare, even in the face of mounting negative consequences.

Psychology cannot tell people how they ought to live their lives. It can, however, provide them with the means for effecting personal and social change. And it can aid them in making value choices by assessing the consequences of alternative lifestyles and institutional arrangements. As a science concerned with the social consequences of its applications, psychology must promote public understanding of psychological issues that bear on social policies to ensure that its findings are used in the service of human betterment.