

The Self System in Reciprocal Determinism

ALBERT BANDURA *Stanford University*

ABSTRACT: *Explanations of human behavior have generally favored unidirectional causal models emphasizing either environmental or internal determinants of behavior. In social learning theory, causal processes are conceptualized in terms of reciprocal determinism. Viewed from this perspective, psychological functioning involves a continuous reciprocal interaction between behavioral, cognitive, and environmental influences. The major controversies between unidirectional and reciprocal models of human behavior center on the issue of self influences. A self system within the framework of social learning theory comprises cognitive structures and subfunctions for perceiving, evaluating, and regulating behavior, not a psychic agent that controls action. The influential role of the self system in reciprocal determinism is documented through a reciprocal analysis of self-regulatory processes. Reciprocal determinism is proposed as a basic analytic principle for analyzing psychosocial phenomena at the level of intrapersonal development, interpersonal transactions, and interactive functioning of organizational and social systems.*

Recent years have witnessed a heightened interest in the basic conceptions of human nature underlying different psychological theories. This interest stems in part from growing recognition of how such conceptions delimit research to selected processes and are in turn shaped by findings of paradigms embodying the particular view. As psychological knowledge is converted to behavioral technologies, the models of human behavior on which research is premised have important social as well as theoretical implications (Bandura, 1974).

Explanations of human behavior have generally been couched in terms of a limited set of determinants, usually portrayed as operating in a unidirectional manner. Exponents of environmental determinism study and theorize about how behavior is controlled by situational influences. Those favoring personal determinism seek the causes of human behavior in dispositional sources in the form of instincts, drives, traits, and other motivational forces within the individual. Interactionists attempt to accommodate both situational

and dispositional factors, but within an essentially unidirectional view of behavioral processes. The present article analyzes the various causal models and the role of self influences in behavior from the perspective of reciprocal determinism.

Unidirectional environmental determinism is carried to its extreme in the more radical forms of behaviorism. It is not that the interdependence of personal and environmental influences is never acknowledged by advocates of this point of view. Indeed, Skinner (1971) has often commented on the capacity for countercontrol. However, the notion of countercontrol portrays the environment as the instigating force to which individuals can counteract. As will be shown later, people create and activate environments as well as rebut them. A further conceptual problem is that having been acknowledged, the reality of reciprocal interdependence is negated and the preeminent control of behavior by the environment is repeatedly reasserted (e.g., "A person does not act upon the world, the world acts upon him," Skinner, 1971, p. 211). The environment thus becomes an autonomous force that automatically shapes, orchestrates, and controls behavior. Whatever allusions are made to two-way processes, environmental rule clearly emerges as the reigning metaphor in the operant view of reality.

There exists no shortage of advocates of alternative theories emphasizing the personal determination of environments. Humanists and existentialists, who stress the human capacity for conscious judgment and intentional action, contend that individuals determine what they become by their own free choices. Most psychologists find conceptions of human behavior in terms of unidirectional personal determinism as unsatisfying as those espousing unidirectional environmental determinism.

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Requests for reprints should be sent to Albert Bandura, Department of Psychology, Stanford University, Stanford, California 94305.

To contend that mind creates reality fails to acknowledge that environmental influences partly determine what people attend to, perceive, and think. To contend further that the methods of natural science are incapable of dealing with personal determinants of behavior does not enlist many supporters from the ranks of those who are moved more by empirical evidence than by philosophic discourse.

Social learning theory (Bandura, 1974, 1977b) analyzes behavior in terms of reciprocal determinism. The term *determinism* is used here to signify the production of effects by events, rather than in the doctrinal sense that actions are completely determined by a prior sequence of causes independent of the individual. Because of the complexity of interacting factors, events produce effects probabilistically rather than inevitably. In their transactions with the environment, people are not simply reactors to external stimulation. Most external influences affect behavior through intermediary cognitive processes. Cognitive factors partly determine which external events will be observed, how they will be perceived, whether they have any lasting effects, what valence and efficacy they have, and how the information they convey will be organized for future use. The extraordinary capacity of humans to use symbols enables them to engage in reflective thought, to create, and to plan foresightful courses of action in thought rather than having to perform possible options and suffer the consequences of thoughtless action. By altering their immediate environment, by creating cognitive self-inducements, and by arranging conditional incentives for themselves, people can exercise some influence over their own behavior. An act therefore includes among its determinants self-produced influences.

It is true that behavior is influenced by the environment, but the environment is partly of a person's own making. By their actions, people play a role in creating the social milieu and other circumstances that arise in their daily transactions. Thus, from the social learning perspective, psychological functioning involves a continuous reciprocal interaction between behavioral, cognitive, and environmental influences.

Reciprocal Determinism and Interactionism

Over the years the locus of the causes of behavior has been debated in personality and social psychology in terms of dispositional and situational

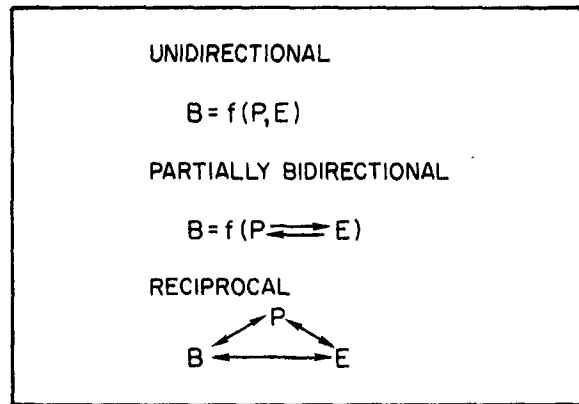


Figure 1. Schematic representation of three alternative conceptions of interaction. *B* signifies behavior, *P* the cognitive and other internal events that can affect perceptions and actions, and *E* the external environment.

determinants of conduct. Most of the participants in the controversy eventually adopted the position that behavior results from the interaction of persons and situations rather than from either factor alone (Bowers, 1973; Endler & Magnusson, 1975). However, these views of interactionism and the accompanying methodologies essentially retain a unidirectional orientation toward behavior.

Interaction processes have been conceptualized in three fundamentally different ways. These alternative formulations are summarized schematically in Figure 1. In the unidirectional notion of interaction, persons and situations are treated as independent entities that combine to produce behavior. This commonly held view can be called into question on both conceptual and empirical grounds. Personal and environmental factors do not function as independent determinants; rather, they determine each other. Nor can "persons" be considered causes independent of their behavior. It is largely through their actions that people produce the environmental conditions that affect their behavior in a reciprocal fashion. The experiences generated by behavior also partly determine what individuals think, expect, and can do, which in turn, affect their subsequent behavior.

A second conception of interaction acknowledges that personal and environmental influences are bidirectional, but it retains a unidirectional view of behavior. In this analysis, persons and situations are considered to be interdependent causes of behavior, but behavior is treated as though it were only a by-product that does not figure at all in the causal process. As previously noted, be-

havior is an interacting determinant, not simply an outcome of a "person-situation interaction."

The methodology used to evaluate the preceding conceptualizations relies heavily on factorial designs in which responses of different 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 attention of researchers working within this framework centers mainly on the dispute over which of the components—persons, situations, or Person \times Situation—accounts most for variation in behavior. However, the basic weakness in the conceptual scheme (i.e., treating behavior as a dependent rather than as an interdependent factor) goes largely unnoticed.

In the social learning view of interaction, which is analyzed as a process of reciprocal determinism (Bandura, 1977b), behavior, internal personal factors, and environmental influences all operate as interlocking determinants of each other. As shown in Figure 1, the process involves a triadic reciprocal interaction rather than a dyadic conjoint or a dyadic bidirectional one. We have already noted that behavior and environmental conditions function as reciprocally interacting determinants. Internal personal factors (e.g., conceptions, beliefs, self-perceptions) and behavior also operate as reciprocal determinants of each other. For example, people's efficacy and outcome expectations influence how they behave, and the environmental effects created by their actions in turn alter their expectations. People activate different environmental reactions, apart from their behavior, by their physical characteristics (e.g., size, physiognomy, race, sex, attractiveness) and socially conferred attributes, roles, and status. The differential social treatment affects recipients' self-conceptions and actions in ways that either maintain or alter the environmental biases.

The relative influence exerted by these three sets of interlocking factors will vary in different individuals and under different circumstances. In some cases, environmental conditions exercise such powerful constraints on behavior that they emerge as the overriding determinants. If, for example, people are dropped in deep water they will all promptly engage in swimming activities, however uniquely varied they might be in their cognitive and behavioral repertoires. There are times when behavior is the central factor in the interlocking

system. One example of this is persons who play familiar piano selections for themselves that create a pleasing sensory environment. The behavior is self-regulated over a long period by the sensory effects it produces, whereas cognitive activities and contextual environmental events are not much involved in the process.

In other instances, cognitive factors serve as the predominant influence in the regulatory system. The activation and maintenance of defensive behavior is a good case in point. False beliefs activate avoidance responses that keep individuals out of touch with prevailing environmental conditions, thus creating a strong reciprocal interaction between beliefs and action that is protected from corrective environmental influence. In extreme cases, behavior is so powerfully controlled by bizarre internal contingencies that neither the beliefs nor the accompanying actions are much affected even by extremely punishing environmental consequences (Bateson, 1961).

In still other instances, the development and activation of the three interlocking factors are all highly interdependent. Television-viewing behavior provides an everyday example. Personal preferences influence when and which programs, from among the available alternatives, individuals choose to watch on television. Although the potential televised environment is identical for all viewers, the actual televised environment that impinges on given individuals depends on what they select to watch. Through their viewing behavior, they partly shape the nature of the future televised environment. Because production costs and commercial requirements also determine what people are shown, the options provided in the televised environment partly shape the viewers' preferences. Here, all three factors—viewer preferences, viewing behavior, and televised offerings—reciprocally affect each other.

The methodology for elucidating psychological processes requires analysis of sequential interactions between the triadic, interdependent factors within the interlocking system. Investigations of reciprocal processes have thus far rarely, if ever, examined more than two of the interacting factors simultaneously. Some studies analyze how cognitions and behavior affect each other in a reciprocal fashion (Bandura, 1977a; Bandura & Adams, 1977). More often, however, the sequential analysis centers on how social behavior and environment determine each other. In these studies of dyadic exchanges, behavior creates certain condi-

tions and is, in turn, altered by the very conditions it creates (Bandura, Lipsher, & Miller, 1960; Patterson, 1975; Raush, Barry, Hertel, & Swain, 1974; Thomas & Martin, 1976).

From the perspective of reciprocal determinism, the common practice of searching for the ultimate environmental cause of behavior is an idle exercise because, in an interactional process, one and the same event can be a stimulus, a response, or an environmental reinforcer, depending on where in the sequence the analysis arbitrarily begins. Figure 2, which represents a sequence of reactions of two persons (A and B), shows how the same events change their status from stimuli, to responses, to environmental reinforcers, at different entry points in the flow of the two-way interaction. For example, event A_2 is an environmental stimulus in the third point of entry, a response in the second analysis, and an environmental reinforcer in the first analysis. One cannot speak of "behavior" and its "controlling environmental conditions" as though these two factors were fundamentally different events.

The preceding analysis focused only on the dependencies among acts, and how they change from responses to environmental events in the flow of interaction. However, regulatory processes are not governed solely by the reciprocal influence of antecedent and consequent acts. While behaving, people are also cognitively appraising the progression of events. Their thoughts about the probable effects of prospective actions partly determine how acts are affected by their immediate environmental consequences. Consider, for example, investigations of reciprocal coercive behavior in an ongoing dyadic interaction. In discordant families, coercive behavior by one member tends to elicit coercive counteractions from recipients in a mutual escalation of aggression (Patterson, 1975). However, coercion often does not produce coercive counteractions. To increase the predictive power of a theory of behavior, it is necessary to broaden the analysis to include cognitive factors that operate in the interlocking system. Counterresponses to antecedent acts are influenced not only by their immediate effects but also by judgments of later consequences for a given course of action. Thus, aggressive children will continue, or even escalate, coercive behavior in the face of immediate punishment when they expect persistence eventually to gain them what they seek. But the same momentary punishment will serve as an inhibitor rather than as an enhancer of coercion when they expect

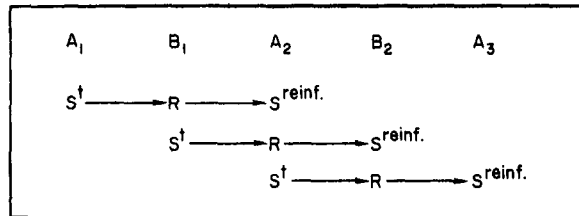


Figure 2. Illustration of how the same behavioral event can be an antecedent stimulus, a response, or a reinforcing consequent depending on where one arbitrarily begins the analysis in the flow of a social interaction. The A's are successive responses by one person, and the B's are successive responses by the second person in the dyadic interaction. S^t represents stimulus; R represents response; and S^{reinf} represents reinforcer.

continuance of the aversive conduct to be ineffective.

The predictive value of momentary reciprocal consequences derives partly from people's expectations of how their actions are likely to change future consequences over the course of sequential interchanges. Findings from several lines of research document how cognitive factors alter the functional relationship between actions and outcomes. The degree to which behavior is influenced by its momentary effects depends on people's beliefs about action-outcome contingencies (Baron, Kaufman, & Stauber, 1969; Estes, 1972; Kaufman, Baron, & Kopp, 1966; Spielberger & DeNike, 1966), the meaning they attribute to the outcomes (Dulany, 1968), and their expectations that persistence in a given course of behavior will eventually alter people's reinforcement practices (Bandura & Barab, 1971).

In the above studies, cognitive influences serve as controlling rather than controllable factors. But cognitions do not arise in a vacuum, nor do they function as autonomous determinants of behavior. In the social learning analysis of cognitive development, conceptions about oneself and the nature of the environment are developed and verified through four different processes (Bandura, 1977b). People derive much of their knowledge from direct experience of the effects produced by their actions. Indeed, most theories of cognitive development, whether they favor behavioristic, information-processing, or Piagetian orientations, focus almost exclusively on cognitive change through feedback from direct experimentation. However, results of one's own actions are not the sole source of knowledge. Information about the

nature of things is frequently extracted from vicarious experience. In this mode of verification, observation of the effects produced by somebody else's actions serves as the source and authentication of thoughts.

There are many things we cannot come to know by direct or vicarious experience because of limited accessibility or because the matters involve metaphysical ideas that are not subject to objective confirmation. When experiential verification is either difficult or impossible, people develop and evaluate their conceptions of things in terms of the judgments voiced by others. In addition to enactive, vicarious, and social sources of thought verification, all of which rely on external influences, logical verification also enters into the process, especially in later phases of development. After people acquire some rules of inference, they can evaluate the soundness of their reasoning and derive from what they already know new knowledge about things that extend beyond their experiences.

External influences play a role not only in the development of cognitions but in their activation as well. Different sights, smells, and sounds will elicit quite different trains of thought. Thus, while it is true that conceptions govern behavior, the conceptions themselves are partly fashioned from direct or mediated transactions with the environment. A complete analysis of reciprocal determinism therefore requires investigation of how all three sets of factors—cognitive, behavioral, and environmental—interact reciprocally among themselves. Contrary to common misconception, social learning theory does not disregard personal determinants of behavior. Within this perspective, such determinants are treated as integral, dynamic factors in causal processes rather than as static trait dimensions.

Self-Regulatory Functions of the Self System

The differences between unidirectional and reciprocal analyses of behavior have been drawn most sharply in the area of self-regulatory phenomena. Exponents of radical behaviorism have always disavowed any construct of self for fear that it would usher in psychic agents and divert attention from physical to experiential reality. While this approach encompasses a large set of environmental factors, it assumes that self-generated influences either do not exist or, if they do, that they have

no effect upon behavior. Internal events are treated simply as an intermediate link in a causal chain. Since environmental conditions presumably create the intermediate link, one can explain behavior in terms of external factors without recourse to any internal determinants. Through a conceptual bypass, cognitive determinants are thus excised from the analysis of causal processes.

In contrast to the latter view, internal determinants of behavior are gaining increasing attention in contemporary theorizing and research. Indeed, self-referent processes occupy a central position in social learning theory (Bandura, 1977b). As will be shown later, self-generated events cannot be relegated to a redundant explanatory link. In the triadic reciprocal system, they not only operate as reciprocal determinants of behavior but they play a role in the perception and formation of the environmental influences themselves.

Self influences have traditionally been conceptualized in terms of the self-concept (Rogers, 1959; Wylie, 1974). In these approaches, self-conceptions are measured by having people rate in one way or another evaluative statements that they consider apply to themselves. The principal thesis that self-conceptions determine psychological functioning is then tested by correlating self-concepts or disparities between actual-ideal selves with various indexes of adjustment, attitudes, and behavior.

One can point to several features of self theories of this type that detract from their explanatory and predictive power. For the most part, they are concerned with global self-images. A global view of what people think of themselves cannot possibly account for the wide variations they typically show in their self-reactions under different situational circumstances, on different activities, and at different times. A postulated internal determinant cannot be less complex than its effects. Another limitation of self theories is that they fail to specify in sufficient detail how self-concepts regulate specific actions.

In social learning theory, a self system is not a psychic agent that controls behavior. Rather, it refers to cognitive structures that provide reference mechanisms and to a set of subfunctions for the perception, evaluation, and regulation of behavior. Before proceeding to a reciprocal analysis of self influences, the processes by which people exercise some control over their own behavior will be reviewed briefly.

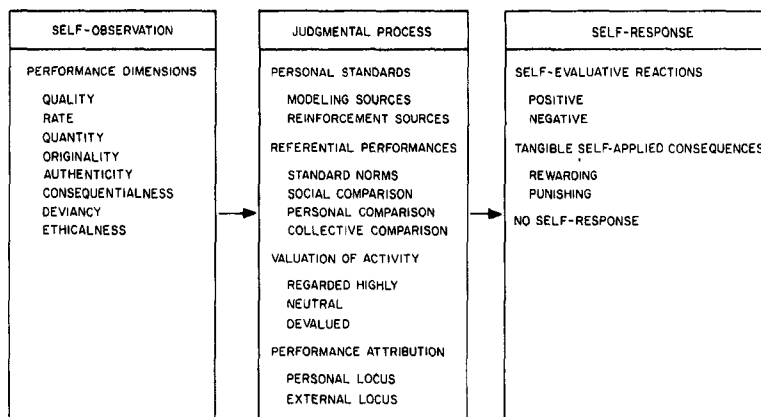


Figure 3. Component processes in the self-regulation of behavior by self-prescribed contingencies.

COMPONENT PROCESSES IN SELF-REGULATION

Figure 3 summarizes the different component processes in the self-regulation of behavior through self-prescribed contingencies. Behavior typically varies on a number of dimensions, some of which are listed in the self-observation component. Depending on value orientations and the functional significance of given activities, people attend selectively to certain aspects of their behavior and ignore variations on nonrelevant dimensions.

Simply observing variations in one's performances yields some relevant information, but such data, in themselves, do not provide any basis for personal reactions. Behavior produces self-reactions through a judgmental function that includes several subsidiary processes. Whether a given performance will be regarded as commendable or dissatisfying depends upon the personal standards against which it is evaluated. Actions that measure up to internal standards are appraised favorably; those that fall short are judged unsatisfactory.

For most activities, there are no absolute measures of adequacy. The time in which a given distance is run, the number of points obtained on an achievement test, or the size of charitable contributions often do not convey sufficient information for self-appraisal even when compared with an internal standard. When adequacy is defined relationally, performances are evaluated by comparing them with those of others. The referential comparisons may involve standard norms, the performances of particular individuals, or the accomplishments of reference groups.

One's previous behavior is continuously used as the reference against which ongoing performance is judged. In this referential process, it is self-com-

parison that supplies the measure of adequacy. Past attainments influence performance appraisals mainly through their effects on standard setting. After a given level of performance is attained, it is no longer challenging, and new self-satisfactions are often sought through progressive improvement.

Another important factor in the judgmental component of self-regulation concerns the evaluation of the activities. People do not much care how they perform on tasks that have little or no significance for them. And little effort is expended on devalued activities. It is mainly in areas affecting one's welfare and self-esteem that favorable performance appraisals activate personal consequences (Simon, Note 2).

Self-reactions also vary depending on how people perceive the determinants of their behavior. They take pride in their accomplishments when they ascribe their successes to their own abilities and efforts. They do not derive much self-satisfaction, however, when they view their performances as heavily dependent on external factors. The same is true for judgments of failure and blameworthy conduct. People respond self-critically to inadequate performances for which they hold themselves responsible but not to those which they perceive are due to unusual circumstances or to insufficient capabilities. Performance appraisals set the occasion for self-produced consequences. Favorable judgments give rise to rewarding self-reactions, whereas unfavorable appraisals activate negative self-reactions. Performances that are judged to have no personal significance do not generate any reactions one way or another.

In the social learning view, self-regulated incentives alter performance mainly through their motivational function (Bandura, 1976). Contin-

gent self-reward improves performance not because it strengthens preceding responses. When people make self-satisfaction or tangible gratifications conditional upon certain accomplishments, they motivate themselves to expend the effort needed to attain the desired performances. Both the anticipated satisfactions of desired accomplishments and the dissatisfactions with insufficient ones provide incentives for actions that increase the likelihood of performance attainments.

Much human behavior is regulated through self-evaluative consequences in the form of self-satisfaction, self-pride, self-dissatisfaction, and self-criticism. The act of writing is a familiar example of a behavior that is continuously self-regulated through evaluative self-reactions. Writers adopt a standard of what constitutes an acceptable piece of work. Ideas are generated and rephrased in thought before they are committed to paper. Provisional constructions are successively revised until authors are satisfied with what they have written. The more exacting the personal standards, the more extensive are the corrective improvements.

People also get themselves to do things they would otherwise put off by making tangible outcomes conditional upon completing a specified level of performance. In programs of self-directed change, individuals improve and maintain behavior on their own over long periods by arranging incentives for themselves (Bandura, 1976; Goldfried & Merbaum, 1973; Mahoney & Thoresen, 1974). In many instances, activities are regulated through self-prescribed contingencies involving both evaluative and tangible self-rewards. Authors influence how much they write by making breaks, recreational activities, and other tangible rewards contingent on completing a certain amount of work (Wallace, 1977), but they revise and improve what they write by their self-evaluative reactions.

Conceptual Bypass of the Self System

The notion that people can exercise some influence over their own behavior and change their environment was not enthusiastically received by adherents of unidirectional environmental determinism. Alternative conceptions were proposed that would make behavior explainable without postulating any self-generated influences. One solution is to redefine the phenomenon out of existence. Self-directed change through personally arranged incentives was relabeled as a process of self-awareness (Catania, 1975) or as a stimulus signalling

that a response had been executed (Rachlin, 1974). The assumptions on which such redefinitions are based and the contravening evidence are discussed at length elsewhere (Bandura, 1976) and need not be repeated here.

The second, and more commonly used, solution is to execute a regress of causes. By locating a remote environmental factor that might affect self-reactions, self-generated influences are thereby converted into simple operants. As Stuart (1972) succinctly put it, "The behaviors commonly ascribed to self-control can be functionally analyzed as a special subset of operant responses which are, in fact, under situational control" (p. 130). The organism thus becomes simply a repository of self-control responses waiting to be externally activated, but otherwise it possesses no capacity to generate guides and incentives for its own actions. But causal regression is a no more convincing disposal of self-generated influences than is renaming, because for every environmental cause that is invoked, one can find a prior personal cause of that environment.

Some conceptual regressions of self-generated influences to situational causes treat reciprocal influences as rivalrous or even as confounding factors. This view is exemplified by Jones, Nelson, and Kazdin (1977), who consider external influences to be "plausible rival interpretations" of the changes people achieve by arranging conditional incentives for themselves. The situational contenders in unidirectional analyses assume several different forms. A commonly cited external candidate is "reinforcement history." As Jones et al. (1977) note, self-reward partly depends upon prior training in how to judge and set standards of performance. This is certainly true. Values and generic standards of self-reward are extracted from diverse experience.

Having external origins, of course, in no way detracts from the fact that, once established, self-produced influences operate as contributory factors in the regulation of behavior. Ascribing a generalizable capability to past experiences cannot substitute for current influences arising through exercise of that capability, any more than one would attribute Shakespeare's literary masterpieces to his prior instruction in the mechanics of writing. A unidirectional environmentalist might well contend that literary creations are products of the sum total of past situational influences. No one would argue with the view, however limited its predictive value, that human ingenuity incorpo-

rates some aspects of past experiences. A social learning analysis, however, emphasizes the reciprocally interacting influences of personal and environmental factors in the innovative process. By their actions, people partly determine the nature of their experiences; through their capacity to manipulate symbols and to engage in reflective thought for innovative action, they can generate novel ideas and fashion new environments for themselves and others.

In laboratory investigations of self-regulatory processes, behavioral standards are transmitted by selective consequences (Bandura & Mahoney, 1974; Mahoney, Bandura, Dirks, & Wright, 1974) or through modeling (Bandura, 1976). In educational and clinical applications of self-reinforcement practices, the procedures on how to set performance goals and regulate one's own behavior are usually conveyed by instruction. To Jones et al. (1977), instruction on self-influence exteriorizes the locus of regulation.

Externalizing determinants in instructions, like the embodiment of control in reinforcement histories, fails to do justice to the complexities of the regulatory process. As we have previously seen, one must distinguish between the mechanics and the agency of behavior regulation. An environment may provide information for developing self-regulatory skills, but the recipients play an active role in what information they extract from ongoing events and when and how they use the acquired skills. Instructions are merely sources of information that become influences through cognitive processing rather than by reflexive adoption. It is not uncommon for people to improvise on information conveyed by instructions to create their own performance guides (Bandura & Simon, 1977). Indeed, a major challenge to the investigation of self-regulatory processes, whether they involve self-observation, goal setting, cognitive rehearsal, or self-generated consequences, is that people do not simply react mechanically to situational influences—they actively process and transform them.

It will be recalled from the earlier discussion that in order for people to regulate their own behavior through self-managed incentives, they have to know what they are doing and to measure their behavior against personal standards of what constitutes a worthy performance. Hence, self-monitoring and goal setting are indispensable constituents in the process, rather than ancillary components that can be plugged in or disconnected from a self-regulatory system. Jones et al. (1977) spec-

ulate about how self-observation, goal setting, and situational demands might account for the effects of contingent self-reward. An issue of contributory influence need not be cast in terms of rival determinants. A large body of evidence exists showing that people who reward their own behavior achieve significantly higher levels of performance than those who perform the same activities under instruction but receive no reinforcement, are rewarded noncontingently, or monitor their own behavior and set goals for themselves but do not reward their attainments (Bandura & Perloff, 1967; Bellack, 1976; Felixbrod & O'Leary, 1973; Glynn, 1970; Jeffrey, 1974; Litrownik, Franzini, & Skenderian, 1976; Mahoney, 1974; Montgomery & Parton, 1970; Speidel, 1974; Switzky & Haywood, 1974).

Exclusive reliance on physical events in behavioristic conceptions results in neglect of the role of self-evaluative reactions in the regulation of behavior. Consider, for example, the view set forth by Jones et al. (1977) that "although self-monitoring frequently is evaluated independently of self-reinforcement, the reverse is not the case" (p. 164). The first portion of the statement is debatable, the second is inconceivable. Self-monitoring can be regarded as independent of self-reinforcement only if the analysis is confined solely to material self-consequences of action. In fact, it is difficult for people to monitor their performances without setting goals for themselves and responding evaluatively to their behavior. Most people value their self-respect and the self-satisfaction derived from a job well done more highly than they do reinforcement tokens. To ignore the influential role of self-evaluative reactions in the self-regulation of behavior is to disavow a uniquely human capacity.

Self-reinforcement has never been evaluated independently of self-monitoring, nor is there much prospect that it ever will, simply because it would require an impossible feat. People cannot reward their behavioral attainments contingently if they do not know what they are doing. Observation of one's performances is a necessary precondition for contingent self-reward, not a handy but disconnectable component. Nor, for reasons given above, can evaluative self-reactions be easily dissociated from self-monitoring and goal-setting operations. To restate a central thesis of this article, self-generated influences cannot be excised from among the determinants of human behavior without sacrificing considerable explanatory and predictive power.

It might be argued that after self-regulatory functions are established, the self system operates in a wholly automatic fashion. Environmental stimuli trigger the regulatory mechanism to produce predictable outcomes, in the manner of cybernetic control. Were this the case, functional relationships could be established between environmental stimuli and responses without knowing much about the characteristics and processes of the self system. Such an analysis, however, rests on a number of improbable assumptions. The operational limits of the cybernetic model are too numerous to provide an adequate account of self-directed change. Consider only a few of the complexities involved. At the first step, a self-regulatory system requires close and reliable monitoring of behavior. In reality, most performances are difficult to codify because they are multifaceted, with each aspect varying on a number of relevant dimensions. Consequently, one must rely on integrative judgment rather than on preset mechanical sensors. In addition to complexities in the reading of behavior, self-observation is usually episodic rather than continuous. The poorer the quality of self-observation, the more difficult is the attainment of self-directed change (Kazdin, 1974; Mahoney, Moore, Wade, & Moura, 1973).

The demands on personal judgment are even heavier in the referential operations, which cannot rely solely on the preset properties of the system. Performances must be evaluated in terms of varying arrays of circumstances under which they occur and measured against reference standards that synthesize several sources of comparative information. Here we are dealing with evaluative and composite comparative judgments rather than with a mechanical comparator that checks the readings from a sensor against a preprogrammed criterion as in the model of cybernetic control. Nor is there anything automatic about the amount, type, and temporal administration of self-consequences.

To automate a self-regulation system one would have to preprogram (a) an elaborate set of intricate sensors that could decipher instantly information contained in novel combinations of relevant variables that appear in multifarious varieties, (b) a comparator that contained all the possible referential standards derivable from the various comparative factors in the relational network, and (c) a device whereby differential comparative signals would automatically select and trigger particular self-reactions from a wide variety of possible responses. The system would, of course, require

precise and continuous self-monitoring. These conditions are achievable in mechanical and biological systems that perform a limited routine function and hence involve only a few possible responses regulated by a few variables. A thermostat, for example, is sensitive only to variations in temperature, it can only turn off or on, and it is ever watchful.

Because of the complexity of behavioral functioning at "input," "throughput," and "output," cognitive processing serves in place of reflexive mechanics. The more complex the activities that are self-regulated, and the less particularized the regulatory decision rules, the more judgmental factors enter the process, and the more the process departs from the mechanical servocybernetic metaphor.

Incomplete preprogramming has some decided benefits. A wholly automated psychocybernetic self system would produce completely predictable responsiveness but at the heavy price of rigidity. When adaptive demands vary significantly across situations and times, as they typically do, what is functional under one set of circumstances becomes dysfunctional under different circumstances. Preprogrammed feedback sensitivity to immediate benefits would often produce aversive long-run consequences. An automaton that is self-guided by instant feedback to fixed internal referents would repeatedly direct itself into serious difficulties or even out of existence. In actuality, self-regulation operates in terms of basic preset properties, but it also relies on reflective judgment in assessing behavioral events, in rendering referential comparisons, and in selecting self-responses. To achieve full automaticity would require complete automation of judgment as well. Those who hold a wholly "robotic" view of the process face the task of explaining how automatons program automatons and whether a regress of programmers ultimately leads to inventive nonautomatons with a capacity for reflective thought.

Reciprocal Influence of External Factors on Self-Regulatory Functions

Social learning theory regards self-generated influences not as autonomous regulators of behavior but as contributory influences in a reciprocally interacting system. A variety of external factors serve as reciprocal influences on the operation of a self system. They can affect self-regulatory processes in at least three major ways: They are involved in the development of the component functions in

self-regulatory systems; they provide partial support for adherence to self-prescribed contingencies; and they facilitate selective activation and disengagement of internal contingencies governing conduct.

DEVELOPMENT OF SELF-REGULATORY FUNCTIONS

The development of capabilities for self-reaction requires adoption of standards against which performances can be evaluated. These internal criteria do not emerge in a vacuum. Behavioral standards are established by precept, evaluative consequences accompanying different performances, and exposure to the self-evaluative standards modeled by others (Bandura, 1976, 1977b; Masters & Mokros, 1974). People do not passively absorb behavioral standards from the environmental stimuli that happen to impinge upon them. They extract generic standards from the multiplicity of evaluative reactions that are exemplified and taught by different individuals or by the same individuals on different activities and in different settings (Bandura, 1976; Lepper, Sagotsky, & Mailer, 1975). People must therefore process the divergent information and eventually arrive at personal standards against which to measure their own behavior.

Associational preferences add another reciprocal element to the acquisition process. The people with whom one regularly associates partly influence the standards of behavior that are adopted. Value orientations, in turn, exercise selective influence on choices of activities and associates (Bandura & Walters, 1959; Krauss, 1964).

EXTERNAL SUPPORTS FOR SELF-REGULATORY SYSTEMS

In analyzing regulation of behavior through self-produced consequences, one must distinguish between two different sources of incentives that operate in the system. First, there is the arrangement of self-reward contingent upon designated performances to create proximal incentives for oneself to engage in the activities. Second, there are the more distal incentives for adhering to the self-prescribed contingencies.

Adherence to performance requirements for self-reward is partly sustained by periodic environmental influences that take a variety of forms (Bandura, 1977b). First, there are the negative sanctions for unmerited self-reward. When standards are being acquired or when they are later

applied inconsistently, rewarding oneself for underserving performances is more likely than not to evoke critical reactions from others. Occasional sanctions for unmerited self-reward influence the likelihood that people will withhold rewards from themselves until their behavior matches their standards (Bandura, Mahoney, & Dirks, 1976). Personal sanctions operate as well in fostering such adherence. After people adopt codes of conduct, when they perform inadequately or violate their standards they tend to engage in self-critical and other distressing trains of thought. Anticipated, thought-produced distress over faulty behavior provides an internal incentive to abide by personal standards of performance (Bandura, 1977b).

Negative inducements, whether personal or social, are not the most reliable basis upon which to rest a system of self-regulation. Fortunately, there are more advantageous reasons for exercising some influence over one's own behavior through self-arranged incentives. Some of these personal benefits are extrinsic to the behavior; others derive from the behavior itself.

People are motivated to institute performance contingencies for themselves when the behavior they seek to change is aversive. To overweight persons, the discomforts, maladies, and social costs of obesity create inducements to control their overeating. Similarly, students are prompted to improve their study behavior when failures in course work make academic life sufficiently distressing. By making self-reward conditional upon performance attainments, individuals can reduce aversive behavior, thereby creating natural benefits for their efforts.

The benefits of self-regulated change may provide natural incentives for adherence to personal prescriptions for valued activities as well as for unpleasant ones. People often motivate themselves by conditional incentives to enhance their skills in activities they aspire to master. Here the personal benefits derived from improved proficiency support self-prescription of contingencies. Self-generated inducements are especially important in ensuring continual progress in creative endeavors, because people have to develop their own work schedules for themselves. There are no clocks to punch or supervisors to issue directives. In analyzing the writing habits and self-discipline of novelists, Wallace (1977) documents how famous novelists regulate their writing output by making self-reward contingent upon completion of a certain amount of

writing each day whether the spirit moves them or not.

If societies relied solely on inherent benefits to sustain personal contingencies, many activities that are tiresome and uninteresting until proficiency in them is acquired would never be mastered. Upholding standards is therefore socially promoted by a vast system of rewards including praise, social recognition, and honors. Few accolades are bestowed on people for self-rewarding their mediocre performances. Direct praise or seeing others publicly recognized for upholding excellence fosters adherence to high performance standards (Bandura, Grusec, & Menlove, 1967).

Modeling is a powerful means for establishing behavior, but it has rarely been studied as a maintenance factor. Considering that human behavior is extensively regulated by modeling influences, there is every reason to expect that seeing others successfully regulate their own behavior by conditional incentives would increase the likelihood of adherence to self-prescribed contingencies in observers.

Although self-regulatory functions are developed and occasionally supported by external influences, this does not negate the fact that exercise of that function partly determines how people behave. In the case of arduous tasks, environmental inducements alone often fail to produce change, whereas the same inducements with contingent self-reward prove successful (Bandura & Perloff, 1967; Bellack, 1976; Mahoney, 1974; Switzky & Haywood, 1974; Flaxman & Solnick, Note 1). Competencies developed through the aid of self-reward enable people to activate environmental influences that would otherwise not come into play. This is because most environmental influences are only potentialities until actualized by appropriate action. In still other instances, the behavior fashioned through self-reward enables people to alter important aspects of their environment.

Because personal and environmental determinants affect each other in a reciprocal fashion, attempts to assign causal priority to these two sources of influence reduce to the "chicken-or-egg" debate. The quest for the ultimate environmental determinant of activities regulated by self-influence becomes a regressive exercise that can yield no victors in explanatory contests, because for every ultimate environmental cause that is invoked, one can find prior actions that helped to produce it.

SELECTIVE ACTIVATION AND DISENGAGEMENT OF SELF-REACTIVE INFLUENCES

The third area of research on the role of external factors in self-regulation centers on the selective activation and disengagement of self-reactive influences (Bandura, 1977b). Theories of internalization that portray incorporated entities (e.g., the conscience or superego, moral codes) as continuous internal overseers of conduct are usually at a loss to explain the variable operation of internal control and the perpetration of inhumanities by otherwise humane people.

In the social learning analysis, considerate people perform culpable acts because of the reciprocal dynamics between personal and situational determinants of behavior rather than because of defects in their moral structures. Development of self-regulatory capabilities does not create an invariant control mechanism within a person. Self-evaluative influences do not operate unless activated, and many situational dynamics influence their selective activation.

After ethical and moral standards of conduct are adopted, anticipatory self-censuring reactions for violating personal standards ordinarily serve as self-deterrents against reprehensible acts (Bandura & Walters, 1959). Self-detering consequences are likely to be activated most strongly when the causal connection between conduct and the detrimental effects it produces is unambiguous. There are various means, however, by which self-evaluative consequences can be dissociated from reprehensible behavior. Figure 4 shows the several points in the process at which the disengagement can occur.

One set of disengagement practices operates at the level of the behavior. What is culpable can be made honorable through moral justifications and palliative characterizations (Gambino, 1973; Kelman, 1973). In this process, reprehensible conduct is made personally and socially acceptable by portraying it in the service of beneficial or moral ends. Such cognitive restructuring of behavior is an especially effective disinhibitor because it not only eliminates self-generated deterrents but engages self-reward in the service of the behavior.

Another set of dissociative practices operates by obscuring or distorting the relationship between actions and the effects they cause. By displacing and diffusing responsibility, people do not see themselves as personally accountable for their actions and are thus spared self-prohibiting reactions (Ban-

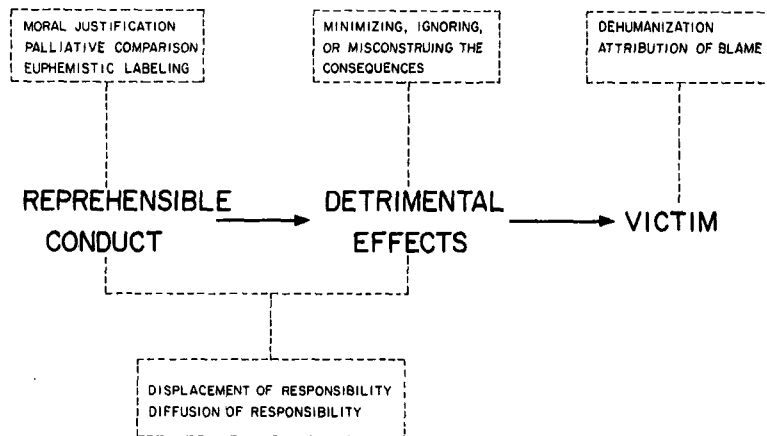


Figure 4. Mechanisms through which behavior is disengaged from self-evaluative consequences at different points in the behavioral process.

dura, Underwood, & Fromson, 1975; Milgram, 1974). Additional ways of weakening self-detering reactions operate by disregarding or obscuring the consequences of actions. When people embark on a self-disapproved course of action for personal gain, or because of other inducements, they avoid facing the harm they cause. Self-censuring reactions are unlikely to be activated as long as the detrimental effects of conduct are disregarded.

The final set of disengagement practices operates at the level of the recipients of injurious effects. The strength of self-evaluative reactions partly depends on how the people toward whom actions are directed are viewed. Maltreatment of individuals who are regarded as subhuman or debased is less apt to arouse self-reproof than if they are seen as human beings with dignifying qualities (Zimbardo, 1969). Detrimental interactions usually involve a series of reciprocally escalative actions in which the victims are rarely faultless. One can always select from the chain of events an instance of defensive behavior by the adversary as the original instigation. By blaming victims, one's own actions are excusable. The disengagement of internal control, whatever the means, is not achieved solely through personal deliberation. People are socially aided in this process by indoctrination, scapegoating, and pejorative stereotyping of people held in disfavor.

As is evident from preceding discussion, the development of self-regulatory functions does not create an automatic control system, nor do situational influences exercise mechanical control. Personal judgments operating at each subfunction pre-

clude the automaticity of the process. There is leeway in judging whether a given behavioral standard is applicable. Because of the complexity and inherent ambiguity of most events, there is even greater leeway in the judgment of behavior and its effects. To add further to the variability of the control process, most activities are performed under collective arrangements that obscure responsibility, thus permitting leeway in judging the degree of personal agency in the effects that are socially produced. In short, there exists considerable latitude for personal judgmental factors to affect whether or not self-regulatory influences will be activated in any given activity.

Reciprocal Influence of Personal Factors on Reinforcement Effects

Reinforcement has commonly been viewed as a mechanistic process in which responses are shaped automatically and unconsciously by their immediate consequences. The assumption of automaticity of reinforcement is crucial to the argument of unidirectional environmental control of behavior. One can dispense with the so-called internal link in causal chains only if persons are conceived of as mechanical respondents to external stimuli. The empirical evidence does not support such a view (Bandura, 1977b; Bower, 1975; Mischel, 1973; Neisser, 1976). External influences operate largely through cognitive processes.

During ongoing reinforcement, respondents are doing more than simply emitting responses. They develop expectations from observed regularities about the outcomes likely to result from their

actions under given situational circumstances. Contrary to claims that behavior is controlled by its immediate consequences, behavior is related to its outcomes at the level of aggregate consequences rather than momentary effects (Baum, 1973). People process and synthesize contextual and outcome information from sequences of events over long intervals about the action patterns that are necessary to produce given outcomes.

The notion that behavior is governed by its consequences fares better for anticipated than for actual consequences (Bandura, 1977b). We have already reviewed research demonstrating how the same environmental consequences have markedly different effects on behavior depending on respondents' beliefs about the nature of the relationships between actions and outcomes and the meaning of the outcomes. When belief differs from actuality, which is not uncommon, behavior is weakly influenced by its actual consequences until more realistic expectations are developed through repeated experience. But it is not always expectations that change in the direction of social reality. Acting on erroneous expectations can alter how others behave, thus shaping the social reality in the direction of the expectations.

While undergoing reinforcing experiences, people are doing more than learning the probabilistic contingencies between actions and outcomes. They observe the progress they are making and tend to set themselves goals of progressive improvement. Investigators who have measured personal goal setting as well as changes in performance find that external incentives influence behavior partly through their effects on goal setting (Locke, Bryan, & Kendall, 1968). When variations in personal goals are partialled out, the effects of incentives on performance are reduced. Performance attainments also provide an important source of efficacy information for judging one's personal capabilities. Changes in perceived self-efficacy, in turn, affect people's choices of activities, how much effort they expend, and how long they will persist in the face of obstacles and aversive experiences (Bandura, 1977a; Brown & Inouye, 1978).

Because of the personal determinants of reinforcement effects, to trace behavior back to environmental "reinforcers" by no means completes the explanatory regress. To predict how outcomes will affect behavior, one must know how they are cognitively processed. To understand fully the mechanisms through which consequences change behavior, one must analyze the reciprocally contributory influences of cognitive factors.

Reciprocal Determinism as a Generic Analytic Principle

The discussion thus far has primarily addressed issues regarding the reciprocal interactions between behavior, thought, and environmental events as they occur at the individual level. Social learning theory treats reciprocal determinism as a basic principle for analyzing psychosocial phenomena at varying levels of complexity, ranging from intrapersonal development, to interpersonal behavior, to the interactive functioning of organizational and societal systems. At the intrapersonal level, people's conceptions influence what they perceive and do, and their conceptions are in turn altered by the effects of their actions and the observed consequences accruing to others (Bandura, 1977a; Bower, 1975). Information-processing models are concerned mainly with internal mental operations. A comprehensive theory must also analyze how conceptions are converted to actions, which furnish some of the data for conceptions. In social learning theory, people play an active role in creating information-generating experiences as well as in processing and transforming informative stimuli that happen to impinge upon them. This involves reciprocal transactions between thought, behavior, and environmental events which are not fully encompassed by a computer metaphor. People are not only perceivers, knowers, and actors. They are also self-reactors with capacities for reflective self-awareness that are generally neglected in information-processing theories based on computer models of human functioning.

At the level of interpersonal behavior, we have previously examined how people reciprocally determine each others' actions (Bandura et al., 1960; Patterson, 1975; Rausch et al., 1974). Although the mutuality of behavior may be the focus of study, the reciprocal processes involve cognition as well as action. At the broader societal level, reciprocal processes are reflected in the interdependence of organizational elements, social subsystems, and transnational relations (Bandura, 1973; Keohane & Nye, 1977). Here the matters of interest are the patterns of interdependence between systems, the criteria and means used for gauging systemic performances, the mechanisms that exist for exercising reciprocal influence, and the conditions that alter the degree and type of reciprocal control that one system can exert on another.

It is within the framework of reciprocal determinism that the concept of freedom assumes meaning (Bandura, 1977b). Because people's concep-

tions, their behavior, and their environments are reciprocal determinants of each other, individuals are neither powerless objects controlled by environmental forces nor entirely free agents who can do whatever they choose. People can be considered partially free insofar as they shape future conditions by influencing their courses of action. By creating structural mechanisms for reciprocal influence, such as organizational systems of checks and balances, legal systems, and due process and elective procedures, people can bring their influence to bear on each other. Institutional reciprocal mechanisms thus provide not only safeguards against unilateral social control but the means for changing institutions and the conditions of life. Within the process of reciprocal determinism lies the opportunity for people to shape their destinies as well as the limits of self-direction.

REFERENCE NOTES

1. Flaxman, J., & Solnick, J. V. *Self-reinforcement and self-monitoring under conditions of low and high demand*. Unpublished manuscript, University of North Carolina, 1975.
2. Simon, K. M. *Self-evaluative reactions to one's own performances: The role of personal significance of performance attainments*. Unpublished manuscript, Stanford University, 1978.

REFERENCES

- Bandura, A. *Aggression: A social learning analysis*. Englewood Cliffs, N.J.: Prentice-Hall, 1973.
- Bandura, A. Behavior theory and the models of man. *American Psychologist*, 1974, 29, 859-869.
- Bandura, A. Self-reinforcement: Theoretical and methodological considerations. *Behaviorism*, 1976, 4, 135-155.
- Bandura, A. Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 1977, 84, 191-215. (a)
- Bandura, A. *Social learning theory*. Englewood Cliffs, N.J.: Prentice-Hall, 1977. (b)
- Bandura, A., & Adams, N. E. Analysis of self-efficacy theory of behavioral change. *Cognitive Therapy and Research*, 1977, 1, 287-308.
- Bandura, A., & Barab, P. G. Conditions governing non-reinforced imitation. *Developmental Psychology*, 1971, 5, 244-255.
- Bandura, A., Grusec, J. E., & Menlove, F. L. Some social determinants of self-monitoring reinforcement systems. *Journal of Personality and Social Psychology*, 1967, 5, 449-455.
- Bandura, A., Lipsher, D. H., & Miller, P. E. Psychotherapists' approach-avoidance reactions to patients' expression of hostility. *Journal of Consulting Psychology*, 1960, 24, 1-8.
- Bandura, A., & Mahoney, M. J. Maintenance and transfer of self-reinforcement functions. *Behaviour Research and Therapy*, 1974, 12, 89-97.
- Bandura, A., Mahoney, M. J., & Dirks, S. J. Discriminative activation and maintenance of contingent self-reinforcement. *Behaviour Research and Therapy*, 1976, 14, 1-6.
- Bandura, A., & Perloff, B. Relative efficacy of self-monitored and externally-imposed reinforcement systems. *Journal of Personality and Social Psychology*, 1967, 7, 111-116.
- Bandura, A., & Simon, K. M. The role of proximal intentions in self-regulation of refractory behavior. *Cognitive Therapy and Research*, 1977, 1, 177-193.
- Bandura, A., Underwood, B., & Fromson, M. E. Disinhibition of aggression through diffusion of responsibility and dehumanization of victims. *Journal of Research in Personality*, 1975, 9, 253-269.
- Bandura, A., & Walters, R. H. *Adolescent aggression*. New York: Ronald, 1959.
- Baron, A., Kaufman, A., & Stauber, K. A. Effects of instructions and reinforcement-feedback on human operant behavior maintained by fixed-interval reinforcement. *Journal of the Experimental Analysis of Behavior*, 1969, 12, 701-712.
- Bateson, G. (Ed.). *Perceval's narrative: A patient's account of his psychosis, 1830-1832*. Stanford, Calif.: Stanford University Press, 1961.
- Baum, W. M. The correlation-based law of effect. *Journal of the Experimental Analysis of Behavior*, 1973, 20, 137-153.
- Bellack, A. S. A comparison of self-reinforcement and self-monitoring in a weight reduction program. *Behavior Therapy*, 1976, 7, 68-75.
- Bower, G. H. Cognitive psychology: An introduction. In W. K. Estes (Ed.), *Handbook of learning and cognition*. Hillsdale, N.J.: Erlbaum, 1975.
- Bowers, K. S. Situationism in psychology: An analysis and a critique. *Psychological Review*, 1973, 80, 307-336.
- Brown, I., Jr., & Inouye, D. K. Learned helplessness through modeling: The role of perceived similarity in competence. *Journal of Personality and Social Psychology*, in press.
- Catania, C. A. The myth of self-reinforcement. *Behaviorism*, 1975, 3, 192-199.
- Dulany, D. E. Awareness, rules, and propositional control: A confrontation with S-R behavior theory. In T. R. Dixon & D. L. Horton (Eds.), *Verbal behavior and general behavior theory*. Englewood Cliffs, N.J.: Prentice-Hall, 1968.
- Endler, N. S., & Magnusson, D. (Eds.). *Interactional psychology and personality*. Washington, D.C.: Hemisphere, 1975.
- Estes, W. K. Reinforcement in human behavior. *American Scientist*, 1972, 60, 723-729.
- Felixbrod, J. J., & O'Leary, K. D. Effects of reinforcement on children's academic behavior as a function of self-determined and externally imposed contingencies. *Journal of Applied Behavior Analysis*, 1973, 6, 241-250.
- Gambino, R. Watergate lingo: A language of non-responsibility. *Freedom at Issue*, 1973, No. 22.
- Glynn, E. L. Classroom applications of self-determined reinforcement. *Journal of Applied Behavior Analysis*, 1970, 3, 123-132.
- Goldfried, M. R., & Merbaum, M. (Eds.). *Behavior change through self-control*. New York: Holt, Rinehart & Winston, 1973.
- Jeffrey, D. B. A comparison of the effects of external control and self-control on the modification and maintenance of weight. *Journal of Abnormal Psychology*, 1974, 83, 404-410.
- Jones, R. T., Nelson, R. E., & Kazdin, A. E. The role of external variables in self-reinforcement: A review. *Behavior Modification*, 1977, 1, 147-178.
- Kaufman, A., Baron, A., & Kopp, R. E. Some effects of instructions on human operant behavior. *Psychonomic Monograph Supplements*, 1966, 1, 243-250.

- Kazdin, A. E. Self-monitoring and behavior change. In M. J. Mahoney & C. E. Thoresen (Eds.), *Self-control: Power to the person*. Monterey, Calif.: Brooks/Cole, 1974.
- Kelman, H. C. Violence without moral restraint: Reflections on the dehumanization of victims and victimizers. *Journal of Social Issues*, 1973, 29, 25-61.
- Keohane, R. O., & Nye, J. S. *Power and interdependence: World politics in transition*. Boston: Little, Brown, 1977.
- Krauss, I. Sources of educational aspirations among working-class youth. *American Sociological Review*, 1964, 29, 867-879.
- Lepper, M. R., Sagotsky, J., & Mailer, J. Generalization and persistence of effects of exposure to self-reinforcement models. *Child Development*, 1975, 46, 618-630.
- Litrownik, A. J., Franzini, L. R., & Skenderian, D. Effect of locus of reinforcement control on a concept-identification task. *Psychological Reports*, 1976, 39, 159-165.
- Locke, E. A., Bryan, J. F., & Kendall, L. M. Goals and intentions as mediators of the effects of monetary incentives on behavior. *Journal of Applied Psychology*, 1968, 52(2), 104-121.
- Mahoney, M. J. Self-reward and self-monitoring techniques for weight control. *Behavior Therapy*, 1974, 5, 48-57.
- Mahoney, M. J., Bandura, A., Dirks, S. J., & Wright, C. L. Relative preference for external and self-controlled reinforcement in monkeys. *Behaviour Research and Therapy*, 1974, 12, 157-164.
- Mahoney, M. J., Moore, B. S., Wade, T. C., & Moura, N. G. M. The effects of continuous and intermittent self-monitoring on academic behavior. *Journal of Consulting and Clinical Psychology*, 1973, 41, 65-69.
- Mahoney, M. J., & Thoresen, C. E. *Self-control: Power to the person*. Monterey, Calif.: Brooks/Cole, 1974.
- Masters, J. C., & Mokros, J. R. Self-reinforcement processes in children. In H. W. Reese (Ed.), *Advances in child development and behavior* (Vol. 9). New York: Academic Press, 1974.
- Milgram, S. *Obedience to authority: An experimental view*. New York: Harper & Row, 1974.
- Mischel, W. Toward a cognitive social learning reconceptualization of personality. *Psychological Review*, 1973, 80, 252-283.
- Montgomery, G. T., & Parton, D. A. Reinforcing effect of self-reward. *Journal of Experimental Psychology*, 1970, 84, 273-276.
- Neisser, U. *Cognition and reality: Principles and implications of cognitive psychology*. San Francisco: W. H. Freeman, 1976.
- Patterson, G. R. The aggressive child: Victim and architect of a coercive system. In L. A. Hamerlynck, E. J. Mash, & L. C. Handy (Eds.), *Behavior modification and families*. New York: Brunner/Mazel, 1975.
- Rachlin, H. Self-control. *Behaviorism*, 1974, 2, 94-107.
- Raush, H. L., Barry, W. A., Hertel, R. K., & Swain, M. A. *Communication conflict and marriage*. San Francisco: Jossey-Bass, 1974.
- Rogers, C. R. A theory of therapy, personality, and interpersonal relationships, as developed in the client-centered framework. In S. Koch (Ed.), *Psychology: A study of a science* (Vol. 3). New York: McGraw-Hall, 1959.
- Skinner, B. F. *Beyond freedom and dignity*. New York: Knopf, 1971.
- Speidel, G. E. Motivating effect of contingent self-reward. *Journal of Experimental Psychology*, 1974, 102, 528-580.
- Spielberger, C. D., & DeNike, L. D. Descriptive behaviorism versus cognitive theory in verbal operant conditioning. *Psychological Review*, 1966, 73, 306-326.
- Stuart, R. B. Situational versus self-control. In R. D. Rubin, H. Fensterheim, J. D. Henderson, & L. P. Ullmann (Eds.), *Advances in behavior therapy: Proceedings of the Fourth Conference of the Association for Advancement of Behavior Therapy* (Vol. 3). New York: Academic Press, 1972.
- Switzky, H. N., & Haywood, H. C. Motivational orientation and the relative efficacy of self-monitored and externally imposed reinforcement systems in children. *Journal of Personality and Social Psychology*, 1974, 30, 360-366.
- Thomas, E. A. C., & Martin, J. A. Analyses of parent-child interaction. *Psychological Review*, 1976, 83, 141-156.
- Wallace, I. Self-control techniques of famous novelists. *Journal of Applied Behavior Analysis*, 1977, 10, 515-525.
- Wylie, R. C. *The self-concept: A review of methodological considerations and measuring instruments* (rev. ed.). Lincoln: University of Nebraska Press, 1974.
- Zimbardo, P. G. The human choice: Individuation, reason, and order versus deindividuation, impulse, and chaos. In W. J. Arnold & D. Levine (Eds.), *Nebraska Symposium on Motivation* (Vol. 17). Lincoln: University of Nebraska Press, 1969.