
THEORETICAL INTEGRATION AND RESEARCH SYNTHESIS ESSAY

Social Cognitive Theory of Mass Communication

Albert Bandura
Department of Psychology
Stanford University

Social cognitive theory provides an agentic conceptual framework within which to analyze the determinants and psychosocial mechanisms through which symbolic communication influences human thought, affect and action. Communications systems operate through two pathways. In the direct pathway, they promote changes by informing, enabling, motivating, and guiding participants. In the socially mediated pathway, media influences link participants to social networks and community settings that provide natural incentives and continued personalized guidance, for desired change. Social cognitive theory analyzes social diffusion of new styles of behavior in terms of the psychosocial factors governing their acquisition and adoption and the social networks through which they spread and are supported. Structural interconnectedness provides potential diffusion paths; sociocognitive factors largely determine what diffuses through those paths.

Because of the influential role the mass media play in society, understanding the psychosocial mechanisms through which symbolic communication influences human thought, affect, and action is of considerable import. Social cognitive theory provides an agentic conceptual framework within which to examine the determinants and mechanisms of such effects. Human behavior has often been explained in terms of unidirectional causation, in which behavior is shaped and controlled either by environmental influences or by internal dispositions. Social cognitive theory explains psychosocial functioning in terms of triadic reciprocal

causation (Bandura, 1986). In this transactional view of self and society, personal factors in the form of cognitive, affective, and biological events, behavioral patterns, and environmental events all operate as interacting determinants that influence each other bidirectionally (Fig. 1).

Social cognitive theory is founded in an agentic perspective (Bandura, 1986, 2001b). People are self-organizing, proactive, self-reflecting, and self-regulating, not just reactive organisms shaped and shepherded by environmental events or inner forces. Human self-development, adaptation, and change are embedded in social systems. Therefore, personal agency operates within a broad network of sociostructural influences. In these agentic transactions, people are producers as well as products of social systems. Personal agency and social structure operate as codeterminants in an integrated causal structure rather than as a disembodied duality.

Seen from the sociocognitive perspective, human nature is a vast potentiality that can be fashioned by direct and observational experience into a variety of forms within biological limits. To say that a major distinguishing mark of humans is their endowed plasticity is not to say that they have no nature or that they come structureless (Midgley, 1978). The plasticity, which is intrinsic to the nature of humans, depends upon neurophysiological mechanisms and structures that have evolved over time. These advanced neural systems specialized for processing, retaining, and using coded information provide the capacity for the very capabilities that are distinctly human: generative symbolization, forethought, evaluative self-regulation, reflective self-consciousness, and symbolic communication. These capabilities are addressed in the sections that follow.

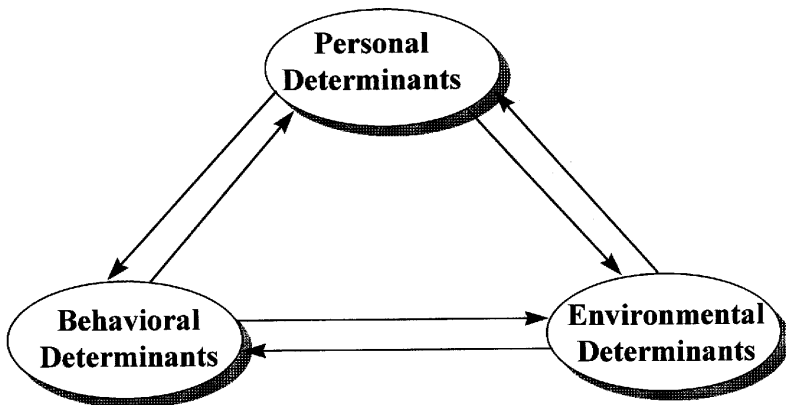


Figure 1. Schematization of triadic reciprocal causation in the causal model of social cognitive theory.

SYMBOLIZING CAPABILITY

Social cognitive theory accords a central role to cognitive, vicarious, self-regulatory, and self-reflective processes. An extraordinary capacity for symbolization provides humans with a powerful tool for comprehending their environment and creating and regulating environmental events that touch virtually every aspect of their lives. Most external influences affect behavior through cognitive processes rather than directly. Cognitive factors partly determine which environmental events will be observed, what meaning will be conferred on them, whether they leave any lasting effects, what emotional impact and motivating power they will have, and how the information they convey will be organized for future use. It is with symbols that people process and transform transient experiences into cognitive models that serve as guides for judgment and action. Through symbols, people give meaning, form, and continuity to their experiences.

People gain understanding of causal relationships and expand their knowledge by operating symbolically on the wealth of information derived from personal and vicarious experiences. They generate solutions to problems, evaluate their likely outcomes, and pick suitable options without having to go through a laborious behavioral search. Through the medium of symbols people can communicate with others at any distance in time and space. However, in keeping with the interactional perspective, social cognitive theory devotes much attention to the social origins of thought and the mechanisms through which social factors exert their influence on cognitive functioning. The other distinctive human capabilities are founded on this advanced capacity for symbolization.

SELF-REGULATORY CAPABILITY

People are not only knowers and performers. They are also self-reactors with a capacity for self-direction. Effective functioning requires the substitution of self-regulation for external sanctions and demands. The self-regulation of motivation, affect, and action operates partly through internal standards and evaluative reactions to one's own behavior (Bandura, 1991a). The anticipated self-satisfaction gained from fulfilling valued standards and discontent with substandard performances serve as incentive motivators for action. The motivational effects do not stem from the standards themselves, but from the evaluative self-investment in activities and positive and negative reactions to one's performances.

Most theories of self-regulation are founded on a negative feedback system in which people strive to reduce disparities between their perceived performance and an adopted standard. But self-regulation by negative discrepancy tells only half the story and not necessarily the more interesting half. In fact, people are proactive, aspiring organisms. Human self-regulation relies on discrepancy production as well as discrepancy reduction. People motivate and guide their actions through proactive control by setting themselves challenging goals and then mobilizing their resources, skills, and effort to fulfill them. After people attain the goal they have been pursuing, those with a strong sense of efficacy set higher goals for themselves. Adopting further challenges creates new motivating discrepancies to be mastered. Self-regulation of motivation and action thus involves a dual control process of disequilibrating discrepancy production (proactive control) followed by equilibrating discrepancy reduction (reactive control).

In areas of functioning involving achievement strivings and cultivation of competencies, the internal standards that are selected as a mark of adequacy are progressively altered as knowledge and skills are acquired and challenges are met. In many areas of social and moral behavior the internal standards that serve as the basis for regulating one's conduct have greater stability. People do not change from week to week what they regard as right or wrong or good or bad. After they adopt a standard of morality, their self-sanctions for actions that match or violate their personal standards serve as the regulatory influencers (Bandura, 1991b). The exercise of moral agency has dual aspects: inhibitive and proactive. The inhibitive form is manifested in the power to refrain from behaving inhumanely. The proactive form of morality is expressed in the power to behave humanely (Bandura, 1999b).

The capability of forethought adds another dimension to the temporal extension of personal agency. Most human behavior is directed by forethought toward events and outcomes projected into the future. The future time perspective manifests itself in many different ways. People set goals for themselves, anticipate the likely consequences of their prospective actions, and otherwise plan courses of action that are likely to produce desired outcomes and to avoid undesired ones. Because future events have no actual existence, they cannot be causes of current motivation and action. However, by being represented cognitively in the present, conceived futures can operate anticipatorily as motivators and regulators of current behavior. When projected over a long time course on matters of value, a forethoughtful perspective provides direction, coherence, and meaning to one's life.

SELF-REFLECTIVE CAPABILITY

The capability to reflect upon oneself and the adequacy of one's thoughts and actions is another distinctly human attribute that figures prominently in social cognitive theory. People are not only agents of action but self-examiners of their functioning. Effective cognitive functioning requires reliable ways of distinguishing between accurate and faulty thinking. In verifying thought by self-reflective means, people generate ideas, act on them, or predict occurrences from them. They then judge from the results the adequacy of their thoughts and change them accordingly. The validity and functional value of one's thoughts are evaluated by comparing how well thoughts match some indicant of reality. Four different modes of thought verification can be distinguished. They include enactive, vicarious, social, and logical forms.

Enactive verification relies on the adequacy of the fit between one's thoughts and the results of the actions they spawn. Good matches corroborate thoughts; mismatches tend to refute them. In vicarious verification, observing other people's transactions with the environment and the effects they produce provides a check on the correctness of one's own thinking. Vicarious thought verification is not simply a supplement to enactive experience. Symbolic modeling greatly expands the range of verification experiences that cannot otherwise be attained by personal action. When experiential verification is difficult or unfeasible, social verification is used, with people evaluating the soundness of their views by checking them against what others believe. In logical verification people can check for fallacies in their thinking by deducing from knowledge that is known what necessarily follows from it.

Such metacognitive activities usually foster veridical thought, but they can produce faulty thinking as well. Forceful actions arising from erroneous beliefs often create social environments that confirm the misbeliefs (Snyder, 1980). We are all acquainted with problem-prone individuals who, through offensive behavior, predictively breed negative social climates wherever they go. Verification of thought by comparison with distorted media versions of social reality can foster shared misconceptions of people, places, and things (Hawkins & Pingree, 1982). Social verification can foster bizarre views of reality if the shared beliefs of the reference group with which one affiliates are peculiar and the group is encapsulated from outside social ties and influences (Bandura, 1982; Hall, 1987). Deductive reasoning can lead one astray if the propositional knowledge on which it is based is faulty or biases intrude on logical reasoning processes (Falmagne, 1975).

Among the self-referent thought, none is more central or pervasive than people's belief in their efficacy to exert control over their level of functioning and events that affect their lives. This core belief is the foundation of human agency (Bandura, 1997, 2001b). Unless people believe that they can produce desired effects and forestall undesired ones by their actions, they have little incentive to act. Efficacy beliefs influence whether people think self-enhancingly or self-debilitatingly, optimistically or pessimistically; what courses of action they choose to pursue; the goals they set for themselves and their commitment to them; how much effort they put forth in given endeavors; the outcomes they expect their efforts to produce; how long they persevere in the face of obstacles; their resilience to adversity; how much stress and depression they experience in coping with taxing environmental demands; and the accomplishments they realize.

People do not live their lives in individual autonomy. They have to work together to secure what they cannot accomplish on their own. Social cognitive theory extends the conception of human agency to collective agency (Bandura, 1999a, 2000c). The more efficacious groups judge themselves to be, the higher their collective aspirations, the greater their motivational investment in their undertakings, the stronger their staying power in the face of impediments, the more robust their resilience to adversity, and the higher their performance accomplishments.

VICARIOUS CAPABILITY

Psychological theories have traditionally emphasized learning by the effects of one's actions. If knowledge and skills could be acquired only by response consequences, human development would be greatly retarded, not to mention exceedingly tedious and hazardous. A culture could never transmit its language, mores, social practices, and requisite competencies if they had to be shaped tediously in each new member by response consequences without the benefit of models to exemplify the cultural patterns. Shortening the acquisition process is vital for survival as well as for self-development because natural endowment provides few inborn skills, hazards are ever present, and errors can be perilous. Moreover, the constraints of time, resources, and mobility impose severe limits on the places and activities that can be directly explored for the acquisition of new knowledge and competencies.

Humans have evolved an advanced capacity for observational learning that enables them to expand their knowledge and skills rapidly through information conveyed by the rich variety of models. Indeed, virtually all behavioral,

cognitive, and affective learning from direct experience can be achieved vicariously by observing people's actions and its consequences for them (Bandura, 1986; Rosenthal & Zimmerman, 1978). Much social learning occurs either designedly or unintentionally from models in one's immediate environment. However, a vast amount of information about human values, styles of thinking, and behavior patterns is gained from the extensive modeling in the symbolic environment of the mass media.

A major significance of symbolic modeling lies in its tremendous reach and psychosocial impact. Unlike learning by doing, which requires altering the actions of each individual through repeated trial-and-error experiences, in observational learning a single model can transmit new ways of thinking and behaving simultaneously to countless people in widely dispersed locales. There is another aspect of symbolic modeling that magnifies its psychological and social impact. During the course of their daily lives, people have direct contact with only a small sector of the physical and social environment. They work in the same setting, travel the same routes, visit the same places, and see the same set of friends and associates. Consequently, their conceptions of social reality are greatly influenced by vicarious experiences—by what they see, hear, and read—without direct experiential correctives. To a large extent, people act on their images of reality. The more people's images of reality depend upon the media's symbolic environment, the greater is its social impact (S. Ball-Rokeach & DeFleur, 1976).

Most psychological theories were cast long before the advent of extraordinary advances in the technology of communication. As a result, they give insufficient attention to the increasingly powerful role that the symbolic environment plays in present-day human lives. Whereas previously, modeling influences were largely confined to the behavior patterns exhibited in one's immediate environment, the accelerated growth of video delivery technologies has vastly expanded the range of models to which members of society are exposed day in and day out. By drawing on these modeled patterns of thought and behavior, observers can transcend the bounds of their immediate environment. New ideas, values, behavior patterns, and social practices are now being rapidly diffused worldwide by symbolic modeling in ways that foster a globally distributed consciousness (Bandura, 1986, 2001a). Because the symbolic environment occupies a major part of people's everyday lives, much of the social construction of reality and shaping of public consciousness occurs through electronic acculturation. At the societal level, the electronic modes of influence are transforming how social systems operate and serving as a major vehicle for sociopolitical change. The study of acculturation in the present electronic age must be broadened to include electronic acculturation.

Mechanisms Governing Observational Learning

Because symbolic modeling is central to full understanding of the effects of mass communication, the modeling aspect of social cognitive theory is discussed in somewhat greater detail. Observational learning is governed by four subfunctions, which are summarized in Figure 2.

Attentional processes determine what is selectively observed in the profusion of modeling influences and what information is extracted from ongoing modeled events. A number of factors influence the exploration and construal of what is modeled. Some of these determinants concern the cognitive skills, preconceptions, and value preferences of the observers. Others are related to the salience, attractiveness, and functional value of the modeled activities themselves. Still other factors are the structural arrangements of human interactions and associational networks, which largely determine the types of models to which people have ready access.

People cannot be much influenced by observed events if they do not remember them. A second major subfunction governing observational learning concerns cognitive representational processes. Retention involves an active process of transforming and restructuring information conveyed by modeled events into rules and conceptions for memory representation. Retention is greatly aided by symbolic transformations of modeled information into memory codes and cognitive rehearsal of the coded information. Preconceptions and affective states exert biasing influences on these representational activities. Similarly, recall involves a process of reconstruction rather than simply retrieval of registered events.

In the third subfunction in modeling—the behavioral production process—symbolic conceptions are translated into appropriate courses of action. This is achieved through a conception-matching process in which conceptions guide the construction and execution of behavior patterns that are then compared against the conceptual model for adequateness. The behavior is modified on the basis of the comparative information to achieve close correspondence between conception and action. The mechanism for translating cognition into action involves both transformational and generative operations. Execution of a skill must be constantly varied to suit changing circumstances. Adaptive performance, therefore, requires a generative conception rather than a one-to-one mapping between cognitive representation and action. By applying an abstract specification of the activity, people can produce many variations on the skill. Conceptions are rarely transformed into masterful performance on the first attempt. Monitored enactments serve as the vehicle for transforming knowledge

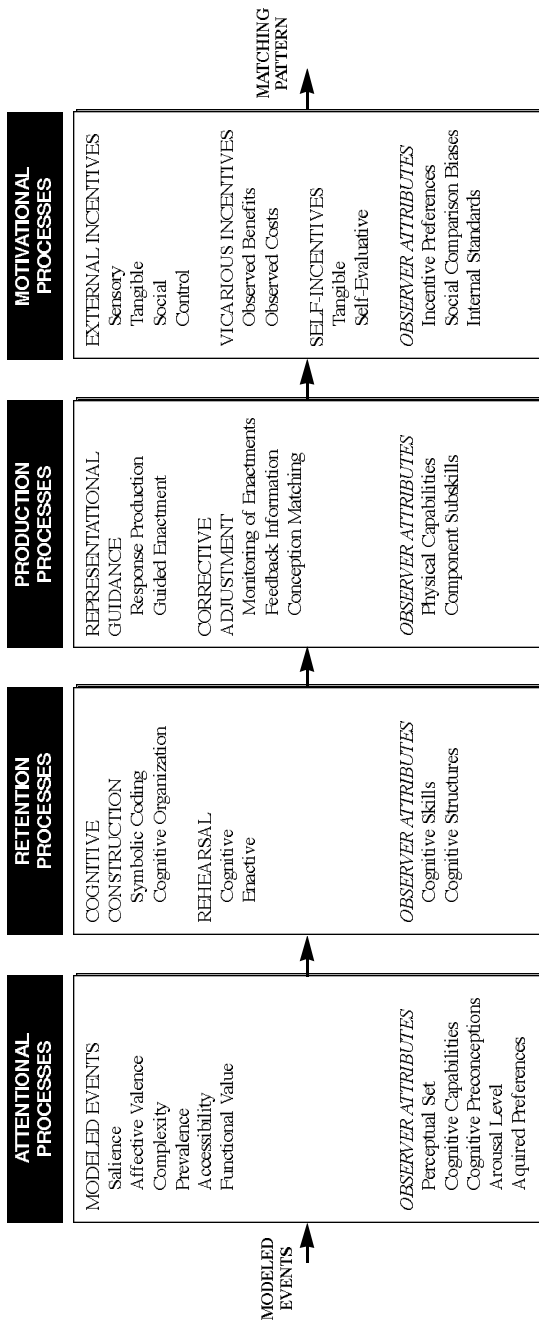


Figure 2. The four major subfunctions governing observational learning and the influential factors operating within each subfunction.

into skilled action. Performances are perfected by corrective adjustments during behavior production. The more extensive the subskills that people possess, the easier it is to integrate them to produce new behavior patterns. When deficits exist, the subskills required for complex performances must first be developed by modeling and guided enactment.

The fourth subfunction in modeling concerns motivational processes. Social cognitive theory distinguishes between acquisition and performance because people do not perform everything they learn. Performance of observationally learned behavior is influenced by three major types of incentive motivators: direct, vicarious, and self-produced. People are more likely to exhibit modeled behavior if it results in valued outcomes than if it has unrewarding or punishing effects. The observed detriments and benefits experienced by others influence the performance of modeled patterns in much the same way as do directly experienced consequences. People are motivated by the successes of others who are similar to themselves, but are discouraged from pursuing courses of behavior that they have seen often result in adverse consequences. Personal standards of conduct provide a further source of incentive motivation. The self-approving and self-censuring reactions people generate to their own behavior regulate which observationally learned activities they are most likely to pursue. They pursue activities that they find self-satisfying and that give them a sense of worth but reject those they personally disapprove.

The different sources of consequences may operate as complimentary or opposing influences on behavior (Bandura, 1986). Behavior patterns are most firmly established when social and self-sanctions are compatible. Under such conditions, socially approvable behavior is a source of self-pride, and socially disapprovable behavior is self-censured. Behavior is especially susceptible to external influences in the absence of countervailing self-sanctions. People who are not much committed to personal standards adopt a pragmatic orientation, tailoring their behavior to fit the situation (Snyder & Campbell, 1982). They become adept at reading social situations and guiding their actions by expediency.

One type of conflict between social and self-produced sanctions arises when individuals are socially punished for behavior they highly value. Principled dissenters and nonconformists often find themselves in this predicament. Here, the relative strength of self-approval and social censure determine whether the behavior will be restrained or expressed. Should the threatened social consequences be severe, people hold in check self-praiseworthy acts in risky situations but perform them readily in relatively safe settings. These are individuals, however, whose sense of self-worth is so strongly invested in certain

convictions that they will submit to prolonged maltreatment rather than accede to what they regard as unjust or immoral.

People commonly experience conflicts in which they are socially pressured to engage in behavior that violates their moral standards. When self-devaluative consequences outweigh the benefits for socially accommodating behavior, the social influences do not have much sway. However, the self-regulation of conduct operates through conditional application of moral standards. We shall see shortly that self-sanctions can be weakened or nullified by selective disengagement of internal control.

Abstract Modeling

Modeling is not merely a process of behavioral mimicry, as commonly misconstrued. The proven skills and established customs of a culture may be adopted in essentially the same form as they are exemplified because of their high functional value. However, in most activities, subskills must be improvised to suit varying circumstances. Modeling influences convey rules for generative and innovative behavior as well. This higher level learning is achieved through abstract modeling. Rule-governed judgments and actions differ in specific content and other details while embodying the same underlying rule. For example, a model may confront moral conflicts that differ widely in content but apply the same moral standard to them. In this higher form of abstract modeling, observers extract the rule governing the specific judgments or actions exhibited by others. Once they learn the rule, they can use it to judge or generate new instances of behavior that go beyond what they have seen or heard.

Much human learning is aimed at developing cognitive skills on how to gain and use knowledge for future use. Observational learning of thinking skills is greatly facilitated by having models verbalize their thoughts aloud as they engage in problem-solving activities (Bandura, 1986, 1997; Meichenbaum, 1984). The thoughts guiding their decisions and action strategies are thus made observable for adoption.

Acquiring generative rules from modeled information involves at least three processes: extracting the generic features from various social exemplars, integrating the extracted information into composite rules, and using the rules to produce new instances of behavior. Through abstract modeling, people acquire, among other things, standards for categorizing and judging events, linguistic rules of communication, thinking skills on how to gain and use knowledge, and personal standards for regulating one's motivation and conduct (Bandura, 1986; Rosenthal & Zimmerman, 1978). Evidence that generative rules of thought and

conduct can be created through abstract modeling attests to the broad scope of observational learning.

Modeling also plays a prominent role in creativity. Creativeness rarely springs entirely from individual inventiveness. By refining preexisting innovations, synthesizing them into new procedures and adding novel elements, something new is created (Bandura, 1986; Bolton, 1993; Fimrite, 1977). When exposed to models of differing styles of thinking and behaving, observers vary in what they adopt and thereby create new blends of personal characteristics that differ from the individual models. Modeling new perspectives and innovative styles of thinking also fosters creativity by weakening conventional mind sets (Harris & Evans, 1973).

Motivational Effects

The discussion thus far has centered on the acquisition of knowledge, cognitive skills, and new styles of behavior through observational learning. Social cognitive theory distinguishes among several modeling functions, each governed by different determinants and underlying mechanisms. In addition to cultivating new competencies, modeling influences have strong motivational effects. Vicarious motivators are rooted in outcome expectations formed from information conveyed by the rewarding and punishing outcomes of modeled courses of action. Seeing others gain desired outcomes by their actions can create outcome expectancies that function as positive incentives; observed punishing outcomes can create negative outcome expectancies that function as disincentives. These motivational effects are governed by observers' judgments of their ability to accomplish the modeled behavior, their perception of the modeled actions as producing favorable or adverse consequences, and their inferences that similar or unlike consequences would result if they themselves were to engage in similar activities.

Vicarious incentives take on added significance by their power to alter the valence and force of external incentives (Bandura, 1986). The value of a given outcome is largely determined by its relation to other outcomes rather than inheres in their absolute qualities. The same outcome can function as a reward or punisher depending on social comparison between observed and personally experienced outcomes. For example, the same pay raise has negative valence for persons who have seen similar performances by others compensated more generously, but positive valence when others have been compensated less generously. Equitable rewards foster a sense of well-being; inequitable ones breed discontent and resentment.

Vicariously created motivators have been studied most extensively in terms of the inhibitory and disinhibitory effects of modeled transgressive, aggressive, and sexual behavior, with accompanying outcomes (Bandura, 1973; Berkowitz, 1984; Malamuth & Donnerstein, 1984; Paik & Comstock, 1994; Zillmann & Bryant, 1984).

Transgressive behavior is regulated by two major sources of sanctions: social sanctions and internalized self-sanctions. Both control mechanisms operate anticipatorily. In motivators arising from social sanctions, people refrain from transgressing because they anticipate that such conduct will bring them social censure and other adverse consequences. In motivators rooted in self-reactive control, people refrain from transgressing because such conduct will give rise to self-reproach. Media portrayals can alter perceived social sanctions by the way in which the consequences of different styles of conduct are portrayed. For example, televised aggression is often exemplified in ways that tend to weaken restraints over aggressive conduct (Goranson, 1970; Halloran & Croll, 1972; Larsen, 1968). In televised representations of human discord, physical aggression is a preferred solution to interpersonal conflicts; it is acceptable and relatively successful; and it is socially sanctioned by superheroes triumphing over evil by violent means. Such portrayals legitimize, glamorize, and trivialize human violence.

Inhibitory and disinhibitory effects stemming from self-sanctions are mediated largely through self-regulatory mechanisms. After standards have been internalized, they serve as guides and deterrents to conduct by the self-approving and self-reprimanding consequences people produce for themselves. However, moral standards do not function as fixed internal regulators of conduct. Self-regulatory mechanisms do not operate unless they are activated, and there are many processes by which moral reactions can be disengaged from inhumane conduct (Bandura, 1991b, 1999b). Selective activation and disengagement of internal control permits different types of conduct with the same moral standards. Figure 3 shows the points in the self-regulatory process at which moral control can be disengaged from censurable conduct.

One set of disengagement practices operates on the construal of the behavior itself by moral justification. People do not ordinarily engage in reprehensible conduct until they have justified to themselves the morality of their actions. What is culpable is made personally and socially acceptable by portraying it in the service of moral purposes. Moral justification is widely used to support self-serving and otherwise culpable conduct. Moral judgments of conduct are also partly influenced by what it is compared against. Self-deplored acts can be made benign or honorable by contrasting them with more flagrant transgressions.

Because examples of human culpability abound, they lend themselves readily to cognitive restructuring of transgressive conduct by such advantageous comparison. Activities can take on a very different appearance depending on what they are called. Sanitizing euphemistic labeling provides another convenient device for masking reprehensible activities or even conferring a respectable status upon them. Through convoluted verbiage, reprehensible conduct is made benign, and those who engage in it are relieved of a sense of personal agency.

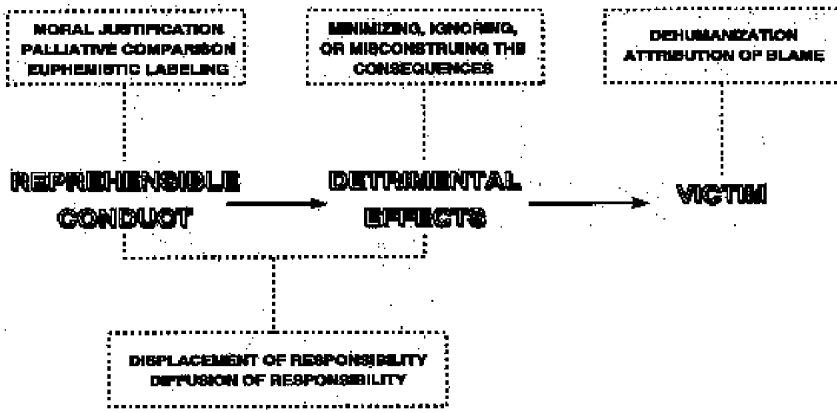


Figure 3. Mechanisms through which self-sanctions are selectively activated and disengaged from detrimental conduct at critical points in the self-regulatory process.

Cognitive restructuring of behavior through moral justifications and palliative characterizations is the most effective psychological mechanism for promoting transgressive conduct. This is because moral restructuring not only eliminates self-deterrents but engages self-approval in the service of transgressive exploits. What was once morally condemnable becomes a source of self-valuation.

Ball-Rokeach (1972) attached special significance to evaluative reactions and social justifications presented in the media, particularly in conflicts of power. This is because relatively few viewers experience sufficient inducement to use the aggressive strategies they have seen, but the transmitted justifications and evaluations can help to mobilize public support for policy actions favoring either social control or social change. The justificatory changes can have widespread social and political ramifications.

The mass media, especially television, provide the best access to the public through their strong drawing power. For this reason, television is increasingly used as the principle vehicle of justification. Struggles to legitimize and gain support for one's values and causes and to discredit those of one's opponents are now waged more and more through the electronic media (Ball-Rokeach, 1972; Bandura, 1990; Bassiouni, 1981). Because of its potential influence, the communication system itself is subject to constant pressures from different factions within society seeking to sway it to their ideology. Research on the role of the mass media in the social construction of reality carries important social implications.

Self-sanctions are activated most strongly when personal causation of detrimental effects is apparent. Another set of disengagement practices operates by obscuring or distorting the relationship between actions and the effects they cause. People will behave in ways they normally repudiate if a legitimate authority sanctions their conduct and accepts responsibility for its consequences (Milgram, 1974). Under conditions of displacement of responsibility, people view their actions as springing from the dictates of others rather than being their personal responsibility. Because they are not the actual agent of their actions, they are spared self-prohibiting reactions. The deterrent power of self-sanctions is also weakened when the link between conduct and its consequences is obscured by diffusion of responsibility for culpable behavior. Through division of labor, diffusion of decision making, and group action, people can behave detrimentally without any one person feeling personally responsible (Kelman & Hamilton, 1989). People behave more injuriously under diffused responsibility than when they hold themselves personally accountable for what they do (Bandura, Underwood, & Fromson, 1975; Diener, 1977).

Additional ways of weakening self-detering reactions operate through disregard or distortion of the consequences of action. When people pursue detrimental activities for personal gain or because of social inducements, they avoid facing the harm they cause or they minimize it. They readily recall the possible benefits of the behavior but are less able to remember its harmful effects (Brock & Buss, 1962, 1964). In addition to selective inattention and cognitive distortion of effects, the misrepresentation may involve active efforts to discredit evidence of the harm they cause. As long as the detrimental results of one's conduct are ignored, minimized, distorted, or disbelieved, there is little reason for self-censure to be activated.

The final set of disengagement practices operates at the point of recipients of detrimental acts. The strength of self-evaluative reactions to detrimental conduct partly depends on how the perpetrators view the people toward whom the

behavior is directed. To perceive another as human enhances empathetic or vicarious reactions through perceived similarity (Bandura, 1992). As a result, it is difficult to mistreat humanized persons without risking self-condemnation. Self-sanctions against cruel conduct can be disengaged or blunted by dehumanization, which divests people of human qualities or invests them with bestial qualities. Whereas dehumanization weakens self-restraints against cruel conduct (Diener, 1977; Zimbardo, 1969), humanization fosters considerate, compassionate behavior (Bandura, Underwood, & Fromson, 1975).

Attribution of blame to one's antagonists is still another expedient that can serve self-exonerative purposes. Deleterious interactions usually involve a series of reciprocally escalative actions, in which the antagonists are rarely faultless. One can always select from the chain of events an instance of the adversary's defensive behavior and view it as the original instigation. Injurious conduct thus becomes a justifiable defensive reaction to belligerent provocations. Others can, therefore, be blamed for bringing suffering on themselves. Self-exoneration is similarly achievable by viewing one's detrimental conduct as forced by circumstances rather than as a personal decision. By blaming others or circumstances, not only are one's own actions excusable but one can even feel self-righteous in the process.

Because internalized controls can be selectively activated and disengaged, marked changes in moral conduct can be achieved without changing people's personality structures, moral principles, or self-evaluative systems. It is self-exonerative processes rather than character flaws that account for most inhumanities. The massive threats to human welfare stem mainly from deliberate acts of principle rather than from unrestrained acts of impulse.

Research in which the different disengagement factors are systematically varied in media portrayals of inhumanities attests to the disinhibitory power of mass media influences (Berkowitz & Geen, 1967; Donnerstein, 1984; Meyer, 1972). Viewers' punitiveness is enhanced by exposure to media productions that morally justify injurious conduct, blame and dehumanize victims, displace or diffuse personal responsibility, and sanitize destructive consequences. Research assessing self-reactive control provides evidence that sanctioning social conditions are linked to self-regulatory influences, which, in turn, are linked to injurious conduct (Bandura et al., 1975). The same disengagement mechanisms are enlisted heavily by members of the television industry in the production of programs that exploit human brutality for commercial purposes (Baldwin & Lewis, 1972; Bandura, 1973).

Acquisition and Modification of Affective Dispositions

People are easily aroused by the emotional expressions of others. Vicarious arousal operates mainly through an intervening self-arousal process (Bandura, 1992). That is, seeing others react emotionally to instigating conditions activates emotion-arousing thoughts and imagery in observers. As people develop their capacity for cognitive self-arousal, they can generate emotional reactions to cues that are only suggestive of a model's emotional experiences (Wilson & Cantor, 1985). Conversely, they can neutralize or attenuate the emotional impact of modeled distress by thoughts that transform threatening situations into nonthreatening ones (Bandura, 1986; Cantor & Wilson, 1988; Dysinger & Ruckmick, 1933).

If the affective reactions of models only aroused observers fleetingly, it would be of some interest as far as momentary communication is concerned, but of limited psychological import. What gives significance to vicarious influence is that observers can acquire lasting attitudes, emotional reactions, and behavioral proclivities toward persons, places, or things that have been associated with modeled emotional experiences. They learn to fear the things that frightened models, to dislike what repulsed them, and to like what gratified them (Bandura, 1986; Duncker, 1938). Fears and intractable phobias are ameliorated by modeling influences that convey information about coping strategies for exercising control over the things that are feared. The stronger the instilled sense of coping self-efficacy, the bolder the behavior (Bandura, 1997). Values can similarly be developed and altered vicariously by repeated exposure to modeled preferences.

SOCIAL CONSTRUCTION OF REALITY

Televized representations of social realities reflect ideological bents in their portrayal of human nature, social relations, and the norms and structure of society (Adoni & Mane, 1984; Gerbner, 1972). Heavy exposure to this symbolic world may eventually make the televised images appear to be the authentic state of human affairs. Some disputes about the vicarious cultivation of beliefs has arisen over findings from correlational studies using global indices based on amount of television viewing (Gerbner, Gross, Morgan & Signorielli, 1981; Hirsch, 1980). Televized influence is best defined in terms of the content people watch rather than the sheer amount of television viewing. More particularized measures of exposure to the televised fare show that heavy television viewing shapes viewers' beliefs and conceptions of reality (Hawkins & Pingree, 1982).

The relationship remains when other possible contributing factors are simultaneously controlled.

Vicarious cultivation of social conceptions is most clearly revealed in studies verifying the direction of causality by varying experimentally the nature and amount of exposure to media influences. Controlled laboratory studies provide converging evidence that television portrayals shape viewers' beliefs (Flerx, Fidler, & Rogers, 1976; O'Bryant & Corder-Bolz, 1978). Portrayals in the print media similarly shape conceptions of social reality (Heath, 1984; Siegel, 1958). To see the world as the televised messages portray it is to harbor some misconceptions. Indeed, many of the shared misconceptions about occupational pursuits, ethnic groups, minorities, the elderly, social and sex roles, and other aspects of life are at least partly cultivated through symbolic modeling of stereotypes (Buerkel-Rothfuss & Mayes, 1981; Bussey & Bandura, 1999; McGhee & Frueh, 1980). Verification of personal conceptions against televised versions of social reality can thus foster some collective illusions.

SOCIAL PROMPTING OF HUMAN BEHAVIOR

The actions of others can also serve as social prompts for previously learned behavior that observers can perform but have not done so because of insufficient inducements, rather than because of restraints. Social prompting effects are distinguished from observational learning and disinhibition because no new behavior has been acquired, and disinhibitory processes are not involved because the elicited behavior is socially acceptable and not encumbered by restraints.

The influence of models in activating, channeling, and supporting the behavior of others is abundantly documented in both laboratory and field studies (Bandura, 1986). By exemplification one can get people to behave altruistically, to volunteer their services, to delay or seek gratification, to show affection, to select certain foods and drinks, to choose certain kinds of apparel, to converse on particular topics, to be inquisitive or passive, to think creatively or conventionally, or to engage in other permissible courses of action. Thus, the types of models who predominate within a social milieu partly determine which human qualities, from among many alternatives, are selectively activated. The actions of models acquire the power to activate and channel behavior when they are good predictors for observers that positive results can be gained by similar conduct.

The fashion and taste industries rely heavily on the social prompting power of modeling. Because the potency of vicarious influences can be enhanced by showing modeled acts bringing rewards, vicarious outcomes figure prominently

in advertising campaigns. Thus, drinking a certain brand of wine or using a particular shampoo wins the loving admiration of beautiful people, enhances job performance, masculinizes self-conception, actualizes individualism and authenticity, tranquilizes irritable nerves, invites social recognition and amicable reactions from total strangers, and arouses affectionate overtures from spouses.

The types of vicarious outcomes, model characteristics, and modeling formats that are selected vary depending on what happens to be in vogue at the time. Model characteristics are varied to boost the persuasiveness of commercial messages. Prestigious models are often enlisted to capitalize on the high regard in which they are held. The best social sellers depend on what happens to be popular at the moment. Drawing on evidence that similarity to the model enhances modeling, some advertisements portray common folk achieving wonders with the wares advertised. Because vicarious influence increases with multiplicity of modeling (Perry & Bussey, 1979), the beers, soft drinks, and snacks are being consumed with gusto in the advertised world by groups of wholesome, handsome, fun-loving models. Eroticism is another stimulant that never goes out of style. Therefore, erotic modeling does heavy duty in efforts to command attention and to make advertised products more attractive to potential buyers (Kanungo & Pang, 1973; Peterson & Kerin, 1979).

In sum, modeling influences serve diverse functions—as tutors, motivators, inhibitors, disinhibitors, social prompters, emotion arouasers, and shapers of values and conceptions of reality. Although the different modeling functions can operate separately, in nature they often work in concert. Thus, for example, in the spread of new styles of aggression, models serve as both teachers and disinhibitors. When novel conduct is punished, observers learn the conduct that was punished as well as the restraints. A novel example can both teach and prompt similar acts.

DUAL-LINK VERSUS MULTIPATTERN FLOW OF INFLUENCE

It has been commonly assumed in theories of mass communication that modeling influences operate through a two-step diffusion process. Influential persons pick up new ideas from the media and pass them on to their followers through personal influence. Some communication researchers have claimed that the media can only reinforce preexisting styles of behavior but cannot create new ones (Klapper, 1960). Such a view is at variance with a vast body of evidence. Media influences create personal attributes as well as alter pre-existing ones (Bandura, 1986; Williams, 1986).

The different modes of human influence are too diverse in nature to have a fixed path of influence or strengths. Most behavior is the product of multiple determinants operating in concert. Hence, the relative contribution of any given factor in a pattern of influences can change depending on the nature and strength of coexisting determinants. Even the same determinant operating within the same causal structure of factors can change in its causal contribution with further experience (Wood & Bandura, 1989). In the case of atypical behavior, it is usually produced by a unique constellation of the determinants, such that if any one of them were absent the behavior would not have occurred. Depending on their quality and coexistence of other determinants, media influences may be subordinate to, equal to, or outweigh nonmedia influences. Given the dynamic nature of multifaceted causal structures, efforts to affix an average strength to a given mode of influence calls to mind the nonswimming analyst who drowned while trying to cross a river that averaged three feet in depth.

The view that the path of media influence is exclusively a filter-down process is disputed by a wealth of knowledge regarding modeling influences. Human judgment, values, and conduct can be altered directly by televised modeling without having to wait for an influential intermediary to adopt what has been shown and then to serve as the diffuser to others. Watt and van den Berg (1978) tested several alternative theories about how media communications relate to public attitudes and behavior. The explanatory contenders included the conceptions that media influence people directly; media influence opinion leaders who then affect others; media have no independent effects; media set the public agenda for discussions by designating what is important but do not otherwise influence the public; and finally, media simply reflect public attitudes and behavior rather than shape them. The direct-flow model from media to the public received the best empirical support. In this study, the behavior was highly publicized and could bring benefits without risks. When the activities being advocated require the investment of time and resources, and failures can be costly, people are inclined to seek verification of functional value from other sources as well before they act.

Chaffee (1982) reviewed substantial evidence that calls into question the prevailing view that interpersonal sources of information are necessarily more persuasive than media sources. People seek information that may be potentially useful to them from different sources. Neither informativeness, credibility, nor persuasiveness are uniquely tied to interpersonal sources or to media sources. How extensively different sources are used depends, in large part, on their accessibility and the likelihood that they will provide the kinds of information sought.

Modeling affects the adoption of new social practices and behavior patterns in several ways. It instructs people about new ways of thinking and behaving by informative demonstration or description. Learning about new things does not rely on a fixed hierarchy of sources. Efficacious modeling not only cultivates competencies but also enhances the sense of personal efficacy needed to transform knowledge and skills into successful courses of action (Bandura, 1997). The relative importance of interpersonal and media sources of information in initiating the adoption process varies for different activities and for the same activity at different stages in the adoption process (Pelz, 1983). Models motivate as well as inform and enable. People are initially reluctant to adopt new practices that involve costs and risks until they see the advantages that have been gained by early adopters. Modeled benefits accelerate social diffusion by weakening the restraints of the more cautious potential adopters. As acceptance spreads, the new ways gain further social support. Models also display preferences and evaluative reactions, which can alter observers' values and standards. Changes in evaluative standards affect receptivity to the activities being modeled. Models not only exemplify and legitimate new practices, they also serve as advocates for them by directly encouraging others to adopt them.

In effecting large-scale changes, communications systems operate through two pathways (Fig. 4). In the direct pathway, communications media promote changes by informing, enabling, motivating, and guiding participants. In the socially mediated pathway, media influences are used to link participants to social networks and community settings. These places provide continued personalized guidance, as well as natural incentives and social supports for desired changes (Bandura, 1997, 2001a). The major share of behavior changes is promoted within these social milieus.

Dual Paths of Influence

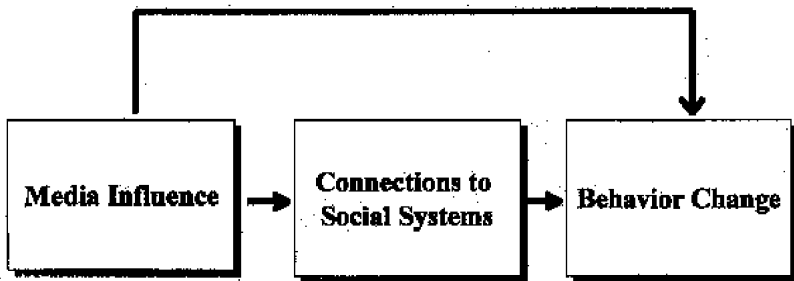


Figure 4. Dual path of communication influences operating on behavior both directly and mediationally through connection to influential social systems.

People are socially situated in interpersonal networks. When media influences lead viewers to discuss and negotiate matters of import with others in their lives, the media set in motion transactional experiences that further shape the course of change. This is another socially mediated process through which symbolic communications exert their effect.

The absence of individualized guidance limits the power of one-way mass communications. The revolutionary advances in interactive technologies provide the means to expand the reach and impact of communications media. On the input side, communications can now be personally tailored to factors that are causally related to the behavior of interest. Tailored communications are viewed as more relevant and credible, are better remembered, and are more effective in influencing behavior than general messages (Kreuter, Strecher, & Glassman, 1999). On the behavioral guidance side, interactive technologies provide a convenient means of individualizing the type and level of behavioral guidance needed to bring desired changes to fruition (Bandura, 2000b). In the population-based approaches the communications are designed to inform, enable, motivate, and guide people to effect personal and social changes. In implementing the social linking function, communications media can connect people to interactive online self-management programs that provide intensive individualized guidance in their homes when they want it (Bandura, 2001a; Taylor, Winzelberg, & Celio, in press).

In short, there is no single pattern of social influence. The media can implant ideas either directly or through adopters. Analyses of the role of mass media in social diffusion must distinguish between their effect on learning modeled activities and on their adoptive use, and examine how media and interpersonal influences affect these separable processes. In some instances the media both teach new forms of behavior and create motivators for action by altering people's value preferences, efficacy beliefs, outcome expectations, and perception of opportunity structures. In other instances, the media teach, but other adopters provide the incentive motivation to perform what has been learned observationally. In still other instances, the effect of the media may be entirely socially mediated. That is, people who have had no exposure to the media are influenced by adopters who have had the exposure and then, themselves, become the transmitters of the new ways. Within these different patterns of social influence, the media can serve as originating, as well as reinforcing, influences.

The hierarchical pattern is more likely to obtain for the print media, which has a more limited audience, than for the ubiquitous video media. Communication technologies and global interconnectedness provide people with ready direct access to information worldwide independently of time and place and unfettered by institutional and moneyed gatekeepers. The public is less dependent on a

mediated filter-down system of persuasion and enlightenment. These vastly expanded opportunities for self-directedness underscore the growing primacy of agentic initiative in human adaptation and change in the electronic era (Bandura, 1997, 2001a). Ready access to communication technologies will not necessarily enlist active participation unless people believe that they can achieve desired results by this means. Perceived personal and collective efficacy partly determines the extent to which people use this resource and the purposes to which they put it.

SOCIAL DIFFUSION THROUGH SYMBOLIC MODELING

Much of the preceding discussion has been concerned mainly with modeling at the individual level. As previously noted, a unique property of modeling is that it can transmit information of virtually limitless variety to vast numbers of people simultaneously through the medium of symbolic modeling. Extraordinary advances in technology of communication are transforming the nature, reach, speed, and loci of human influence (Bandura, 2001a). These technological developments have radically altered the social diffusion process. The video system feeding off telecommunications satellites has become the dominant vehicle for disseminating symbolic environments. Social practices are not only being widely diffused within societies, but ideas, values, and styles of conduct are being modeled worldwide. The electronic media are coming to play an increasingly influential role in transcultural change. Televised modeling is now being used to effect social change at community and society-wide levels (Bandura, 1997; Sabido, 1981; Singhal & Rogers, 1999; Winett, Leckliter, Chinn, Stahl, & Love, 1985).

Social cognitive theory analyzes social diffusion of new behavior patterns in terms of three constituent processes and the psychosocial factors that govern them. These include the acquisition of knowledge about innovative behaviors, the adoption of these behaviors in practice, and the social networks through which they spread and are supported. Diffusion of innovation follows a common pattern (Robertson, 1971; Rogers, 1995). New ideas and social practices are introduced by notable example. Initially, the rate of adoption is slow because new ways are unfamiliar, customs resist change, and results are uncertain. As early adopters convey more information about how to apply the new practices and their potential benefits, the innovation is adopted at an accelerating rate. After a period in which the new practices spread rapidly, the rate of diffusion slows down. The use of the innovation then either stabilizes or declines, depending upon its relative functional value.

Modeling Determinants of Diffusion

Symbolic modeling usually functions as the principal conveyor of innovations to widely dispersed areas. This is especially true in the early stages of diffusion. Newspapers, magazines, radio, and television inform people about new practices and their likely risks or benefits. The Internet provides instant communicative access worldwide. Early adopters, therefore, come from among those who have had greater access to media sources of information about innovations (Robertson, 1971). The psychosocial determinants and mechanisms of observational learning, which were reviewed earlier, govern the rate with which innovations are acquired.

Differences in the knowledge, skills, and resources particular innovations require produce variations in rate of acquisition. Innovations that are difficult to understand and use receive more reluctant consideration than simpler ones (Tornatzky & Klein, 1982). When television models new practices on the screens in virtually every household, people in widely dispersed locales can learn them. However, not all innovations are promoted through the mass media. Some rely on informal personal channels. In such instances, physical proximity determines which innovations will be repeatedly observed and thoroughly learned.

It is one thing to acquire skills, it is another thing to use them effectively under difficult circumstances. Human competency requires not only skills, but also self-belief in one's capabilities to use those skills well. Modeling influences must, therefore, be designed to build self-efficacy as well as convey knowledge and rules of behavior. Perceived self-efficacy affects every phase of personal change (Bandura, 1997). It determines whether people even consider changing their behavior, whether they can enlist the motivation and perseverance needed to succeed should they choose to do so, and how well they maintain the changes they have achieved.

The influential role of people's beliefs in their personal efficacy in social diffusion is shown in their response to health communications aimed at altering health-impairing habits. Meyerowitz and Chaiken (1987) examined four alternative mechanisms through which health communications could alter health habits: by transmission of factual information, fear arousal, change in risk perception, and enhancement of perceived self-efficacy. They found that health communications fostered adoption of preventive health practices primarily by their effects on perceived self-efficacy. Beck and Lund (1981) have similarly shown that preventive health practices are better promoted by heightening self-efficacy than by elevating fear. Analyses of how community-wide media campaigns produce changes reveal that both the preexisting and induced level of

perceived self-efficacy play an influential role in the adoption and social diffusion of health practices (Maibach, Flora, & Nass, 1991; Slater, 1989). The stronger the preexisting perceived self-efficacy, and the more the media campaigns enhance people's beliefs in their self-regulative efficacy, the more likely they are to adopt the recommended practices. Health knowledge gets translated into healthful habits through the mediation of perceived self-efficacy (Rimal, 2000).

The findings reviewed earlier underscore the need to shift the emphasis from trying to scare people into healthy behavior to empowering them with the tools and self-beliefs for exercising personal control over their health habits. People must also experience sufficient success using what they have learned to become convinced of their efficacy and the functional value of what they have adopted. This is best achieved by combining modeling with guided mastery, in which newly acquired skills are first tried under conditions likely to produce good results, and then extended to more unpredictable and difficult circumstances (Bandura, 1986, 2000c).

Adoption Determinants

The acquisition of knowledge and skills regarding innovations is necessary, but not sufficient for their adoption in practice. A number of factors determine whether people will act on what they have learned. Environmental inducements serve as one set of regulators. Adoptive behavior is also highly susceptible to incentive influences, which may take the form of material, social, or self-evaluative outcomes. Some of the motivating incentives derive from the utility of the adoptive behavior. The greater the relative benefits provided by an innovation, the higher the incentive is to adopt it (Ostlund, 1974; Rogers & Shoemaker, 1971). However, benefits cannot be experienced until the new practices are tried. Promoters, therefore, strive to get people to adopt new practices by altering their preferences and beliefs about likely outcomes, mainly by enlisting vicarious incentives. Advocates of new technologies and ideologies create expectations that they offer better solutions than do established ways. Modeled benefits increase adoptive decisions. Modeling influences can, of course, impede as well as promote the diffusion process (Midgley, 1976). Modeling negative reactions to a particular innovation, as a result of having had disappointing experiences with it, dissuades others from trying it. Even modeled indifference to an innovation, in the absence of any personal experience with it, will dampen the interests of others.

Many innovations serve as a means of gaining social recognition and status. Indeed, status incentives are often the main motivators for adopting new styles and tastes. In many instances, the variant styles do not provide different natural

benefits or, if anything, the most innovative styles are the most costly. Status is thus gained at a price. People who strive to distinguish themselves from the common and the ordinary adopt new styles in clothing, grooming, recreational activities, and conduct, thereby achieving distinctive social standing. As the popularity of the new behavior grows, it loses its status-conferring value until eventually it, too, becomes commonplace. It is then discarded for a new form.

Adoptive behavior is also partly governed by self-evaluative reactions to one's own behavior. People adopt what they value but resist innovations that violate their social and moral standards or that conflict with their self-conception. The more compatible an innovation is with prevailing social norms and value systems, the greater its adoptability (Rogers & Shoemaker, 1971). However, we saw earlier that self-evaluative sanctions do not operate in isolation from the pressures of social influence. People are often led to behave in otherwise personally devalued ways by strategies that circumvent negative self-reactions. This is done by changing appearances and meanings of new practices to make them look compatible with people's values.

The amenability of an innovation to brief trial is another relevant characteristic that can affect the ease of adoption. Innovations that can be tried on a limited basis are more readily adoptable than those that have to be tried on a large scale with substantial effort and costs. The more weight given to potential risks and the costs of getting rid of new practices should they fail to live up to expectations, the weaker the incentive to innovate is. And finally, people will not adopt innovations even though they are favorably disposed toward them if they lack the money, the skills, or the accessory resources that may be needed. The more resources innovations require, the lower their adoptability.

Analysis of the determinants and mechanisms of social diffusion should not becloud the fact that not all innovations are useful, nor is resistance to them necessarily dysfunctional (Zaltman & Wallendorf, 1979). In the continuous flow of innovations, the number of disadvantageous ones far exceeds those with truly beneficial possibilities. Both personal and societal well-being are well served by initial wariness to new practices promoted by unsubstantiated or exaggerated claims. The designations *venturesome* for early adopters and *laggards* for later adopters are fitting in the case of innovations that hold promise. However, when people are mesmerized by alluring appeals into trying innovations of questionable value, the more suitable designation is *gullibility* for early adopters and *astuteness* for resisters. Rogers (1995) criticized the prevalent tendency to conceptualize the diffusion process from the perspective of the promoters. This tends to bias the search for explanations of nonadoptive behavior in negative attributes of nonadopters.

Social Networks and Flow of Diffusion

The third major factor that affects the diffusion process concerns social network structures. People are enmeshed in networks of relationships that include occupational colleagues, organizational members, kinships, and friendships, just to mention a few. They are linked not only directly by personal relationships; because acquaintanceships overlap different network clusters, many people become linked to each other indirectly by interconnected ties. Social structures comprise clustered networks of people with various ties among them, as well as persons who provide connections to other clusters through joint membership or a liaison role. Clusters vary in their internal structure, ranging from loosely knit ones to those that are densely interconnected. Networks also differ in the number and pattern of structural linkages between clusters. They may have many common ties or function with a high degree of separateness. In addition to their degree of interconnectedness, people vary in the positions and status they occupy in particular social networks, which can affect their impact on what spreads through their network. One is more apt to learn about new ideas and practices from brief contacts with causal acquaintances than from intensive contact in the same circle of close associates. This path of influence creates the seemingly paradoxical effect that innovations are extensively diffused to cohesive groups through weak social ties (Granovetter, 1983).

Information regarding new ideas and practices is often conveyed through multilinked relationships (Rogers & Kincaid, 1981). Traditionally, the communication process has been conceptualized as one of unidirectional persuasion flowing from a source to a recipient. Rogers emphasized the mutuality of influence in interpersonal communication. People share information, give meaning by mutual feedback to the information they exchange, gain understanding of each other's views, and influence each other. Specifying the channels of influence through which innovations are dispersed provides greater understanding of the diffusion process than simply plotting the rate of adoptions over time.

There is no single social network in a community that serves all purposes. Different innovations engage different networks. For example, birth control practices and agricultural innovations diffuse through quite different networks within the same community (Marshall, 1971). To complicate matters further, the social networks that come into play in initial phases of diffusion may differ from those that spread the innovation in subsequent phases (Coleman, Katz, & Menzel, 1966). Adoption rates are better predicted from the network that subserves a particular innovation than from a more general communication

network. This is not to say that there is no generality to the diffusion function of network structures. If a particular social structure subserves varied activities, it can help to spread the adoption of innovations in each of those activities.

People with many social ties are more apt to adopt innovations than those who have few ties to others (Rogers & Kincaid, 1981). Adoption rates increase as more and more people in one's personal network adopt an innovation. The effects of social connectedness on adoptive behavior may be mediated through several processes. Multilinked relations can foster adoption of innovations because they convey more factual information, they mobilize stronger social influences, or it may be that people with close ties are more receptive to new ideas than those who are socially estranged. Moreover, in social transactions, people see their associates adopt innovations as well as talk about them. Multiple modeling alone can increase adoptive behavior (Bandura, 1986; Perry & Bussey, 1979).

If innovations are highly conspicuous, they can be adopted directly without requiring interaction among adopters. Television is being increasingly used to forge large single-link structures in which many people are linked directly to the media source, but they may have little or no direct relations with each other. For example, television evangelists attract loyal followers who adopt the transmitted precepts as guides for how to behave in situations involving moral, social, and political issues. Although they share a common bond to the media source, most members of an electronic community may never see each other. Political power structures are similarly being transformed by the creation of new constituencies tied to a single media source, but with little interconnectedness. Mass marketing techniques, using computer identification and mass mailings, create special-interest constituencies that by-pass traditional political organizations in the exercise of political influence.

The evolving information technologies will increasingly serve as a vehicle for building social networks. Online transactions transcend the barriers of time and space (Hiltz & Turoff, 1978; Wellman, 1997). Through interactive electronic networking, people link together in widely dispersed locals, exchange information, share new ideas, and transact any number of pursuits. Virtual networking provides a flexible means for creating diffusion structures to serve given purposes, expanding their membership, extending them geographically, and disbanding them when they have outlived their usefulness.

Although structural interconnectedness provides potential diffusion paths, psychosocial factors largely determine the fate of what diffuses through those paths. In other words, it is the transactions that occur within social relationships rather than the ties, themselves, that explain adoptive behavior. The course of diffusion is best understood by considering the interactions among psychosocial determinants of

adoptive behavior, the properties of innovations that facilitate or impede adoption, and the network structures that provide the social pathways of influence. Sociostructural and psychological determinants of adoptive behavior should, therefore, be treated as complementary factors in an integrated comprehensive theory of social diffusion, rather than be cast as rival theories of diffusion.

REFERENCES

- Adoni, H., & Mane, S. (1984). Media and the social construction of reality: Toward an integration of theory and research. *Communication Research, 11*, 323–340.
- Baldwin, T. F., & Lewis, C. (1972). Violence in television: The industry looks at itself. In G. A. Comstock & E. A. Rubinstein (Eds.), *Television and social behavior: Vol. 1. Media content and control* (pp. 290–373). Washington, DC: U.S. Government Printing Office.
- Ball-Rokeach, S., & DeFleur, M. (1976). A dependency model of mass media effects. *Communication Research, 3*, 3–21
- Ball-Rokeach, S. J. (1972). The legitimation of violence. In J. F. Short, Jr. & M. E. Wolfgang (Eds.), *Collective violence* (pp. 100–111). Chicago: Aldine-Atherton.
- Bandura, A. (1973). *Aggression: A social learning analysis*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1982). The psychology of chance encounters and life paths. *American Psychologist, 37*, 747–755.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.
- Bandura, A. (1990). Mechanisms of moral disengagement. In W. Reich (Ed.), *Origins of terrorism: Psychologies, ideologies, theologies, states of mind* (pp. 162–191). Cambridge, MA: Cambridge University Press.
- Bandura, A. (1991a). Self-regulation of motivation through anticipatory and self-regulatory mechanisms. In R. A. Dienstbier (Ed.), *Perspectives on motivation: Nebraska symposium on motivation* (Vol. 38, pp. 69–164). Lincoln: University of Nebraska Press.
- Bandura, A. (1991b). Social cognitive theory of moral thought and action. In W. M. Kurtines & J. L. Gewirtz (Eds.), *Handbook of moral behavior and development* (Vol. A, pp. 45–103). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Bandura, A. (1992). Social cognitive theory and social referencing. In S. Feinman (Ed.), *Social referencing and the social construction of reality in infancy* (pp. 175–208). New York: Plenum.

- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- Bandura, A. (1999a). Moral disengagement in the perpetration of inhumanities. *Personality and Social Psychology Review* [Special Issue on Evil and Violence], 3, 193–209.
- Bandura, A. (1999b). A social cognitive theory of personality. In L. Pervin & O. John (Eds.), *Handbook of personality* (2nd ed., pp. 154–196). New York: Guilford Publications.
- Bandura, A. (2000a). Exercise of human agency through collective efficacy. *Current Directions in Psychological Science*, 9, 75–78.
- Bandura, A. (2000b). Health promotion from the perspective of social cognitive theory. In P. Norman, C. Abraham, & M. Conner (Eds.), *Understanding and changing health behaviour* (pp. 299–339). Reading, UK: Harwood.
- Bandura, A. (2000c). Self-regulation of motivation and action through perceived self-efficacy. In E. A. Locke (Ed.), *Handbook of principles of organization behavior*. (pp. 120–136). Oxford, UK: Blackwell.
- Bandura, A. (2001a, October). *Growing primacy of human agency in adaptation and change in the electronic era*. Paper presented at New Media in the Development of Mind, Naples, Italy.
- Bandura, A. (2001b). Social cognitive theory: An agentic perspective. In S. T. Fiske (Ed.), *Annual review of psychology* (Vol. 52, pp. 1–26). Palo Alto: Annual Reviews, Inc.
- Bandura, A., Underwood, B., & Fromson, M. E. (1975). Disinhibition of aggression through diffusion of responsibility and dehumanization of victims. *Journal of Research in Personality*, 9, 253–269.
- Bassiouni, M. C. (1981). Terrorism, law enforcement, and the mass media: Perspectives, problems, proposals. *The Journal of Criminal Law & Criminology*, 72, 1–51.
- Beck, K. H., & Lund, A. K. (1981). The effects of health threat seriousness and personal efficacy upon intentions and behavior. *Journal of Applied Social Psychology*, 11, 401–405.
- Berkowitz, L. (1984). Some effects of thoughts on anti- and prosocial influences of media events: A cognitive-neoassociation analysis. *Psychological Bulletin*, 95, 410–427.
- Berkowitz, L., & Geen, R. G. (1967). Stimulus qualities of the target of aggression: A further study. *Journal of Personality and Social Psychology*, 5, 364–368.

- Bolton, M. K. (1993). Imitation versus innovation: Lessons to be learned from the Japanese. *Organizational Dynamics*, 22, 30–45.
- Brock, T. C., & Buss, A. H. (1962). Dissonance, aggression, and evaluation of pain. *Journal of Abnormal and Social Psychology*, 65, 197–202.
- Brock, T. C., & Buss, A. H. (1964). Effects of justification for aggression and communication with the victim on postaggression dissonance. *Journal of Abnormal and Social Psychology*, 68, 403–412.
- Buerkel-Rothfuss, N. L., & Mayes, S. (1981). Soap opera viewing: The cultivation effect. *Journal of Communication*, 31, 108–115.
- Bussey, K., & Bandura, A. (1999). Social cognitive theory of gender development and differentiation. *Psychological Review*, 106, 676–713.
- Cantor, J., & Wilson, B. J. (1988). Helping children cope with frightening media presentations. *Current Psychological Research and Reviews*, 7, 58–75.
- Chaffee, S. H. (1982). Mass media and interpersonal channels: Competitive, convergent, or complementary? In G. Gumpert & R. Cathart (Eds.), *Inter/Media: Interpersonal communication in a media world* (pp. 57–77). New York: Oxford University Press.
- Coleman, J. S., Katz, E., & Menzel, H. (1966). *Medical innovation: A diffusion study*. New York: Bobbs-Merrill.
- Diener, E. (1977). Deindividuation: Causes and consequences. *Social Behavior and Personality*, 5, 143–156.
- Donnerstein, E. (1984). Pornography: Its effect on violence against women. In N. M. Malamuth & E. Donnerstein (Eds.), *Pornography and sexual aggression* (pp. 53–81). New York: Academic.
- Duncker, K. (1938). Experimental modification of children's food preferences through social suggestion. *Journal of Abnormal Social Psychology*, 33, 489–507.
- Dysinger, W. S., & Ruckmick, C. A. (1993). *The emotional responses of children to the motion-picture situation*. New York: Macmillan.
- Falmagne, R. J. (1975). *Reasoning: Representation and process in children and adults*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Fimrite, R. (1977, September). A melding of men all suited to a T. *Sports Illustrated*, 91–100.
- Flerx, V. C., Fidler, D. S., & Rogers, R. W. (1976). Sex role stereotypes: Developmental aspects and early intervention. *Child Development*, 47, 998–1007.

- Gerbner, G. (1972). Communication and social environment. *Scientific American*, 227, 153–160.
- Gerbner, G., Gross, L., Morgan, M., & Signorielli, N. (1981). A curious journey into the scary world of Paul Hirsch. *Communication Research*, 8, 39–72.
- Goranson, R. E. (1970). Media violence and aggressive behavior. A review of experimental research. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 5, pp. 2–31). New York: Academic.
- Granovetter, M. (1983). The strength of weak ties—A network theory revisited. In R. Collins (Ed.), *Sociological theory 1983* (pp. 201–233). San Francisco: Jossey-Bass.
- Hall, J. R. (1987). *Gone from the promised land: Jonestown in American cultural history*. New Brunswick, NJ: Transaction Books.
- Halloran, J. D., & Croll, P. (1972). Television programs in Great Britain: Content and control. In G. A. Comstock & E. A. Rubinstein (Eds.), *Television and social behavior: Vol. 1. Media content and control* (pp. 415–492). Washington, DC: U.S. Government Printing Office.
- Harris, M. B., & Evans, R. C. (1973). *Models and creativity. Psychological Reports*, 33, 763–769.
- Hawkins, R. P., & Pingree, S. (1982). Television's influence on social reality. In D. Pearl, L. Bouthilet, & J. Lazar (Eds.), *Television and behavior: Ten years of scientific progress and implications for the eighties* (Vol. II, pp. 224–247). Rockville, MD: National Institute of Mental Health.
- Heath, L. (1984). Impact of newspaper crime reports on fear of crime: Multimethodological investigation. *Journal of Personality and Social Psychology*, 47, 263–276.
- Hiltz, S. R., & Turoff, M. (1978). *The network nation: Human communication via computer*. Reading, MA: Addison-Wesley.
- Hirsch, P. M. (1980). The “scary world of the nonviewer” and other anomalies: A reanalysis of Gerbner et al.'s findings on cultivation analysis. Part I. *Communication Research*, 7, 403–456.
- Kanungo, R. N., & Pang, S. (1973). Effects of human models on perceived product quality. *Journal of Applied Psychology*, 57, 172–178.
- Kelman, H. C., & Hamilton, V. L. (1989). *Crimes of obedience: Toward a social psychology of authority and responsibility*. New Haven, CT: Yale University Press.
- Klapper, J. T. (1960). *The effects of mass communication*. New York: Free Press.

- Kreuter, M. W., Strecher, V. J., & Glassman, B. (1999). One size does not fit all: The case for tailoring print materials. *Annals of Behavioral Medicine, 21*(4), 276–283.
- Larsen, O. N. (Ed.). (1968). *Violence and the mass media*. New York: Harper & Row.
- Maibach, E. W., Flora, J., & Nass, C. (1991). Changes in self-efficacy and health behavior in response to a minimal contact community health campaign. *Health Communication, 3*, 1–15.
- Malamuth, N. M., & Donnerstein, E. (Eds.). (1984). *Pornography and sexual aggression*. New York: Academic.
- Marshall, J. F. (1971). Topics and networks in intravillage communication. In S. Polgar (Ed.), *Culture and population: A collection of current studies* (pp. 160–166). Cambridge, MA: Schenkman Publishing Company.
- McGhee, P. E., & Frueh, T. (1980). Television viewing and the learning of sex-role stereotypes. *Sex Roles, 6*, 179–188.
- Meichenbaum, D. (1984). Teaching thinking: A cognitive-behavioral perspective. In R. Glaser, S. Chipman, & J. Segal (Eds.), *Thinking and learning skills (Vol. 2): Research and open questions* (pp. 407–426). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Meyer, T. P. (1972). Effects of viewing justified and unjustified real film violence on aggressive behavior. *Journal of Personality and Social Psychology, 23*, 21–29.
- Meyerowitz, B. E., & Chaiken, S. (1987). The effect of message framing on breast self-examination attitudes, intentions, and behavior. *Journal of Personality and Social Psychology, 52*, 500–510.
- Midgley, D. F. (1976). A simple mathematical theory of innovative behavior. *Journal of Consumer Research, 3*, 31–41.
- Midgley, M. (1978). *Beast and man: The roots of human nature*. Ithaca, NY: Cornell University Press.
- Milgram, S. (1974). *Obedience to authority: An experimental view*. New York: Harper & Row.
- O'Bryant, S. L., & Corder-Bolz, C. R. (1978). The effects of television on children's stereotyping of women's work roles. *Journal of Vocational Behavior, 12*, 233–244.
- Ostlund, L. E. (1974). Perceived innovation attributes as predictors of innovativeness. *Journal of Consumer Research, 1*, 23–29.

- Paik, H., & Comstock, G. (1994). The effects of television violence on antisocial behavior: A meta-analysis. *Communication Research, 21*, 516–546.
- Pelz, D. C. (1983). Use of information channels in urban innovations. *Knowledge, 5*, 3–25.
- Perry, D. G., & Bussey, K. (1979). The social learning theory of sex differences: Imitation is alive and well. *Journal of Personality and Social Psychology, 37*, 1699–1712.
- Peterson, R. A., & Kerin, R. A. (1979). The female role in advertisements: Some experimental evidence. *Journal of Marketing, 41*, 59–63.
- Rimal, R. N. (2000). Closing the knowledge-behavior gap in health promotion: The mediating role of self-efficacy. *Health Communication, 12*, 219–237.
- Robertson, T. S. (1971). *Innovative behavior and communication*. New York: Holt, Rinehart & Winston.
- Rogers, E. M. (1995). *Diffusion of innovations* (4th ed.). New York: Free Press.
- Rogers, E. M., & Kincaid, D. L. (1981). *Communication networks: Toward a new paradigm for research*. New York: Free Press.
- Rogers, E. M., & Shoemaker, F. (1971). *Communication of innovations: A cross-cultural approach* (2nd ed.). New York: Free Press.
- Rosenthal, T. L., & Zimmerman, B. J. (1978). *Social learning and cognition*. New York: Academic.
- Sabido, M. (1981). *Towards the social use of soap operas*. Mexico City, Mexico: Institute for Communication Research.
- Siegel, A. E. (1958). The influence of violence in the mass media upon children's role expectation. *Child Development, 29*, 35–56.
- Singhal, A., & Rogers, E. M. (1999). *Entertainment-education: A communication strategy for social change*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Slater, M. D. (1989). Social influences and cognitive control as predictors of self-efficacy and eating behavior. *Cognitive Therapy and Research, 13*, 231–245.
- Snyder, M. (1980). Seek, and ye shall find: Testing hypotheses about other people. In E. T. Higgins, C. P. Herman, & M. P. Zanna (Eds.), *Social cognition: The Ontario Symposium on Personality and Social Psychology* (Vol. 1, pp. 105–130). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Snyder, M., & Campbell, B. H. (1982). Self-monitoring: The self in action. In J. Suls (Ed.), *Psychological perspectives on the self* (pp. 185–207). Hillsdale, NJ: Lawrence Erlbaum Associates.

- Taylor, C. B., Winzelberg, A., & Celio, A. (in press). Use of interactive media to prevent eating disorders. In R. Striegel-Moore & L. Smolak (Eds.), *Eating disorders: New direction for research and practice*.
- Tornatzky, L. G., & Klein, K. J. (1982). Innovation characteristics and innovation adoption-implementation: A meta-analysis of findings. *IEEE Transactions of Engineering and Management, EM-29*, 28–45.
- Watt, J. G., Jr., & van den Berg, S. A. (1978). Time series analysis of alternative media effects theories. In R. D. Ruben (Ed.), *Communication Yearbook 2* (pp. 215–224). New Brunswick, NJ: Transaction Books.
- Wellman, B. (1997). An electronic group is virtually a social network. In S. Kiesler (Ed.), *Culture of the Internet* (pp. 179–205). Mahwah, NJ: Lawrence Erlbaum Associates.
- Williams, T. M. (Ed.). (1986). *The impact of television: A natural experiment in three communities*. New York: Academic.
- Wilson, B. J., & Cantor, J. (1985). Developmental differences in empathy with a television protagonist's fear. *Journal of Experimental Child Psychology, 39*, 284–299.
- Winett, R. A., Leckliter, I. N., Chinn, D. E., Stahl, B. N., & Love, S. Q. (1985). The effects of television modeling on residential energy conservation. *Journal of Applied Behavior Analysis, 18*, 33–44.
- Wood, R. E., & Bandura, A. (1989). Social cognitive theory of organizational management. *Academy of Management Review, 14*, 361–384.
- Zaltman, G., & Wallendorf, M. (1979). *Consumer behavior: Basic findings and management implications*. New York: Wiley.
- Zillmann, D., & Bryant, J. (1984). Effects of massive exposure to pornography. In N. M. Malamuth & E. Donnerstein (Eds.), *Pornography and sexual aggression* (pp. 115–138). New York: Academic.
- Zimbardo, P. G. (1969). The human choice: Individuation, reason, and order versus deindividuation, impulse, and chaos. In W. J. Arnold & D. Levine (Eds.), *Nebraska Symposium on Motivation, 1969* (pp. 237–309). Lincoln: University of Nebraska Press.