

## RELATIVE EFFICACY OF DESENSITIZATION AND MODELING APPROACHES FOR INDUCING BEHAVIORAL, AFFECTIVE, AND ATTITUDINAL CHANGES<sup>1</sup>

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The present study investigated basic change processes accompanying several social-learning procedures from the perspective of a dual-process theory of avoidance behavior. Snake-phobic subjects were administered either symbolic desensitization, symbolic modeling, live modeling combined with guided participation (contact desensitization), or they received no treatment. All three approaches produced generalized and enduring reductions in fear arousal and avoidance behavior as well as positive changes in attitudes. Of the three methods, modeling with guided participation proved most powerful, achieving virtually complete extinction of phobic behavior in every subject. Moreover, those who attained only partial improvement through the other treatments displayed total extinction of phobic behavior after a brief period of modeling with guided participation. Consistent with social-learning theory, the favorable changes produced toward the phobic object were accompanied by fear reduction toward threatening situations beyond the specifically treated phobia, the decrements being roughly proportional to the potency of the treatments employed. Moderately high positive correlations were found between behavioral and attitudinal changes. Some evidence was obtained that modeling procedures expedite behavioral changes through vicarious extinction of fear arousal to aversive stimuli below the threshold for activating avoidance responses, thus enabling persons to perform approach behaviors. Direct contact with threats that are no longer objectively justified provides new experiences that further extinguish residual anxiety and augment attitudinal changes.

Psychological approaches to the modification of human behavior have relied heavily upon verbal influence procedures. It would appear from the results of psychotherapy outcome studies that the popularity of such methods is attributable more to their ease of application than to their demonstrated effectiveness. Recent years have witnessed a rapid growth of new treatment approaches that achieve psychological changes mainly through guided learning experiences (Bandura, 1969a). The present experiment was principally designed to assess the differential efficacy of several of these approaches for inducing behavioral, affective, and attitudinal changes in

phobic subjects, and to investigate certain issues pertaining to basic change processes.

The research reported in this paper is guided by the dual-process theory of avoidance behavior. According to this view, threatening stimuli evoke emotional arousal which has both autonomic and central components. It is further assumed that these arousal processes, operating primarily at the central level, exercise some degree of control over instrumental avoidance responding.

The influential role of arousal mediators in avoidance behavior is most clearly demonstrated by Solomon and his colleagues (Rescorla & Solomon, 1967; Solomon & Turner, 1962). In these studies, which use a three-stage paradigm, animals first learn to make an avoidance response to a light stimulus. They are then skeletally immobilized by curare to prevent avoidance responses from being conditioned directly to external stimuli, and shock is paired with one tone, while a contrasting tone is never associated with aversive stimulation. In subsequent tests the

<sup>1</sup>This research was supported by Public Health Research Grant M-5162 from the National Institute of Mental Health. The authors are indebted to Antonette Raskoff, Patricia Baker, and Robert O'Connor for their generous assistance with various aspects of this research.

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animals display essentially the same degree of avoidance in response to the negatively valenced tone and the light, both of which evoke common arousal reactions, whereas avoidance responses rarely occur to the neutral tone. Considering that the light and the tones were never associated, and assuming that the curare blocked all skeletal activity (Black, 1967), thus precluding any differential conditioning of avoidance responses to the tones, the controlling power of the aversive auditory stimulus must be mediated either through events in central systems or through autonomic feedback mechanisms.

There is evidence that avoidance responses can be acquired and maintained in sympathectomized animals (Wynne & Solomon, 1955), and that avoidance behavior persists long after autonomic responses have been extinguished (Black, 1959; Notterman, Schoenfeld, & Bersh, 1952). Moreover, the latency of autonomic reactions is much longer than that of skeletal responding; consequently, avoidance behavior is typically executed before autonomic reactions could possibly be elicited. Findings of the preceding studies indicate that behavior is in large part centrally regulated rather than under autonomic control, as is commonly assumed in peripheral theories of anxiety.

It would follow from the dual-process theory that if the arousal capacity of subjectively threatening events is extinguished, then both the motivation and one set of controlling stimuli for avoidance behavior are removed. Black (1958) has shown in experiments with curarized subjects that neutralization of an aversive stimulus through repeated presentation without any accompanying adverse experiences markedly facilitates elimination of avoidance behavior. The psychological procedures investigated in the present study are likewise predicated on the assumption that extinction of fear arousal will reduce phobic behavior.

The method of systematic desensitization (Wolpe, 1958) attempts to eliminate fear arousal through repeated pairing of imaginal representations of threatening situations with deep relaxation. Wolpe explains the effects of this form of treatment in terms of reciprocally inhibitory processes occurring at the level of

the autonomic nervous system. These theoretical speculations about the mechanisms governing the counterconditioning process are largely disputed by empirical findings (Bandura, 1969a); nevertheless, numerous well-designed experiments (Davison, 1968; Krapf, 1967; Lang, Lazovik & Reynolds, 1965; Mealia, 1967; H. R. Miller, 1967; Moore, 1965; Paul, 1966; Paul & Shannon, 1966; Schubot, 1966) have shown that the systematic desensitization procedure produces significant reduction in avoidance behavior.

Fear arousal can also be eliminated on a vicarious basis. These vicarious extinction effects are achieved by having persons observe models performing fear-provoking behavior without any adverse consequences accruing to the performers (Bandura, 1968). The absence of anticipated negative consequences is a requisite condition for fear extinction. Hence, the modeled displays most likely to have strong effects on phobic observers are ones in which performances they regard as hazardous are repeatedly shown to be safe under a variety of threatening circumstances. However, presentation of modeled approach responses toward the most aversive situations at the outset is apt to generate in observers high levels of emotional arousal that can impede vicarious extinction.

Avoidance responses can be extinguished with minimal distress if persons are exposed to a graduated sequence of modeling activities beginning with displays that have low arousal value (Bandura, Grusec, & Menlove, 1967; Bandura & Menlove, 1968). After emotional reactions to attenuated threats have been extinguished, progressively more aversive modeling events, which are weakened by generalization of fear extinction from preceding displays, are gradually introduced and neutralized. Stimulus graduation is not a necessary condition for vicarious extinction, but it permits greater control over the change process and it entails less fear elicitation than approaches involving repeated exposure to modeling events having high threat value.

When fear arousal is extinguished to symbolic representations of threats, as in systematic desensitization and symbolic modeling, one would expect some loss in generalization of fear reduction to actual events because

they constitute more severe threats. In instances where fear arousal is not reduced below the threshold for activating avoidance behavior, persons will be unable to perform highly threatening approach responses even though their fear has been extinguished to the symbolic equivalents. One might expect less transfer loss when fear arousal is extinguished through both vicarious and direct experiences with the actual threatening events. However, when desired behavior is severely inhibited active response guidance procedures may be required, in addition to graduated modeling, to reinstate approach behavior.

The third approach consists of a form of treatment combining graduated live modeling with guided participation. The principal elements of this method were originally applied by Ritter (1965) and further developed as contact desensitization (Ritter, 1968a, 1968b, 1969a). In the procedure employed in the present study, the model initially demonstrates the desired behavior under secure observational conditions, after which individuals are aided through further demonstration and joint performance to execute progressively more difficult responses. Whenever subjects are unable to perform a given behavior upon demonstration alone they are assisted physically by enacting the activities concurrently with the model. The physical guidance is then gradually reduced until all subjects are able to perform the behavior without assistance.

In the present experiment subjects who suffered from snake phobias received either systematic desensitization, symbolic modeling, live modeling with guided participation,<sup>8</sup> or were assigned to a nontreated control group. Prior to, and upon completion of, their respective treatment programs subjects were administered a behavioral avoidance test to measure the strength of their fear and avoidance of snakes. In addition they completed a comprehensive fear inventory to determine whether extinction of fear of snakes is associated with changes in other areas of anxiety. Attitude measures were also included to furnish information regarding the interesting but inadequately explored attitudinal effects of

behavioral changes induced through social-learning procedures.

It was predicted that all three treatment approaches would extinguish both fear arousal and avoidance behavior, but that live modeling combined with guided participation would prove superior in this respect. No predictions were advanced, however, concerning the relative efficacy of systematic desensitization and symbolic modeling.

Psychodynamic theories generally assume that anxieties are internally generated by arousal of repressed impulses which are then displaced and projected onto environmental events. External phobic objects are therefore regarded as pseudoevocative stimuli. Thus, for example, snake phobias are believed to reflect phallic anxieties (Fenichel, 1945). From this point of view, direct neutralization of a given phobic stimulus should either have no lasting effect, or result in the emergence of new phobic disorders because the underlying source of anxiety has not been eliminated.

According to social-learning theory, extinction of the arousal potential of a phobic stimulus should produce not only stable decreases in avoidance behavior, but some reduction in anxiety in other areas of functioning on the basis of stimulus generalization. The transfer of extinction effects would be expected to vary as a function of level of fear extinction achieved toward the treated phobic stimuli and the degree of similarity between the neutralized and the other sources of anxiety.

Considering both the extensive research on attitude change and the powerful controlling functions that are often conferred upon attitudes, there has been surprisingly little investigation of the relationship between attitudinal and behavioral change. A thorough search of the literature by Festinger (1964) yielded only a few studies which disclose that changes in attitudes produced by persuasive communications have little or no effect upon the performance of corresponding actions. There is some reason to suppose that the degree of relationship between attitudinal and behavioral change may be partly determined by the affective and social consequences of the behavior being modified and by the method of influence used to bring about the change.

<sup>8</sup> The terms modeling with participation and contact desensitization are used interchangeably to refer to the treatment condition.

One can distinguish among three basic modes of attitude change. The *cognitive-oriented* approach attempts to modify persons' attitudes by altering their beliefs about the attitude object through various forms of persuasive communications. As noted above, this method can produce changes in attitudes but it often has little effect upon overt actions. A second general strategy involves an *affect-oriented* approach wherein both evaluations of, and behavior toward, particular attitude objects are modified by altering their emotion-arousing properties, usually through direct or vicarious conditioning procedures. The third approach relies upon a *behavior-oriented* strategy. Results of the latter procedure provide considerable evidence that attitudinal changes can be successfully achieved by getting a person to engage in new behavior in relation to the attitude object without untoward consequences.

The relative modifiability of attitudes and actions, and the degree of correspondence obtained between changes in these two sets of events, may vary with the affective consequences accompanying the behavior. A given social influence might produce analogous changes in both attitude and action when persons are indifferent to, or favorably disposed toward, performing the advocated activities. Most attempts to control consumer behavior through persuasive communications, for example, would fall in this category. The process is much more complicated, however, when persons resist advocated behavior that they can perform because it results in self-devaluation, or when they are amenable to engaging in the desired activities but are unable to do so because of strong fears and inhibitions. In the latter instances, a weak method may alter responses that are readily susceptible to change, such as verbal evaluations, but fail to modify overt behavior which is rendered intractable by its adverse consequences. A relatively powerful influence would be required to achieve correlative changes.

Two of the treatment procedures investigated in the present experiment, namely systematic desensitization and symbolic modeling, are designed to produce changes primarily by extinguishing emotional arousal to symbolic representations of the phobic object.

Modeling with guided participation, on the other hand, eliminates emotional arousal to actual threats and it also provides new direct experiences with the previously avoided object that can serve as a further basis for modifying attitudes. It was predicted that all three treatment procedures would produce favorable changes in attitudes. On the assumption that a method operating through behavior change furnishes an objective and genuine basis for new evaluations, it was expected that modeling with participation would achieve the greater modification in attitudes.

There is some evidence from laboratory studies of counterconditioning processes (Gale, Sturmels, & Gale, 1966; Poppen, 1968) that the aversive properties of threatening stimuli can be extinguished more effectively when administered in conjunction with anxiety-neutralizing events than when presented alone. In the present experiment the symbolic modeling treatment was administered in conjunction with relaxation procedures. Several investigators have also demonstrated that relaxation can reduce physiological arousal to both imagined and external threats (Grings & Uno, 1968; Paul, 1969), and that it increases tolerance of psychologically aversive stimuli (Davison, 1968; Schubot, 1966). In order to evaluate the contribution of relaxation to changes accompanying symbolic modeling, after the posttreatment assessment was completed, subjects in the control group received the symbolic modeling treatment except that they did not utilize relaxation to counteract fear arousal. It was hypothesized that symbolic modeling combined with relaxation would achieve more rapid vicarious extinction of fear arousal, and greater changes in behavior, attitudes, and emotional responsiveness, than symbolic modeling alone.

Under conditions where a given influence procedure exercises weak behavioral control, other variables (e.g., personality characteristics of change agents, attributes of the recipients, and minor variations in the procedure) are likely to emerge as influential determinants of change. However, if a method is sufficiently powerful it should be able to override such influences. In order to demonstrate that in cases exhibiting only partial improvement the major deficits may reside in

the method rather than in the recipient, all subjects who failed to achieve terminal performances, including the treated controls, were subsequently administered the treatment combining live modeling with guided participation. Upon completion of this supplementary treatment program, each subject was again administered the regular assessment procedures. Approximately 1 month after subjects concluded their treatment they returned for a follow-up assessment to evaluate the durability of the established changes.

#### METHOD

##### *Subjects*

Subjects were recruited through an advertisement placed in community newspapers. The advertisement requested volunteers to participate in an experiment testing procedures designed to eliminate fear of snakes. The sample also contained a small number of students recruited from an introductory course in psychology.

Of the total number of 48 subjects who qualified for inclusion in the study on the basis of a behavioral avoidance test, 5 were males and 43 were females. They varied in age from 13 to 59 years, with a mean age of 27 years.

In virtually all cases the phobia unnecessarily restricted subjects' activities and adversely affected their psychological functioning in various ways. Some of the people were unable to perform their occupational duties in situations where there was any remote possibility that they might come into contact with snakes; others could not take part in recreational activities such as hunting, camping, hiking, or gardening, because of their dread of snakes; and still others avoided purchasing homes in rustic areas, or experienced marked distress whenever they would be unexpectedly confronted with pet snakes in the course of their social or occupational activities.

In the preliminary assessment subjects completed a questionnaire in which they were asked to describe any direct or vicarious aversive experiences that they or members of their families had had in relation to snakes, to indicate the onset of their fear, and to note any familial modeling of snake phobic behavior.

##### *Pretreatment Measurement of Attitudes*

In the present study attitudes are conceptualized as evaluative responses. Subjects' attitudes toward snakes were measured in two ways. First, they were administered six attitude scales describing various encounters with snakes such as visiting a reptile exhibit, being unexpectedly shown a documentary film on the habits of snakes, encountering a snake on a hike, keeping snakes in the home, and handling snakes and caring for them. Subjects were instructed to rate each item on a 7-point scale which

indicates strong enjoyment at one end, strong dislike on the other, and indifference at the midpoint. The mean of the six ratings constituted the attitude score.

Subjects' attitudes toward snakes were also assessed in terms of evaluative dimensions of the semantic differential technique. The form used consisted of eight bipolar adjective rating scales using the following pairs of contrasting adjectives: good-bad, clean-dirty, ugly-beautiful, belligerent-peaceful, interesting-dull, worthless-valuable, nice-awful, and pleasant-unpleasant. The pooled ratings obtained from these scales were averaged to provide a summary evaluative score.

##### *Behavioral Avoidance Test*

The test of avoidance behavior, which was similar to the one employed by Schubot (1966), consisted of a graded series of 29 performance tasks involving increasingly more threatening interactions with a 4-foot king snake. The tasks required subjects to approach the snake in an enclosed glass cage, to look down at it, to touch and hold the snake with gloved and then bare hands, to let it loose in the room and then to replace it in the cage, to hold it within 5 inches of their faces, and finally to tolerate the snake crawling in their laps while they held their hands passively at their sides.

Prior to the test of avoidance behavior subjects were given some factual information about the characteristics of reptiles. They were told that snakes are dry rather than slimy, that they feel cool to the touch because they are cold-blooded and take on the temperature of their surroundings, and that they often flick their tongues because they have faulty vision and use the tongue to explore their environment. This information was provided in order to exclude moderately fearful subjects who might achieve performance gains on the basis of incidental information alone derived from testing and treatment experiences. Moreover, by introducing informational factors prior to measurement of the behavioral base line their potential influence was eliminated from the effects produced by the treatment operations.

Subjects were tested individually by a female experimenter. Those who were unable to enter the room containing the snake were given a score of zero; subjects who could go in were asked to perform the items in the graded series of tasks. To control for any possible influence of expressive and postural cues from the experimenter, she stood behind the subject and read aloud the approach responses to be performed. She also rated the snake's activity level and recorded whether or not the subject successfully completed each test item. In order to evaluate scorer reliability 17 of the behavioral tests, randomly selected from pretreatment, posttreatment, and follow-up phases of the experiment, were scored simultaneously but independently by another rater who observed the test sessions through a one-way mirror. The interrater agreement

was 100% for approach responses and 92% for snake activity level.

The subject's score on the behavioral test was the number of approach tasks he was able to perform. Those who succeeded in lifting the snake inside the cage with a gloved hand for 5 seconds or more were eliminated from the experiment. On the basis of this selection criterion, 38% of the subjects who had defined themselves as snake phobic proved, much to their surprise, relatively fearless in the behavioral test. Subjects were excluded only on the basis of approach behavior without regard to any other psychological characteristics so as to increase generality of the findings.

### *Fear Arousal Accompanying Approach Responses*

In addition to measuring the attitudinal and behavioral effects of the different treatment approaches, their efficacy in eliminating the fear arousal potential of phobic objects was also assessed. During the behavioral test subjects were asked to rate orally, in terms of a 10-interval scale, the intensity of the fear they experienced when each snake approach response was described to them and again while they were performing the corresponding behavior. The scores, averaged across the responses that each subject was able to complete, served as measures of anticipatory fear arousal and performance-related fear.

Immediately after the behavioral avoidance test was completed subjects were readministered the attitude scales and the semantic differential to obtain a new attitudinal base line reflecting any changes resulting from receipt of factual information and exposure to an actual snake.

### *Appraisal of Fear Proneness*

As the final task in the pretreatment assessment subjects completed a comprehensive fear inventory to determine whether elimination of fears concerning snakes is associated with concomitant changes in other areas of anxiety. The inventory, which contained 100 items, included 72 from the test developed by Wolpe and Lang (1964) plus an additional 28 items designed to provide 20 items in each of the following five fear categories: animals; social situations and interpersonal behavior; physical afflictions and injuries; classical phobias; and a group of miscellaneous fears.

Subjects were asked to rate their emotional responses to each object or situation in terms of a 5-point scale describing increasing degrees of fearfulness. Two sets of scores were derived from this test. One was the number of situations that were rated as fear-provoking and the other was a fear-intensity measure obtained by assigning to each item numerical values ranging from 0 to 4 depending upon the level of fear checked. Number and intensity of fear scores were determined separately for each of the five categories and summed across all the items

to provide an overall index of susceptibility to fear arousal.

It should be noted in passing that attitudes, defined as evaluative responses, are differentiated from fear arousal. These two sets of measures are distinguished on the grounds that people can be attracted to things they fear, as evident in approach-avoidance conflicts; conversely, it is not uncommon for people to dislike things they do not fear.

### *Treatment Conditions*

Subjects were individually matched on the basis of their pretreatment avoidance behavior and then randomly assigned to one of four conditions. Each group contained 12 subjects. All treatments were administered individually.

One group of subjects received the standard form of systematic desensitization treatment originally devised by Wolpe (1958). In this procedure deep relaxation was successively paired with imaginal representations of snakes arranged in order of increasing aversiveness. During the first of two sessions subjects received training in muscular relaxation and in the use of positive imagery to diminish emotional arousal. In subsequent sessions, after being deeply relaxed, subjects were asked by the experimenter to visualize the least threatening item in the hierarchy of emotion-arousing scenes involving snakes that they had previously ranked from least to most aversive. This anxiety hierarchy contained a total of 34 scenes ranging from relatively innocuous activities such as looking at pictures and toy replicas of snakes to handling live snakes in ways that would be fear provoking. Whenever subjects signaled anxiety to visualization of a threatening scene it was promptly withdrawn, relaxation was reinstated, and then the item was repeatedly presented until it ceased to evoke anxiety. If relaxation remained unimpaired in the imagined presence of the threat, subjects' emotional responses to the next item in the hierarchy were extinguished and so on throughout the graduated series until the most threatening events were completely neutralized.

A second group of subjects participated in a self-administered symbolic modeling treatment in which they observed a graduated film depicting young children, adolescents, and adults engaging in progressively more threatening interactions with a snake. The colored film, which was approximately 35 minutes long, began with scenes showing the fearless models handling plastic snakes and proceeded through displays in which they touched and held a large king snake, draped it around their necks, and let it crawl freely over their bodies (Figure 1).

To further increase the efficacy of this method two other features were added: First, subjects were taught to induce and to maintain anxiety-neutralizing relaxation throughout the period of exposure. The second factor concerned the control of stimulus presentation. A self-regulated modeling treatment would be expected to permit greater control over extinction outcomes than one in which subjects were



FIG. 1. Photographs of children and adults modeling progressively more fear-arousing interactions with a King snake.

exposed to a sequence of aversive modeling stimuli without regard to their anxiety responses. Therefore, the rate of presentation of modeling stimuli was regulated by subjects through a Kodak analyst projector equipped with remote control starting and reversing devices. Subjects were instructed to stop the film whenever a particular model performance was anxiety provoking, to reverse the film to the beginning of the aversive sequence, and to reinduce deep relaxation. They then reviewed the threatening scene repeatedly in this manner until it was completely neutralized before proceeding to the next item in the graduated sequence. After subjects became skillful in handling the projector controls and the self-induction of relaxation, the experimenter absented himself from the situation so that the subjects themselves conducted their own treatment until their anxieties to the depicted scenes were thoroughly extinguished. Treatment was terminated when they could view the entire film without experiencing any emotional arousal.

During the symbolic modeling treatment subjects rated on a 10-point scale the intensity of their emotional responses to each scene and to subsequent reexposures to the same items. These data were collected to provide information on the course of vicarious extinction of emotional arousal as a function of repeated observation of modeled approach responses.

Subjects assigned to the third group received the treatment combining graduated live modeling with guided participation. After observing intimate snake-interaction behavior repeatedly modeled by the experimenter, subjects were aided through demonstration and joint participation to perform progressively more threatening approach responses toward the king snake. In the initial procedure subjects observed through a one-way mirror the experimenter perform a series of threatening activities with the king snake that provided striking demonstrations that close interaction with the snake does not have harmful consequences. During this period, which lasted approximately 15 minutes, the experimenter held the snake close to his face, allowed it to crawl over his body at will, and let it loose to slither about the room. After returning the snake to its glass cage, the experimenter invited the subject to join him in the room and to be seated in one of four chairs placed at varying distances from the experimenter's chair. The experimenter then removed the snake from the cage and commenced the treatment, beginning with relatively nonthreatening performance tasks and proceeding through increasingly fear-provoking activities. This treatment was conducted without the use of relaxation procedures.

At each step the experimenter himself performed fearless behavior and gradually led subjects into touching, stroking, and then holding the midsection of the snake's body with gloved and then bare hands while the experimenter held the snake securely by the head and tail. Whenever a subject was unable to perform the behavior upon demonstration alone she was asked to place her hand on the experi-

menter's and to move her hand down gradually until it touched the snake's body. After subjects no longer felt any apprehension about touching the snake under these secure conditions, anxieties about contact with the snake's head area and entwining tail were extinguished. The experimenter again performed the tasks fearlessly, and then he and the subject enacted the responses jointly; as subjects became less fearful the experimenter gradually reduced his participation and control over the snake until eventually subjects were able to hold the snake in their laps without assistance, to let the snake loose in the room and to retrieve it, and to let it crawl freely over their bodies. Progress through the graded approach tasks was paced according to the subjects' apprehensiveness. The threat value of the activities for each subject determined the particular order in which they were performed. When they reported being able to perform one activity with little or no fear, they were eased into a more difficult interaction. Treatment was terminated when subjects were able to execute all the snake interaction tasks independently.

Subjects assigned to the control condition participated in all of the assessment procedures without receiving any intervening treatment. This group primarily furnished a control for changes resulting from repeated measurements. A pseudotherapy was not employed because several previous investigations (Davison, 1968; Krapfl, 1967; Lang et al., 1965) have shown that snake avoidance behavior is unaffected by such experiences. In addition, the controls were subsequently used to test the efficacy of symbolic modeling without relaxation.

To evaluate the reliability of treatment outcomes the procedures were administered by two experimenters, one female and one male. Each experimenter applied each of the three treatments to half the subjects. The experimenters received no information about subjects' pretreatment performances on any of the measures so as not to alter the manner in which they administered the procedures.

The treatments, which were typically scheduled twice a week, continued until subjects either achieved the terminal criterion specified for each condition or the maximum time allotment for 5.25 hours of treatment (not counting relaxation training) was completed. Maximum contact with snakes, either in live or symbolic form, was thus equated across conditions. The average duration of treatment required for the different methods was 2 hours, 10 minutes for contact desensitization, 2 hours, 46 minutes for symbolic modeling, and 4 hours, 32 minutes for systematic desensitization. The latter method required more treatment time than the two modeling procedures, which did not differ significantly from each other. These treatment durations do not include the time devoted to relaxation training in the symbolic modeling and systematic desensitization conditions.

Several subjects who were originally selected for the experiment had to be replaced by subjects with comparable avoidant tendencies because of various difficulties that precluded their participation. A male

subject who was making satisfactory progress in the contact desensitization treatment had to discontinue the program when an occupational change made it difficult for him to meet the required schedule; and a female subject in this same condition had to be replaced because she was afflicted with mononucleosis; two controls moved to distant cities during the waiting period, and one dropped out after the pretreatment assessment.

#### *Posttreatment Assessment*

Following completion of the treatment series the assessment procedures employed in the pretreatment phase of the study were readministered to all subjects. As in the pretest, the attitude measures were administered prior to and following the behavioral avoidance test to permit evaluation of the reciprocal interaction between attitudinal and behavioral changes.

In order to determine the generality of extinction effects, half the subjects in each of the conditions were tested initially with the familiar brown-striped king snake and then with an unfamiliar crimson-splotched corn snake that was strikingly different in coloration; the remaining subjects were tested with the two snakes in the reverse order. Two groups of 12 students, drawn from an introductory psychology course, were tested with either the king snake or the corn snake to compare their aversive properties. Except for a slight tendency for the corn snake to evoke more negative evaluations on the semantic differential ( $t = 2.33$ ,  $p < .05$ ), both snakes produced equivalent approach behavior, fear arousal accompanying specific approach responses, and negative attitudes toward reptiles.

The same female experimenter who conducted the pretreatment assessment administered the posttreatment measures. To control for any possible bias, she was provided with no information about the conditions to which the subjects were assigned.

#### **RESULTS**

Differences in approach behavior toward the two snakes were evaluated separately for each treatment condition. Although subjects in the contact desensitization and systematic desensitization treatments performed more approach responses toward the familiar king snake than toward the generalization snake, none of the differences reached the .05 significance level. Nor did subjects experience differential levels of fear arousal while performing specific approach responses toward the two snakes. The two sets of scores were, therefore, averaged across snakes for evaluating the results of the experiment.

The data were analyzed using analysis of covariance in which pretreatment measure-

ments served as the covariates. Separate three-way analyses were computed for each dependent variable with treatment conditions, experimenters, and snake order representing the three factors.

Table 1 shows the significance levels of the treatment effects, the differences between pairs of treatment conditions, and the changes that occurred within each group on each of 17 measures. The order in which the snake tests were administered did not in itself produce any significant differences, and except for one instance which will be discussed later, the two experimenters achieved equivalent results. In the numerous analyses only three significant interaction effects were obtained that will be discussed when results are reported separately for each measure.

#### *Approach Behavior*

The mean approach responses performed by subjects in each of the four conditions at the pretreatment and posttreatment phases of the experiment are presented in Figure 2. As depicted in Table 1, subjects in the control group showed no change in their avoidance behavior. On the other hand, all three treatments produced substantial reductions in avoidance behavior and they differed significantly in this respect from the control condition. Symbolic modeling and systematic desensitization proved equally efficacious in restoring approach behavior. As predicted, subjects who received live modeling combined with guided participation achieved the greatest performance gains. The analysis disclosed no significant experimenter differences or interaction effects.

A more stringent criterion of extinction of avoidance behavior is the percentage of subjects in each condition who were able to perform the terminal approach task with at least one snake. The rates were 92% for modeling with participation, 33% for symbolic modeling, 25% for systematic desensitization, and 0% for the controls. These differential rates of terminal performances were highly significant ( $\chi^2 = 23.14$ ,  $p < .001$ ).

As noted earlier, the behavior changes produced by the treatment procedures generalized extensively to the unfamiliar snake that subjects encountered for the first time

TABLE 1  
SIGNIFICANCE OF TREATMENT EFFECTS, INTERGROUP DIFFERENCES, AND WITHIN-GROUP CHANGES FOR EACH OF SEVERAL MEASURES

Response measure	Treatment effect ( <i>F</i> test)	Comparison of pairs of treatment conditions ( <i>F</i> test)				Within-group changes ( <i>t</i> test)
		Modeling with participation vs. symbolic modeling	Modeling with participation vs. systematic desensitization	Symbolic modeling vs. systematic desensitization	Systematic desensitization vs. control	
Approach behavior	16.70***	8.24**	11.75**	.79	9.04**	6.00*
Fear arousal	16.73***	2.30	10.71**	52.83***	77.18***	19.95***
Initial Approach	14.61***	.12	15.82***	47.73***	52.57***	8.59**
Total approach	22.84***	7.36**	22.27***	64.34***	4.02	28.17***
Attitude scores	26.33***	6.05*	17.78***	70.76***	3.90	35.42***
Semantic differential						17.60***
Total number	.85					3.27**
Total intensity	1.23					5.13***
Number animal	1.84					1.99
Intensity animal	4.06*					5.56***
Number social	.63					6.14***
Intensity social	1.90					3.49**
Number injury	.47					2.77*
Intensity injury	.42					2.57*
Number classical	.48					1.68
Intensity classical	1.02					1.92
Number miscellaneous	1.66					2.92*
Intensity miscellaneous	1.10					4.82***

\*  $p < .05$ .  
\*\*  $p < .01$ .  
\*\*\*  $p < .001$ .

in the posttreatment assessment. However, some of the subjects whose avoidance behavior was thoroughly extinguished in relation to the familiar king snake were nevertheless unwilling to perform the terminal task with the corn snake. Among subjects who achieved terminal performances with the king snake, the percentage showing complete transfer to the other reptile was 55%, 100%, and 0% for contact desensitization, symbolic modeling, and systematic desensitization, respectively. When approach scores are considered for all subjects, regardless of whether or not they achieved terminal performances with the experimental snake, the contact desensitization treatment of course produced greater approach behavior ( $M = 24.6$ ) toward the generalization snake than either symbolic modeling (18.0) or systematic desensitization (15.8).

#### *Fear Arousal Accompanying Approach Responses*

The degree of fear arousal evoked by approach responses is partly dependent on the threat value of the behavior being performed. That is, looking at a caged snake is a much less fear-provoking activity than holding a writhing snake close to one's face. The degree of fear extinction was measured by comparing the mean level of fear arousal accom-

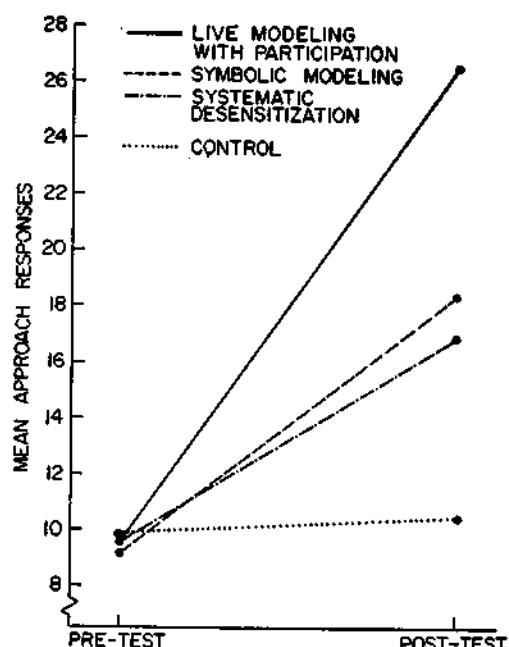


FIG. 2. Mean number of approach responses performed by subjects before and after receiving their respective treatments.

panying approach responses that subjects performed before treatment with the fear levels reported in the posttreatment period for the same subset of approach responses and for all of the approach behavior that subjects

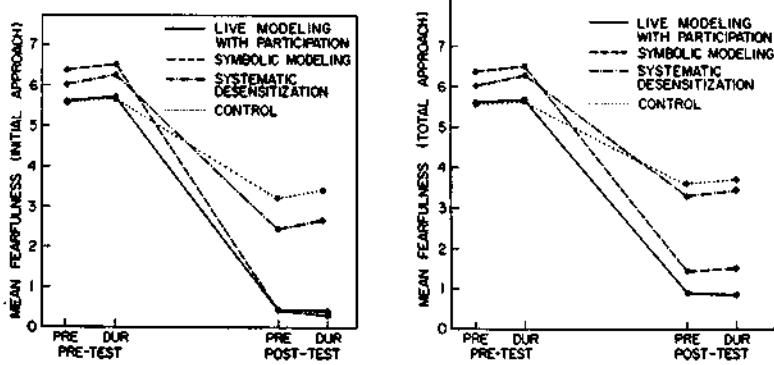


FIG. 3. Mean level of fear arousal associated with approach responses that subjects performed before treatment and the fear levels reported in the post-treatment period for the same subset of approach responses (left figure) and for all the approach responses (right figure) that subjects successfully performed. (Pre refers to the intensity of fear subjects experienced when each snake approach response was described to them, and Dur signifies the fear level they reported while actually performing the corresponding behavior.)

successfully executed. If, for example, a given subject successfully completed 5 approach responses in the pretest and 20 responses in the posttreatment phase, the fear decrement for initial approach responses was based on differences in mean fear scores for the same 5 responses in the two assessments; the fear decrement for total approach behavior was measured in terms of differences between mean fear scores for the 5 pretest responses and for the 20 responses performed in the posttreatment period.

The fear extinction data are depicted graphically in Figure 3. Since anticipatory and performance fear arousal did not differ significantly, these two sets of ratings were averaged for statistical analyses. The results are shown in Table 1.

*Fear evoked by initial approach responses.* With regard to the pretreatment subset of approach responses, subjects in all conditions, including the controls, experienced less fear the second time they performed the same behavior. The treatment conditions, however, produced more marked fear decrements. Further comparisons among means revealed that the magnitude of fear reduction achieved by subjects who received systematic desensitization was significantly less than that shown by subjects in the two modeling conditions, which did not differ from each other.

The analysis disclosed a Treatment  $\times$  Order interaction effect at a borderline level of significance ( $F = 2.97$ ,  $p < .05$ ). Subjects who received the modeling treatments achieved greatest decrements in fear arousal when they were tested first with the unfamiliar snake, systematic desensitization subjects displayed greatest fear reduction when they were tested initially with the familiar snake, while the order of the behavioral test had no differential effects on fear arousal in control subjects. The results also yielded a significant triple interaction effect ( $F = 5.96$ ,  $p < .01$ ) that is not easily interpretable.

*Fear evoked by total approach responses.* Further evidence for the differential efficacy of the treatment procedures in extinguishing fear arousal is provided in comparisons of fear level experienced in relation to pretreatment approach responses with fear arousal accompanying total approach behavior. On this

measure, control subjects showed no significant fear reduction even though their posttreatment performances did not differ much from their initial approach behavior. Subjects in the treatment conditions, on the other hand, experienced significantly less fear in connection with far more threatening performances. Except for the significant treatment effect none of the other main effects or interactions between variables were significant.

As was the case with fear reduction in relation to pretreatment level performances, the two modeling conditions did not differ from each other, but both produced greater fear extinction for total approach behavior than did systematic desensitization. Considering, however, that the mean fear level for contact desensitization is based upon more fear-provoking behavior in posttreatment than the mean for symbolic modeling, the data for the latter two groups are not entirely comparable. A supplementary analysis was therefore performed which compared the level of fear associated with the last approach response that the more timorous member of each matched pair was able to perform. That is, if a pair of matched subjects in the contact desensitization and symbolic modeling treatments completed 29 and 25 approach responses, respectively, the comparison included the fear level accompanying the twenty-fifth response they performed in common. In this analysis subjects receiving symbolic modeling experienced far greater fear arousal ( $M = 4.21$ ) than their counterparts in contact desensitization ( $M = .69$ ), a difference that is highly significant ( $t = 3.29$ ,  $p < .01$ ).

#### *Attitudinal Changes*

The changes in attitudes produced by the various treatment procedures are shown graphically in Figure 4 and evaluated statistically in Table 1. Both measures—based on the attitude scales and the semantic differential—yielded comparable results. There are no differences on either measures between the two attitude assessments conducted in the pretreatment phase ( $Pre_2 - Pre_1$ ). For the types of subjects included in this experiment, apparently factual information about snakes and exposure to a snake in the behavioral test did not alter their negative evaluations

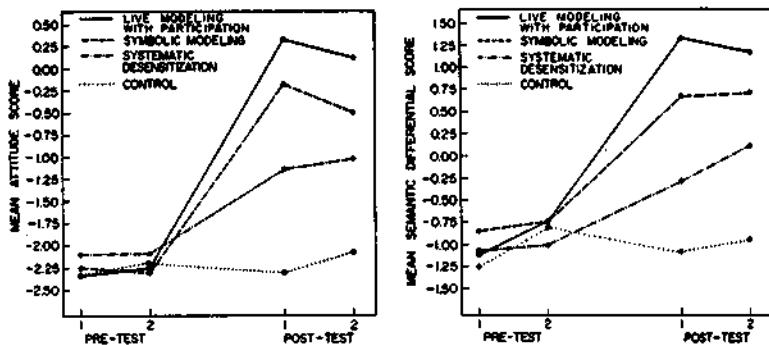


FIG. 4. Attitudes displayed by subjects on the attitude scales (left figure) and the semantic differential (right figure) before and after receiving their respective treatments. (The numeral 1 indicates subjects' attitudes prior to the behavioral test, and the numeral 2 shows their attitudes immediately after the test of avoidance behavior.)

of reptiles. The refractory quality of these negative attitudes is further shown by the control subjects whose attitudes remained unaltered in the posttreatment assessment as well.

Analysis of changes in attitude scores obtained between the pretreatment behavioral test and following the treatment phase ( $\text{Post}_1 - \text{Pre}_2$ ) reveals a highly significant treatment effect for both measures. Subjects in all three experimental conditions displayed favorable changes in their evaluation of reptiles. Individual comparisons among the means for the different conditions show that modeling combined with participation produced the greatest attitudinal changes, the two modeling procedures were superior to systematic desensitization, and all three treatment conditions differed significantly in this respect from the nontreated control group. It is interesting to note that subjects showed no additional attitudinal changes as measured immediately after the posttreatment behavioral test ( $\text{Post}_2 - \text{Post}_1$ ).

The results revealed two additional significant effects. Subjects treated by the female experimenter displayed greater changes on the semantic differential than those treated by the male ( $F = 7.75, p < .01$ ). A significant Treatment  $\times$  Order interaction effect ( $F = 3.08, p < .05$ ) was obtained in the analysis of data from the attitude scales. The behavioral test order in which the familiar snake was presented first produced more

favorable changes in attitudes of subjects receiving the modeling treatments, but variation in snake order had no differential effects on subjects in the systematic desensitization and control groups.

#### *Fear Inventory*

The changes in the number and intensity of fears in each of the five areas measured are given in Figure 5. Results of the statistical evaluation of these scores are summarized in Table 1. The analysis of covariance indicates no significant difference between groups except for intensity of animal fears. Further comparison of pairs of means shows that subjects in the two modeling conditions experienced a greater reduction in the degree to which they feared animals than did the controls.

Analysis of change scores within groups reveals some degree of fear reduction toward situations beyond the specifically treated phobia, the decrements being roughly proportional to the potency of the treatments employed (Table 1). Nontreated controls showed no changes in either the number or intensity of fears; systematic desensitization produced a decrease only in severity of fears toward other animals; and symbolic modeling was accompanied by reduction in the intensity of fear of animals and social events. Contact desensitization, on the other hand, effected the most widespread fear reductions in relation to a variety of threats including animals,

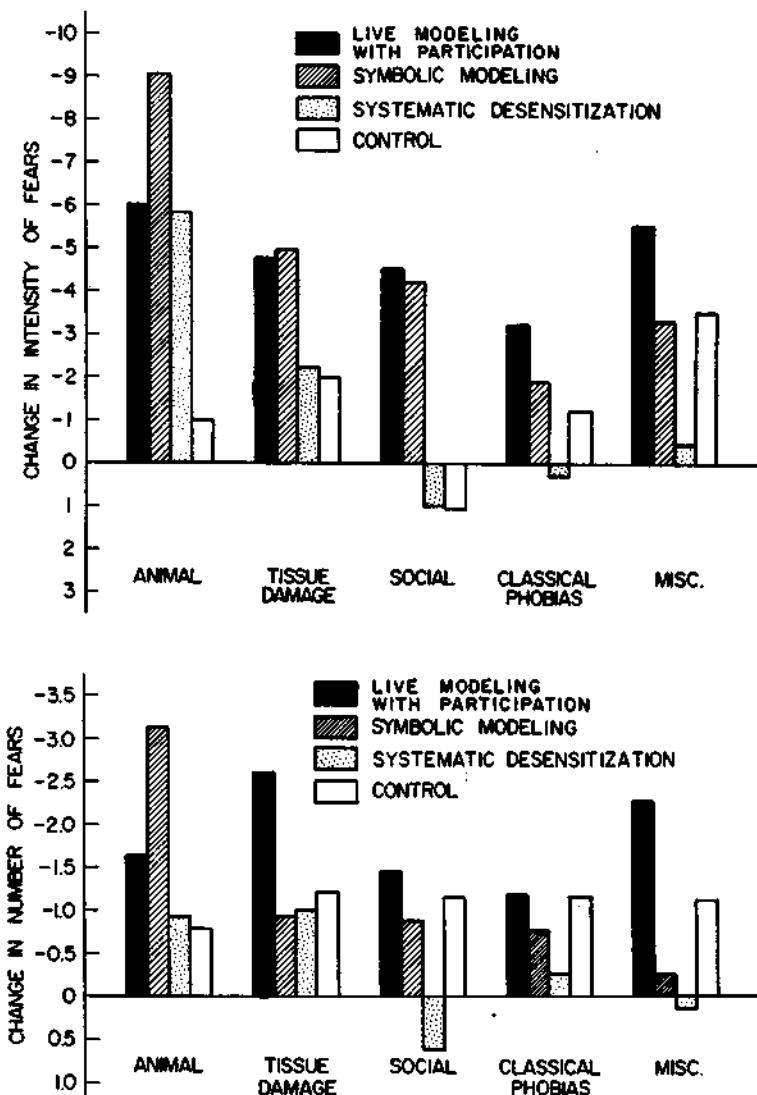


FIG. 5. Changes in the mean number and intensity of fear shown by groups of subjects in each of the five areas measured.

physical injury, interpersonal situations, and miscellaneous events.

#### *Relationship between Attitudinal and Behavioral Changes*

Pretest attitudes and behavior were correlated to assess the degree of relationship that ordinarily exists between these two responses classes. Attitudes were highly positively related to approach behavior for the unselected group of subjects who were used

to measure the aversiveness of the snakes. Approach scores correlated .73 with attitudes prior to the behavior test and .87 immediately after the behavior test. The corresponding relationships between the attitude measures based on the semantic differential and approach behavior were .56 and .70, respectively. These correlation are all significant beyond the .01 level.

Similar product-movement correlations were calculated for the phobic subjects as well,

although coefficients based on these data are less informative because the range of approach scores for this sample is considerably curtailed. Nevertheless, approach behavior correlated positively with attitudes prior to ( $r = .48$ ) and after ( $r = .56$ ) the behavior test. The data also reveal moderately high positive relationships between approach behavior and evaluative responses on the semantic differential as measured before ( $r = .44$ ) and after ( $r = .60$ ) the behavior test. All of the preceding correlation coefficients exceed the .01 level of significance.

In order to determine whether the treatment procedures produced analogous changes in attitude and behavior, correlations were computed on amount of change obtained between pretest and posttreatment scores for these sets of measures. Since the corresponding correlations computed separately for data from the different treatment conditions were in the same direction and did not differ significantly, they were averaged by means of an  $r$  to  $z$  transformation.

Behavior change is positively correlated with attitude change ( $\text{Post}_1 - \text{Pre}_2$ ) as measured by both the semantic differential ( $r = .39$ ,  $p < .05$ ) and the attitude scales ( $r = .59$ ,  $p < .01$ ). Moderately high positive relationships are likewise obtained between these measures when the attitude change scores are based on differences between pretest attitudes and those exhibited in posttreatment following the behavioral avoidance test ( $\text{Post}_2 - \text{Pre}_2$ ). The correlations of changes in behavior with changes in semantic differential and attitude scores are  $r = .55$  ( $p < .01$ ) and  $r = .58$  ( $p < .01$ ), respectively.

The correlational analysis disclosed no relationship between degree of behavioral change and either initial number or intensity of fears in other areas of functioning. Thus, the effectiveness of the treatment procedures was not diminished by the presence of generalized anxiety. Nor did subjects' initial attitudes toward snakes affect the degree of behavioral improvement achieved by the different treatment methods.

Although attitudes were not predictors of behavioral change, the initial severity of avoidance behavior was a significant pre-

dictor of degree of attitude change as measured by both the attitude scales ( $r = -.43$ ;  $p < .01$ ) and the semantic differential ( $r = -.42$ ;  $p < .01$ ). The more avoidant subjects were to begin with, the less they altered their evaluations of reptiles in the positive direction. Moreover, within the two modeling treatments, degree of attitude change on the attitude scales correlated negatively with number of fears ( $r = -.40$ ;  $p < .05$ ), and anxiety about physical injury ( $r = -.54$ ;  $p < .01$ ).

#### Treated Controls

Following completion of the posttreatment assessment, subjects in the control group received the symbolic modeling treatment without the relaxation component. They simply reviewed threatening scenes repeatedly until completely neutralized, and recorded their level of fear arousal during each exposure. Except for one subject who had to discontinue toward the end of the treatment to undergo major surgery, all of the controls completed this second phase of the experiment. They were then readministered the same sets of measures used in the preceding assessments.

In evaluating the efficacy of symbolic modeling without relaxation,  $t$  tests for correlated means were computed on changes in the performances of control subjects after they had received the treatment relative to their posttest scores. As shown in Table 2, symbolic modeling alone increased subjects' approach behavior. In fact, 45% of the subjects exhibited terminal performances toward both snakes. This treatment also produced favorable attitudinal changes, and it reduced fear arousal to both snake approach behavior and a variety of other potentially threatening situations measured by the fear inventory (Table 2).

Statistical comparisons were made of the changes achieved by control subjects through symbolic modeling alone and by experimental subjects who received symbolic modeling with relaxation. No differences were found between the groups either in approach behavior or in generalized anxiety (Table 2). However, subjects who paired aversive modeling cues with relaxation subsequently experienced signifi-

TABLE 2

SIGNIFICANCE OF SUPPLEMENTAL TREATMENTS AND TEMPORAL CHANGES FOR EACH OF SEVERAL MEASURES

Response measure	Treated controls	Treated controls vs. symbolic modeling	Changes following modeling with participation			Group differences at multiple treatment ( <i>F</i> test)	Post treatment vs. follow-up ( <i>t</i> test)	Group differences at follow-up ( <i>F</i> test)
			Symbolic modeling <i>n</i> = 8	Systematic desensitization <i>n</i> = 9	Treated controls <i>n</i> = 6			
Approach behavior	5.65***	.46	18.50***	18.36***	9.58***	.15	.50	.12
Fear arousal								
Initial approach	5.35***	2.04*	1.91	7.19***	2.12	1.32	2.65*	.72
Total approach	2.92*	3.00**	3.39*	5.96***	2.16	1.46	4.21**	1.68
Attitude scores	3.73**	2.09*	8.26***	3.12*	3.47*	2.36	2.12*	1.30
Semantic differential	5.29***	2.71*	4.09**	1.49	1.80	3.30*	2.24*	3.68*
Fear inventory								
Total number	4.78***	.62	3.21*	.24	4.89**	1.45	2.13*	1.33
Total intensity	6.43***	.45	6.52**	.71	1.97	1.19	2.80**	1.50
Number animal	3.68**	.62	3.97**	.00	1.23	1.61	1.83	2.72
Intensity animal	4.55**	.74	4.95**	.45	1.95	1.19	3.07*	2.06
Number social	3.99**	1.22	4.41**	1.00	.00	1.18	.40	.52
Intensity social	2.85*	.04	5.34**	1.43	.72	1.13	.63	.66
Number injury	1.79	.34	1.25	2.03	.80	2.11	3.66**	1.42
Intensity injury	2.39*	.93	3.81**	.69	2.43	1.50	2.87**	1.43
Number classical	2.39*	.22	3.00*	.12	4.39**	1.97	.95	2.16
Intensity classical	5.02***	.71	4.58**	.32	2.76*	2.10	1.33	2.51
Number miscellaneous	2.60*	1.98	1.75	.23	2.42	1.48	2.24*	.80
Intensity miscellaneous	3.60**	.17	2.44*	.79	1.29	.94	2.43*	1.08

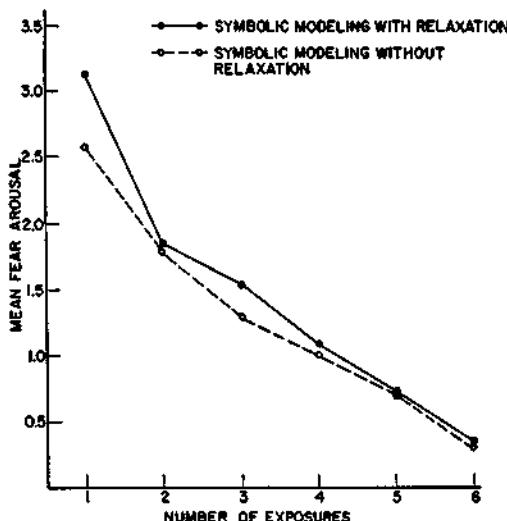
\*  $p < .05$ .\*\*  $p < .01$ .\*\*\*  $p < .001$ .

FIG. 6. Mean level of fear arousal evoked by the modeling stimuli initially and by each subsequent reexposure to the same scenes in subjects receiving symbolic modeling with relaxation and symbolic modeling alone.

cantly less fear arousal while performing snake-approach responses, and they showed greater positive changes in their attitude toward snakes.

#### Vicarious Extinction of Fear Arousal to Modeled Events

As was mentioned earlier, subjects receiving film-mediated treatment rated the degree of fear arousal evoked by the modeled scenes initially and by each subsequent reexposure to the same scenes. These ratings were averaged across subjects and scenes at each exposure to provide an index of the rate with which fear arousal was extinguished in subjects who observed the modeled events with and without the benefit of relaxation. The data are plotted in Figure 6 for the first six exposures since subjects rarely required more than six presentations to neutralize any given scene. The vicarious extinction data for the subject who had to discontinue before com-

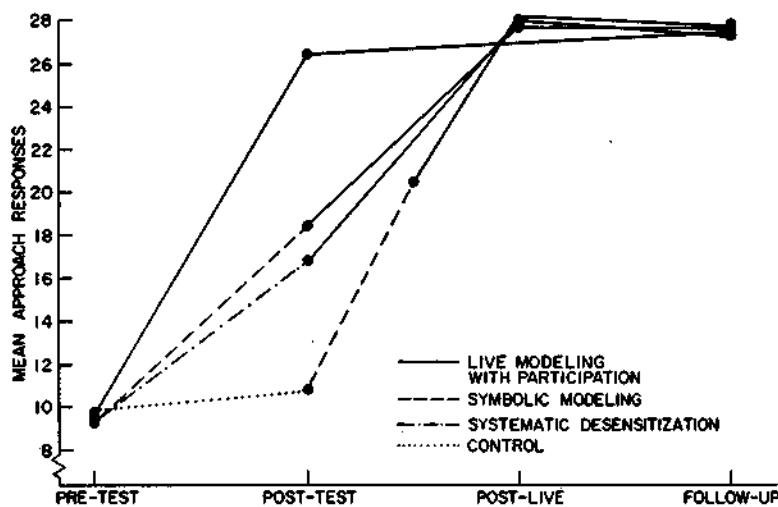


FIG. 7. Mean number of approach responses performed by subjects before and after receiving their respective treatments (posttest). (Control subjects subsequently received symbolic modeling without relaxation. The postlive point combines the scores of subjects in each condition who required no additional treatment and those who were later given the supplementary treatment combining modeling with guided participation. The approach behavior in all four groups was measured again in the follow-up study conducted one month later.)

pleting the final portion of the treatment and the fear arousal ratings of the matched subject for the same duration of treatment were included in the statistical analysis.

Both groups of subjects showed a progressive decline in fear arousal with each successive exposure to modeled approach behavior. Separate comparisons of scores between adjacent points reveals that the fear decrements with each reexposure are highly significant for both sets of data.

Although repeated observation of nonreinforced approach behavior eliminated fear arousal, the addition of relaxation did not have a strong facilitative effect on the rate of vicarious fear extinction. The two groups did not differ significantly in level of fear arousal on first exposure to each modeled scene, but subjects who combined modeling with relaxation experienced a greater reduction in fear on the second exposure to the aversive scenes than their counterparts who received modeling alone ( $t = 1.80$ ,  $p < .05$ ); on subsequent reexposures, however, the rate of fear extinction was essentially the same. Subjects who paired modeling with relaxation

required fewer reexposures ( $M = 24$ ) than the modeling-alone group ( $M = 58$ ) to achieve complete extinction of fear arousal, but there was considerable variability and the difference is significant only at a borderline level of significance ( $t = 1.66$ ,  $.10 < p < .05$ ).

#### *Changes Following Supplementary Treatment with Contact Desensitization*

A total of 23 subjects from the symbolic modeling, systematic desensitization, and treated control groups who failed to attain terminal performances received live modeling with guided participation. Although there was some variability, the average length of this supplementary treatment was approximately 1 hour and 20 minutes. After these subjects completed their treatment they were administered the regular assessment procedures.

As shown in Figure 7 and Table 2, subjects in all three groups displayed further significant increases in approach behavior. The data of this subgroup combined and those who required no additional treatment reveals that 96% of all the subjects who participated in

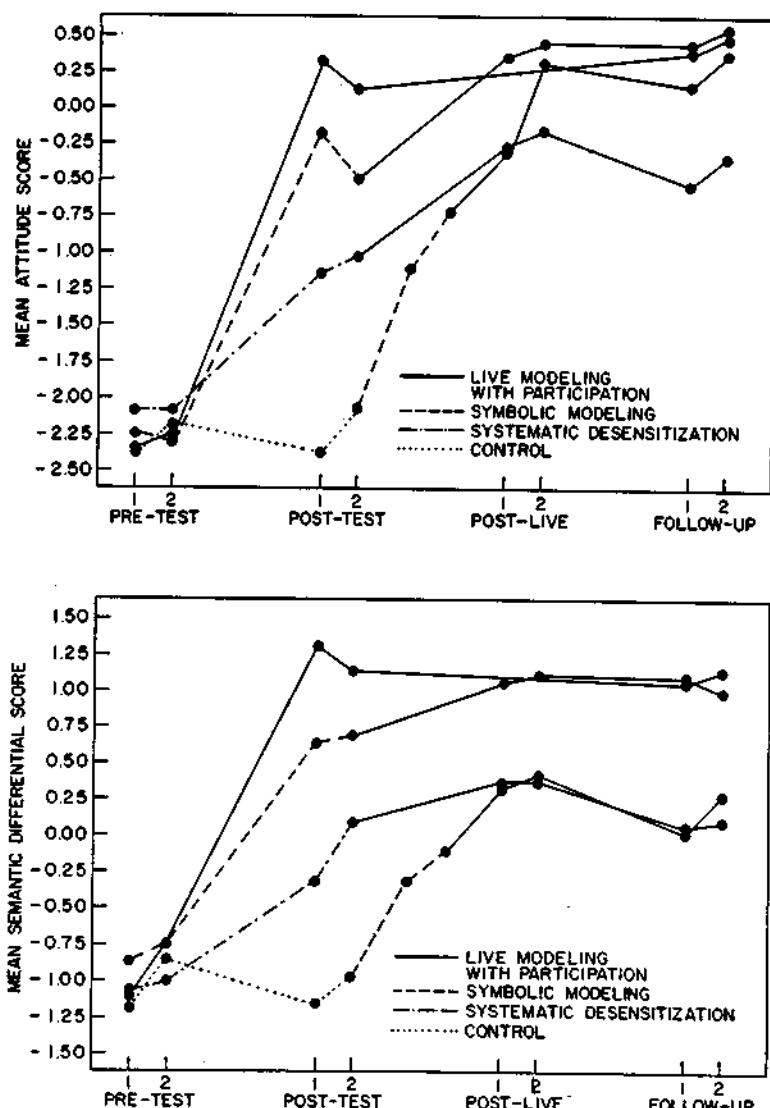


FIG. 8. Attitudes exhibited by subjects in each of the four groups before treatment (pretest); following their respective treatments (posttest); after supplementary treatment of the subgroups of subjects with modeling and participation (postlive); and at the follow-up period.

the study achieved terminal performances with the experimental snake, while 70% showed complete extinction of avoidance behavior toward the generalization snake as well. These behavioral changes were maintained at the same level over the follow-up period, with the terminal performances being 96% and 67% for the experimental and generalization snakes, respectively. At the various test periods sub-

jects in the different treatment conditions who failed to complete the final approach response usually successfully performed the remaining tasks, which explains why differences in approach scores based on the two snakes do not reach statistical significance.

Subjects' attitudes and level of fear arousal at the different assessment periods are summarized graphically in Figures 8 and 9. The

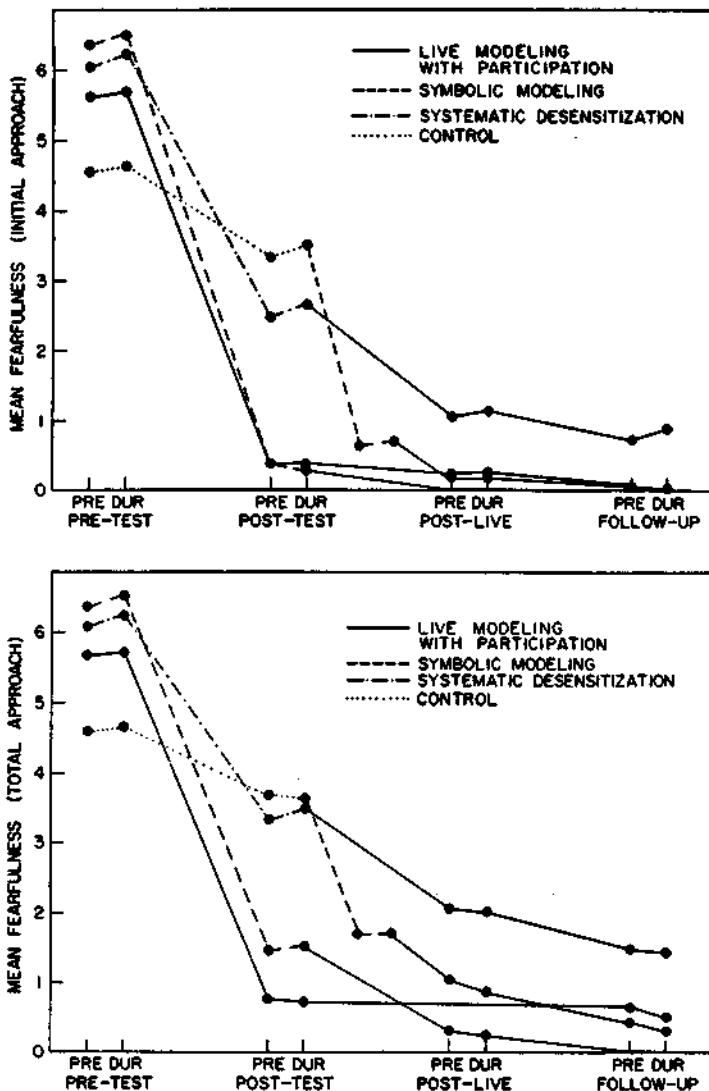


FIG. 9. Mean level of fear arousal displayed by subjects in each of the four groups before treatment (pretest); following their respective treatments (posttest); after supplementary treatment of the subgroup of subjects with modeling and guided participation (postlive); and at the follow-up period.

significance of the changes on these and other measures by the subgroup of subjects receiving the supplementary treatment is presented in Table 2.

Of the three groups of subjects, those who originally received symbolic modeling paired with relaxation benefited most from live modeling with guided participation. In addition to the increases in approach behavior

previously reported, they showed further improvements in attitude, additional fear extinction, and generalized reduction of anxiety in all five areas of functioning measured by the fear inventory (Table 2). Following the supplementary treatment, control subjects, who previously received symbolic modeling alone, displayed a significant reduction in avoidance behavior, positive changes on the

attitude measure, and a significant decrease in the total number of fears.

The supplementary treatment likewise produced behavioral and attitudinal improvements in the systematic desensitization subgroup. In addition, subjects in this condition, who originally achieved the smallest decrement in fear arousal compared to the other methods, showed marked extinction of fear arousal. However, the supplementary treatment did not produce any further change in their fear of other potential threats. The fact that subjects receiving the symbolic modeling treatment originally achieved greater decrements in fear arousal than either the treated controls or the systematic desensitization subjects might explain why the former group showed the most generalized reduction in other fears following the treatment combining modeling with participation.

Separate analyses of variance were computed on the 17 measures after subjects attained terminal performances either through their regular treatment alone or combined with modeling and participation. At this phase of the experiment there were no significant differences between the groups on any of the measures except the semantic differential administered before the behavioral avoidance test (Table 2). Subjects who received modeling with participation exhibited greater changes than their counterparts in either the control ( $F = 6.10, p < .05$ ) or the systematic desensitization ( $F = 5.05, p < .05$ ) conditions. The symbolic modeling group also manifested more positive evaluative responses than the controls ( $F = 4.64, p < .05$ ), but it did not differ significantly from the systematic desensitization group. No significant group differences were found, however, either on attitude scores ( $F = .54$ ) or semantic differential scores ( $F = 1.45$ ) obtained immediately after the behavioral avoidance test.

#### *Maintenance of Psychological Changes*

In order to evaluate the durability of induced changes subjects returned for an additional evaluation approximately 1 month after they had concluded their final treatment.  $t$  tests were calculated on differences between performances for the total sample of sub-

jects in their last posttreatment test and in the follow-up assessment. Results of these statistical analyses for the combined sample are given in Table 2.

Subjects not only maintained the same level of bold approach behavior, but they experienced significantly less fear arousal while performing the same approach responses in the follow-up assessment. However, subjects showed a small but nevertheless significant decrease in positive attitudes toward snakes over the follow-up period. As can be seen from Figures 8 and 9, subjects in the systematic desensitization ( $t = 2.34, p < .05$ ) and control ( $t = 1.93, p < .10$ ) conditions accounted mainly for the change in attitude scores; control subjects ( $t = 2.82, p < .02$ ) also contributed largely to the change on the semantic differential.

Analysis of fear inventory scores revealed that subjects either maintained their gains or showed further reductions in their fear of potential threats in other areas of functioning (Table 2). Specifically, they reported fewer fears and a significant diminution in the intensity of their subjective reactions to threats. The greatest fear reduction over the follow-up period occurred in relation to animals and apprehension over physical injury. In addition, subjects reported decrements in various miscellaneous fears.

Separate analyses of variance were also performed on the 17 measures at the follow-up period to determine whether subjects in the different conditions retained their comparable improvements. As in the final posttreatment assessment, there were no significant differences between the groups on any of the measures, except the semantic differential obtained prior to the behavioral avoidance test (Table 2). Individual comparisons of pairs of means shows the control group as having lower positive evaluations of snakes than subjects in either the contact desensitization ( $F = 7, p < .05$ ) or symbolic modeling ( $F = 8.54, p < .01$ ) conditions. However, control subjects significantly increased their valuations of snakes after the behavioral avoidance test and no significant group differences were found ( $F = 1.70$ ) on the final semantic differential score.

*Antecedents of Snake-Phobic Behavior*

As was previously mentioned, at the beginning of the experiment subjects were administered a questionnaire measuring both direct and vicarious aversive experiences with snakes and the incidence of familial modeling of snake phobic behavior. Although not a single subject had ever been physically injured by a snake, they reported a variety of frightening experiences involving reptiles. For example, 63% of the subjects were frightened in childhood by surprise encounters with snakes on walks, coiled up under rocks, under household furniture, in boats, in tents, and in other unexpected places. Some subjects described revolting child experiences in which they witnessed snakes viciously beaten to death. To a young child incidents of this type would tend to convey the impression that snakes must be exceedingly dangerous to warrant such extreme onslaughts.

In 62% of the cases, fear of snakes was further reinforced through pranks involving live or dead snakes and toy specimens. In their childhood years the subjects were chased by other children brandishing snakes menacingly, they had dead snakes thrown at them, or hidden in their lunch baskets, in beds, in tents, in closets, and in grocery bags. Those who were most apprehensive about snakes were selected as the favorite targets in such pranks.

Traumatic vicarious experiences that often resulted in recurrent nightmares were also reported by 58% of the sample. The episodes that subjects found most shocking were sequences in movies or television programs in which snakes were shown stalking their prey, crawling menacingly toward sleeping people, wrapping themselves around animals or people and slowly crushing them to death, or where persons were thrown into a pit of writhing snakes.

Familial modeling of snake-phobic behavior also occurred with relatively high frequency (56%) in this sample. The vast majority of cases (85%) reported having experienced two or more of these different forms of fear arousal (i.e., direct, vicarious, and familial modeling influences). Although these findings cannot be fully interpreted in the absence of compara-

tive data from a nonphobic sample, they nevertheless reveal that subjects in the present study had undergone numerous frightening experiences capable of endowing snakes with strong aversive properties.

At the conclusion of the experiment subjects filled out a questionnaire that asked them, among other things, to describe their reaction when they first learned about the type of treatment that they would be receiving and their confidence in the method; and to indicate whether the treatment experiences in any way enhanced or hindered their functioning. These results are reported next.

*Therapeutic Expectations*

The treatment procedures were presented to subjects as experimental approaches, without any claims made for their efficacy. Questionnaire results disclose that when subjects first learned about the type of treatment they were to receive, 67% did not expect to benefit from the program, 16% were uncertain about what to expect, while 16% believed that they would achieve beneficial results. Subjects in the symbolic modeling and systematic desensitization conditions were skeptical that even if the treatment eliminated their fears toward symbolic representation of snakes, the extinction effects would transfer to actual snakes.

I felt totally unconfident that it would work on me. I thought I could probably get used to seeing snakes, but I never thought that I could be able to pick one up calmly . . . I did not see how just imagining snakes could help me. I did not have much confidence in the method.

Most subjects in the contact desensitization condition, on the other hand, had serious doubts that they could ever perform the snake approach responses required by the treatment ("I was appalled and determined I could never handle a snake.").

The skepticism regarding these more direct treatment approaches also stemmed in part from the widespread belief that anxiety conditions can be successfully modified only through verbal interpretive means. This attitude is reflected in the following comments of one of the subjects:

When I heard that it would be all involvement with snakes, I didn't think it would be successful in my case. I had expected and hoped for more discussion about snakes. However, I now realize that this would not have solved my problem. Rather, it would have been a waste of time.

#### *Positive Transfer to Naturalistic Situations*

During the follow-up period 47% of the subjects reported encounters with snakes in one form or another. In each case they reported that the reduction in fear of snakes achieved in treatment generalized to snakes in naturalistic situations. The subjects no longer experienced marked distress when unexpectedly confronted with snakes in the course of their social or occupational activities; they could visit reptile exhibits and look at pictorial displays of snakes without trepidation; they were able to handle harmless snakes, and a few even served as model therapists for their own children and faint-hearted friends.

Other subjects, though they had no contact with snakes, were nevertheless able to participate in recreational activities such as hunting, camping, picnicking and hiking, which they had formerly avoided because of their dread of snakes. As one subject explained, "I am no longer harassed by walking through grassy areas in fear of running across a snake."

#### DISCUSSION

Results of the present experiment provide further evidence that treatment approaches based on social-learning principles can be highly efficacious in producing generalized and enduring psychological changes. Of the three methods investigated, modeling combined with guided participation was most successful in eliminating phobic behavior, in extinguishing fear arousal, and in creating favorable attitudes. The generality of these findings is increased by the additional evidence that subjects who achieved only partial improvement through other treatments displayed substantial changes after a brief period of contact desensitization.

It would appear from these laboratory findings that a powerful form of treatment is one in which therapeutic agents themselves model the desired behavior and arrange optimal conditions for clients to engage in similar ac-

tivities until they can perform the behavior skillfully and fearlessly.

Comparison of symbolic desensitization and symbolic modeling shows both procedures to be equally effective in extinguishing avoidance behavior; however, symbolic modeling produced greater reduction in both fear arousal and negative attitudes, and the behavioral changes it achieved appear to be more generalized. Indeed, findings of the present study and those reported by Blanchard (1969) disclose that subjects who attain terminal performances through modeling alone show almost complete transfer on behavioral generalization tests.

Although the foregoing results demonstrate that significant psychological changes can be reliably achieved by extinguishing the arousal potential of aversive stimuli presented in symbolic form, they also indicate that such treatment approaches have certain limitations if used alone. Virtually all subjects who received systematic desensitization or symbolic modeling displayed behavioral improvements that surpassed either their pretreatment performances (96%) or the changes exhibited by matched nontreated controls (91%). Nevertheless, most subjects in these treatment conditions were unable to perform terminal-level activities that had been thoroughly neutralized in symbolic form. Other investigators (Agras, 1967; Hoenig & Reed, 1966) have found a similar discrepancy between symbolic desensitization and actual performance.

From knowledge of stimulus generalization one would ordinarily expect some transfer loss in symbolically oriented treatments. A major advantage of modeling with participation is that fear is eliminated toward actual threats. In clinical practice, of course, symbolic desensitization is typically supplemented with graded performance tasks that are executed in real life situations, with active positive reinforcement of approach behavior to overcome initial reluctance of phobic persons to reexpose themselves to feared situations, and with modeling procedures to further augment change in behavior. In laboratory investigations, these various "extraneous" influences are intentionally excluded.

The prediction that relaxation would augment the effects of symbolic modeling was

only partially corroborated. Modeling coupled with relaxation produced greater decrements in fear accompanying approach responses, more favorable attitudes, and more rapid vicarious extinction of fear arousal on initial reexposure to the modeled events. The groups did not differ, however, in approach behavior. These results, while interesting, must be accepted with reservation because subjects who received modeling without the benefit of relaxation required significantly more observational trials to extinguish their fearful reactions to the modeled approach responses. It is conceivable that if these treatments were limited to the same number of observational extinction trials, the obtained differences would have been even larger and a difference in approach behavior might also have emerged. This expectation receives some support from a recent study (Spiegler, Liebert, McMains, & Fernandez, 1969) demonstrating that relaxation facilitates vicarious fear extinction under conditions where subjects receive only a single exposure to the modeled approach behavior.

It is of interest that the efficacy of the treatment procedures was in no way limited by subjects' general level of anxiety. The correlational data from the present study are somewhat at variance with previous findings (Bandura & Menlove, 1968) that susceptibility to emotional arousal in children is inversely related to degree of vicarious extinction achieved through film-mediated modeling. Several factors might have accounted for these divergent results. The two experiments differ in the age of the subjects and in the type of phobic behavior being modified. Another possible explanation is in terms of markedly different ways in which the modeling treatments were conducted. The earlier study involved only a single exposure to modeling stimuli without regard to subjects' fear arousal, whereas the present experiment utilized a self-regulated modeling procedure which permitted subjects the opportunity to review threatening scenes repeatedly until thoroughly neutralized. Under conditions where aversive modeling stimuli are presented only once, anxiety proneness in observers is more likely to serve as a determinant of vicarious extinction.

It is also noteworthy that the various treatments were equally effective when applied by experimenters differing widely in personality characteristics. These findings are consistent with those of Paul (1966) and Mann and Rosenthal (1969), showing that changes produced by systematic desensitizations are not differentially affected by variations in experimenter characteristics. Further evidence that socially conducted and self-administered systematic desensitization achieves equivalent results (Donner, 1967; Krapfl, 1967; Melamed & Lang, 1967) suggests that social variables are not appreciable contributors to the measured outcomes. Ideally, psychological treatment methods should be sufficiently powerful to achieve consistent changes by different therapists, just as one would not be content with medical procedures whose effects depended heavily upon the bedside manner of physicians.

Further research is needed to isolate the factors in modeling cues that govern fear reduction in observers. There is some reason to expect that the affective expressions accompanying a model's behavior may exercise some degree of control over vicarious extinction. It has been shown in studies of vicarious emotional arousal in primates (R. E. Miller, 1967; Miller, Banks, & Ogawa, 1962; Miller, Murphy & Mirsky, 1959) and in human subjects (Bandura & Rosenthal, 1966; Berger, 1962), that negative affective expressions by others can serve as powerful cues for arousing fear and avoidance in observers. In fact, Miller and his colleagues (Miller et al., 1959) have shown that exposure to a subject reacting in an apprehensive or fearful manner could reinstate avoidance responses in observers even after such responses had been completely extinguished.

The foregoing research suggests that modeled approach responses accompanied by positive affective expressions would engender less fear arousal in observers and hence faster vicarious extinction, than if models manifested fearful reactions while performing the same approach behavior. In the present experiment the models frequently expressed pleasant emotional reactions as they performed approach responses in a relaxed manner.

It is generally assumed in theories of identification that similarity of the model to the observer enhances response matching. However, it remains an open question whether utilization of fearful models would facilitate or hinder the reduction of phobic behavior. According to the theory of identification presented by Bandura (1969b), response consequences to models generally outweigh their characteristics in producing identificatory behavior in observers. Thus, for example, witnessing a similar model bitten by a snake would in all likelihood increase snake avoidance behavior, whereas seeing a dissimilar model handle a snake without any untoward consequences would weaken avoidance responses. The treatment film included not only fearless adult models but also several young children, on the assumption that their lack of fear while performing responses that adult observers regarded as hazardous would provide the most dramatic disconfirmation of anticipated aversive consequences. It would be of considerable interest to investigate systematically the degree to which model-subject similarity on a relevant dimension (i.e., fearfulness) and also on irrelevant dimensions (i.e., attitudes, interests, general background) affects the rate of vicarious extinction of phobic behavior.

The results show that applications of social-learning procedures have important attitudinal consequences. Both symbolic modeling and systematic desensitization, which operate primarily through extinction of negative affect aroused by aversive stimuli, produced favorable changes in attitudes toward snakes. Consistent with expectation, the treatment condition that reduced the fear-arousing properties of snakes and enabled subjects to engage in intimate interactions with snakes achieved the greatest attitudinal changes. These findings are sufficiently promising to warrant more extensive use of social-learning procedures for studying theoretical issues concerning the development, modification, and functional role of attitudes.

It will be recalled that previous research, though admittedly meager, found changes in attitude and actions to be essentially unrelated. More recently, Greenwald (1965a) reported a positive, but low, correlation be-

tween these measures on an academic activity that does not have much affective impact. However, for subjects who expressed their negative attitude prior to the influence attempt, persuasive communications changed their attitudes but not their behavior (Greenwald, 1965b). In contrast to these results, desensitization and modeling treatments produced corresponding changes in both attitudes and behavior even though all subjects initially committed themselves to a strong loathing for snakes. In a study employing similar procedures, Blanchard (1969) also found a high positive correlation ( $r = .72$ ) between changes in attitude and behavior as induced through modeling influences.

The correlated changes produced by social-learning procedures in different response systems may be interpreted in several different ways. According to most contemporary attitude theories (Abelson, Aronson, McGuire, Newcomb, Rosenberg, & Tannenbaum, 1968), there exists a strong drive for consistency among beliefs, feelings, and actions. A change in any one of the components will, therefore, engender congruous modification in the other constituents. In these consistency models, changes in attitudes or behavior are treated, not simply as consequent events, but as causal factors affecting other classes of behavior. An alternative interpretation is that social influences have similar but independent effects on attitudes, behavior, and emotional arousal. In this view, attitude-behavior consistencies represent correlated effects rather than outcomes of a process in which modification of one type of behavior forces changes in other forms of responding to eliminate cognitive disequilibrium.

Definitive tests of the parallel effects and consistency explanations of change processes are precluded by the absence of a methodology that would permit simultaneous measurement of attitudes, affect, and actions. If incongruity creates an internal stimulus for psychological change then a sequential testing procedure unavoidably confounds the effects of external influences and the consistency drive. Conversely, a given environmental influence could have analogous effects on different classes of response that would be erroneously attributed to the operation of a

consistency drive. These alternative formulations perhaps should be regarded as complementary rather than competing. Under most conditions, powerful social influences produce corresponding changes in different modes of responding, and performance of new behavior is likely to have additional cognitive and emotional consequences.

The findings of the present study also have implications for different theoretical formulations regarding the conditions governing phobic behavior. Contrary to expectation from psychodynamic theory, extinction of emotional responses toward the phobic object not only enduringly eliminated fear arousal and phobic avoidance of snakes, but the treatments produced significant reductions in anxiety in other areas of functioning not specifically treated. These findings are in accord with numerous studies demonstrating that direct extinction of phobic behavior is typically accompanied by generalized anxiety reduction as measured by self-ratings (Lang et al., 1965; Mealiea, 1967; H. R. Miller, 1967; Paul, 1966, 1967, 1968; Paul & Shannon, 1966) and behavioral avoidance tests (Mealiea, 1967).

The positive transfer obtained in the present experiment probably reflects the operation of at least two somewhat different processes. The first involves generalization of fear extinction effects from stimuli that were neutralized by the treatments to related anxiety sources. Analysis of differences between groups and changes within treatment conditions revealed that the greatest fear decrements occurred in relation to similar phobic objects such as other animals, which would be expected from knowledge of stimulus generalization. The second process entails positive reinforcement of a sense of capability through success which can mitigate emotional arousal to potentially threatening situations. Having successfully eliminated a phobia that had plagued them for most of their lives, a number of subjects reported increased confidence that they could cope effectively with other fear-provoking events. As one subject explained it, "My success in gradually overcoming this fear of snakes has contributed to a greater feeling of confidence generally in my abilities to overcome any other problem

which may arise. I have more faith in myself." Others stated that their treatment experiences not only changed their views about the modifiability of personality patterns, but provided them with a means of eliminating other unwarranted fears.

Within the treatment combining modeling and guided participation several factors are operative that might contribute to the psychological changes accompanying this method. These component influences include observation of fearless approach behavior repeatedly modeled without any unfavorable consequences to the performer, incidental information received about the feared objects, and guided interaction with threatening objects that engender no adverse effects. Results of experiments subsequently conducted by Blanchard (1969) and Ritter (1969a, 1969b) throw some light on the relative influence of these component variables.

In a comparative study of the effects of modeling, informational factors, and guided participation, Blanchard (1969) found that modeling accounted for approximately 60% of the behavior change and 80% of the change in attitudes and fear arousal; guided participation contributed the remaining increment. Informational influences, on the other hand, had no effect on any of the three classes of responses.

As mentioned earlier, the guided participation component of the procedure under discussion involves both enactment of progressively more difficult responses and physical assistance in performing the required behavior. In a study designed to evaluate the influence of these elements, Ritter (1969c) found that modeling accompanied by physically guided performance produced greater changes in acrophobic subjects than modeling with verbally guided enactment which, in turn, was superior to demonstration alone.

Ritter (1968a) gave special emphasis to the anxiety-reducing effects of physical contact. In addition, when persons are physically assisted in performing the behavior required at each step in the graded sequence, their fears and inhibitions may be reduced to some degree by the added protection that the model's behavior provides. An experiment is needed to determine whether the facilitative effects of

physical guidance derive from interpersonal contact, from protection against potential injurious consequences, or, as seems most likely, from both factors.

Further research is needed to clarify the mechanisms through which modeling combined with guided participation achieves such uniformly powerful extinction effects. Results of modeling procedures, particularly those based on a nonresponse extinction paradigm, are consistent with the dual-process theory of avoidance behavior. Data from subjects in the symbolic modeling condition demonstrate that emotional arousal can be effectively extinguished on a vicarious basis simply by having observers witness models exhibit approach responses toward feared objects without experiencing any adverse consequences. It has been further shown by Blanchard (1969) that the more thoroughly emotional arousal to aversive modeling stimuli is vicariously extinguished the greater is the reduction in avoidance behavior and the more generalized are the changes.

In accordance with the above findings the change process associated with the powerful procedure involving modeling with guided participation may be conceptualized as follows: Repeated modeling of approach responses and the anxiety-mitigating influence of physical contact and physical protection decrease the arousal potential of aversive stimuli below the threshold for activating avoidance responses, thus enabling persons to engage, albeit somewhat anxiously, in approach behavior. The favorable outcomes resulting from direct contact with threats that are no longer objectively justified further extinguish any residual anxiety and avoidance tendencies. Without the benefit of prior vicarious extinction, the reinstatement of severely inhibited behavior generally requires a tedious and protracted program. After approach behavior toward formerly avoided objects has been fully restored the resultant new experiences give rise to substantial reorganization of attitudes.

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(Received April 4, 1969)

## Self-efficacy: Toward a Unifying Theory of Behavioral Change

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The present article presents an integrative theoretical framework to explain and to predict psychological changes achieved by different modes of treatment. This theory states that psychological procedures, whatever their form, alter the level and strength of *self-efficacy*. It is hypothesized that expectations of personal efficacy determine whether coping behavior will be initiated, how much effort will be expended, and how long it will be sustained in the face of obstacles and aversive experiences. Persistence in activities that are subjectively threatening but in fact relatively safe produces, through experiences of mastery, further enhancement of self-efficacy and corresponding reductions in defensive behavior. In the proposed model, expectations of personal efficacy are derived from four principal sources of information: performance accomplishments, vicarious experience, verbal persuasion, and physiological states. The more dependable the experiential sources, the greater are the changes in perceived self-efficacy. A number of factors are identified as influencing the cognitive processing of efficacy information arising from enactive, vicarious, exhortative, and emotive sources. The differential power of diverse therapeutic procedures is analyzed in terms of the postulated cognitive mechanism of operation. Findings are reported from microanalyses of enactive, vicarious, and emotive modes of treatment that support the hypothesized relationship between perceived self-efficacy and behavioral changes. Possible directions for further research are discussed.

Current developments in the field of behavioral change reflect two major divergent trends. The difference is especially evident in the treatment of dysfunctional inhibitions and defensive behavior. On the one hand, the mechanisms by which human behavior is acquired and regulated are increasingly formulated in terms of cognitive processes. On the other hand, it is performance-based procedures that are proving to be most powerful for effecting psychological changes. As a consequence, successful performance is replacing symbolically based experiences as the principle vehicle of change.

The present article presents the view that changes achieved by different methods derive from a common cognitive mechanism. The

apparent divergence of theory and practice can be reconciled by postulating that cognitive processes mediate change but that cognitive events are induced and altered most readily by experience of mastery arising from effective performance. The distinction between process and means is underscored, because it is often assumed that a cognitive mode of operation requires a symbolic means of induction. Psychological changes can be produced through other means than performance accomplishments. Therefore, the explanatory mechanism developed in this article is designed to account for changes in behavior resulting from diverse modes of treatment.

### *Cognitive Locus of Operation*

Psychological treatments based on learning principles were originally conceptualized to operate through peripheral mechanisms. New behavior was presumably shaped automatically by its effects. Contingency learning through paired stimulation was construed in

The research by the author reported in this article was supported by Research Grant M-5162 from the National Institutes of Health, United States Public Health Service.

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connectionist terms as a process in which responses were linked directly to stimuli. Altering the rate of preexisting behavior by reinforcement was portrayed as a process wherein responses were regulated by their immediate consequences without requiring any conscious involvement of the responders.

Growing evidence from several lines of research altered theoretical perspectives on how behavior is acquired and regulated. Theoretical formulations emphasizing peripheral mechanisms began to give way to cognitively oriented theories that explained behavior in terms of central processing of direct, vicarious, and symbolic sources of information. Detailed analysis of the empirical and conceptual issues (see Bandura, 1977) falls beyond the scope of the present article. To summarize briefly, however, it has now been amply documented that cognitive processes play a prominent role in the acquisition and retention of new behavior patterns. Transitory experiences leave lasting effects by being coded and retained in symbols for memory representation. Because acquisition of response information is a major aspect of learning, much human behavior is developed through modeling. From observing others, one forms a conception of how new behavior patterns are performed, and on later occasions the symbolic construction serves as a guide for action (Bandura, 1971). The initial approximations of response patterns learned observationally are further refined through self-corrective adjustments based on informative feedback from performance.

Learning from response consequences is also conceived of largely as a cognitive process. Consequences serve as an unarticulated way of informing performers what they must do to gain beneficial outcomes and to avoid punishing ones. By observing the differential effects of their own actions, individuals discern which responses are appropriate in which settings and behave accordingly (Dulany, 1968). Viewed from the cognitive framework, learning from differential outcomes becomes a special case of observational learning. In this mode of conveying response information, the conception of the appropriate behavior is gradually con-

structed from observing the effects of one's actions rather than from the examples provided by others.

Changes in behavior produced by stimuli that either signify events to come or indicate probable response consequences also have been shown to rely heavily on cognitive representations of contingencies. People are not much affected by paired stimulation unless they recognize that the events are correlated (Dawson & Furedy, 1976; Grings, 1973). Stimuli influence the likelihood of a behavior's being performed by virtue of their predictive function, not because the stimuli are automatically connected to responses by their having occurred together. Reinterpretation of antecedent determinants as predictive cues, rather than as controlling stimuli, has shifted the locus of the regulation of behavior from the stimulus to the individual.

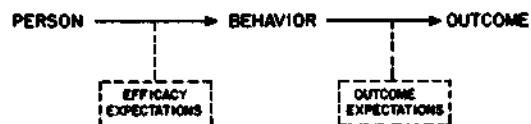
The issue of the locus at which behavioral determinants operate applies to reinforcement influences as well as to antecedent environmental stimuli. Contrary to the common view that behavior is controlled by its immediate consequences, behavior is related to its outcomes at the level of aggregate consequences rather than momentary effects (Baum, 1973). People process and synthesize feedback information from sequences of events over long intervals about the situational circumstances and the patterns and rates of actions that are necessary to produce given outcomes. Since consequences affect behavior through the influence of thought, beliefs about schedules of reinforcement can exert greater influence on behavior than the reinforcement itself (Baron, Kaufman, & Stauber, 1969; Kaufman, Baron, & Kopp, 1966). Incidence of behavior that has been positively reinforced does not increase if individuals believe, based on other information, that the same actions will not be rewarded on future occasions (Estes, 1972); and the same consequences can increase, reduce, or have no effect on incidence of behavior depending on whether individuals are led to believe that the consequences signify correct responses, incorrect responses, or occur non-contingently (Dulany, 1968).

The discussion thus far has examined the

role of cognition in the acquisition and regulation of behavior. Motivation, which is primarily concerned with activation and persistence of behavior, is also partly rooted in cognitive activities. The capacity to represent future consequences in thought provides one cognitively based source of motivation. Through cognitive representation of future outcomes individuals can generate current motivators of behavior. Seen from this perspective, reinforcement operations affect behavior largely by creating expectations that behaving in a certain way will produce anticipated benefits or avert future difficulties (Bolles, 1972b). In the enhancement of previously learned behavior, reinforcement is conceived of mainly as a motivational device rather than as an automatic response strengthener.

A second cognitively based source of motivation operates through the intervening influences of goal setting and self-evaluative reactions (Bandura, 1976b, 1977). Self-motivation involves standards against which to evaluate performance. By making self-rewarding reactions conditional on attaining a certain level of behavior, individuals create self-inducements to persist in their efforts until their performances match self-prescribed standards. Perceived negative discrepancies between performance and standards create dissatisfactions that motivate corrective changes in behavior. Both the anticipated satisfactions of desired accomplishments and the negative appraisals of insufficient performance thus provide incentives for action. Having accomplished a given level of performance, individuals often are no longer satisfied with it and make further self-reward contingent on higher attainments.

The reconceptualization of human learning and motivation in terms of cognitive processes has major implications for the mechanisms through which therapeutic procedures alter behavioral functioning. Although the advances in cognitive psychology are a subject of increasing interest in speculations about behavioral change processes, few new theories of psychotherapy have been proposed that might prove useful in stimulating research on explanatory mechanisms



*Figure 1. Diagrammatic representation of the difference between efficacy expectations and outcome expectations.*

and in integrating the results accompanying diverse modes of treatment. The present article outlines a theoretical framework, in which the concept of *self-efficacy* is assigned a central role, for analyzing changes achieved in fearful and avoidant behavior. The explanatory value of this conceptual system is then evaluated by its ability to predict behavioral changes produced through different methods of treatment.

#### *Efficacy Expectations as a Mechanism of Operation*

The present theory is based on the principal assumption that psychological procedures, whatever their form, serve as means of creating and strengthening expectations of personal efficacy. Within this analysis, efficacy expectations are distinguished from response-outcome expectancies. The difference is presented schematically in Figure 1.

An outcome expectancy is defined as a person's estimate that a given behavior will lead to certain outcomes. An efficacy expectation is the conviction that one can successfully execute the behavior required to produce the outcomes. Outcome and efficacy expectations are differentiated, because individuals can believe that a particular course of action will produce certain outcomes, but if they entertain serious doubts about whether they can perform the necessary activities such information does not influence their behavior.

In this conceptual system, expectations of personal mastery affect both initiation and persistence of coping behavior. The strength of people's convictions in their own effectiveness is likely to affect whether they will even try to cope with given situations. At this initial level, perceived self-efficacy influences

choice of behavioral settings. People fear and tend to avoid threatening situations they believe exceed their coping skills, whereas they get involved in activities and behave assuredly when they judge themselves capable of handling situations that would otherwise be intimidating.

Not only can perceived self-efficacy have directive influence on choice of activities and settings, but, through expectations of eventual success, it can affect coping efforts once they are initiated. Efficacy expectations determine how much effort people will expend and how long they will persist in the face of obstacles and aversive experiences. The stronger the perceived self-efficacy, the more active the efforts. Those who persist in subjectively threatening activities that are in fact relatively safe will gain corrective experiences that reinforce their sense of efficacy, thereby eventually eliminating their defensive behavior. Those who cease their coping efforts prematurely will retain their self-debilitating expectations and fears for a long time.

The preceding analysis of how perceived self-efficacy influences performance is not meant to imply that expectation is the sole determinant of behavior. Expectation alone will not produce desired performance if the component capabilities are lacking. Moreover, there are many things that people can do with certainty of success that they do not perform because they have no incentives to do so. Given appropriate skills and adequate incentives, however, efficacy expectations are a major determinant of people's choice of activities, how much effort they will expend, and of how long they will sustain effort in dealing with stressful situations.

#### *Dimensions of Efficacy Expectations*

Empirical tests of the relationship between expectancy and performance of threatening activities have been hampered by inadequacy of the expectancy analysis. In most studies the measures of expectations are mainly concerned with people's hopes for favorable outcomes rather than with their sense of per-

sonal mastery. Moreover, expectations are usually assessed globally only at a single point in a change process as though they represent a static, unidimensional factor. Participants in experiments of this type are simply asked to judge how much they expect to benefit from a given procedure. When asked to make such estimates, participants assume, more often than not, that the benefits will be produced by the external ministrations rather than gained through the development of self-efficacy. Such global measures reflect a mixture of, among other things, hope, wishful thinking, belief in the potency of the procedures, and faith in the therapist. It therefore comes as no surprise that outcome expectations of this type have little relation to magnitude of behavioral change (Davison & Wilson, 1973, Lick & Bootzin, 1975).

Efficacy expectations vary on several dimensions that have important performance implications. They differ in *magnitude*. Thus when tasks are ordered in level of difficulty, the efficacy expectations of different individuals may be limited to the simpler tasks, extend to moderately difficult ones, or include even the most taxing performances. Efficacy expectations also differ in *generality*. Some experiences create circumscribed mastery expectations. Others instill a more generalized sense of efficacy that extends well beyond the specific treatment situation. In addition, expectancies vary in *strength*. Weak expectations are easily extinguishable by disconfirming experiences, whereas individuals who possess strong expectations of mastery will persevere in their coping efforts despite disconfirming experiences.

An adequate expectancy analysis, therefore, requires detailed assessment of the magnitude, generality, and strength of efficacy expectations commensurate with the precision with which behavioral processes are measured. Both efficacy expectations and performance should be assessed at significant junctures in the change process to clarify their reciprocal effects on each other. Mastery expectations influence performance and are, in turn, altered by the cumulative effects of one's efforts.

### *Sources of Efficacy Expectations*

In this social learning analysis, expectations of personal efficacy are based on four major sources of information: performance accomplishments, vicarious experience, verbal persuasion, and physiological states. Figure 2 presents the diverse influence procedures commonly used to reduce defensive behavior and presents the principal source through which each treatment operates to create expectations of mastery. Any given method, depending on how it is applied, may of course draw to a lesser extent on one or more other sources of efficacy information. For example, as we shall see shortly, performance-based treatments not only promote behavioral accomplishments but also extinguish fear arousal, thus authenticating self-efficacy through enactive and arousal sources of information. Other methods, however, provide fewer ways of acquiring information about one's capability for coping with threatening situations. By postulating a common mechanism of operation, this analysis provides a conceptual framework within which to study behavioral changes achieved by different modes of treatment.

*Performance accomplishments.* This source of efficacy information is especially influential

because it is based on personal mastery experiences. Successes raise mastery expectations; repeated failures lower them, particularly if the mishaps occur early in the course of events. After strong efficacy expectations are developed through repeated success, the negative impact of occasional failures is likely to be reduced. Indeed, occasional failures that are later overcome by determined effort can strengthen self-motivated persistence if one finds through experience that even the most difficult obstacles can be mastered by sustained effort. The effects of failure on personal efficacy therefore partly depend on the timing and the total pattern of experiences in which the failures occur.

Once established, enhanced self-efficacy tends to generalize to other situations in which performance was self-debilitated by preoccupation with personal inadequacies (Bandura, Adams, & Beyer, in press; Bandura, Jeffery, & Gajdos, 1975). As a result, improvements in behavioral functioning transfer not only to similar situations but to activities that are substantially different from those on which the treatment was focused. Thus, for example, increased self-efficacy gained through rapid mastery of a specific animal phobia can

## EFFICACY EXPECTATIONS

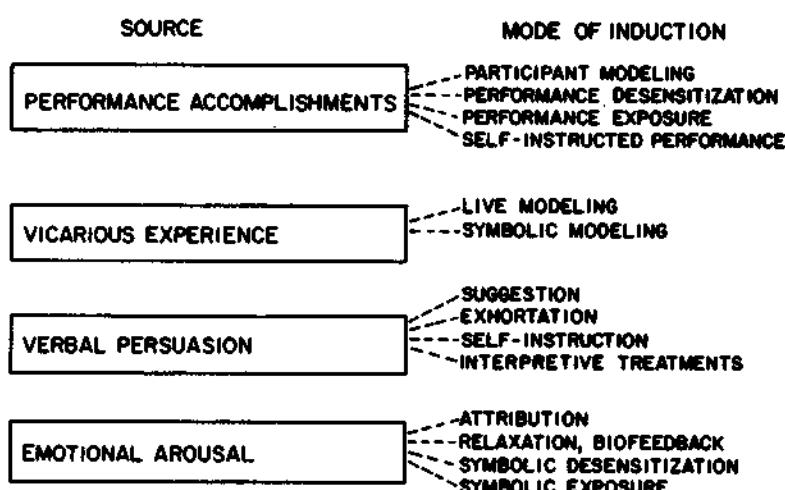


Figure 2. Major sources of efficacy information and the principal sources through which different modes of treatment operate.

increase coping efforts in social situations as well as reduce fears of other animals. However, the generalization effects occur most predictably to the activities that are most similar to those in which self-efficacy was restored by treatment (Bandura, Blanchard, & Ritter, 1969).

Methods of change that operate on the basis of performance accomplishments convey efficacy information in more ways than simply through the evidence of performance improvements. In the course of treatments employing modeling with guided performance, participants acquire a generalizable skill for dealing successfully with stressful situations, a skill that they use to overcome a variety of dysfunctional fears and inhibitions in their everyday life (Bandura et al., in press; Bandura et al., 1975). Having a serviceable coping skill at one's disposal undoubtedly contributes to one's sense of personal efficacy. Behavioral capabilities can also be enhanced through modeling alone (Bandura, 1971; Flanders, 1968). However, participant modeling provides additional opportunities for translating behavioral conceptions to appropriate actions and for making corrective refinements toward the perfection of skills.

Most of the treatment procedures developed in recent years to eliminate fearful and defensive behavior have been implemented either through performance or by symbolic procedures. Regardless of the methods involved, results of comparative studies attest to the superiority of performance-based treatments. In the desensitization approach devised by Wolpe (1974), clients receive graduated exposure to aversive events in conjunction with anxiety reducing activities, usually in the form of muscular relaxation. A number of experiments have been reported in which relaxation is paired with scenes in which phobics visualize themselves engaging in progressively more threatening activities or with enactment of the same hierarchy of activities with the actual threats. Findings based on different types of phobias consistently reveal that performance desensitization produces substantially greater behavioral change than does symbolic desensitization (LoPiccolo, 1970;

Sherman, 1972; Strahley, 1966). Physiological measures yield similar results. Symbolic desensitization reduces autonomic responses to imagined but not to actual threats, whereas performance desensitization eliminates autonomic responses to both imagined and actual threats (Barlow, Leitenberg, Agras, & Wincze, 1969). The substantial benefits of successful performance are typically achieved in less time than is required to extinguish arousal to symbolic representations of threats.

More recently, avoidance behavior has been treated by procedures involving massive exposure to aversive events. In this approach, intense anxiety is elicited by prolonged exposure to the most threatening situations and sustained at high levels, without relief, until emotional reactions are extinguished. Several investigators have compared the relative success of prolonged exposure to aversive situations in imagery and actual encounters with them in ameliorating chronic agoraphobias. Real encounters with threats produce results decidedly superior to imagined exposure, which has weak, variable effects (Emmelkamp & Wessels, 1975; Stern & Marks, 1973; Watson, Mullett, & Pillay, 1973). Prolonged encounters that ensure behavioral improvements are more effective than distributed brief encounters that are likely to end before successful performance of the activity is achieved (Rabavilas, Boulougouris, & Stefanis, 1976).

The participant modeling approach to the elimination of defensive behavior utilizes successful performance as the primary vehicle of psychological change. People displaying intractable fears and inhibitions are not about to do what they dread. In implementing participant modeling, therapists therefore structure the environment so that clients can perform successfully despite their incapacities. This is achieved by enlisting a variety of response induction aids, including preliminary modeling of threatening activities, graduated tasks, enactment over graduated temporal intervals, joint performance with the therapist, protective aids to reduce the likelihood of feared consequences, and variation in the severity of the threat itself (Bandura, Jeffery, & Wright, 1974). As treatment progresses,

the supplementary aids are withdrawn so that clients cope effectively unassisted. Self-directed mastery experiences are then arranged to reinforce a sense of personal efficacy. Through this form of treatment incapacitated people rapidly lose their fears, they are able to engage in activities they formerly inhibited, and they display generalized reductions of fears toward threats beyond the specifically treated conditions (Bandura, 1976a).

Participant modeling has been compared with various symbolically based treatments. These studies corroborate the superiority of successful performance facilitated by modeling as compared to vicarious experience alone (Bandura et al., 1969; Blanchard, 1970b; Lewis, 1974; Ritter, 1969; Röper, Rachman, & Marks, 1975), to symbolic desensitization (Bandura et al., 1969; Litvak, 1969), and to imaginal modeling in which clients visualize themselves or others coping successfully with threats (Thase & Moss, 1976). When participant modeling is subsequently administered to those who benefit only partially from the symbolic procedures, avoidance behavior is thoroughly eliminated within a brief period.

The findings summarized above are consistent with self-efficacy theory, but they do not shed much light on the mechanism by which specific mastery experiences produce generalized and enduring changes in behavior. Verification of the operative mechanism requires experimental evidence that experienced mastery does in fact alter the level and strength of self-efficacy and that self-efficacy is, in turn, linked to behavior. We shall return later to research that addresses itself specifically to the linkages between treatment procedures, perceived self-efficacy, and behavior.

*Vicarious experience.* People do not rely on experienced mastery as the sole source of information concerning their level of self-efficacy. Many expectations are derived from vicarious experience. Seeing others perform threatening activities without adverse consequences can generate expectations in observers that they too will improve if they intensify and persist in their efforts. They

persuade themselves that if others can do it, they should be able to achieve at least some improvement in performance (Bandura & Barab, 1973). Vicarious experience, relying as it does on inferences from social comparison, is a less dependable source of information about one's capabilities than is direct evidence of personal accomplishments. Consequently, the efficacy expectations induced by modeling alone are likely to be weaker and more vulnerable to change.

A number of modeling variables that are apt to affect expectations of personal efficacy have been shown to enhance the disinhibiting influence of modeling procedures. Phobics benefit more from seeing models overcome their difficulties by determined effort than from observing facile performances by adept models (Kazdin, 1973; Meichenbaum, 1971). Showing the gains achieved by effortful coping behavior not only minimizes for observers the negative impact of temporary distress but demonstrates that even the most anxious can eventually succeed through perseverance. Similarity to the model in other characteristics, which increases the personal relevance of vicariously derived information, can likewise enhance the effectiveness of symbolic modeling (Kazdin, 1974b).

Modeled behavior with clear outcomes conveys more efficacy information than if the effects of the modeled actions remain ambiguous. In investigations of vicarious processes, observing one perform activities that meet with success does, indeed, produce greater behavioral improvements than witnessing the same performances modeled without any evident consequences (Kazdin, 1974c, 1975). Diversified modeling, in which the activities observers regard as hazardous are repeatedly shown to be safe by a variety of models, is superior to exposure to the same performances by a single model (Bandura & Menlove, 1968; Kazdin, 1974a, 1975, 1976). If people of widely differing characteristics can succeed, then observers have a reasonable basis for increasing their own sense of self-efficacy.

The pattern of results reported above offers at least suggestive support for the view that exemplifications of success through sus-

tained effort with substantiating comparative information can enhance observers' perceptions of their own performance capabilities. Research will be presented below that bears more directly on the proposition that modeling procedures alter avoidance behavior through the intervening influence of efficacy expectations.

*Verbal persuasion.* In attempts to influence human behavior, verbal persuasion is widely used because of its ease and ready availability. People are led, through suggestion, into believing they can cope successfully with what has overwhelmed them in the past. Efficacy expectations induced in this manner are also likely to be weaker than those arising from one's own accomplishments because they do not provide an authentic experiential base for them. In the face of distressing threats and a long history of failure in coping with them, whatever mastery expectations are induced by suggestion can be readily extinguished by disconfirming experiences.

Results of several lines of research attest to the limitation of procedures that attempt to instill outcome expectations in people simply by telling them what to expect. In laboratory studies, "placebo" conditions designed suggestively to raise expectations of improvement produce little change in refractory behavior (Lick & Bootzin, 1975; Moore, 1965; Paul, 1966). Whether this is due to the low credibility of the suggestions or to the weakness of the induced expectations cannot be determined from these studies, because the expectations were not measured.

Numerous experiments have been conducted in which phobics receive desensitization treatment without any expectancy information or with suggestions that it is either highly efficacious or ineffective. The differential outcome expectations are verbally induced prior to, during, or immediately after treatment in the various studies. The findings generally show that desensitization reduces phobic behavior, but the outcome expectancy manipulations have either no effect or weak, inconsistent ones (Howlett & Nawas, 1971; McGlynn & Mapp, 1970; McGlynn, Mealiea, & Nawas, 1969; McGlynn, Reynolds, &

Linder, 1971). As in the "placebo" studies, it is difficult to make conclusive interpretations because the outcome expectations induced suggestively are not measured prior to the assessment of behavior changes, if at all. Simply informing participants that they will or will not benefit from treatment does not mean that they necessarily believe what they are told, especially when it contradicts their other personal experiences. Moreover, in the studies just cited the verbal influence is aimed mainly at raising outcome expectations rather than at enhancing self-efficacy. It is changes on the latter dimension that are most relevant to the theory under discussion.

Although social persuasion alone may have definite limitations as a means of creating an enduring sense of personal efficacy, it can contribute to the successes achieved through corrective performance. That is, people who are socially persuaded that they possess the capabilities to master difficult situations and are provided with provisional aids for effective action are likely to mobilize greater effort than those who receive only the performance aids. However, to raise by persuasion expectations of personal competence without arranging conditions to facilitate effective performance will most likely lead to failures that discredit the persuaders and further undermine the recipients' perceived self-efficacy. It is therefore the interactive, as well as the independent, effects of social persuasion on self-efficacy that merit experimental consideration.

*Emotional arousal.* Stressful and taxing situations generally elicit emotional arousal that, depending on the circumstances, might have informative value concerning personal competency. Therefore, emotional arousal is another constituent source of information that can affect perceived self-efficacy in coping with threatening situations. People rely partly on their state of physiological arousal in judging their anxiety and vulnerability to stress. Because high arousal usually debilitates performance, individuals are more likely to expect success when they are not beset by aversive arousal than if they are tense and viscerally agitated. Fear reactions gen-

erate further fear of impending stressful situations through anticipatory self-arousal. By conjuring up fear-provoking thoughts about their ineptitude, individuals can rouse themselves to elevated levels of anxiety that far exceed the fear experienced during the actual threatening situation.

As will be recalled from the earlier discussion, desensitization and massive exposure treatments aimed at extinguishing anxiety arousal produce some reductions in avoidance behavior. Anxiety arousal to threats is likewise diminished by modeling, and is even more thoroughly eliminated by experienced mastery achieved through participant modeling (Bandura & Barab, 1973; Bandura et al., 1969; Blanchard, 1970a). Modeling approaches have other advantages for enhancing self-efficacy and thereby removing dysfunctional fears. In addition to diminishing proneness to aversive arousal, such approaches also teach effective coping skills by demonstrating proficient ways of handling threatening situations. The latter contribution is especially important when fear arousal partly results from behavioral deficits. It is often the case that fears and deficits are interdependent. Avoidance of stressful activities impedes development of coping skills, and the resulting lack of competency provides a realistic basis for fear. Acquiring behavioral means for controlling potential threats attenuates or eliminates fear arousal (Averill, 1973; Notterman, Schoenfeld, & Bersh, 1952; Szpiler & Epstein, 1976). Behavioral control not only allows one to manage the aversive aspects of an environment. It also affects how the environment is likely to be perceived. Potentially stressful situations that can be controlled are construed as less threatening, and such cognitive appraisals further reduce anticipatory emotional arousal (Averill, 1973).

Diminishing emotional arousal can reduce avoidance behavior, but different theories posit different explanatory mechanisms for the observed effects. In the theory from which the emotive treatments are derived, emotional arousal is conceived of as a drive that activates avoidance behavior. This view stresses the energizing function of arousal

and the reinforcing function of arousal reduction. Social learning theory, on the other hand, emphasizes the informative function of physiological arousal. Simply acknowledging that arousal is both informative and motivating by no means resolves the issue in dispute, because these are not necessarily two separate effects that somehow jointly produce behavior. Rather, the cognitive appraisal of arousal to a large extent determines the level and direction of motivational inducements to action. Certain cognitive appraisals of one's physiological state might be energizing, whereas other appraisals of the same state might not (Weiner, 1972). Moreover, many forms of physiological arousal are generated cognitively by arousing trains of thought. When motivation is conceptualized in terms of cognitive processes (Bandura, 1977; Weiner, 1972), the informational and motivational effects of arousal are treated as interdependent rather than as separate events. We shall return to this issue later when we consider the differential predictions made from social learning theory and from the dual-process theory of avoidance behavior concerning the behavioral effects of extinguishing anxiety arousal.

Researchers working within the attributional framework have attempted to modify avoidance behavior by directly manipulating the cognitive labeling of emotional arousal (Valins & Nisbett, 1971). The presumption is that if phobics are led to *believe* that the things they have previously feared no longer affect them internally, the cognitive reevaluation alone will reduce avoidance behavior. In treatment analogues of this approach, phobics receive false physiological feedback suggesting that they are no longer emotionally upset by threatening events. Results of this procedure are essentially negative. Early claims that erroneous arousal feedback reduces avoidance behavior (Valins & Ray, 1967) are disputed by methodologically superior studies showing that false feedback of physiological tranquility in the presence of threats has either no appreciable effect on subsequent fearful behavior (Gaupp, Stern, & Galbraith, 1972; Howlett & Nawas, 1971; Kent, Wilson, & Nelson, 1972; Rosen, Rosen, & Reid, 1972; Sushinsky & Bootzin,

1970), or produces minor changes under such limited conditions as to be of little practical consequence (Borkovec, 1973).

Misattribution of emotional arousal is another variant of the attributional approach to modification of fearful behavior. The strategy here is to lead fearful people into believing that their emotional arousal is caused by a nonemotional source. To the extent that they no longer label their agitated state as anxiety, they will behave more boldly. It may be possible to reduce mild fears by this means (Ross, Rodin, & Zimbardo, 1969), but the highly anxious are not easily led into misattributing their anxiety to irrelevant sources (Nisbett & Schachter, 1966). When evaluated systematically, misattribution treatments do not produce significant changes in chronic anxiety conditions (Singerman, Borkovec, & Baron, 1976), and some of the benefits reported with other dysfunctions cannot be replicated (Bootzin, Herman, & Nicassio, 1976; Kellogg & Baron, 1975). There is also some suggestive evidence that in laboratory studies the attenuation of fear may be due more to the veridicality of arousal information than to misattribution of fear arousal to an innocuous source (Calvert-Boyanowsky & Leventhal, 1975).

Any reduction in fear resulting from deceptive feedback is apt to be short-lived because illusory assurances are not an especially reliable way of creating durable self-expectations. However, more veritable experiences that reduce the level of emotional arousal can set in motion a reciprocal process of change. In the social learning view, potential threats activate fear largely through cognitive self-arousal (Bandura, 1969, 1977). Perceived self-competence can therefore affect susceptibility to self-arousal. Individuals who come to believe that they are less vulnerable than they previously assumed are less prone to generate frightening thoughts in threatening situations. Those whose fears are relatively weak may reduce their self-doubts and debilitating self-arousal to the point where they perform successfully. Performance successes, in turn, strengthen self-efficacy. Such changes can, of course, be reliably achieved without resort to ruses.

Moreover, mislabeling arousal or attributing it to erroneous sources is unlikely to be of much help to the highly anxious. Severe acrophobics, for example, may be temporarily misled into believing that they no longer fear high elevations, but they will reexperience unnerving internal feedback when confronted with dreaded heights. It should also be noted that in attributional explanations of the success of behavioral treatments the heavy emphasis on physiological arousal derives more from speculations about the nature of emotion (Schachter, 1964) than from evidence that arousal is a major determinant of defensive behavior.

#### *Cognitive Processing of Efficacy Information*

The discussion thus far has centered primarily on the many sources of information—enactive, vicarious, exhortative, and emotive—that people use to judge their level of self-efficacy. At this point a distinction must be drawn between information contained in environmental events and information as processed and transformed by the individual. The impact of information on efficacy expectations will depend on how it is cognitively appraised. A number of contextual factors, including the social, situational, and temporal circumstances under which events occur, enter into such appraisals. For this reason, even success experiences do not necessarily create strong generalized expectations of personal efficacy. Expectations that have served self-protective functions for years are not quickly discarded. When experience contradicts firmly established expectations of self-efficacy, they may undergo little change if the conditions of performance are such as to lead one to discount the import of the experience.

The corrective value of information derived from successful performance can be attenuated in several ways. The first involves discrimination processes. The consequences individuals anticipate were they to perform feared activities differ in circumstances which vary in safeguards. As a result, they may behave boldly in situations signifying safety, but retain unchanged their self-doubts under less secure conditions. Such mitigative discriminations can extend to the treatments

themselves, as well as to the situational circumstances in which behavioral attainments occur. This is especially true of treatments relying solely on symbolic and vicarious experience. Achieving reductions in fear to threats presented symbolically is unlikely to enhance perceived self-efficacy to any great extent in people who believe that success in imagery does not portend accomplishments in reality. Information conveyed by facilely modeled performances might likewise be minimized by anxious observers on the grounds that the models possess special expertise enabling them to prevent injurious consequences that might otherwise befall the unskilled. Because such discriminations, even though objectively mistaken, impede change in self-efficacy, observers will be reluctant to attempt feared activities and will be easily dissuaded by negative experience.

Cognitive appraisals of the causes of one's behavior, which have been examined extensively in investigations of self-attributional processes (Bem, 1972), can similarly delimit gains in self-efficacy from behavioral attainments. It was previously shown that attributions of affect and actions to illusory competence have little, if any, effect on refractory behavior. This does not, of course, mean that causal appraisals are of limited importance in the process of behavior change. Quite the contrary, performance attainment is a prominent source of efficacy information, but it is by no means unambiguous. As already mentioned briefly, people can gain competence through authentic means but, because of faulty appraisals of the circumstances under which they improve, will credit their achievements to external factors rather than to their own capabilities. Here the problem is one of inaccurate ascription of personal competency to situational factors. Successes are more likely to enhance self-efficacy if performances are perceived as resulting from skill than from fortuitous or special external aids. Conversely, failures would be expected to produce greater reductions in self-efficacy when attributed to ability rather than to unusual situational circumstances. The more extensive the situational aids for performance, the greater are

the chances that behavior will be ascribed to external factors (Bem, 1972; Weiner, 1972).

Even under conditions of perceived self-determination of outcomes, the impact of performance attainments on self-efficacy will vary depending on whether one's accomplishments are ascribed mainly to ability or to effort. Success with minimal effort fosters ability ascriptions that reinforce a strong sense of self-efficacy. By contrast, analogous successes achieved through high expenditure of effort connote a lesser ability and are thus likely to have a weaker effect on perceived self-efficacy. Cognitive appraisals of the difficulty level of the tasks will further affect the impact of performance accomplishments on perceived self-efficacy. To succeed at easy tasks provides no new information for altering one's sense of self-efficacy, whereas mastery of challenging tasks conveys salient evidence of enhanced competence. The rate and pattern of attainments furnish additional information for judging personal efficacy. Thus, people who experience setbacks but detect relative progress will raise their perceived efficacy more than those who succeed but see their performances leveling off compared to their prior rate of improvement.

Extrapolations from theories about attribution and self-perception to the field of behavioral change often imply that people must labor unaided or under inconspicuously arranged influences if they are to convince themselves of their personal competence (Kopel & Arkowitz, 1975). Such prescriptions are open to question on both conceptual and empirical grounds. Cognitive misappraisals that attenuate the impact of disconfirming experiences can be minimized without sacrificing the substantial benefits of powerful induction procedures. This is achieved by providing opportunities for self-directed accomplishments after the desired behavior has been established. Any lingering doubts people might have, either about their capabilities or about probable response consequences under unprotected conditions, are dispelled easily in this manner (Bandura et al., 1975). The more varied the circumstances in which threats are mastered in-

dependently, the more likely are success experiences to authenticate personal efficacy and to impede formation of discriminations that insulate self-perceptions from disconfirming evidence.

Results of recent studies support the thesis that generalized, lasting changes in self-efficacy and behavior can best be achieved by participant methods using powerful induction procedures initially to develop capabilities, then removing external aids to verify personal efficacy, then finally using self-directed mastery to strengthen and generalize expectations of personal efficacy (Bandura et al., 1975). Independent performance can enhance efficacy expectations in several ways: (a) It creates additional exposure to former threats, which provides participants with further evidence that they are no longer aversively aroused by what they previously feared. Reduced emotional arousal confirms increased coping capabilities. (b) Self-directed mastery provides opportunities to perfect coping skills, which lessen personal vulnerability to stress. (c) Independent performance, if well executed, produces success experiences, which further reinforce expectations of self-competency.

Extensive self-directed performance of formerly threatening activities under progressively challenging conditions at a time when treatments are usually terminated could also serve to reduce susceptibility to relearning of defensive patterns of behavior. A few negative encounters among many successful experiences that have instilled a strong sense of self-efficacy will, at most, establish discriminative avoidance of realistic threats, an effect that has adaptive value. In contrast, if people have limited contact with previously feared objects after treatment, whatever expectations of self-efficacy were instated would be weaker and more vulnerable to change. Consequently, a few unfavorable experiences are likely to reestablish defensive behavior that generalizes inappropriately.

We have already examined how cognitive processing of information conveyed by modeling might influence the extent to which vicarious experience effects changes in self-efficacy. Among the especially informative

elements are the models' characteristics (e.g., adeptness, perseverance, age, expertness), the similarity between models and observers, the difficulty of the performance tasks, the situational arrangements under which the modeled achievements occur, and the diversity of modeled attainments.

Just as the value of efficacy information generated enactively and vicariously depends on cognitive appraisal, so does the information arising from exhortative and emotive sources. The impact of verbal persuasion on self-efficacy may vary substantially depending on the perceived credibility of the persuaders, their prestige, trustworthiness, expertise, and assuredness. The more believable the source of the information, the more likely are efficacy expectations to change. The influence of credibility on attitudinal change has, of course, received intensive study. But its effects on perceived self-efficacy remain to be investigated.

People judge their physiological arousal largely on the basis of their appraisal of the instigating conditions. Thus, visceral arousal occurring in situations perceived to be threatening is interpreted as fear, arousal in thwarting situations is experienced as anger, and that resulting from irretrievable loss of valued objects as sorrow (Hunt, Cole, & Reis, 1958). Even the same source of physiological arousal may be interpreted differently in ambiguous situations depending on the emotional reactions of others in the same setting (Mandler, 1975; Schachter & Singer, 1962).

When tasks are performed in ambiguous or complex situations in which there is a variety of evocative stimuli, the informational value of the resultant arousal will depend on the meaning imposed upon it. People who perceive their arousal as stemming from personal inadequacies are more likely to lower their efficacy expectations than those who attribute their arousal to certain situational factors. Given a proneness to ascribe arousal to personal deficiencies, the heightened attention to internal events can result in reciprocally escalating arousal. Indeed, as Sarason (1976) has amply documented, individuals who are especially susceptible to anxiety arousal

readily become self-preoccupied with their perceived inadequacies in the face of difficulties rather than with the task at hand.

### *Differing Perspectives on Self-efficacy*

The phenomena encompassed by the construct of self-efficacy have been the subject of interest in other theories of human behavior. The theoretical perspectives differ, however, in how they view the nature and origins of personal efficacy and the intervening processes by which perceived self-efficacy affects behavior. In seeking a motivational explanation of exploratory and manipulative behavior, White (1959) postulated an "effectance motive," which is conceptualized as an intrinsic drive for transactions with the environment. Unlike instigators arising from tissue deficits, effectance motivation is believed to be aroused by novel stimulation and is sustained when the resultant inquisitive and exploratory actions produce further elements of novelty in the stimulus field. The effectance motive presumably develops through cumulative acquisition of knowledge and skills in dealing with the environment. However, the process by which an effectance motive emerges from effective transactions with the environment is not spelled out in White's theory. Nor is the existence of the motive easy to verify, because effectance motivation is inferred from the exploratory behavior it supposedly causes. Without an independent measure of motive strength one cannot tell whether people explore and manipulate things because of a competence motive to do so, or for any number of other reasons. Although the theory of effectance motivation has not been formulated in sufficient detail to permit extensive theoretical comparisons, there are several issues on which the social learning and effectance theories clearly differ.

In the social learning analysis, choice behavior and effort expenditure are governed in part by percepts of self-efficacy rather than by a drive condition. Because efficacy expectations are defined and measured independently of performance, they provide an explicit basis for predicting the occurrence, generality, and persistence of coping be-

havior, whereas an omnibus motive does not. People will approach, explore, and try to deal with situations within their self-perceived capabilities, but they will avoid transactions with stressful aspects of their environment they perceive as exceeding their ability.

The alternative views also differ on the origins of efficacy. Within the framework of effectance theory, the effectance drive develops gradually through prolonged transactions with one's surroundings. This theory thus focuses almost exclusively on the effects produced by one's own actions. In the social learning theory, self-efficacy is conceptualized as arising from diverse sources of information conveyed by direct and mediated experience. These differences in theoretical approach have significant implications for how one goes about studying the role of perceived self-efficacy in motivational and behavioral processes. Expectations of personal efficacy do not operate as dispositional determinants independently of contextual factors. Some situations require greater skill and more arduous performances and carry higher risk of negative consequences than do others. Expectations will vary accordingly. Thus, for example, the level and strength of perceived self-efficacy in public speaking will differ depending on the subject matter, the format of the presentation, and the types of audiences that will be addressed. The social learning approach is therefore based on a microanalysis of perceived coping capabilities rather than on global personality traits or motives of effectance. From this perspective, it is no more informative to speak of self-efficacy in general terms than to speak of nonspecific approach behavior. To elucidate how perceived self-efficacy affects behavior requires a microanalysis of both factors.

Discrepancies between efficacy expectations and performance are most likely to arise under conditions in which situational and task factors are ambiguous. When performance requirements are ill-defined, people who underestimate the situational demands will display positive discrepancies between self-efficacy and performance attainments; those who overestimate the demands will

exhibit negative discrepancies. Therefore, in testing predictions from the conceptual scheme presented here it is important that subjects understand what kind of behavior will be required and the circumstances in which they will be asked to perform them. Moreover, performances and the corresponding efficacy expectations should be analyzed into separate activities, and preferably ordered by level of difficulty. In this type of microanalysis both the efficacy expectations and the corresponding behaviors are measured in terms of explicit types of performances rather than on the basis of global indices.

The social learning determinants of self-efficacy can be varied systematically and their effects measured. Hence, propositions concerning the origins of self-efficacy are verifiable with some precision. A slowly developing motive, however, does not easily lend itself to being tested experimentally. Another dimension on which the alternative theories might be judged is their power to produce the phenomena they purport to explain. As we shall see later, there are more diverse, expeditious, and powerful ways of creating self-efficacy than by relying solely on novel stimulation arising from exploratory actions.

With the ascendancy of cognitive views of behavior, the concept of expectancy is assuming an increasingly prominent place in contemporary psychological thought (Bolles, 1972b; Heneman, & Schwab, 1972; Irwin, 1971). However, virtually all of the theorizing and experimentation has focused on action-outcome expectations. The ideas advanced in some of the theories nevertheless bear some likeness to the notion of self-efficacy. According to the theory of personality proposed by Rotter (1966), behavior varies as a function of generalized expectancies that outcomes are determined by one's actions or by external forces beyond one's control. Such expectations about the instrumentality of behavior are considered to be largely a product of one's history of reinforcement. Much of the research within this tradition is concerned with the behavioral correlates of individual differences in the tend-

ency to perceive events as being either personally or externally determined.

The notion of locus of control is often treated in the literature as analogous to self-efficacy. However, Rotter's (1966) conceptual scheme is primarily concerned with causal beliefs about action-outcome contingencies rather than with personal efficacy. Perceived self-efficacy and beliefs about the locus of causality must be distinguished, because convictions that outcomes are determined by one's own actions can have any number of effects on self-efficacy and behavior. People who regard outcomes as personally determined but who lack the requisite skills would experience low self-efficacy and view activities with a sense of futility. Thus, for example, a child who fails to grasp arithmetic concepts and expects course grades to be dependent entirely on skill in the subject matter has every reason to be demoralized. While causal beliefs and self-efficacy refer to different phenomena, as we have already noted, causal ascriptions of behavior to skill or to chance can mediate the effects of performance attainments on self-efficacy.

The theoretical framework presented in the present article is generalizable beyond the psychotherapy domain to other psychological phenomena involving behavioral choices and regulation of effort in activities that can have adverse effects. For example, the theory of learned helplessness advanced by Maier and Seligman (1976) assumes that as a result of being subjected to uncontrollable aversive events, organisms acquire expectancies that actions do not affect outcomes. Because they come to expect future responding to be futile, they no longer initiate behavior in situations where outcomes are in fact controllable by responses. Although this theory posits an expectancy mechanism of operation, it focuses exclusively on response-outcome expectancies.

Theorizing and experimentation on learned helplessness might well consider the conceptual distinction between efficacy and outcome expectations. People can give up trying because they lack a sense of efficacy in achieving the required behavior, or they may be assured of their capabilities but give up

trying because they expect their behavior to have no effect on an unresponsive environment or to be consistently punished. These two separable expectancy sources of futility have quite different antecedents and remedial implications. To alter efficacy-based futility requires development of competencies and expectations of personal effectiveness. By contrast, to change outcome-based futility necessitates changes in prevailing environmental contingencies that restore the instrumental value of the competencies that people already possess.

#### *Microanalysis of Self-efficacy and Behavioral Change*

To test derivations from the social learning analysis of the process of change, an experiment was conducted wherein severe phobics received treatments designed to create differential levels of efficacy expectations, and then the relationship between self-efficacy and behavioral change was analyzed in detail (Bandura et al., in press). The experiment proceeded as follows. Adult snake phobics, whose phobias affected their lives adversely, were administered for equivalent periods either participant modeling, modeling alone, or no treatment. In participant modeling, which operates through direct mastery experiences, subjects were assisted, by whatever induction aids were needed, to engage in progressively more threatening interactions with a boa constrictor. After completing all the therapeutic tasks, which included holding the snake, placing open hands in front of its head as it moved about the room, holding the snake in front of their faces, and allowing it to crawl freely in their laps, the subjects engaged in a brief period of self-directed mastery. In the present experiment, the modeling aid was used only briefly if needed to help initiate performance in order to minimize overlap of this element in the two modes of treatment.

Subjects receiving the modeling treatment merely observed the therapist perform the same activities for an equivalent period. These subjects did not engage in any behavior themselves, and consequently they had no

performance sources of information for their efficacy expectations. Enactive and vicarious procedures were selected for study to assess the predictive value of self-efficacy created by quite different modes of treatment.

The level, strength, and generality of the subjects' efficacy expectations were measured at critical junctures in the change process. Subjects privately designated, on a list of 18 performance tasks ranked in order of increasing threat, those tasks they considered themselves capable of executing. They then rated the strength of their expectations for each of these tasks on a 100-point probability scale ranging, in 10-unit intervals, from great uncertainty, through intermediate values of certainty, to complete certainty. They rated their efficacy expectations for coping with snakes of the same variety used in treatment as well as dissimilar snakes to measure the generality of their efficacy expectations. These measures were obtained prior to treatment, following treatment but before the behavioral posttest, and after completing the posttest. Approach behavior was assessed in the posttest by a series of performance tasks requiring increasingly more threatening interactions with a different type of boa constrictor from the one used in treatment and with a corn snake of markedly different appearance but equivalent threat value. Different phobic objects were used to provide a test of the generalized effects of changes in efficacy expectations along a dimension of similarity to the threat used in treatment.

Subjects assigned to the control condition participated in the assessment procedures without receiving any intervening treatment. Following completion of the posttest, the controls and those in the modeling condition who failed to achieve terminal performances received the participant modeling treatment.

Consistent with the social learning analysis of the sources of self-efficacy, experiences based on performance accomplishments produced higher, more generalized, and stronger efficacy expectations than did vicarious experience, which in turn exceeded those in the control condition. Figure 3 summarizes the level of efficacy expectations and performance as a function of treatment condi-

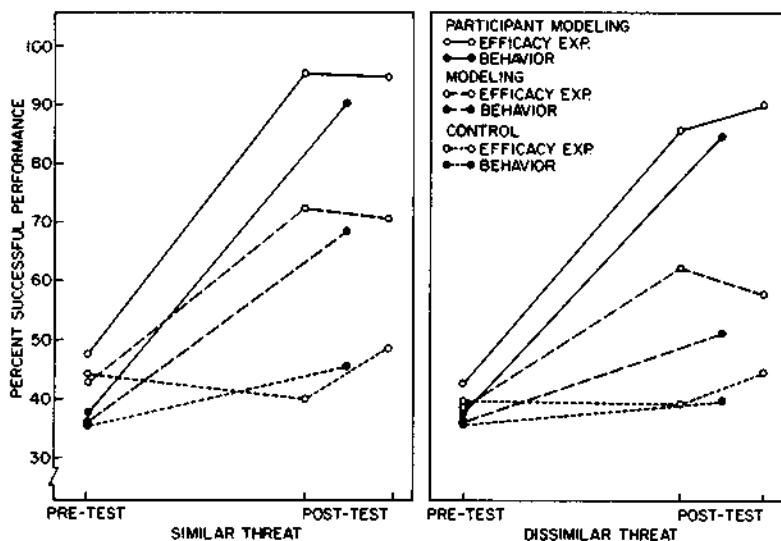


Figure 3. Level of efficacy expectations and approach behavior displayed by subjects toward threats after receiving vicarious or enactive treatments, or no treatment (Bandura et al., in press).

tions at different phases of the experiment. As shown in the figure, performance change corresponds closely to the magnitude of expectancy change. The greater the increments in self-perceived efficacy, the greater the changes in behavior. Similar relationships between level of self-efficacy and performance are obtained when the data are considered separately for the two snakes. In accordance with prediction, participant modeling produced the more generalized increases in efficacy expectations and the more generalized behavioral changes.

Although the enactive and vicarious treatments differed in their power to enhance self-efficacy, the efficacy expectations were equally predictive of subsequent performance irrespective of how they were instated. The higher the level of perceived self-efficacy at the completion of treatment the higher was the level of approach behavior for efficacy expectations instated enactively ( $r = .83$ ) and vicariously ( $r = .84$ ). It might be noted here that all subjects had at their disposal the component responses for producing the interactive patterns of behavior, and they all had some incentive to overcome their phobic behavior. Under conditions in which people differ substantially in component capabilities and motivation, skill and incentive factors

will also contribute to variance in performance.

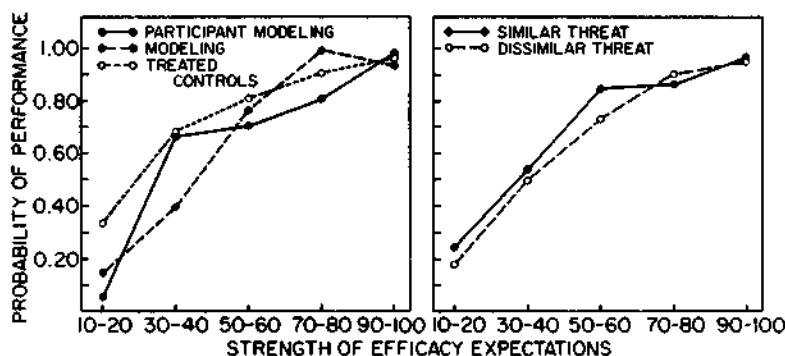
Correlation coefficients based on aggregate measures do not fully reveal the degree of correspondence between self-efficacy and performance on the specific behavioral tasks from which the aggregate scores are obtained. A subject can display an equivalent number of efficacy expectations and successful performances, but they might not correspond entirely to the same tasks. The most precise index of the relationship is provided by a microanalysis of the congruence between self-efficacy and performance at the level of individual tasks. This measure was obtained by recording whether or not subjects considered themselves capable of performing each of the various tasks at the end of treatment and by computing the percentage of accurate correspondence between efficacy judgment and actual performance. Self-efficacy was a uniformly accurate predictor of performance on tasks varying in difficulty with different threats regardless of whether the changes in self-efficacy were produced through performance accomplishments (89% congruence) or by vicarious experience alone (86% congruence). The degree of congruence between perceived self-efficacy and subsequent behavior is equally high for enactive (82%) and

vicarious (79%) treatments when the micro-analysis is conducted only on the subset of tasks that subjects had never performed in the pretest assessment.

In the preceding analysis efficacy expectations were considered without regard to strength. A weak sense of self-efficacy thus received the same weight as one reflecting complete certitude. However, the intensity and persistence of effort, and hence level of performance, should be higher with strong than with weak self-efficacy. The likelihood that a task will be performed as a function of the strength of the corresponding efficacy expectation therefore provides a further refinement in the analysis of the relationship between self-efficacy and performance. The probability of successful performance of any given task as a function of strength of efficacy expectations is plotted in Figure 4. Because the control subjects performed few responses and had correspondingly restricted efficacy expectations, their data were plotted after they had received the participant modeling treatment. In all conditions, the stronger the efficacy expectations, the higher was the likelihood that a particular task would be successfully completed. The positive relationship between strength of self-efficacy and probability of successful performance is virtually identical for the similar and the dissimilar threats.

In brief, the theory systematizes a variety of findings. As the preceding results show, it

predicts accurately the magnitude and generality of behavioral change for efficacy expectations induced enactively and vicariously. Moreover, it orders variations in level of behavioral change occurring within the same treatment condition. Subjects who received participant modeling, either as the primary or as the supplementary treatment, successfully performed all of the behaviors in treatment that were later assessed in the posttest toward different threats. Although all had previously achieved maximal performances, not all expressed maximal efficacy expectations. One can therefore compare the error rates of predictions made from maximal past performance and from maximal efficacy expectations. It would be predicted from the proposed theory that among these successful performers, those who acquire maximal efficacy expectations should attain terminal performances, whereas those holding lower expectations should not. If one predicts that those who performed maximally in treatment will likewise achieve terminal performances when assessed with similar tasks, the error rate is relatively low for the similar threat (28%) but high for the dissimilar threat (52%). If, on the other hand, one predicts that those who express maximal expectations will perform maximally, the error rate is comparably low for both the similar (21%) and the dissimilar (24%) threats. The predictive superiority of efficacy expectations over past performance is significant for total



*Figure 4.* Probability of successful performance of any given task as a function of strength of self-efficacy. The figure on the left shows the relationship for vicarious and enactive treatments; the figure on the right shows the relationship between strength of self-efficacy and successful approach responses toward similar and dissimilar threats combined across treatments (Bandura et al., in press).

approach behavior and for approach behavior toward the dissimilar threat. These differential findings indicate that experienced mastery altered subjects' sense of personal efficacy rather than merely providing behavioral cues for judgments of self-efficacy.

The theory also accounts for variations in behavioral change produced by modeling alone. To equate for duration of treatment, subjects in the modeling condition were yoked to matched counterparts in participant modeling, who received treatment until they performed all the therapeutic tasks. The subjects in the participant modeling condition varied in the time they required to complete treatment, so some of the subjects in the modeling conditions had only brief exposure to successful performances, whereas others had the benefit of observing feared activities modeled repeatedly without any untoward consequences. The findings are consistent with hypothesized increases in self-efficacy as a function of repeated observation of successful modeling. Brief exposure produced limited increases in the level (9%) and strength (5%) of efficacy expectations and correspondingly little behavior change (10%). In contrast, repeated observation of successful performances increased by a substantial amount the level (44%) and strength (38%) of self-efficacy which, in turn, was accompanied by similarly large increments in performance (35%).

#### *Comparison of Self-efficacy and Dual-Process Theory*

As a further test of the generality of the theory under discussion, a microanalysis was conducted of efficacy expectations instated by desensitization procedures, which are aimed at reducing emotional arousal. Social learning theory and the dual-process theory of anxiety, on which the desensitization approach is based, posit different explanatory mechanisms for the changes accompanying this mode of treatment. The alternative views therefore give rise to differential predictions that can be readily tested.

The standard desensitization approach is

based on the assumption that anxiety activates defensive behavior (Wolpe, 1974). According to this view, association of neutral events with aversive stimulation creates an anxiety drive that motivates defensive behavior; the defensive behavior, in turn, is reinforced by reducing the anxiety aroused by conditioned aversive stimuli. Hence, to eliminate defensive responding, it is considered necessary to eradicate its underlying anxiety. Treatment strategies are therefore keyed to reduction of emotional arousal. Aversive stimuli are presented at graduated levels in conjunction with relaxation until anxiety reactions to the threats are eliminated.

Although desensitization produces behavioral changes, there is little evidence to support the original rationale that defensive behavior is diminished because anxiety is eliminated either by reciprocal physiological inhibition or by associative recoupling of threatening stimuli to relaxation. Desensitization does not require graduated exposure, and anxiety-reducing activities are at most facilitatory, not necessary, conditions for eliminating defensive behavior (Bandura, 1969; Wilson & Davison, 1971).

The principal assumption that defensive behavior is controlled by anxiety arousal is also disputed by several lines of evidence. Autonomic arousal, which constitutes the principal index of anxiety, is not necessary for defensive learning. Because autonomic reactions take much longer to activate than do avoidance responses, the latter cannot be caused by the former. Studies in which autonomic and avoidance responses are measured concurrently indicate that these two modes of activity may be partially correlated in the acquisition phase but are not causally related (Black, 1965). Avoidance behavior, for example, can persist long after autonomic reactions to threats have been extinguished. Surgical removal of autonomic feedback capability in animals has little effect on the acquisition of avoidance responses (Rescorla & Solomon, 1967). Maintenance of avoidance behavior is even less dependent on autonomic feedback. Once defensive behavior has been learned, depriving animals of autonomic feed-

back does not hasten the rate at which such activities are extinguished.

Research casts doubt on the postulated reinforcement sources, as well as the activating sources, of defensive behavior. In the dual-process theory, the anxiety reduction occasioned by escape from the feared stimulus presumably reinforces the defensive behavior. The evidence, however, reveals that whether or not defensive behavior removes the feared stimulus has variable effects on the maintenance of the behavior (Bolles, 1972a). Moreover, defensive behavior can be acquired and maintained by its success in diminishing the frequency of aversive stimulation, even though there are no feared stimuli to arouse anxiety and to provide the source of decremental reinforcement (Herrnstein, 1969). The substantial negative evidence concerning an anxiety mediational mechanism in avoidance behavior suggests that the effects of desensitization treatment must result from some other mechanism of operation.

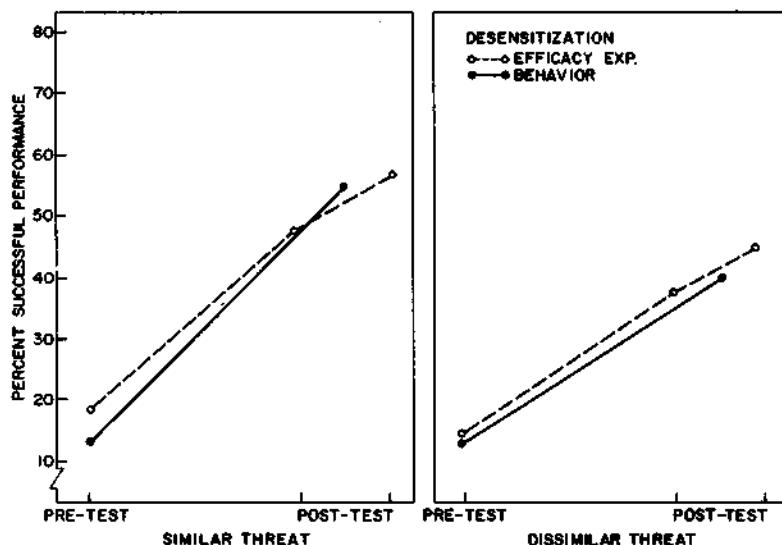
Social learning theory regards anxiety and defensive behavior as coeffects rather than as causally linked (Bandura, 1977). Aversive experiences, either of a personal or vicarious sort, create expectations of injurious effects that can activate both fear and defensive behavior. Being coeffects, there is no fixed relationship between autonomic arousal and actions. Until effective coping behaviors are achieved, perceived threats produce high emotional arousal and various defensive maneuvers. But after people become adept at self-protective behaviors, they perform them in potentially threatening situations without having to be frightened (Notterman et al., 1952). Should their habitual coping devices fail, they experience heightened arousal until new defensive learning reduces their vulnerability.

Perceived threats activate defensive behavior because of their predictive value rather than their aversive quality. That is, when formerly neutral stimuli are associated with painful experiences, it is not that the stimuli have become aversive but that individuals have learned to anticipate aversive consequences. It is people's knowledge of their

environment, not the stimuli, that are changed by correlated experience. Stimuli having predictive significance signal the likelihood of painful consequences unless protective measures are taken. Defensive behavior, in turn, is maintained by its success in forestalling or reducing the occurrence of aversive events. Once established, self-protective behavior is difficult to eliminate even though the hazards no longer exist. This is because consistent avoidance prevents a person from learning that the real-life conditions have changed. Hence, the nonoccurrence of anticipated hazards reinforces the expectation that the defensive maneuvers forestalled them.

From the perspective of dual-process theory, thorough extinction of anxiety should eliminate avoidance behavior. In the desensitization treatment, however, anxiety reactions are typically extinguished to visualized representations of feared situations. One would expect some transfer loss of extinction effects from symbolic to real-life threats, as is indeed the case (Agras, 1967; Barlow et al., 1969). It is not uncommon for people to fear and avoid real-life situations to which they have been desensitized in imagery. Therefore, according to this view, thorough extinction of anxiety to visualized threats should produce substantial, though less than complete, reductions in defensive behavior. However, dual-process theory provides no basis for predicting either the level of behavior change or the variability in behavior displayed by subjects who have all been equally desensitized.

In the social learning analysis presented earlier, reducing physiological arousal improves performance by raising efficacy expectations rather than by eliminating a drive that instigates the defensive behavior. This information-based view of the mediating mechanism predicts that the higher and stronger the efficacy expectations instated by desensitization procedures, the greater are the reductions in defensive behavior. Because arousal is only one of several sources of efficacy information, and not necessarily the most dependable one, extinguishing anxiety



*Figure 5.* Level of efficacy expectations and approach behavior displayed by subjects toward different threats after their emotional reactions to symbolic representations of feared activities were eliminated through systematic desensitization. (Bandura & Adams, in press.)

arousal is rarely a sufficient condition for eliminating defensive behavior.

To test the theory that desensitization changes behavior through its intervening effects on efficacy expectations, severe snake phobics were administered the standard desensitization treatment until their emotional reactions were completely extinguished to imaginal representations of the most aversive scenes (Bandura & Adams, in press). The assessment procedures were identical to those used in the preceding experiment. Subjects' approach behavior was tested on the series of performance tasks before and after the desensitization treatment. The level, strength, and generality of their efficacy expectations were similarly measured before treatment, upon completion of treatment but prior to the posttest, and following the posttest.

The findings show that phobics whose anxiety reactions to visualized threats have been thoroughly extinguished emerge from the desensitization treatment with widely differing efficacy expectations. As depicted graphically in Figure 5, performance corresponds closely to level of self-efficacy. The higher the subjects' level of perceived self-

efficacy at the end of treatment, the more approach behavior they subsequently performed in the posttest assessment ( $r = .74$ ).

Results of the microanalysis of congruence between self-efficacy at the end of treatment and performance on each of the tasks administered in the posttest are consistent with the findings obtained from enactive and vicarious treatment. Self-efficacy was an accurate predictor of subsequent performance on 85% for all the tasks, and 83% for the subset of tasks that subjects were unable to perform in the pretest assessment. Subjects successfully executed tasks within the range of their perceived self-efficacy produced by the desensitization treatment, whereas they failed at tasks they perceived to be beyond their capabilities.

#### *Microanalysis of Self-efficacy and Performance During the Process of Change*

The preceding series of experiments examined the predictive value of self-efficacy at the completion of different modes of treatment. A further study investigated the process of efficacy and behavioral change during the course of treatment itself. Participant model-

ing was selected for this purpose because the amount of treatment can be well-regulated and it promotes rapid change.

As in the previous studies, adults whose lives were adversely affected by severe snake phobias were tested for their efficacy expectations and approach behavior using the microanalytic methodology described earlier. The various treatment activities were segmented into natural blocks of tasks of increasing difficulty and threat value. Items in the initial block included looking at a snake from progressively closer distances; intermediate blocks required subjects to touch and to hold the snake with gloved and bare hands for increasing intervals; the terminal block required them to tolerate the snake crawling about freely in their laps for an extended period. Subjects received the participant modeling treatment only for the block of items they failed in the hierarchy of assessment tasks. Treatment was continued until they could perform the activities in the failed block, whereupon they were tested for their efficacy expectations and approach responses on the succeeding tasks. Subjects who attained terminal performances received no further treatment. For those who achieved only partial improvement, the sequence of treatment on the failed block followed by assessments of self-efficacy and approach behavior on succeeding blocks was repeated until they achieved terminal performances.

Findings of the microanalysis lend further support to the postulated cognitive mechanism of change. Subjects who mastered the same intermediate performances during the course of treatment varied considerably in their behavioral attainments when tested on succeeding blocks of tasks. Past performance was therefore of limited value in predicting what subjects would be able to do when confronted with more threatening tasks. However, efficacy judgments proved to be good predictors of degree of behavioral change resulting from partial mastery experiences. Self-efficacy predicted subsequent performance as measured at different points in treatment in 92% of the total assessment tasks. This relationship holds even when the measure of congruence is based only on the subset of activities that

subjects could not perform in pretest because they found them too threatening, and did not perform in treatment because the activities extended beyond the failed block. Expectations of personal effectiveness formed through partial mastery experiences during the course of treatment predicted, at a 84% level of accuracy, performance on highly threatening tasks that subjects had never done before.

### *Concluding Remarks*

The present theoretical formulation orders variations in the level of behavioral changes produced by different modes of treatment; it accounts for behavioral variations displayed by individuals receiving the same type of treatment; and it predicts performance successes at the level of individual tasks during and after treatment. It is possible to generate alternative explanations for particular subsets of data, but the mechanism proposed in the present theory appears to account equally well for the different sets of findings. It might be argued, for example, that self-efficacy proved to be an accurate predictor of performance in the enactive mode of treatment because subjects were simply judging their future performance from their past behavior. However, an interpretation of this type has no explanatory value for the vicarious and emotive treatments, in which perceived self-efficacy was an equally accurate predictor of performance although subjects engaged in no overt behavior. Even in the enactive treatment, perceived self-efficacy proved to be a better predictor of behavior toward unfamiliar threats than did past performance. Moreover, self-efficacy derived from partial enactive mastery during the course of treatment predicted performance on stressful tasks that the individuals had never done before.

As an alternative explanation, one could invoke a superordinate mediator that controls both efficacy expectations and behavior. Although such a possibility is not inconceivable, the mediator would have to be an exceedingly complex one to account adequately for the diverse sets of relationships. To cite but a few examples, it would have to affect differentially efficacy expectations and be-

havior resulting from maximal enactive mastery; somehow, it would have to produce different levels of self-efficacy from equivalent reductions in emotional arousal; and it would have to generate some variation in efficacy expectations from similar partial mastery experiences. The theory presented here posits a central processor of efficacy information. That is, people process, weigh, and integrate diverse sources of information concerning their capability, and they regulate their choice behavior and effort expenditure accordingly.

Evidence that people develop somewhat different efficacy expectations from similar enactive mastery and fear extinction warrants comment. One possible explanation for the variance is in terms of differential cognitive processing of efficacy information. To the extent that individuals differ in how they cognitively appraise their arousal decrements and behavioral attainments, their percepts of self-efficacy will vary to some degree. A second possibility concerns the multiple determination of self-efficacy. Because people have met with different types and amounts of efficacy-altering experiences, providing one new source of efficacy information would not be expected to affect everyone uniformly. Thus, for example, extinguishing arousal to threats will enhance self-efficacy, but more so in individuals whose past coping attempts have occasionally succeeded than in those who have consistently failed.

The research completed thus far has tested the predictive power of the conceptual scheme for efficacy expectations developed through enactive, vicarious, and emotive-based procedures. Additional tests of the generality of this approach need to be extended to efficacy expectations arising from verbal persuasion and from other types of treatments aimed at reducing emotional arousal.

Cognitive processing of efficacy information, which is an important component function in the proposed theory, is an especially relevant area for research. A number of factors were identified as influencing the cognitive appraisal of efficacy information conveyed by each of the major sources of self-efficacy. Previous research from a number

of different perspectives demonstrating that some of these factors affect attitudinal and behavioral changes has suggestive value. But it is investigations that include assessment of the intervening self-efficacy link that can best provide validity for the present theory.

The operative process involved in the relationship between efficacy expectations and action also requires further investigation. It will be recalled that efficacy expectations are presumed to influence level of performance by enhancing intensity and persistence of effort. In the preceding experiments, the behavioral tasks were ordered in level of difficulty and subjects either persisted in their efforts until they completed all of the tasks or they quit at varying points along the way. The number of tasks successfully completed reflects degree of perseverance. As a further step toward elucidating the intervening process, it would be of interest to measure the intensity and duration of effort subjects exert in attempts to master arduous or insoluble tasks as a function of the level and strength of their efficacy expectations. Further research on the processes postulated in the present theoretical formulation should increase our understanding of the relationship between cognitive and behavioral change.

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Received June 30, 1976 ■

## Social Cognitive Theory of Self-Regulation

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In social cognitive theory human behavior is extensively motivated and regulated by the ongoing exercise of self-influence. The major self-regulative mechanism operates through three principal subfunctions. These include self-monitoring of one's behavior, its determinants, and its effects; judgment of one's behavior in relation to personal standards and environmental circumstances; and affective self-reaction. Self-regulation also encompasses the self-efficacy mechanism, which plays a central role in the exercise of personal agency by its strong impact on thought, affect, motivation, and action. The same self-regulative system is involved in moral conduct although compared to the achievement domain, in the moral domain the evaluative standards are more stable, the judgmental factors more varied and complex, and the affective self-reactions more intense. In the interactionist perspective of social cognitive theory, social factors affect the operation of the self-regulative system. © 1991 Academic Press, Inc.

Self-regulatory systems lie at the very heart of causal processes. They not only mediate the effects of most external influences, but provide the very basis for purposeful action. Most human behavior, being purposive, is regulated by forethought. The future time perspective manifests itself in many different ways. People form beliefs about what they can do, they anticipate the likely consequences of prospective actions, they set goals for themselves, and they otherwise plan courses of action that are likely to produce desired outcomes. Through exercise of forethought, people motivate themselves and guide their actions in an anticipatory proactive way.

The capability for intentional and purposive action is rooted in symbolic activity. Future events cannot be causes of present motivation and action. However, by being represented cognitively in the present, conceived future events are converted into current motivators and regulators of behavior. In anticipatory control, behavior is directed by cognized

Portions of this article contain revised and expanded material from the book *Social foundations of thought and action: A social cognitive theory* (1986, Englewood Cliffs, NJ: Prentice-Hall) and from a chapter that originally appeared as "Self-regulation of motivation through anticipatory and self-regulatory mechanisms," in R. A. Dienstbier (Ed.), *Nebraska symposium on motivation: Perspectives on motivation* (1991, Vol. 38, Lincoln: Univ. of Nebraska Press). Address correspondence and reprint requests to Albert Bandura, Psychology Department, Jordan Hall, Stanford University, Stanford, CA 94305.

goals not pulled by an unrealized future state. The causal agency resides in forethought and the self-regulatory mechanisms by which it is translated into incentives and guides for purposive action. The present article analyzes the structure and mechanisms of self-regulation.

If human behavior were regulated solely by external outcomes, people would behave like weathervanes, constantly shifting direction to conform to whatever momentary social influence happened to impinge upon them. In actuality, people possess self-reflective and self-reactive capabilities that enable them to exercise some control over their thoughts, feelings, motivation, and actions. In the exercise of self-directedness, people adopt certain standards of behavior that serve as guides and motivators and regulate their actions anticipatorily through self-reactive influence. Human functioning is, therefore, regulated by an interplay of self-generated and external sources of influence.

### STRUCTURE OF SELF-REGULATORY SYSTEMS

Self-regulation operates through a set of psychological subfunctions that must be developed and mobilized for self-directed change (Bandura, 1986). Neither intention nor desire alone has much effect if people lack the capability for exercising influence over their own motivation and behavior (Bandura & Simon, 1977). The constituent subfunctions in the exercise of self-regulation through self-reactive influence are summarized in Fig. 1 and discussed in the sections that follow.

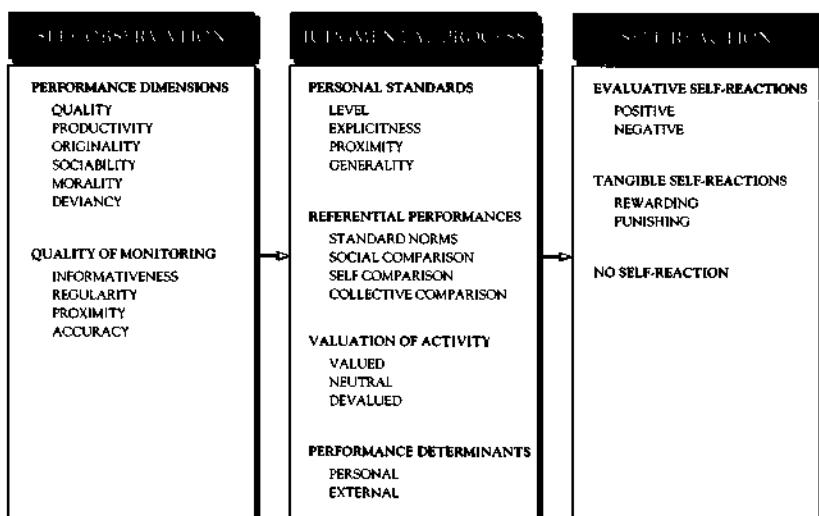


FIG. 1. Structure of the system of self-regulation of motivation and action through internal standards and self-reactive influences.

*Self-Monitoring Subfunction*

People cannot influence their own motivation and actions very well if they do not pay adequate attention to their own performances, the conditions under which they occur, and the immediate and distal effects they produce. Therefore, success in self-regulation partly depends on the fidelity, consistency, and temporal proximity of self-monitoring. Activities vary on a number of evaluative dimensions, some of which are listed in Fig. 1. Depending on people's values and the functional significance of different activities, they attend selectively to certain aspects of their functioning and ignore those that are of little import to them.

The process of self-monitoring is not simply a mechanical audit of one's performances. Preexisting cognitive structures and self-beliefs exert selective influence on which aspects of one's functioning are given the most attention, how they are perceived, and how performance information is organized for memory representation. Mood states also affect how one's performances are self-monitored and cognitively processed (Kuiper, MacDonald, & Derry, 1983). Self-monitoring of behavior that bears on personal competence and self-esteem, in turn, activates affective reactions that can distort self-perceptions at the time the behavior is occurring, as well as later recollections of it.

Self-observation serves at least two important functions in the process of self-regulation. It provides the information needed for setting realistic goals and for evaluating one's progress toward them. But there are additional dynamic ways in which paying close attention to one's thought patterns and actions in different social contexts can contribute to self-directed change.

*Self-diagnostic function.* Systematic self-observation can provide important self-diagnostic information. When people observe their thought patterns, emotional reactions, and behavior and the conditions under which these reactions occur, they begin to notice recurrent patterns. By analyzing regularities in the covariation between situations and their thought and actions, people can identify the psychologically significant features of their social environment that lead them to behave in certain ways. For those who know how to alter their behavior and modifiable aspects of their environment, the self-insights so gained can set in motion a process of corrective change.

Diagnostic self-monitoring need not be confined to observing naturally occurring covariations in one's everyday experiences or to retrospective analyses. Significant determinants of psychosocial functioning can be identified more effectively through personal experimentation (Neuringer, 1981). By systematically varying things in their daily lives and noting the accompanying personal changes, people can discover what factors influ-

ence their psychosocial functioning and sense of well-being. Similarly, by altering their habitual thought patterns and observing the accompanying effects, people can gain understanding of how their thinking affects their emotional states, level of motivation, and performance. Self-knowledge provides direction for self-regulatory control.

*Self-motivating function.* When people attend closely to their performances they are inclined to set themselves goals of progressive improvement, even though they have not been encouraged to do so. Goal setting enlists evaluative self-reactions that mobilize efforts toward goal attainment. The directive and motivational effects of self-monitoring have been found to be quite variable. It sometimes increases the behavior being observed, sometimes reduces it, and oftentimes has no effect. One can bring some order to this variability by considering the intervening mechanism of self-directedness. Knowledge of how one is doing alters one's subsequent behavior to the extent that it activates self-reactive influences in the form of personal goal setting and self-evaluative reactions.

Thus, when people engage in an ongoing activity and are informed of their performance attainments, some set goals for themselves spontaneously (Bandura & Cervone, 1983). Variations in personal goal setting are reflected in diversity in motivation (Fig. 2). Those who set no goals for themselves achieve no change in effort and are surpassed by those who aim to match their previous level of effort who, in turn, are outperformed by those who set themselves the more challenging goal of bettering their past endeavor.

A number of factors, some relating to the attributes of individuals, others to the behavior, and still others to the nature and type of self-monitoring, can affect the likelihood that observing how one behaves will enlist self-reactive influences. One such factor is the *temporal proximity* of self-monitoring to the changeworthy behavior (Bandura, 1986; Kazdin, 1974; Nelson, 1977). Self-directed change is more readily achieved by bringing consequences to bear on present behavior than on its distal effects. Self-observation close in time provides continuing information and, thus, the best opportunity to bring self-influence to bear on the strategies one is using and on one's behavior while it is in progress. Focusing on the more distal effects of courses of action cannot correct the past and may provide little guidance for the future. Intermittent self-monitoring, because it is only partially informative, also produces less effective self-regulation than does regular attention to one's own performances.

A second factor is the *informativeness of performance feedback*. Evaluative self-reactions cannot be much aroused if one does not have a clear idea of how one is doing. Self-observation enhances performance when there is clear evidence of progress, but it has little effect when there is considerable ambiguity about the effects of one's courses of action. Mo-

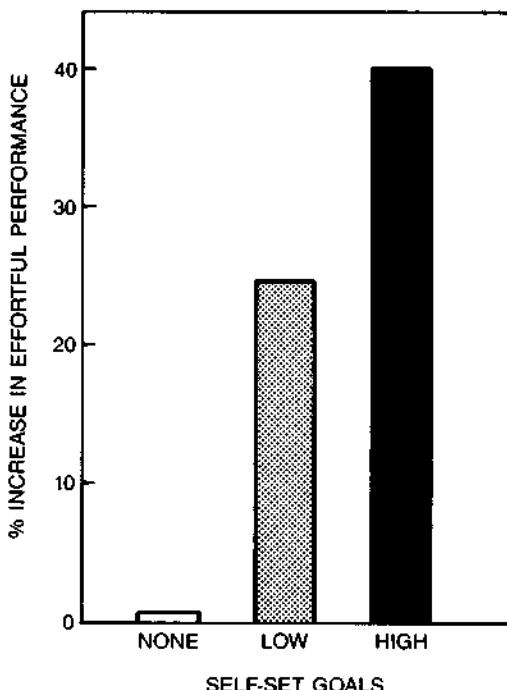


FIG. 2. Mean increases in motivational level under conditions of performance feedback alone depending on whether people continue to perform the activity without goals or spontaneously set low or high goals for themselves. Plotted from data of Bandura & Cervone (1983).

*tivational level* is still another factor mediating the effects of self-observation. People who desire to change the activities they are monitoring are prone to set goals for themselves and to react self-evaluatively to the progress they are making. Low motivation is accompanied by unreactive self-observation.

*Valence of the behavior* will affect the type and strength of evaluative self-reactions that self-observation is apt to elicit. Behavioral attainments in valued domains produce self-satisfactions and raise aspirations that can augment change; devalued behaviors are apt to be reduced by activating self-displeasure; and neutral behaviors are likely to undergo little alteration because they do not arouse much in the way of self-reactions (Kanfer, 1970). Self-observation has similar differential effects regardless of whether the valence of the activity has been established naturally or the activity is arbitrarily invested with positive and negative value (Cavior & Marabotto, 1976; Sieck & McFall, 1976).

Attending to one's accomplishments is encouraging, whereas dwelling

on failures can be discouraging and undermine one's sense of efficacy. Therefore, the degree and direction of change accompanying self-monitoring will partly depend on whether attention is predominantly focused on one's *successes or failures*. Self-monitoring successes increases desired behavior, attending only to one's failures causes little change or lowers performance accomplishments (Gottman & McFall, 1972). Although heavy focus on one's failure is dispiriting, it can have beneficial effects if it identifies possible causes and suggests corrective changes. Behavior also varies greatly in its *amenability to voluntary control*. Self-monitoring alone can produce lasting changes in activities that are relatively easy to modify by deliberate effort. But self-observation alone has, at best, only transient effects on behavior that is highly resistant to change.

It is evident from the foregoing discussion that self-monitoring is not simply a mechanical tracking and registry process. It operates through self-referent processes that can bias what is observed and it can activate self-reactive influences that alter the course of action. Moreover, people differ in their *self-monitoring orientations* in the extent to which they guide their actions in terms of personal standards or social standards of behavior (Snyder, 1987). Those who have a firm sense of identity and are strongly oriented toward fulfilling their personal standards display a high level of self-directedness. Those who are not much committed to personal standards adopt a pragmatic orientation, tailoring their behavior to fit whatever the situation seems to call for. They become adept at reading social cues, remembering those that have predictive value and varying their self-presentation accordingly.

#### *Judgmental Subfunction*

Observing one's pattern of behavior is the first step toward doing something to affect it, but, in itself, such information provides little basis for self-directed reactions. Actions give rise to self-reactions through a judgmental function that includes several subsidiary processes. Personal standards for judging and guiding one's actions play a major role in the exercise of self-directedness. Whether a given performance is regarded favorably or negatively will depend upon the personal standards against which it is evaluated.

*Development of personal standards.* Personal standards are developed from information conveyed by three principal modes of influence (Bandura, 1986). People form personal standards partly on the basis of how significant persons in their lives have reacted to their behavior. Eventually they may come to judge themselves by the evaluative standards reflected in the social sanctions of others. Sociological perspectives on the self have tended to emphasize this particular mode of acquisition

(Cooley, 1902; McCall, 1977). Standards can be acquired through direct tuition as well as through the evaluative reactions of others toward one's behavior. In this form of transmission, standards are drawn from the tutelage of influential persons in one's social environment or from the standards prescribed by them. As in other forms of influence, direct tuition is most effective in fostering development of standards when it is based on shared values and mutual support. People not only teach and prescribe standards for others, they also exemplify them in their reactions to their own behavior. They respond with self-satisfaction and self-approval when they fulfill their personal standards but negatively when they fall short of, or violate, their standards. The power of social modeling in transmitting standards is well documented empirically (Bandura, 1986).

It should be noted that people do not passively absorb ready-made standards from whatever social influences happen to impinge upon them. Rather, they construct for themselves their own standards through reflective processing of multiple sources of direct and vicarious influence. The self-construction of standards is complicated when there is much diversity and inconsistency in the standards by which people judge their own efforts and actions or those of others. People differ to some extent, not only in the standards they favor, but they often display inconsistencies between what they practice and what they prescribe, and even the same person may promote different standards in different settings and domains of activity. Therefore, the standards people fashion for themselves are not merely facsimiles of what they have been taught or prescribed, or have seen modeled.

*Social referential comparisons.* Behavior is easier to regulate when it produces independent objective indicants of adequacy. There is little ambiguity about whether one can swim, fly an aircraft, or balance a checkbook. However, for most activities there are no absolute measures of adequacy. People must, therefore, evaluate their performances in relation to the attainments of others. For example, a student who achieves a score of 115 points on an examination, and whose aspiration is to be in the upper 10% of a certain group, would have no basis for meaningful self-appraisal without knowing how others have performed. When adequacy is defined relationally, appraisals of one's own performance require comparisons among three major information sources: the attained performance level, one's personal standards, and the performances of others.

The referential comparisons with others may take different forms for different tasks for our purposes. For some regular activities, standard norms based on representative groups are used to determine one's relative standing. More often people compare themselves to particular associates in similar situations. This may involve certain classmates, work

associates, or people in other settings engaged in similar endeavors. Performance judgments will, therefore, vary substantially depending upon those chosen for *social comparison* (Bandura & Jourden, 1991; Goethals & Darley, 1987; Wood, 1989).

One's previous behavior is continuously used as a reference against which ongoing performance is judged. In this referential process, *self-comparison* supplies the measure of adequacy. Past attainments affect self-appraisal mainly through their effects on goal setting. People generally try to surpass their past accomplishments. After a given level of performance has been attained, it is no longer challenging and people seek new self-satisfactions by striving for progressive improvements (Bandura, 1989).

The referential performances against which people partly judge their own behavior take the form of *collective comparison* in social systems organized around collective principles. In such systems, group performance rather than individual accomplishment is evaluated and publicly acclaimed (Bronfenbrenner, 1970; Tannenbaum, Kavcic, Rosner, Jianello, & Wieser, 1974). Comparison processes still operate under collective arrangements, but self-appraisal is primarily based on one's relative contribution to the group accomplishment and how well it measures up to the standard adopted by the group.

*Valuation of activities.* Another important factor in the judgmental component of self-regulation concerns the valuation of activities. People do not care much how they do in activities that have little or no significance for them. They expend little effort on devalued activities. It is mainly in areas affecting their welfare and self-esteem that performance appraisals activate self-reactions. Thus, the more relevant performances are to one's value preferences and sense of personal adequacy, the more likely self-evaluative reactions are to be elicited in that activity (Simon, 1979). In everyday life, people imbue remarkably varied activities, many seemingly trivial in character, with high evaluative significance, as when they invest their self-esteem in how far they can toss a shot-put ball.

*Perceived performance determinants.* Self-reactions also vary depending on how people perceive the determinants of their behavior. They are most likely to take pride in their accomplishments when they ascribe their successes to their own abilities and efforts. But they do not derive much self-satisfaction when they view their performances as heavily dependent on external aid or special situational supports. Self-reactions to faulty and blameworthy conduct similarly depend on causal judgments. People respond self-critically to faulty performances for which they hold themselves responsible, but not to those they perceive as due to unusual circumstances, to insufficient capabilities, or to unrealistic demands

(Weiner, 1986). In the latter instances, external conditions are considered to be at fault.

### *Self-Reactive Influences*

Performance judgments set the occasion for self-reactive influence. Self-reactions provide the mechanism by which standards regulate courses of action. The self-regulatory control is achieved by creating incentives for one's own actions and by anticipative affective reactions to one's own behavior depending on how it measures up to an internal standard. Thus, people pursue courses of action that produce positive self-reactions and refrain from behaving in ways that result in self-censure. The self-motivating incentives may be either tangible outcomes or self-evaluative reactions.

Self-incentives affect behavior mainly through their motivational function. When people make self-satisfaction or tangible benefits conditional upon certain accomplishments, they motivate themselves to expend the effort needed to attain the requisite 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. In the case of tangible self-motivators, people get themselves to do things they would otherwise put off or avoid altogether by making tangible rewards dependent upon performance attainments. By making free time, relaxing breaks, recreational activities, and other types of tangible self-reward contingent upon a certain amount of progress in an activity, they mobilize the effort necessary to get things done. People who reward their own attainments usually accomplish more than those who perform the same activities under instruction but without self-incentives, are rewarded noncontingently, or monitor their own behavior and set goals for themselves without rewarding their attainments (Bandura, 1986).

One of the factors that differentiates people who succeed in regulating their motivation and behavior to achieve what they seek from those who are unsuccessful in their self-regulatory efforts is the effective use of self-incentives (Perri & Richards, 1977; Zimmerman, 1989). This is nowhere better illustrated than in the writing habits of successful novelists. They must depend on their own self-discipline because they have no resident supervisors issuing directives and overseeing daily writing activities. As Wallace (1977) clearly documents, novelists influence how much they write by making the pursuit of other activities contingent on either completing a certain amount of writing each day or writing for a designated length of time. Even in activities that are externally prescribed,

self-regulatory skills partly determine how effectively people can mobilize their efforts and resources to do them.

Most people value their self-respect and the self-satisfaction derived from a job well done more highly than they do material rewards. The self-regulation of behavior by self-evaluative reactions is a uniquely human capability. Self-evaluation gives direction to behavior and creates motivators for it. Evaluative self-incentives are, therefore, repeatedly recruited in the service of behavior that reflects on personal competence. By making self-satisfaction conditional on performances that match a personal index of merit, people get themselves to put forth the effort necessary to accomplish what they value (Bandura & Cervone, 1983; Bandura & Jourden, 1991).

In addition to serving as guides and incentives for behavior, self-evaluative reactions are of considerable interest in their own right. They affect how much satisfaction people derive from what they do. We shall return to these affective outcomes later in the analysis of dysfunctions in the self-regulatory system. In most instances, people exert influence on their own motivation and behavior by enlisting both evaluative and tangible self incentives.

### FUNCTIONING OF SELF-REGULATORY SYSTEMS

In the preceding sections we have examined the general structure of self-regulatory systems. Now we turn our attention to the functional operation of the self system. A social cognitive theory of self-regulation encompasses another major mechanism of self-directedness that exerts strong impact on human thought, affect, motivation, and action. This is the self-efficacy mechanism, which plays a central role in the exercise of personal agency (Bandura, 1986, 1989).

#### *Self-Efficacy Mechanism*

Among the mechanisms of personal agency, none is more central or pervasive than people's beliefs about their capabilities to exercise control over their own level of functioning and over events that affect their lives. Self-efficacy beliefs function as an important set of proximal determinants of human self-regulation. People's beliefs in their efficacy influence the choices they make, their aspirations, how much effort they mobilize in a given endeavor, how long they persevere in the face of difficulties and setbacks, whether their thought patterns are self-hindering or self-aiding, the amount of stress they experience in coping with taxing environmental demands, and their vulnerability to depression.

Self-beliefs of efficacy partly determine how the various subfunctions of a self-regulatory system operate. Such beliefs affect the self-monitoring and cognitive processing of different aspects of one's performances and

the outcomes that flow from them (Bandura, 1991a). They influence the perceived causes of successes and failures. Thus, people who regard themselves as highly efficacious tend to ascribe their failures to insufficient effort, whereas those who regard themselves as ineffectual view the cause of their failures as stemming from low ability (Collins, 1982; Silver, Mitchell, & Gist, 1989). The effects of causal attributions on motivation and performance attainments are mediated almost entirely through changes in self-efficacy beliefs (Relich, Debus, & Walker, 1986; Schunk & Gunn, 1986). As will be shown shortly, the impact of social comparison on performance attainments is similarly mediated through its effects on self-efficacy beliefs (Bandura & Jourden, 1991).

Self-beliefs of efficacy also affect the goal-setting subfunction of self-regulation. The more capable people judge themselves to be, the higher the goals they set for themselves and the more firmly committed they remain to them (Bandura, 1991a; Locke & Latham, 1990; Wood & Bandura, 1989b). Whether negative discrepancies between personal standards and attainments are motivating or discouraging is partly determined by people's beliefs that they can attain the goals they set for themselves. Those who harbor self-doubts about their capabilities are easily dissuaded by obstacles or failures. Those who are assured of their capabilities intensify their efforts when they fail to achieve what they seek and they persist until they succeed (Bandura & Cervone, 1986).

And finally, perceived self-efficacy contributes to the valuation of activities. People display enduring interest in activities at which they judge themselves to be self-efficacious and from which they derive satisfaction by mastering challenges (Bandura & Schunk, 1981). Indeed, intrinsic interest is better predicted by perceived self-efficacy than by actual ability (Collins, 1982). Biographical studies similarly reveal that deep engrossment in, and enjoyment of, different types of life pursuits are best fostered by selecting personal changes that match one's perceived capabilities and seeing evidence of progress toward one's aspirations (Csikszentmihalyi, 1979).

### *Self-Regulation and the Negative Feedback Model*

Many theories of self-regulation are founded on a negative feedback control system. This is the basic regulator in control theory (Carver & Scheier, 1981; Lord & Hanges, 1987), in psychobiologic homeostatic theories (Appley, 1991), and in the cybernetic TOTE model presented by Miller, Galanter, and Pribram (1960). Equilibration is also the sole motivational mechanism in Piaget's theory (1960). This type of system functions as a motivator and regulator of action through a discrepancy reduction mechanism. Perceived discrepancy between performance and an internal standard triggers action to reduce the incongruity. In negative

feedback control, if performance matches the internal standard the person does nothing. A regulatory process in which matching a standard begets inertness does not characterize human self-motivation. Such a feedback control system would produce circular action that leads nowhere. Nor could people be stirred to action until they receive feedback of a shortcoming. Although comparative feedback is essential in the ongoing regulation of motivation, people initially raise their level of motivation by adopting goals before they receive any feedback regarding their beginning effort (Bandura & Cervone, 1983). The exercise of forethought enables them to wield adaptive control anticipatorily rather than being simply reactive to the effects of their efforts. As can be seen in Fig. 3, anticipative or proactive control operates as the primary system in the mobilization of motivation and reactive feedback specifies the further adjustments in effort needed to accomplish desired goals. Negative feedback may help to keep people going on a preset course, but from time to time they must transcend the feedback loop to initiate new challenging courses for themselves.

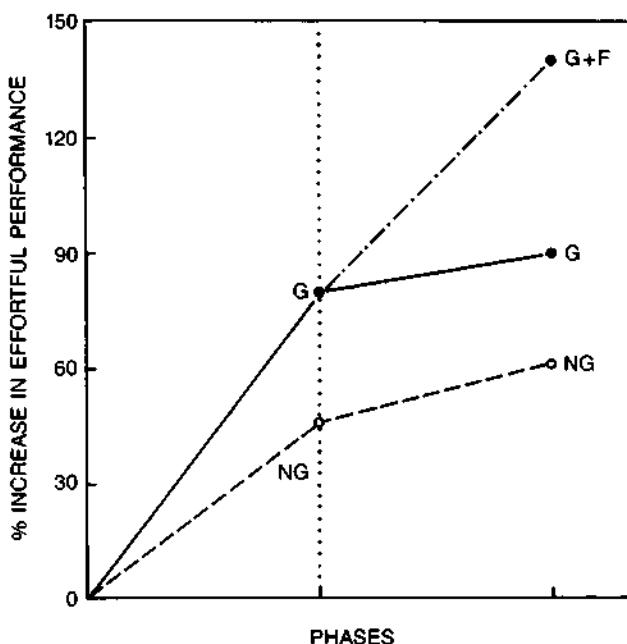


FIG. 3. Portrayal of how proactive systems and reactive feedback systems operate in the initiation and continued regulation of motivation. In the initial proactive phase, subjects performed with goals (G) or no goals (NG). In the next phase, combining proactive and reactive self-influence, subjects continued to perform with either goals only (G) or with goals and performance feedback (G + F). Plotted from data of Bandura & Cervone, 1983.

Human self-motivation relies on both *discrepancy production* and *discrepancy reduction*. It requires *proactive control* as well as *reactive control*. People initially motivate themselves through proactive control by setting themselves valued performance standards that create a state of disequilibrium and then mobilizing their effort on the basis of anticipatory estimation of what it would take to reach them. Feedback control comes into play in subsequent adjustments of effort expenditure to achieve desired results. After people attain the standard they have been pursuing, those who have a strong sense of efficacy generally set a higher standard for themselves. The adoption of further challenges creates new motivating discrepancies to be mastered. Similarly, surpassing a standard is more likely to raise aspiration than to lower subsequent performance to reduce disequilibrium by conforming to the surpassed standard. Self-motivation thus involves a dual control process of disequilibrating discrepancy production followed by equilibrating discrepancy reduction.

An evaluative executive control system with a proactive component can, of course, be superimposed on a negative feedback operation that keeps changing aspirational standards either upward or downward depending on how performance attainments are construed. To capture the complexity of human self-regulation, such an executive control system must be invested with the evaluative agentive properties previously shown to play an important role in self-directedness. These include (1) predictive anticipatory control of effort expenditure, (2) affective self-evaluative reactions to one's performances rooted in a value system, (3) self-appraisal of personal efficacy for goal attainment, and (4) self-reflective metacognitive activity concerning the adequacy of one's efficacy appraisals and the suitability of one's standard setting. Evaluation of perceived self-efficacy relative to task demands indicates whether the standards being pursued are within attainable bounds or beyond one's reach.

#### *Self-Reactive Influences in the Self-Regulation of Motivation*

The capacity to exercise self-influence by personal challenge and evaluative reaction to one's own attainments provides a major cognitive mechanism of motivation and self-directedness. Innumerable studies yield strong consistent evidence that explicit challenging goals enhance motivation and performance attainments (Locke & Latham, 1990). As previously noted, motivation based on standards involves a cognitive comparison process. The motivational effects do not stem from the goals themselves, but rather from the fact that people respond evaluatively to their own behavior. Goals specify the conditional requirements for positive self-evaluation.

Activation of self-reactive influences through internal comparison re-

quires both comparative factors—a personal standard and knowledge of one's performance level. Neither performance knowledge without standards nor standards without performance knowledge provides a basis for self-evaluative reactions. Studies in which goals and performance feedback are systematically varied yield results consistent with this formulation, whatever the nature of the pursuit (Bandura & Cervone, 1983; Becker, 1978; Strang, Lawrence, & Fowler, 1978). Simply adopting a goal, whether an easy or challenging one, without knowing how one is doing, or knowing how one is doing in the absence of a goal, has no lasting motivational impact. But the combined influence of goals with performance feedback heightens motivation substantially. This is shown in Fig. 4, which summarizes the level of self-motivation when both, only one, or none of the comparative factors was present.

Cognitive motivation based on goal intentions is mediated by three types of self-influences. The first includes affective self-evaluation. People seek self-satisfactions from fulfilling valued standards and are prompted to intensify their efforts by discontent with substandard performances. We have already seen that perceived self-efficacy is another

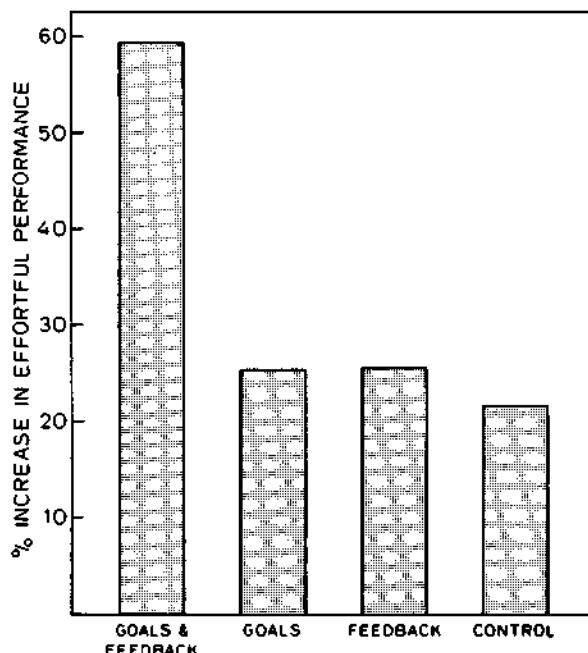


FIG. 4. Mean percentage change in level of motivation under conditions combining goals with performance feedback, goals alone, feedback alone, or with none of these factors (Bandura & Cervone, 1983).

self-referent factor that plays an influential role in the self-regulation of motivation. The goals people set for themselves at the outset of an endeavor are subject to change, depending on the pattern and level of progress they are making (Campion & Lord, 1982). They may maintain their original goal, lower their sights, or adopt an even more challenging goal. Thus, the third constituent self-influence in the ongoing regulation of motivation concerns the readjustment of internal standards in light of one's attainments.

The contribution of these self-reactive influences to motivation is strikingly revealed in a study that systematically varied the direction and magnitude of discrepancy between performance and a difficult assigned standard (Bandura & Cervone, 1986). Inspection of Fig. 5 shows that the more sources of self-influence individuals brought to bear on themselves, the higher the effort they exerted and sustained to attain what they sought. Taken together this set of self-reactive influences accounts for the major share of variation in motivation.

Affective self-reactions provide a dual source of incentive motivation—the anticipated self-satisfaction for personal accomplishment operates as a positive motivator, and discontent with deficient performance functions

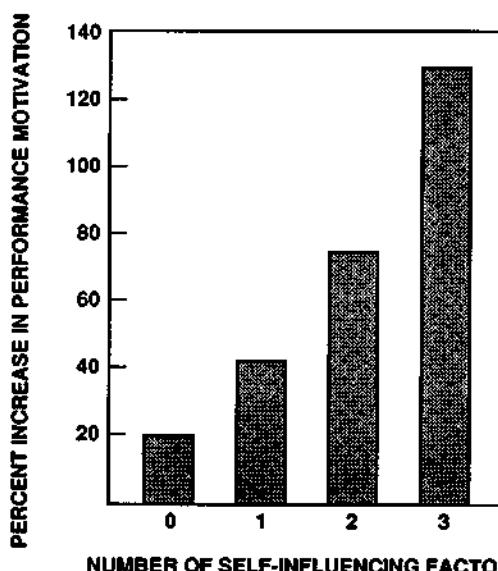


FIG. 5. Mean percentage change in motivational level as a function of the number of self-reactive influences operating in given individuals. The three self-reactive factors included strong perceived self-efficacy for goal attainment; self-dissatisfaction with substandard performance; and adoption of challenging standards. Plotted from data of Bandura & Cervone (1986).

as a negative motivator. These two forms of self-motivators may contribute differentially to performance accomplishments depending on the complexity of the activity. On simpler tasks, where success is attainable solely by increased level of effort, self-discontent with substandard attainments is a major regulator of performance motivation (Bandura & Cervone, 1983, 1986). In contrast, on complex tasks that make heavy attentional and cognitive demands, self-satisfaction with personal progress toward challenging standards provides a positive motivational orientation for performance accomplishments. Strong negative self-reactions can impair level of functioning by interfering with the intricate task of generating and testing alternative strategies of action (Bandura & Jourden, 1991; Cervone, Jiwani, & Wood, 1990).

#### *Hierarchical Structure of Goal Systems*

Thus far, the discussion has centered on goal systems as directive and motivational devices, and the self-referent mechanisms through which they exert their effects. Goal systems, of course, usually involve a hierarchical structure in which the goals that operate as the proximal regulators of motivation and action subserve broader goals reflecting matters of personal import and value. However, proximal goals are not simply subordinate servitors of valued loftier ones as commonly depicted in machinelike hierarchical control systems. Through engagement of the self-system, subgoals invest activities with personal significance. As previously shown, proximal goals generate self-satisfaction from personal accomplishments that operates as its own reward during the pursuit of higher level goals. When the reward of personal accomplishment is linked to indicants of progress, individuals contribute a continuing source of interest and self-motivation quite apart from the incentive of the loftier goal. Indeed, subgoal challenges often outweigh the lure of superordinate goals as ongoing motivators (Bandura & Schunk, 1981). In this motivational process, people gain their satisfaction from progressive mastery of an activity rather than suspend any sense of success in their endeavors until the superordinate goal is attained. In short, the reward is in the ongoing process of mastery rather than solely in the attainment of the end goal. The model of self-motivation as a process of recurrent proximal self-challenge and evaluative reward differs from one in which a linear series of subordinate goals is powered entirely by a superordinate one. Self-motivation through proximal self-influence does not imply any restriction in the future time perspective of aspirations. Progress toward valued futures is best achieved by combining distal aspirations with proximal self-guidance.

#### *Aspirational Standards, Achievement Motives, and External Incentives*

Self-motivation through self-reactive influence is a significant ingredi-

ent in a variety of motivational phenomena that come under different names. Achievement motivation is one such instance. High achievers tend to invest their self-satisfaction in attainment of challenging goals; low achievers adopt easy goals as sufficing. The higher the aspirational standards people set for themselves, the harder they strive to fulfill them and the more likely they are to excel in their attainments.

Personality theories often portray human strivings and accomplishments as products of achievement needs or motives. The achievement motive is usually inferred from responses to items containing cues relevant to achievement. Theories in which motives are inferred from the types of behavior they supposedly cause create problems of circularity (Bandura, 1986). The motive is inferred from a given class of behavior and is then used to explain the activation of that class of behavior. Response-inferred motives present fewer conceptual problems when they are assessed through means other than performance. The functional properties ascribed to the achievement motive are much the same as those that characterize aspirational standards. Both are said to direct and activate courses of action that lead to desired accomplishments. However, there is a major conceptual difference between a motive force and self-generated incentives arising from internal standards and self-reactive influence. Motives impel behavior; self-incentives motivate and direct behavior through cognitive anticipatory mechanisms.

Research in which achievement motive and aspirational standards are measured sheds some light on these alternative motivational mechanisms. High need for achievement is associated with high goal setting. However, need for achievement has no influence on performance independently of personal goals. The relationship between need for achievement and performance disappears when level of self-set goals is controlled (Dossett, Latham, & Mitchell, 1979; Latham & Marshall, 1982; Matsui, Okada, & Kakuyama, 1982). The goals people set for themselves predict their performance level and self-satisfaction better than do the traditional personality measures of need for achievement (Arvey & Dewhirst, 1976; Ostrow, 1976; Yukl & Latham, 1978).

The inclination of high need achievers to select higher goals than those who score low on need achievement tests does not necessarily mean that performance standards are the products of an underlying motive as is commonly assumed. Personal standards of excellence may lead people to endorse achievement statements or to produce achievement imagery on personality tests rather than such endorsements verifying an achievement motive fueling aspiring standards. Evidence that standard setting is a better predictor of ongoing level of performance than are indices of achievement motives lends causal priority to standard setting. Moreover, goal theory can explain rapid shifts in motivational level through fluctu-

ations in mediating self-processes, whereas quick changes pose explanatory difficulties for a dispositional motive determinant.

Self-influence through internal standards also contributes to the motivational effects of extrinsic feedback and incentives. Extrinsic incentives can motivate partly by activating personal goals for progressive improvement. Indeed, a series of studies conducted by Locke and his associates shows that incentives increase performance to the extent that they encourage people to set motivating goals for themselves (Locke, Bryan, & Kendall, 1968). In research reporting mixed results on whether incentives influence performance partly by their effect on personal goals, performers were given no information about their level of performance (Pritchard & Curtis, 1973). Self-evaluative motivators are not effectively activated in the absence of knowledge of how one is doing (Bandura & Cervone, 1983). People are certainly motivated by the prospect of valued extrinsic outcomes. But by applying evaluative standards to their ongoing performances, they create motivating challenges and fulfill them to please themselves as well. Even simple feedback of progress of trivial extrinsic incentives can enhance performance motivation once self-satisfaction becomes invested in the activity. Satisfaction in personal accomplishment becomes the reward.

#### *Self-Regulatory Dynamics in Collective Endeavors*

Virtually all of the research on cognitive motivators has been concerned with how self-regulatory dynamics operate in personal accomplishments. Many human endeavors are directed at group goals that are achieved in organizational structures through socially mediated effort. In exercising control over collective outcomes, decision makers have to rely on the concerted efforts of others, whereas at the individual level, they need regulate only their own efforts. Socially mediated regulation of a group endeavor involves considerably more complex paths of influence than does direct self-regulation (Wood & Bandura, 1989a). Therefore, functional relationships established at the individual level may require qualifications at the group level.

Much of the research on human decision making examines discrete judgments in static environments under nontaxing conditions (Beach, Barnes, & Christensen-Szalanski, 1986; Hogarth, 1981). By contrast, in naturalistic environments decisions must be made from a wide array of information within a continuing flow of activity under time constraints and significant social and evaluative consequences. Actions taken at one point affect the options and effects of later decisions. Moreover, many of the decisional rules for exercising control over dynamic environments must be learned through exploratory experiences in the course of managing the ongoing organizational activities. Under these more complex

transactional conditions, self-regulative, affective, and motivational factors can exert substantial impact on quality of sociocognitive functioning.

Because organizational outcomes must be achieved through the coordinated efforts of others, some of the most important managerial decisions are concerned with how best to use human talent and how to guide and motivate human effort. In executing this role, managers have to cope with numerous obstacles, failures, and setbacks, which often carry perturbing self-evaluative implications, as well as social consequences. These affective factors can undermine self-conceptions and motivation in ways that impair good use of decision-making skills. Effective decision making thus involves more than applying a set of cognitive operators to existing knowledge for desired solutions. Self-regulatory influences have considerable impact on how well cognitive-processing systems operate (Bandura, 1986).

The mechanisms and outcomes of managerial decision making do not lend themselves readily to experimental analysis in actual organizational settings. The governing processes are usually influenced by a multiplicity of interacting factors that are difficult to identify let alone exercise experimental control over them. Advances in this complex field can be achieved by experimental analyses of decision making in simulated organizational environments. One such computer simulation encompasses the types of decisional activities required in complex dynamic environments (Wood & Bailey, 1985). It permits experimental variation of organizational properties and belief systems that can enhance or undermine self-regulatory determinants of motivation and action. People serve as managerial decision makers in which they have to match employee attributes to organizational subfunctions and to learn a complex set of decision rules on how best to guide and motivate those they oversee. The managerial rules concern the optimal use of goals, supervisory feedback, and social incentives to enhance the level of organizational performance. Some of the factors involve nonlinear and compound decision rules combining incentive and social equity elements, making them especially difficult to discern (Brehmer, Hagafors, & Johansson, 1980). The set of rules has to be integrated into a cognitive model of organizational functioning that could serve as a guide for decisions regarding different group members. Knowing rules does not ensure optimal implementation of them. The managers also have to gain proficiency in tailoring the applications of the rules to individual members of the group and to apply them in concert to achieve desired group results. The self-regulatory factors are measured at periodic intervals as the managerial task is performed over a series of trials.

The multifaceted nature of managerial activities and their mazy linkage to organizational accomplishments introduces complexities in the relation

between personal goals and group attainment. Personal goals are readily translatable into performance attainments when people possess the knowledge and means to exercise control. Goals can affect performance directly by channeling attention and by mobilizing effort and sustaining it in the face of obstacles (Locke & Latham, 1990). In most of the research demonstrating enhancement of accomplishments through goal setting, the performers already possess the means of control and need only to intensify their efforts. Even on tasks that are directly controllable by effort alone, goal effects are weaker for more complex activities (Wood, Mento, & Locke, 1987). Sheer managerial effort alone does not ensure attainment of group goals. Until the optimal managerial rules are identified, goals can produce more effortful and discerning cognitive processing of outcome information, but not necessarily immediate improvements in organizational performance. To complicate further the effects of goals on group performance, efforts to enhance the level of organizational functioning often require constituent changes in particular aspects of the social structure and the way in which social resources are allocated. If grounded in sound judgment, such fractional changes would eventually raise organizational attainments without necessarily producing sizable gains in the short run. Learning in an ambiguous probabilistic environment is made even more difficult when the effectiveness of decisional actions is reflected in distal rather than in proximal outcomes.

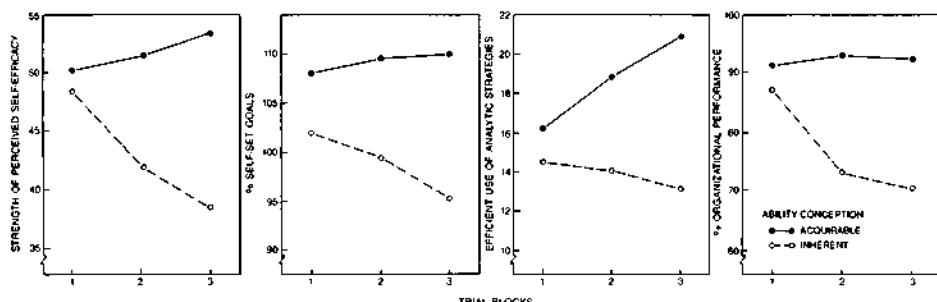
Social cognitive theory explains psychosocial functioning in terms of triadic reciprocal causation (Bandura, 1986). In this model of reciprocal determinism, (1) cognitive and other personal factors, (2) behavior, and (3) environmental events all operate as interacting determinants that influence each other bidirectionally. Each of the major interactants in the triadic causal structure—cognitive, behavioral, and environmental—functions as an important constituent in the dynamic environment. The cognitive determinant is indexed by self-beliefs of efficacy, personal goal setting, and quality of analytic thinking. The managerial choices that are actually executed constitute the behavioral determinant. The properties of the organizational environment, the level of challenge it prescribes, and its responsiveness to managerial interventions represent the environmental determinant. Analyses of ongoing processes clarify how the interactional causal structure operates and changes over time.

#### *Impact of Belief Systems on Self-Regulatory Mechanisms*

The interactional causal structure was tested in conjunction with experimentally varied organizational properties and belief systems that can enhance or undermine the operation of self-regulatory determinants. One important belief system is concerned with the conception of ability (M. Bandura & Dweck, 1990; Dweck & Elliott, 1983; Nicholls, 1984). Some

people regard ability as an *acquirable skill* that can be increased by gaining knowledge and perfecting competencies. They adopt a functional learning goal. They seek challenges that provide opportunities to expand their knowledge and competencies. They regard errors as a natural part of an acquisition process. One learns from mistakes. They judge their capabilities more in terms of personal improvement than by comparison against the achievement of others. For people who view ability as a more or less *inherent capacity*, performance level is regarded as diagnostic of underlying aptitude. Errors and deficient performances carry high evaluative threat. Therefore, they prefer tasks that minimize errors and permit ready display of intellectual proficiency at the expense of expanding their knowledge and competencies. High effort is also threatening because it presumably reveals low ability. The successes of others belittle their own perceived ability.

We instilled these different conceptions of ability and then examined their effects on the self-regulatory mechanisms governing the utilization of skills and performance accomplishments (Wood & Bandura, 1989b). Managers who viewed decision-making ability as reflecting basic cognitive aptitude were beset by increasing self-doubts about their managerial efficacy as they encountered problems (Fig. 6). They became more and more erratic in their analytic thinking, they lowered their organizational aspirations, and they achieved progressively less with the organization they were managing. In contrast, construal of ability as an acquirable skill fostered a highly resilient sense of personal efficacy. Under this belief system, the managers remained steadfast in their perceived managerial self-efficacy even when performance standards were difficult to fulfill, they continued to set themselves challenging organizational goals, and



**FIG. 6.** Changes in perceived managerial self-efficacy, self-set organizational goals relative to a preset standard, effective analytic strategies, and achieved level of organizational performance across blocks of trials under conceptions of ability as an acquirable skill or an inherent capacity. Each trial block comprises six different production orders (Wood & Bandura, 1989b).

they used analytic strategies in efficient ways that aided discovery of optimal managerial decision rules. Such a self-efficacious orientation paid off in high organizational attainments.

It is noteworthy that conceptions of ability bias how similar substandard performances are cognitively processed at the outset. This is because substandard performances carry markedly different diagnostic implications depending on whether ability is construed as an acquirable skill or as an inherent aptitude. Construal of insufficient attainments as indicants of inherent deficiencies gradually creates an ineffectual self-schema in the particular domain of functioning, whereas construal of substandard attainments as instructive guides for enhancing personal competencies fosters an efficacious self-schema. Such evolving self-beliefs further bias cognitive processing of outcome information and promote actions that create confirmatory behavioral evidence for them. This produces an exacerbation cycle of motivational and performance impairment under the inherent capacity set, and highly proficient functioning under the acquirable skill set.

Another important belief system that affects how efficacy-relevant information is cognitively processed is concerned with people's beliefs about the extent to which their environment is influenceable or controllable. Two aspects to the exercise of control are especially relevant to the management of organizational functioning (Bandura, 1986; Gurin & Brim, 1984). The first concerns the level of personal efficacy to effect changes by productive use of capabilities and enlistment of effort. This constitutes the personal side of the transactional control process. The second aspect concerns the changeability or controllability of the environment. This facet represents the level of system constraints, the opportunity structures to exercise personal efficacy, and the ease of access to those opportunity structures. Human behavior is, of course, governed by perceptions of personal efficacy and social environments rather than simply by their objective properties. Thus, individuals who believe themselves to be ineffectual are likely to effect little change even in environments that provide many potential opportunities and are highly responsive to the exercise of personal competence. Conversely, those who have a strong sense of efficacy, through ingenuity and perseverance, figure out ways of exercising some measure of control in environments containing limited opportunities and many constraints.

In the transactions of everyday life, beliefs regarding self-efficacy and environmental controllability are not divorced from experiential realities. Rather, they are products of reciprocal causation (Bandura, 1986). Thus, when people believe the environment is controllable on matters of import to them, they are motivated to exercise fully their personal efficacy, which enhances the likelihood of success. Experiences of success, in

turn, provide behavioral validation of personal efficacy and environmental controllability. Repeated affirmation of personal effectiveness under difficult conditions produces unshakeable persisters. If people approach situations as largely uncontrollable, they are likely to exercise their efficacy weakly and abortively, which breeds failure experiences. Over time, failures take an increasing toll on perceived self-efficacy and beliefs about how much environmental control is possible.

Our organizational simulation research underscores the strong impact of perceived controllability on the self-regulatory factors governing decision making that can enhance or impede performance (Bandura & Wood, 1989). People who managed the simulated organization under a cognitive set that organizations are not easily changeable quickly lost faith in their decision-making capabilities even when performance standards were within easy reach (Fig. 7). They lowered their aspirations. Those who operated under a cognitive set that organizations are controllable displayed a strong sense of managerial efficacy. They set themselves increasingly challenging goals and used good analytic thinking for discovering effective managerial rules. They exhibited high resiliency of self-efficacy even in the face of numerous difficulties. The divergent changes in the self-regulatory factors are accompanied by large differences in organizational attainments.

Path analyses confirm the postulated causal ordering of self-regulatory determinants. When initially faced with managing a complex unfamiliar environment, people relied heavily on their past performance in judging their efficacy and setting their personal goals. But as they began to form

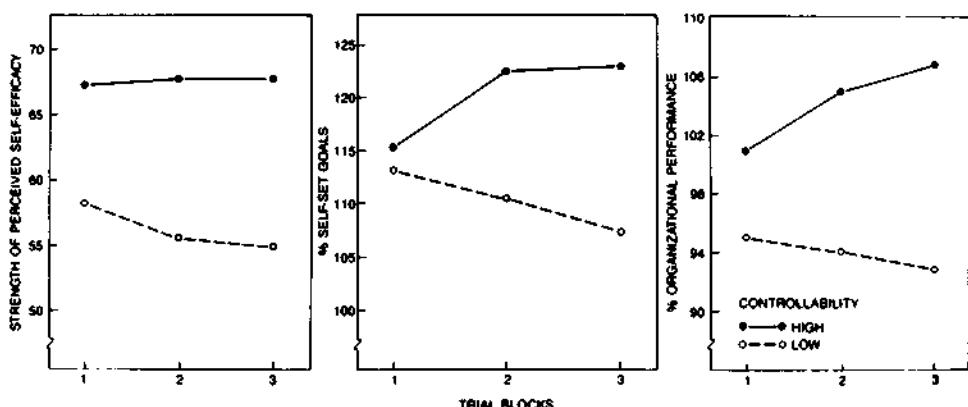


FIG. 7. Changes in perceived managerial self-efficacy, the performance goals set for the organization, and level of organizational attainment for managers who operated under a cognitive set that organizations are controllable or difficult to control (Bandura & Wood, 1989).

a self-schema concerning their efficacy through further experience, the performance system was powered more strongly and intricately by self-perceptions of efficacy (Fig. 8). Perceived self-efficacy influences performance both directly and through its strong effects on personal goal setting and proficient analytic thinking. Personal goals, in turn, enhance performance attainments through the mediation of analytic strategies.

We have previously noted that social comparison influences can affect self-regulation through their impact on self-appraisal of capabilities and affective self-reactions. The research on self-appraisal of capability via social standards had centered mainly on why people engage in social comparison, whom they choose to compare themselves with, the role of performance and attribute similarity in the selection of social referents, and the self-evaluative consequences of such choices (Suls & Miller, 1977; Suls & Mullen, 1982; Wood, 1989). Results of these studies have helped to clarify some important aspects of comparative self-appraisal. However, the laboratory situations generally differ in several respects from how socially comparative influences operate under naturally occurring conditions. In the former case, people can choose from a set of social referents whose accomplishments they want to hear about to determine whether they prefer upward or downward comparisons. The comparative self-appraisal typically involves a single evaluative instance. By contrast, under ordinary conditions, people are continually confronted with comparative information with social consequences whether they seek it or not. Moreover, comparative evaluation is an ongoing process often involving changes in the level, rate, and direction of performance discrepancies. Comparative self-appraisal, therefore, entails interpreting the ability implications of changing patterns of comparative information over time.

The research on organizational management corroborates the influential role played by self-regulatory factors in mediating the impact of social-comparative influences on motivation and collective attainments

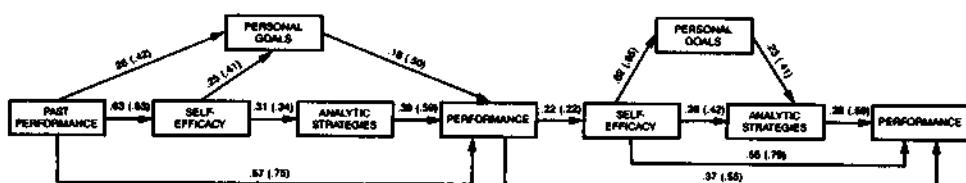


FIG. 8. Path analysis of causal structures. The initial numbers on the paths of influence are the significant standardized path coefficients ( $p < .05$ ); the numbers in parentheses are the zero-order correlations. The network of relations on the left half of the figure are for the initial managerial efforts, and those on the right half are for later managerial efforts (Wood & Bandura, 1989a).

(Bandura & Jourden, 1991). Decision makers managed the simulated organization during which they received accurate feedback about their own performance attainments but preset information on how well other decision makers performed. The individuals received social-comparative information suggesting that they performed either as well as their managerial comparators, consistently surpassed them, performed below the comparison group at the outset but gradually closed the gap and eventually surpassed them, or performed as well as their comparators but began to fall behind and ended up well below them.

Feedback that one is as able or superior to one's comparators sustained an efficacious self-regulatory orientation, although easy comparative triumphs incurred some demotivating effects. Compared to those who had to struggle to gain mastery, those who were led to believe they had achieved relative superiority easily set lower goal challenges for themselves and were highly self-satisfied with mediocre performance attainments because they happened to surpass the performances of their comparators. Complacent self-assurance creates little incentive to expend the increased effort needed to attain high levels of performance. Of special psychological interest are the comparative patterns of progressive mastery and progressive decline, which had striking contrasting effects on self-regulatory factors and organizational performance attainments (Figure 9).

Seeing oneself increasingly surpassed by similar social referents undermined perceived self-efficacy, disrupted analytic thinking, created unremitting self-discontent, and produced a sharp decline in organizational performance. By contrast, seeing oneself gain progressive mastery enhanced a sense of personal efficacy, fostered efficient analytic thinking,

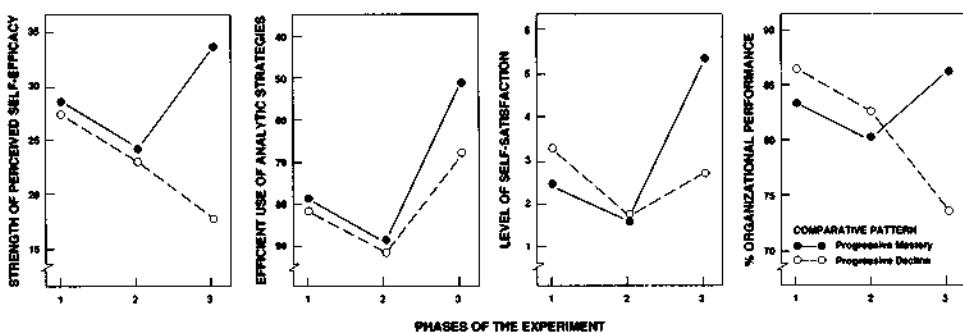


FIG. 9. Changes in perceived managerial self-efficacy, effective use of analytic strategies, affective self-evaluation, and achieved level of organizational performance across blocks of production orders for individuals who received social-comparative information indicating progressive mastery or progressive decline relative to their comparators. Each trial block comprises six different production orders (Bandura & Jourden, 1991).

and transformed self-evaluation from self-discontent to self-satisfaction with accelerating progress. These positive self-regulatory changes were accompanied by a large rise in organizational attainments. Path analysis confirms that the contrasting performance trajectories are mediated by the changes in self-regulatory factors.

The findings reveal that social comparison can have both beneficial and detrimental effects. The adverse consequences are not easily avoidable in competitively structured systems because of the prevalence of forced social comparisons. Indeed, comparison with agemates is well entrenched even by the early years of development (Morris & Nemcek, 1982). Given that people are not about to forsake achievement pursuits and cooperatively structured systems are hard to come by, it remains a challenge on how to minimize the demoralizing effects of unfavorable social comparison. Construal of ability as an acquirable attribute, rather than an inherent fixed aptitude, and beliefs in controllability can help to sustain a sense of self-efficacy, motivation for self-development, and positive self-evaluation in the face of repeated failure and setbacks (Bandura & Wood, 1989; Wood & Bandura, 1989b). Placing greater weight on self-comparative standards and indicants of personal improvement can also lessen the detrimental effects of inimical social comparison (Frey & Ruble, 1990; Nicholls, 1990). It is a fruitful extension of research on social comparison to articulate the ways in which its demoralizing effects can be attenuated.

#### *Affective Consequences of Dysfunctions in Self-Regulation*

Analyses of the structure and mechanisms of self-regulation operating through personal standards, conditional self-evaluations and motivation of effort, may make the process sound like self-infliction of encumbrances. In actuality, self-directedness provides an important and continuing source of personal satisfaction, interest, and self-esteem (Bandura, 1986). Success in goal attainments builds a sense of personal efficacy. Without aspirations and evaluative involvement in activities, people remain unmotivated, bored, uncertain about their capabilities, and dependent upon momentary external stimulation for their satisfactions. Life without any elements of challenge can be rather dull. However, internalization of dysfunctional standards of self-evaluation can serve as a source of chronic misery.

Self-regulatory processes produce emotional effects that can undermine performance motivation and psychological well-being. Indeed, many of the miseries people inflict upon themselves and others arise from dysfunctions in the self-regulatory system. They drive themselves relentlessly with stringent performance standards so their achievements rarely give them a sense of fulfillment. They judge others harshly by the same

demanding standards. And they experience a great deal of self-inflicted stress, despondency, and self-devaluation. A growing body of evidence reveals that negative cognitive biases in the constituent processes of self-regulation are especially conducive to depression (Kanfer & Hagerman, 1981; Rehm, 1982).

In the self-monitoring domain, people who are prone to depression misperceive their performance attainments or distort their recollections of them in self-slitting directions. In contrast, the nondepressed display a self-enhancing bias, remembering their successes well but recall fewer failures than they have actually experienced (DeMonbreun & Craighead, 1977; Nelson & Craighead, 1977; Wener & Rehm, 1975). Minimizing one's successes while accenting one's failures can give rise to despondency. The satisfactions people derive from what they do are determined to a large degree by their self-evaluative standards. A sure way of inducing self-discouragement and a sense of personal inadequacy is to judge one's attainments against lofty, global, or distal goals. Evidence indicates that faulty goal setting is, indeed, conducive to despondency and performance debilitation. Compared to nondepressed persons, the depressed tend to set higher standards for themselves relative to their attainments. (Golin & Terrill, 1977; Loeb, Beck, Diggory, & Tuthill, 1967; Schwartz, 1974; Simon, 1979). Goal difficulty is a relational characteristic reflecting the match between personal capabilities and goals, not a matter of absolute level. Depression is most likely to arise when personal standards of merit are set well above one's perceived self-efficacy to attain them (Kanfer & Zeiss, 1983).

The likelihood of depressive reactions is heightened when lofty standards are combined with a penchant for processing performance information in self-belittling ways. Depressed persons are not especially charitable to themselves in how they judge their performance determinants. In causal appraisals of their performances, the nondepressed credit successes to themselves and failures to situational factors. Such favorable causal appraisals serve to heighten positive affect. The depressed, while not always discounting their contributions to successes, nevertheless, are quick to blame themselves for their failures (Kuiper, 1978; Peterson & Seligman, 1984; Rizley, 1978).

Depression-prone individuals also tend to use social comparative information in self-deprecating ways. When exposed to the high attainments of others, the depressed judge their own accomplishments as less praiseworthy than do the nondepressed (Ciminero & Steingarten, 1978). The various self-devaluation cognitive biases tend to be more pronounced in depressed women than in depressed men.

People who judge themselves unfavorably are not inclined to treat themselves positively. Not surprisingly, the negative bias extends to the

affective self-reaction component of self-regulation. Compared to nondepressed persons, those who are prone to depression react less self-rewardingly for similar successes but more self-critically for similar failures (Gotlib, 1981; Lobitz & Post, 1979; Nelson & Craighead, 1977; Rehm, 1982). Self-devaluation and despondent mood feed on each other. Repeated self-devaluation creates a depressive mood which, in turn, further diminishes self-rewarding reactions and enhances self-critical ones. It is difficult to maintain interest and involvement in activities in which one's performances produce mainly self-devaluation.

Successful treatment of despondency stemming from dysfunctional self-evaluation rectifies each of the self-regulatory subfunctions—how people monitor and interpret their experiences, the standards by which they judge themselves, and their self-evaluative reactions to their performances (Heiby, 1986; Rehm, 1981).

Self-regulatory theories of motivation and of depression make seemingly contradictory predictions regarding the effects of negative discrepancies between attainments and standards. Standards that exceed attainments are said to enhance motivation through goal challenges, but negative discrepancies are also invoked as activators of despondent mood. Moreover, when negative discrepancies do have adverse effects, they may give rise to apathy rather than to despondency. A conceptual scheme that differentiates the conditions under which negative discrepancies will motivate, depress, or induce apathy is needed.

In accord with social cognitive theory, the directional effects of negative goal discrepancies are predictable from the relationship between perceived self-efficacy for goal attainment and level of self-set goals (Bandura & Abrams, 1986). Negative disparities give rise to high motivation and low despondent mood for people who believe they have the efficacy to fulfill difficult goals and continue to strive for them (Fig. 10). Negative disparities diminish motivation and generate despondent mood for people who judge themselves as ineffectual to attain difficult goals but continue to demand them of themselves for any sense of satisfaction or success. People who judge they lack the efficacy for goal attainment and abandon the difficult goals as unrealistic for themselves display the apathetic reaction.

### SELF-REGULATORY MECHANISMS IN MORAL AGENCY

The preceding discussion analyzed the mechanisms through which aspirational standards regulate motivation, personal accomplishments, and affective states. In areas of functioning involving achievement strivings and cultivation of competencies, the personal standards that are selected

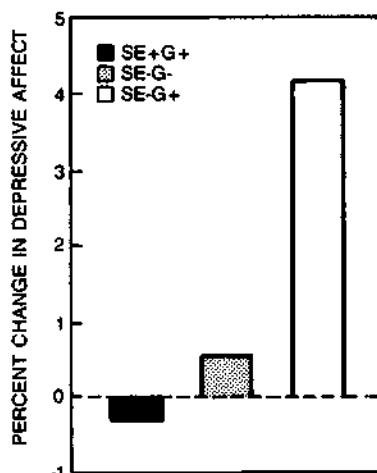


FIG. 10. Percentage change in depressive mood for people combining strong perceived self-efficacy with goal adherence (SE + G +); weak perceived self-efficacy with goal adherence (SE - G +); and weak perceived self-efficacy with goal abandonment (SE - G -) (Bandura & Abrams, 1986).

as a mark of adequacy are progressively altered as skills and knowledge 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 are relatively stable. That is, people do not change from week to week in what they regard as right or wrong or as good or bad. Moreover, violation of moral standards usually generates much stronger affective self-reactions to transgressive conduct than performances that may fall short of achievement standards.

Space limitation does not permit a detailed exposition of moral motivation and action. The social-cognitive conception of the exercise of moral agency through self-regulatory mechanisms has been presented elsewhere in some detail (Bandura, 1991b). In this theory, transgressive conduct is regulated by two major sources of sanctions: social sanctions and internalized self-sanctions. Both 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 behave in prosocial ways that give them a sense of self-satisfaction and self-respect and they refrain from transgressing because such conduct will give rise to self-reproach. Societal codes and sanctions articulate collective moral imperatives as well as influence social conduct. However, external sanctions are limited in their deterrent

power because most transgressive acts go socially undetected. But people continuously preside over their own behavior in countless situations presenting little or no threat of external sanctions. So the exercise of self-sanction must play a central role in the regulation of moral conduct.

Moral conduct is regulated mainly via mechanisms of self-reactive influence. Moral agency operates through the same basic set of psychological subfunctions. However, the evaluative standards differ from those in the achievement domain in content and stablyness, the judgmental factors are more varied and complex, and affective self-reactions to moral conduct are often more intense. To exert influence over their own conduct people have to monitor what they do. Actions give rise to self-reactions through a judgmental function in which conduct is evaluated in relation to personal standards and environmental circumstances. Situations with moral implications contain many judgmental ingredients that not only vary in importance but may be given lesser or greater weight depending upon the particular constellation of events in a given moral predicament. Among the many factors that enter into judging conduct are the nature of the transgression and its base rate of occurrence and degree of norm variation; the contexts in which it is performed and the perceived situational and personal motivators for it; the immediate and long-range consequences of the actions; whether it produces personal injury or property damage; whether it is directed at faceless agencies and organizations or at individuals; the characteristics of the wrongdoers, such as their age, sex, and ethnic and social status; and the characteristics of the victims and their perceived blameworthiness.

The integrative rules of moral decision making have been studied most extensively by researchers who analyze moral thinking as a process of information integration (Kaplan, 1989; Lane & Anderson, 1976; Leon, 1982; Surber, 1985). In dealing with moral dilemmas, people must extract, weight, and integrate the morally relevant information in the situations confronting them. Factors that are weighted heavily under some combinations of conditions may be disregarded or considered of lesser import under a different set of conditions. This process of moral reasoning is guided by multidimensional rules for judging conduct.

Self-regulation of moral conduct involves more than moral thought. Moral judgment sets the occasion for self-reactive influence. Evaluative self-reactions provide the mechanism by which standards regulate conduct. The anticipatory self-pride and self-censure for actions that correspond to or violate personal standards serve as the regulatory influences. People do things that give them self-satisfaction and a sense of self-worth. They ordinarily refrain from behaving in ways that violate their moral standards because it will bring self-condemnation. Anticipatory self-sanctions thus keep conduct in line with internal standards.

*Interplay between Personal and Social Sanctions*

The self-regulation of conduct is not entirely an intrapsychic affair, nor do people operate as autonomous moral agents impervious to the social realities in which they are enmeshed. In the interactionist perspective of social cognitive theory, moral conduct is regulated by a reciprocity of influence between thought and self-sanctions, conduct, and a network of social influences. Social factors affect the operation of the self system in at least three major ways (Bandura, 1986). They contribute importantly to the development of each of the self-regulatory functions. Social influences shape the rules of moral judgment and the nature of moral standards. Analyses of regulation of moral action through affective self-reaction distinguish between two sources of incentive motivation operating in the process. There are the conditional evaluative self-incentives that provide guides and proximal motivators for moral courses of action. Then there are the more distal social incentives for holding to a moral system. Thus, the second way in which social influences contribute to morality is by providing collective support for adherence to moral standards. The third way in which social realities affect moral functioning is by facilitating selective activation and disengagement of moral self-regulation. We shall return to this issue later.

After standards and self-reactive functions are developed, behavior usually produces two sets of consequences: self-evaluative reactions and social effects. These two sources of consequences may operate as complementary or opposing influences on behavior. Conduct is most congruent with moral standards when transgressive behavior is not easily self-excusable and the evaluative reactions of significant others are compatible with personal standards. Under conditions of shared moral standards, socially approvable acts are a source of self-pride and socially punishable ones are self-censured. To enhance the compatibility between personal and social sanctions, people generally select associates who share similar standards of conduct and thus ensure social support for their own system of self-evaluation (Bandura & Walters, 1959; Emmons & Diener, 1986). Diversity of standards in a society, therefore, does not necessarily create personal conflict. Selective association can forge consistency out of diversity. Behavior is especially susceptible to external influences in the absence of strong countervailing internal standards (Snyder, 1987).

One type of conflict between social and self-produced consequences arises when individuals are socially punished for behavior they highly value (Bandura, 1973). 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 se-

vere, people hold in check self-praiseworthy acts in risky situations but perform them readily in relatively safe settings. There 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. Self-sanctions can, therefore, be weakened or nullified by exonerative moral reasoning and social circumstances. People display different levels of detrimental behavior and offer different types of moral reasons for it, depending on whether they find themselves in social situations that are conducive to humane or to transgressive conduct (Bandura, Underwood, & Fromson, 1975).

#### *Selective Activation and Disengagement of Internal Standards*

Development of self-regulatory functions operating through moral standards does not create a fixed internal regulator of conduct, as suggested by theories of internalization incorporating entities such as conscience or superego as continuous overseers of actions. Self-regulatory mechanisms do not operate unless they are activated, and there are many processes by which self-sanctions can be disengaged from inhumane conduct (Bandura, 1986, 1991b). Selective activation and disengagement of internal control permits different types of conduct with the same moral standards. Figure 11 shows the points in the self-regulatory process at which

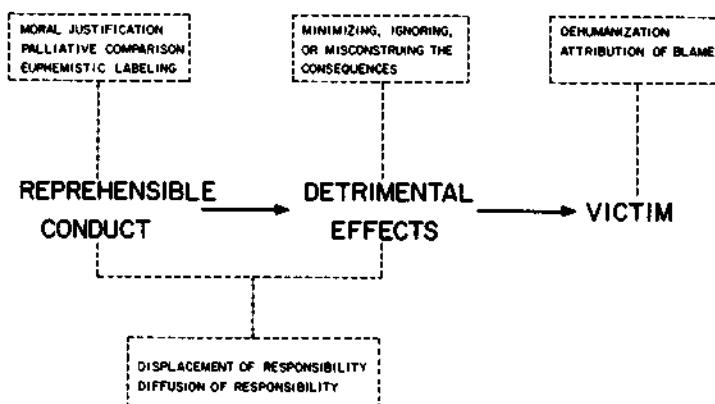


FIG. 11. Mechanisms through which moral control is selectively activated or disengaged from detrimental conduct at different points in the self-regulatory process (Bandura, 1986).

internal moral control can be disengaged from detrimental conduct.

People repeatedly experience conflicts in which behavior they themselves devalue or consider reprehensible can serve as the means for securing valued benefits. As long as self-sanctions override the force of external inducements behavior is kept in line with personal standards. However, in the face of strong external inducements, such conflicts are often resolved by selective disengagement of self-sanctions. This enables otherwise considerate people to perform self-serving activities that have detrimental social effects.

One set of disengagement practices operates on the construal of the behavior itself. People do not ordinarily engage in reprehensible conduct until they have justified to themselves the morality of their actions. What is culpable can be made righteous through cognitive reconstrual. In this process of *moral justification*, detrimental conduct is made personally and socially acceptable by portraying it in the service of moral purposes (Bandura, 1991b; Sanford & Comstock, 1971). People then act on a moral imperative.

Language shapes people's thought patterns on which they base many of their actions. Activities can take on a very different appearance depending on what they are called. *Euphemistic labeling* thus provides a convenient device for masking reprehensible activities or even conferring a respectable status upon them. Through convoluted and sanitizing verbiage, detrimental conduct is made benign, and those who engage in it are relieved of a sense of personal agency. In an insightful analysis of the language of nonresponsibility, Gambino (1973) identifies the different varieties of euphemisms. Palliative expressions, the agentless passive form, and the specialized jargon of legitimate enterprises are widely used to make the reprehensible respectable.

Whenever events occur or are presented contiguously, the first one colors how the second one is perceived and judged. By exploiting the contrast principle, moral judgments of conduct can be influenced by expedient structuring of what it is compared against (Bandura, 1991b). Acts that would ordinarily be self-deplored can be made righteous by *advantageous comparison* with flagrant transgressions. The more outrageous the comparison practices, the more likely it is that one's own reprehensible conduct will appear trifling or even benevolent. Advantageous historical comparisons are also often invoked in the reconstrual and justification or reprehensible conduct.

Cognitive restructuring of behavior through moral and social justifications and palliative characterizations is the most effective psychological mechanism for promoting conduct that violates personal standards. This is because moral restructuring not only eliminates self-deterrants but engages self-approval in the service of deleterious conduct. What was once

morally condemnable becomes a source of self-valuation. After harmful practices become invested with high moral purpose, people work hard to become proficient at them and take pride in accomplishments achieved deleteriously.

Self-sanctions are activated most strongly when personal agency for detrimental effects is unambiguous. Another set of dissociative 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 accepts responsibility for the consequences of the conduct (Diener, Dineen, Endresen, Beaman, & Fraser, 1975; Milgram, 1974). Under *displacement of responsibility*, people view their actions as springing from the dictates of authorities rather than their being personally responsible for them. Since they do not regard themselves as the actual agent of their actions, they are spared self-prohibiting reactions. Displacement of responsibility not only weakens restraints over one's own deleterious actions but diminishes social concern over the well-being of those mistreated by others (Milgram, 1974; Tilker, 1970).

The deterrent power of self-sanctions is weakened when the link between conduct and its consequences is obscured by *diffusion of responsibility* for deleterious behavior. This is achieved in several ways. Responsibility can be diffused by division of labor, group decision making, and group action. As a result, no single individual feels responsible for what is done collectively. Where everyone is responsible no one really feels responsible. People, therefore, behave more reprehensibly when responsibility is obfuscated by a collective instrumentality than when they hold themselves personally accountable for what they do (Bandura *et al.*, 1975; Diener, 1977; Zimbardo, 1969).

Additional ways of weakening self-deterring reactions operate through *disregard or distortion of consequences of action*. When people chose to pursue activities harmful to others for personal gain, or because of social inducements, they avoid facing the harm they cause or they minimize it. They readily recall prior information about the potential 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 harmful effects. 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 on the recipients of deleterious acts through *dehumanization* and *attribution of blame*. The strength of self-evaluative reactions to harmful 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, 1991b). The joys and suffering of similar persons are more vicariously arousing than are those of strangers or individuals who have been divested of human qualities. As a result, it is difficult to mistreat humanized persons without risking self-censure.

Self-sanctions against harmful conduct can be disengaged or blunted by divesting people of human qualities. Once dehumanized, they are no longer viewed as persons with feelings, hopes, and concerns but rather as subhuman objects. People treat dehumanized individuals much more harshly than those who have been invested with human qualities (Bandura *et al.*, 1975). Imputing blame to one's antagonists is still another expedient that can serve self-exonerative purposes. In this process, people regard themselves as faultless self-defenders compelled to harmful action by forcible provocation. Such conduct thus becomes a justifiable defensive reaction to willful or foolish provocations. Self-exoneration is similarly achievable by viewing one's injurious 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.

### CONCLUDING COMMENT

The converging lines of evidence reviewed in this article testify to the paramount role played by self-regulatory mechanisms in human motivation and action across diverse realms of functioning. Self-regulation is a multifaceted phenomenon operating through a number of subsidiary cognitive processes including self-monitoring, standard setting, evaluative judgment, self-appraisal, and affective self-reaction. Cognitive regulation of motivation and action relies extensively on an anticipatory proactive system rather than simply on a reactive negative feedback system. The human capacity for forethought, reflective self-appraisal, and self-reaction gives prominence to cognitively based motivators in the exercise of personal agency.

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# **Self-Regulatory Mechanisms Governing Gender Development**

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**Bussey, Kay, and Bandura, Albert.** *Self-Regulatory Mechanisms Governing Gender Development*. *Child Development*, 1992, 63, 1236-1250. This study tested predictions about development of gender-related thought and action from social cognitive theory. Children at 4 levels of gender constancy were assessed for their gender knowledge, personal gender standards, and gender-linked behavior under different situational conditions. Irrespective of gender constancy level, all children engaged in more same-sex than cross-sex typed behavior. Younger children reacted in a gender stereotypic manner to peers' gender-linked behavior but did not regulate their own behavior on the basis of personal gender standards. Older children exhibited substantial self-regulatory guidance based on personal standards. They expressed anticipatory self-approval for same-sex typed behavior and self-criticism for cross-sex typed behavior. Their anticipatory self-sanctions, in turn, predicted their actual gender-linked behavior. Neither gender knowledge nor gender constancy predicted gender-linked behavior. These results lend support to social cognitive theory that evaluation and regulation of gender-linked conduct shifts developmentally from anticipatory social sanctions to anticipatory self-sanctions rooted in personal standards.

Because so much of human experience is affected by gender differentiation, the processes governing gender development continue to be the subject of much developmental theorizing and research. Proponents of cognitive-developmental theory (Kohlberg, 1966) advanced gender constancy as the driving force guiding young children's gender-related behavior (Stangor & Ruble, 1987). According to this theory, once children achieve gender constancy—a conception of their own gender as fixed and irreversible—they positively value and seek to adopt only those behaviors congruent with the gender concept they have acquired. Children are not expected to adopt sex-typed behaviors consistently until after they have labeled themselves unalterably as a boy or a girl, which usually is not achieved until about age 6. However, many studies have failed to corroborate the link between children's attainment of gender constancy and their gender-linked conduct (Huston,

1983). For example, children prefer same-sex toys (Carter & Levy, 1988; Marcus & Overton, 1978), imitate same-sex models (Bussey & Bandura, 1984), and reward peers for gender-appropriate behavior before they have fully attained gender constancy (Lamb & Roopnarine, 1979). Moreover, growing awareness of gender constancy does not increase children's preferences for same-sex roles and activities (Marcus & Overton, 1978; Smetana & Letourneau, 1984). Thus, factors other than gender constancy seem to guide children's gender-linked behavior.

Because of its limitations, cognitive-developmental theory has been modified and extended within the explanatory framework of gender schema theory (Carter & Levy, 1988; Martin & Halverson, 1981). This theory bears many similarities to cognitive-developmental theory, but departs from it in two significant ways. First, the attainment of complete gender constancy is not consid-

This research was supported by Public Health Research grant MH-5162-25 from the National Institute of Mental Health to Albert Bandura, and Australian Research Council grant A78930570 to Kay Bussey. We are grateful to Kathleen Davies, Elizabeth Grimbeek, and Gwyn Wachtel for assisting with the data collection, and to the children at Bing Nursery School for their participation in the study. We thank Barry Zimmerman for helpful comments on an earlier draft of the manuscript. Requests for reprints should be sent either to Kay Bussey, School of Behavioral Sciences, Macquarie University, North Ryde, Sydney, Australia, 2109, or to Albert Bandura, Department of Psychology, Stanford University, Stanford, CA 94305-2130.

ered necessary to motivate and guide children's gender-linked behavior (Martin & Halverson, 1981; Stangor & Ruble, 1987). Second, the information-processing functions of the schema are given greater emphasis in gender schema theory than in Kohlberg's theory (Bem, 1981; Martin & Halverson, 1981).

Gender schema theory initially proposed that only the attainment of gender identity was necessary for the acquisition of gender-linked behavior (Martin & Halverson, 1981). Once children could label their own gender and that of others, they were expected to behave in ways consistent with traditional gender roles. In keeping with these expectations, Fagot and Leinbach (1989) found that children who acquired gender-labeling skills prior to 28 months (early labelers) were more likely to play with traditional gender-linked toys than those who had not yet mastered gender labeling by that age (late labelers). However, it remains unclear whether gender labeling and gender-linked preferences are effects of social influences or are causally linked. Early labelers may simply be more precocious than late labelers, demonstrating gender-related play preferences learned earlier from parents, peers, and the media. Moreover, at this age, children are unable to label accurately the gender linkage of toys (Weinraub et al., 1984), regardless of their ability to label accurately the gender of persons. Hence, knowledge of gender-linked labeling cannot explain the early phases of gender development. To complicate matters even further, Martin and Little (1990) have recently found that the strongest correlate of gender-linked preference was gender stability. A weaker relation was found with gender identity, but none was obtained between gender consistency and gender-linked preference. Although gender schema theory differs from Kohlberg's theory in the level of gender understanding that is considered necessary for the acquisition of gender-linked behavior, the measures of gender conception remain the same.

With regard to the information-processing aspect of gender schema theory, the more salient or available the schema, the more individuals are expected to attend to, encode, represent, and retrieve information relevant to gender. Research conducted within this conceptual framework has added to our understanding of how gender-schematic processing affects allocation of attention, organization, and memory of gen-

der-related information. However, the relation of gender schematization to children's gender preferences has been problematic. The findings have been inconsistent across different measures of gender schematization and across age groups (Carter & Levy, 1988; Edwards & Spence, 1987; Signorella, 1987). Moreover, Signorella (1989) has noted that children's knowledge about gender-related stereotypes is unlikely to explain gender development, because most young children "know" the gender stereotypes but differ in gender-linked conduct. Apparently, gender knowledge is not the main determinant of children's gender-linked conduct. Both cognitive-developmental theory and gender schema theory have focused on gender conceptions, but neither devotes much attention to the translation of gender-linked conceptions to gender-linked conduct. Nor do they specify the motivating mechanism for acting in accordance with a conception (Bandura, 1986). Knowing a stereotype does not necessarily mean that one strives to behave in accordance with it. For example, self-conception as elderly does not enhance valuation and eager adoption of the negative stereotypic behavior of old age.

Social cognitive theory provides a third perspective on gender development and the mechanisms governing the motivation and regulation of gender-linked behavior (Bandura, 1986, 1989). This theory specifies the multifaceted determinants of thought and action and the regulative mechanisms by which they are linked. Social cognitive theory does not require that action be dependent on gender knowledge in the early phase of gender development. Because gender-related cues are available for gender labeling, in this view, children learn to label their own and others' gender before they learn to label and categorize objects, activities, tasks, and roles that, of themselves, have no inherent gender linkage. It is from children's social and observational experiences that gender-linked knowledge emerges. As children develop stronger gender-linked preferences, their knowledge of the constellations of attributes that are linked to gender increases. In social cognitive theory (Bandura, 1986), children's growing cognitive competence is but one factor involved in their gender-related development. Proximal social influences of parents, teachers, and peers, as well as distal social and symbolic influences from the mass media and cultural institutions, all serve to promote gender development. In this theory of

triadic reciprocal causation, the social environment, children's knowledge structures and cognitive capabilities, and their behavior interact to produce gender-related standards and action.

Viewed from the sociocognitive theoretical perspective, it is not surprising that children exhibit gender-linked preferences prior to achieving gender constancy. From the moment of birth children are socialized according to their gender (Rheingold & Cook, 1975). Parents explicitly and implicitly convey to their children gender-appropriate behavior. As a consequence, children act in accord with gender-linked stereotypes before they are fully cognizant of the culturally derived gender-linked stereotypes and before they have achieved gender constancy (Blakemore, LaRue, & Olejnik, 1979; Weinraub et al., 1984). Social cognitive theory posits that, in the course of development, the regulation of behavior shifts from predominantly external sanctions and direction to gradual substitution of internal sanctions and mandates rooted in personal standards (Bandura, 1986). Initially, behavior is self-regulated on the basis of anticipatory outcomes mediated by the social environment. With increasing experience, social knowledge, and cognitive development, children construct their own personal standards relating to gender-linked conduct. Such conduct is then motivated and regulated mainly by the exercise of self-reactive influence.

Evaluative self-reaction is the mechanism whereby standards motivate and regulate conduct anticipatorily (Bandura, 1986, 1991a). After an internalized self-regulative mechanism is developed through the combined influence of modeling, tuition, evaluative feedback, and environmental structuring, children guide their conduct by sanctions they apply to themselves. They do things that give them self-satisfaction and a sense of self-worth. They refrain from behaving in ways that violate their standards to avoid self-censure. The standards provide the guidance; the anticipatory self-sanctions the motivators. Self-sanctions thus keep conduct in line with internal standards. Developmentally, children learn to evaluate and regulate gender-linked conduct on the basis of external anticipatory sanctions before they do so in terms of anticipatory self-sanctions rooted in personal standards. Whereas gender schema theory emphasizes conception matching as the primary regulatory process, social cognitive theory posits

both a standard-matching function and an affective self-reactive function. Research conducted in different domains reveals that both functions are necessary in the motivation and regulation of conduct (Bandura, 1991b).

The self-regulatory mechanisms specified in social cognitive theory have been shown to operate as important motivators and regulators of children's conduct in other major domains of functioning. For example, children exhibit self-reactive control of transgressive conduct (Bandura, 1991a; Grusec & Kuczynski, 1977; Perry, Perry, Bussey, English, & Arnold, 1980), aggressive patterns of behavior (Perry & Bussey, 1977), and of the course of their cognitive development (Zimmerman, 1989). However, the regulatory role of self-influence through personal standards in gender-related behavior has not been systematically examined.

The present study was primarily designed to test predictions from social cognitive theory regarding the emergence and regulation of gendered thought and action. However, for comparative interest, the contributions of factors emphasized in cognitive-developmental theory and gender schema theory, such as gender labeling, gender constancy, and gender-linked knowledge, were also examined. Children were selected at four levels of gender conception, ranging from gender labeling to gender constancy, and their gender-related standards and conduct were assessed. Evaluative standards are manifested not only in self-reactions but in the sanctions applied to the behavior of others. Therefore, children's gender-linked knowledge and social sanctions toward peers' behavior that is traditionally regarded as cross-sex were also measured.

Based on social cognitive theory of gender development, it was predicted that children would be aware of social sanctions for sex-typed behavior and behave in gender-related ways before they displayed anticipatory self-approval for same-sex typed behavior and self-criticism for their own cross-sex typed behavior. It was further hypothesized that after children adopted gender standards, their anticipatory self-sanctions would predict their gender-linked conduct. In accord with findings of previous tests of cognitive-developmental theory, children at higher levels of gender constancy were not expected to be more likely to engage in same-sex behavior and shun cross-sex behav-

ior than children at lower levels of gender constancy. In gender schema theory, gender identity, and more recently gender stability, rather than the complete attainment of gender constancy, are considered necessary to guide children's gender-linked behavior. Hence, from this perspective, children who had attained the lower levels of gender conception, gender identity and gender stability, would be expected to engage in more same-sex behavior than cross-sex behavior.

## Method

### Subjects

Subjects were 40 nursery school children (20 girls and 20 boys) from predominantly middle-class families. They ranged in age from 2.5 to 4.7 years, with a mean age of 3.5 years. Equal numbers of boys and girls were selected at one of four levels of gender conception. Three female experimenters conducted different phases of the study.

All children participated in two sessions approximately 3 to 5 days apart. In the first session, children's level of gender conception was measured. In the second session, gender-related knowledge, evaluative standards, and conduct were measured. One experimenter conducted the first session, and a second experimenter conducted the second session. A third experimenter recorded children's evaluative responses and conduct from behind a one-way observation mirror. Each experimenter was blind to children's performances on the other aspects of the assessment.

### Gender Conception

Children's level of gender conception was assessed from their performances on the Slaby and Frey (1975) gender constancy test, which consists of three components that most children master in the following sequential order: (1) gender identity—knowledge of self and other's gender; (2) gender stability—knowledge that gender remains invariant across time; (3) gender consistency—knowledge that gender remains invariant across situations (Fagot, 1985; Slaby & Frey, 1975). Those children who failed the gender identity component of the test were administered the lower-level gender-labeling test (Fagot, Leinbach, & Hagan, 1986). This test requires only that the child points to the picture of a man/woman and boy/girl when the gender labels are provided by the experimenter. Further, it does not use the more complicated repeated questioning procedure of the Slaby and Frey

test. It was used in this study to establish children's gender labeling competence that may have been masked by the Slaby and Frey (1975) test. All children exhibited accurate gender labeling. Consequently, four progressive levels of gender conception were established: (1) no gender identity, but accurate gender labeling; (2) gender identity; (3) gender identity and gender stability; (4) gender identity, gender stability, and complete or almost complete gender consistency (one out of the three questions incorrect).

### Gender-Linked Self-Evaluative Standards

A second experimenter, blind to the child's level of gender conception, brought each child individually to the testing room. The experimenter explained that she was helping a friend set up a toy store. Her friend wanted to know which toys children liked to play with so she could stock them in her toy store. It was further explained that *only* the toy store lady, not the experimenter, needed to know how the children would feel about playing with each of the toys. The children were told that their responses would be recorded automatically and anonymously on a "computer" and that the experimenter would sit with her back to the computer so that she was unaware of their responses. It was also explained that the toy store lady was asking many children about their reactions to the toys and that she would not be able to identify their particular responses. The "computer" consisted of a panel of lights and switches for reporting self-evaluative reactions. This format enabled even the youngest children in the study to express their evaluative reactions privately without the experimenters being aware of their responses. This response procedure thus provided full control over any possible experimenter bias and social influence of the children's evaluative reactions.

Children were first trained to use the lights and switches to record the nature and strength of their self-evaluative reactions by playing a ring toss game. They were taught to record their positive and negative evaluative reactions by pressing a switch that activated the light behind it. When the light was activated a buzzer sounded to inform the experimenter that the child had responded. The use of the buzzer enabled the experimenter to sit with her back to the lights to remain blind to the child's response. The observer, also blind to the child's level of gender constancy, was located behind a one-

way mirror and recorded the children's evaluative reactions.

To measure strength of self-reactions, five lights were mounted vertically: a large red light, a small red light, a large orange light, a small green light, and a large green light. The lights signified five different self-evaluative reactions using descriptors established in pretest as those used by nursery school children to represent approving and critical affective reactions. Specifically, children were told that they should press the switch on the large green light if they anticipated feeling *real great* with themselves for having played with a particular toy. Similarly, they should activate the small green light if they would feel *kinda great*, the orange light for feeling *nothing special*, the small red light for feeling *kinda awful*, and the large red light for feeling *real awful* with themselves after having played with each of the toys.

Children were trained to respond evaluatively to their attainments with the ring toss game until they could correctly use the lights to signify approving and critical self-reactions. This preparatory training removed the novelty of activating lights and ensured full understanding of their evaluative import. Following instruction in the procedure, children's gender-linked personal standards were measured by the degree to which children anticipated self-satisfaction or self-criticism for playing with different types of toys. Two parallel sets of toys (A and B), each consisting of five toys, were used. One set was used to measure personal standards and the other to measure spontaneous gender-linked behavior. Within each of the four levels of gender conception, sets A and B were counterbalanced for assessing self-evaluative standards and gender-linked behavior to control for any possible variation in the attributes across the two sets of toys. Toys were selected on the basis of gender-linked ratings by adults. Each set included a dump truck (highly masculine), robot (moderately masculine), xylophone (neutral), kitchen set (moderately feminine), baby doll (highly feminine). The two sets of toys differed in color and other appearance features, but not in size. Children were shown each of the toys separately in one of four different sequences, and they registered their anticipated self-evaluative reaction. For half of the children in each condition the red light was uppermost and for the other half the green light was uppermost to control for any possible position affects. Evaluative reactions

were scored on a 5-point scale with 1 representing *real awful* and 5 representing *real great*.

#### *Gender-Linked Behavior*

Each child's gender-linked behavior was measured during an unstructured play session. The experimenter removed the box containing the toys used for the personal standards measure and explained that she was taking them to children in the room next door. She left the other set, randomly arranged in one of four orders on the floor for the child to play with while she was gone. The child was told that she or he could play with any of the toys while the experimenter was away and that when she returned she would knock on the door to let the child know that she was coming back into the room. They were given the information about the signaled entry to remove any possible external constraint on their gender-linked behavior for fear that the experimenter would walk in on them unannounced and see what they were doing.

The duration of play with each toy was recorded by an observer who observed the play sessions through a one-way mirror. The observer was provided with a behavior form that listed each of the toys available for play. Each time the child touched a toy a timer was started and the duration of the play behavior was recorded. If the child played simultaneously with several toys, the behavior durations were recorded separately for each toy. A second observer independently recorded the duration of play behavior for eight of the children. The interobserver agreement for duration of play with each of the various toys was 94%, indicating very high scorer reliability.

After 3 min the experimenter returned and explained that the children next door needed more toys and that she would take some to them. She removed three of the toys—two same-sex and one neutral—and remarked that the child could continue playing with the remaining toys, which were both cross-sex, one highly gender-linked and one moderately gender-linked toy. Again, the child's spontaneous play behavior was recorded. During both of the behavior test sessions children were left alone to play with the toys.

#### *Evaluative Social Reactions*

Upon her return, the second experimenter invited the child to watch some video clips with her. She explained that the toy store lady had produced some videos to

advertise her store on television, and that she would like the children's appraisal of the videos. Four 7-year-old children, two boys and two girls, enacted cross-sex preferences following a standardized format. The video depicted a child entering a toy store where six toys were displayed on a table. The toys included a dump truck (highly masculine), tool set (moderately masculine), a piano and puppet (both neutral), a tea set (moderately feminine), and a baby doll (highly feminine).

The children in the videotaped presentation examined each of the toys closely and then selected a highly cross-sex typed toy. The boy selected the baby doll and played with it for 2½ min. He changed the doll's diaper, fed her, and patted her. The girl selected the dump truck and played with it for 2½ min. She put blocks in the back of the truck, tipped them out, and scooped them back up again. Four videotapes were produced with different girl and boy actors to control for any possible idiosyncrasies of the child actors, and to counterbalance the order of appearances of girl and boy actors.

The children watched the video clips of the girl and boy separately engage in cross-sex behavior and then recorded their evaluative reactions using the light switches. At the outset, a procedural check was performed to ensure that the child remembered the meaning of the lights and the operation of the switches. They all did. The response options were the same as those used in the assessment of personal standards: real great, kinda great, nothing special, kinda awful, real awful. After watching the video for approximately 30 sec the child was asked, "What would this girl's/boy's friends think about her/him playing with this doll/truck?" The child was asked to record his or her evaluations by activating the appropriate light switch. The experimenter was again seated with her back to the lights, blind to the responses. The child watched the video for a further 30 sec before being asked, "What do you think about this boy/girl playing with the doll/truck?" Again, the child was instructed to record his or her evaluations using the light switches.

#### *Gender Knowledge*

The gender knowledge test was administered as the final task. The experimenter explained that the toy store lady wanted to display the boys' toys separately from the girls' toys in her shop. Toys played with by both boys and girls would be displayed in a third location in the store. Children were

asked to sort each of the 12 toys comprising the A and B sets and two highly sex-typed toys, one feminine and one masculine, from the videos into one of three boxes: a boys' box, a girls' box, and a boys' and girls' box. Pictures of either two boys, two girls, or a boy and a girl were placed in front of the corresponding boxes to remind the children of the three categories. The observer recorded the sorting choices. Items were scored as correct if the toy was sorted into a box that matched the cultural sex role stereotype of masculine, feminine, or neutral, as rated by adults prior to the study. Children received a score of 1 for each toy correctly sorted. The total possible score was 12.

#### **Results**

A primary aim of this study was to examine the influence of sanctions arising from gender-linked personal standards on gender-related conduct. Hence, the first analysis reported is of children's gender-linked standards and the way in which self-regulatory control of their own gender-related conduct and that of peers changes with age. To test predictions from social cognitive theory concerning regulatory processes, a micro-level analysis of the relation between anticipatory self-evaluative reactions and gender-linked conduct is reported. Children's gender conceptions and their relations to gender-linked conduct is also examined.

#### *Evaluative Reactions and Age*

To examine age differences in children's evaluative self-reactions, children were divided into two equal groups on the basis of their age. The younger children's mean age was 37 months, and the older children's mean age was 48 months. Table 1 presents the means and standard deviations for children's affective evaluative reactions toward gender-linked conduct as a function of age, sex, and agent of the conduct.

*Self-evaluative reactions.*—A 2 (age) × 2 (sex) × 2 (gender-linked toys) analysis of variance was performed on children's self-evaluative reactions. In this and all subsequent analyses, when significant interactions were obtained, the source of the effects were examined using the Bonferroni method with an alpha of .05. There was a significant interaction for sex of subject and gender-linked toy type,  $F(1,36) = 32.88, p < .0001$ . This interaction was, however, qualified by a three-way interaction involving age, sex of subject, and gender-linked toys,  $F(1,36) =$

TABLE 1

MEANS (and Standard Deviations) FOR CHILDREN'S EVALUATIVE REACTIONS  
TOWARD GENDER-LINKED CONDUCT AS A FUNCTION OF AGE,  
SEX, AND THE AGENT OF THE CONDUCT

EVALUATIVE REACTIONS	YOUNGER		OLDER	
	Girls	Boys	Girls	Boys
<b>Self-evaluative reactions:</b>				
Feminine-linked behavior .....	3.9 (.7)	3.6 (1.3)	4.3 (1.1)	1.9 (1.0)
Masculine-linked behavior .....	3.2 (1.2)	4.3 (1.2)	2.9 (1.6)	4.7 (.3)
<b>Social-evaluative reactions:</b>				
<b>Self-reactions:</b>				
Boys' cross-sex behavior .....	3.0 (1.4)	2.7 (1.2)	2.8 (1.8)	2.5 (1.5)
Girls' cross-sex behavior .....	3.0 (1.4)	3.4 (1.3)	2.9 (1.6)	2.0 (1.2)
<b>Peers' reactions:</b>				
Boys' cross-sex behavior .....	3.2 (1.6)	3.2 (1.7)	3.0 (2.1)	2.2 (1.3)
Girls' cross-sex behavior .....	3.4 (1.3)	3.1 (1.5)	2.5 (1.5)	2.0 (1.7)

8.07,  $p < .006$ . The interaction is depicted graphically in Figure 1.

The younger children did not differ significantly in their self-evaluative reactions for gender-linked behavior. However, as predicted, the older children exhibited differential self-evaluations for gender-linked behavior. Both boys and girls exhibited anticipatory approving self-reactions for same-sex behavior and disapproving self-reactions for cross-sex behavior.

**Social evaluative reactions.**—Children's reactions to peers' cross-sex behavior and their judgments of how their peers would react to such behavior were subjected to separate 2 (age)  $\times$  2 (sex of subject)  $\times$  2 (sex of peer) analyses of variance. There were no significant main or interaction effects. The mean for the children's evaluative reactions to peers' behavior ( $M = 2.79$ ) and that for assumed peers' reactions ( $M = 2.83$ ) indicated that children reacted negatively to both boys' and girls' cross-sex behavior and expected their peers to react in the same way.

#### Gender Knowledge

Preliminary analyses revealed no significant differences between children at Levels 1 and 2 or between children at Levels 3 and 4 on any of the dependent measures. Fagot (1985) similarly found no difference between children at Levels 1 and 2 in

their gender-linked play, and Slaby and Frey (1975) found no difference between children at Levels 1 and 2 or Levels 3 and 4 in their attention to same-sex models. Therefore, to increase the size of the sample for the group comparisons, children assigned to Levels 1 and 2 were combined to form Level I and children at Levels 3 and 4 were combined to form Level II. Children at Level I had acquired gender labeling and children at Level II had mastered at least the gender-identity and gender-stability components of gender constancy.

A 2 (gender constancy)  $\times$  2 (sex) analysis of variance was computed on the number of toys correctly assigned by each subject to the boys', girls', and both boys' and girls' category. The only effect to attain significance was a main effect for level of gender conception,  $F(1,36) = 11.26, p < .002$ . Children at the lowest level of gender conception displayed less gender knowledge ( $M = 6.00$ ) than did children at the higher level of gender conception ( $M = 8.65$ ). It might be argued that children who placed a sex-typed toy, either masculine or feminine, in the box for both boys and girls were evidencing flexible gender stereotypes. Hence, an analysis in which sex-typed toys placed in the neutral category were scored correct was conducted. Although the mean scores were raised, the pattern of results was identical to those obtained in the analysis reported above.

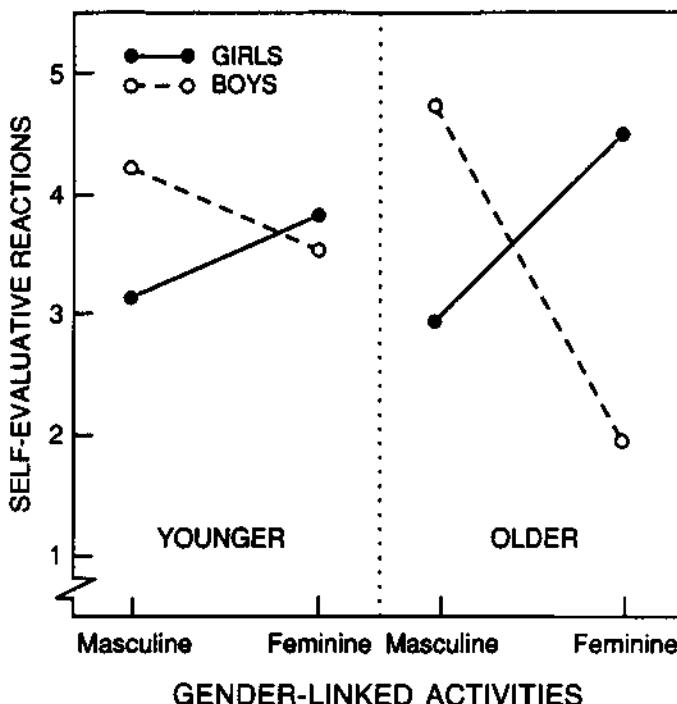


FIG. 1.—Mean self-evaluative reactions toward gender-linked behavior as a function of age, sex of subject, and gender-linked activity.

#### *Gender-Linked Conduct*

Children's gender-linked behavior was scored as the total number of seconds the children played with each of the toys. Table 2 presents the means and standard deviations for gender-linked behavior performed by boys and girls at different levels of gender constancy.

These data were analyzed by a 2 (sex)  $\times$  2 (gender constancy)  $\times$  2 (gender-linked behavior) analysis of variance with gender-typed behavior as the within-subjects variable. This analysis yielded a highly significant interaction for sex of subject and gender-typed activity,  $F(1,36) = 31.04, p < .0001$ . This interaction is depicted graphically in Figure 2.

Boys performed the masculine activities for a longer period of time than the feminine activities. Conversely, girls performed the feminine activities for a greater amount of time than they did the masculine activities. There was no main effect for gender constancy, nor did it interact with any other factors. A comparable analysis using all four levels of gender conception yielded the same pattern of results, as did the analysis

in which age was substituted for gender constancy level.

*Cross-sex conduct.*—A similar analysis of variance was performed for children's gender-linked behavior when only the cross-sex toys (highly and moderately sex-typed) were available. The main effect for sex of subject was significant,  $F(1,36) = 4.51, p < .05$ , as was the main effect for cross-sex play material,  $F(1,36) = 16.98, p < .0001$ . The interaction involving sex of subject and gender-linked activity was also significant,  $F(1,36) = 5.72, p < .05$ . This interaction is depicted graphically in Figure 3. Boys and girls did not differ in the extent of their moderately cross-sex behavior; girls, however, engaged in significantly more highly cross-sex behavior than did boys. As in the previous analyses, there was no main effect for gender constancy, nor did it interact with any of the other variables. A similar analysis using age rather than gender constancy level yielded the same pattern of results.

#### *Relation of Theoretical Determinants to Gender-Linked Conduct*

A major issue addressed in this study is the relation of children's self-evaluative

TABLE 2

MEANS (and Standard Deviations) FOR GENDER-LINKED CONDUCT PERFORMED BY BOYS AND GIRLS AT DIFFERENT LEVELS OF GENDER CONSTANCY

GENDER-LINKED CONDUCT	GENDER CONSTANCY LEVEL			
	I		II	
	Girls	Boys	Girls	Boys
<b>All toys:</b>				
Feminine behavior .....	69.6 (70.0)	32.5 (30.9)	61.7 (50.4)	22.0 (35.4)
Masculine behavior .....	9.3 (12.7)	57.7 (45.0)	9.7 (16.8)	102.7 (55.9)
<b>Cross-sex toys:</b>				
High .....	24.8 (24.1)	3.3 (7.8)	44.0 (26.9)	1.2 (1.9)
Medium .....	49.5 (35.7)	63.2 (55.6)	44.7 (26.0)	36.9 (40.8)

reactions to their gender-linked conduct at different age levels. To assess this self-regulative function, children's gender-linked behavior was correlated with their anticipatory self-evaluative reactions associated with each gender-linked activity. These correlations, as well as those for gender conceptions and gender knowledge, are presented

in Table 3. For the older children, self-evaluative reactions were consistent predictors of gender-linked behavior. The stronger their self-approval for feminine-linked behavior, the more they engaged in traditionally feminine-typed activities and refrained from traditionally masculine-typed activities. Conversely, the more

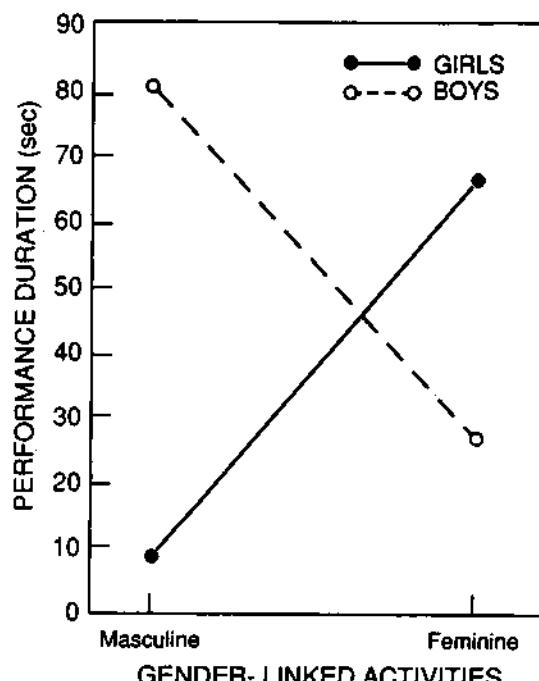


FIG. 2.—Mean duration of gender-linked behavior as a function of sex of subject and gender-linked activity.

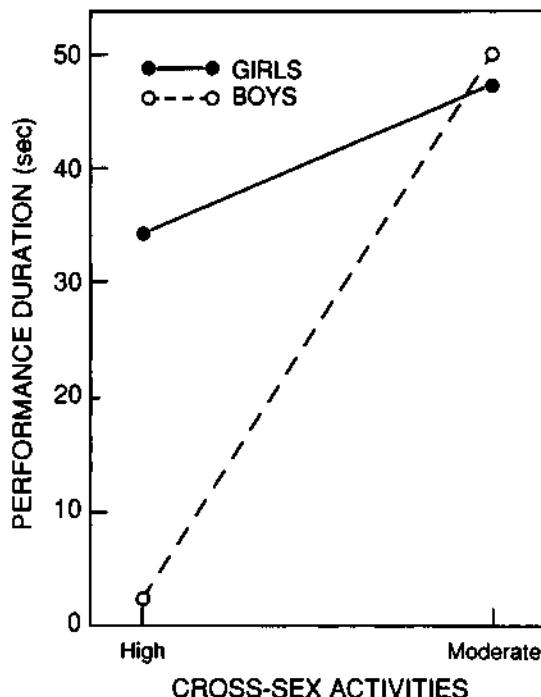


FIG. 3.—Mean duration of cross-sex behavior as a function of sex of subject

self-approving they were of masculine-linked behavior, the more they performed masculine-typed activities and shunned feminine-typed activities. However, the younger children's reactions were unrelated to either feminine-linked or masculine-linked behavior.

To evaluate the relation between children's gender conceptions and their gender-linked behavior, their gender conception scores were correlated with their duration of play with feminine-linked and masculine-linked materials (Table 3). Neither gender identity, gender stability, level of gender constancy, nor gender-linked knowledge bore any relation to gender-linked conduct. Not surprisingly, gender identity, stability, and constancy are highly interrelated.

#### *Relation of Gender-Linked Variables to Age*

A further set of correlations was computed relating age to level of gender conception and gender-linked behavior. Age was significantly correlated with children's gender-constancy score ( $r = .65, p < .0001$ ) and their gender-knowledge score ( $r = .38, p < .01$ ). However, age was unrelated to same-sex ( $r = .07$ ) or opposite-sex ( $r = .04$ ) gender-linked behavior. Age was also unrelated

to self-evaluative reactions for same-sex behavior ( $r = .14$ ), but related to self-evaluative reactions for cross-sex behavior ( $r = -.43, p < .01$ ). Thus, with increasing age children expressed increasingly critical self-reactions for cross-sex behavior.

#### **Discussion**

The findings of this study lend support to a social cognitive model of gender development as involving a shift from socially guided control to self-regulatory control of gender-linked behavior with increasing age. Younger children did not exhibit any differential anticipatory self-reactions to same-sex or cross-sex behavior, whereas older children reacted self-approvingly for same-sex behavior and self-critically for cross-sex behavior. This differential self-reaction was true for both older boys and girls. Thus, with increasing age children revealed a greater ability for anticipatory self-regulation of gender-linked behavior. Moreover, the older children's anticipatory self-evaluative reactions predicted their actual gender-linked behavior. They engaged in the gender-linked behavior they regarded self-approvingly but shunned cross-sex behavior that would lead them to react self-critically.

TABLE 3  
CORRELATIONS BETWEEN THEORETICALLY RELEVANT DETERMINANTS AND GENDER-LINKED BEHAVIOR

	GI	GS	GC	GK	Fem. Beh.	Masc. Beh.	Fem. S-E	Masc. S-E
Gender constancy (GC)	.87*** .74***	.80*** .86***	.81*** .67***	-.25 .40*** .33**	.14 -.01 -.05	.12 -.06 -.08	.01 .16 .34*	-.18 .02 .01
Gender identity (GI)								
Gender stability (GS)								
Gender consistency (GC)								
Gender knowledge (GK)								
Female-linked behavior (Fem. Beh.)								
Masculine-linked behavior (Masc. Beh.)								
Self-evaluative reactions toward feminine-linked behavior (Fem. S-E)								
Self-evaluative reactions toward masculine-linked behavior (Masc. S-E)								

NOTE.—The top correlation coefficients in each cell within each column are for the younger children, and the bottom correlations are for the older children. No correlation coefficients were computed between gender consistency and the other variables for the younger children because none of these children had attained gender consistency.

\*  $p < .05$ .

\*\*  $p < .025$ .

\*\*\*  $p < .01$ .

\*\*\*\*  $p < .001$ .

Younger children neither exhibited any differential anticipatory evaluative self-reactions nor any linkage between anticipatory self-reactions and gender-linked conduct. Thus, with increasing age, children's gender-linked behavior came increasingly under self-regulatory control.

With expanded gender-related experiences, children's cognitive understanding of gender emerges, as do personal standards for gender-related conduct. Children showed a developmental change in which social sanctioning of gender-related behavior precedes self-sanctioning of the same activities. Even the youngest children in this study behaved toward others in a gender-stereotypic manner, despite their limited gender-linked knowledge. Consistent with the social cognitive theory of gender self-regulation, the findings of this study show that children first learn to discriminate and evaluate gender-linked conduct and later to guide their own conduct by self-evaluative reactions. The youngest children disapproved of peers' cross-sex conduct but did not apply evaluative standards to their own gender-related behavior. Irrespective of children being able to label objects as gender-linked, they were aware of the social standards associated with gender-linked objects. Most children, by 3 years of age, would have been exposed to the play material used in this study and would have learned which ones were acceptable for them and for others to play with and which ones were not (Caldera, Huston, & O'Brien, 1989).

When only cross-sex material was available, boys displayed stronger self-sanctions against cross-sex behavior than did girls. Some tried to have the stereotypic feminine toys removed. For example, when it became apparent that they were being left with "feminine" toys, one boy hastily announced to the departing experimenter, "No, I'm finished with those toys," even though he had completely shunned them. They were not at all hesitant in expressing their displeasure with the selections they were left with: "I don't like baby dolls." During the session they tried to do anything but play with the cross-sex toys. One boy flung the doll across the room and turned his back on it, getting it at least out of sight if not out of mind. Some sought to restructure their limited options by sticking to the moderately sex-typed material and transforming it into masculine tools, as, for example, using beaters in the cooking set as guns or drills. Getting boys to change diapers on the baby doll for the film-

ing of the peer videotape was no easy matter, either. As one 7-year-old boy remarked at the completion of the filming, "It's the most awful thing I have ever done." Although girls expressed much weaker self-evaluative reactions to cross-sex behavior, some of their comments were most revealing. In expressing her self-sanctions against playing with a truck, one girl explained, "My mommy would want me to play with this, but I don't want to." Her personal standards had evidently come under the sway of extrafamilial influences.

The findings do not support the view that children were striving to match their behavior to their gender labeling. From as young as 30 months children chose to play with same-sex toys. Their behavior conformed to gender-linked stereotypes regardless of level of gender conception. Children were not first labeling play material in a gender-linked manner and then engaging in gender-linked behavior. Gender-linked behavior was guided by factors other than matching gender labeling with behavior. These findings offer little support for either cognitive-developmental theory or for gender schema accounts of gendered development. Although this study supported the finding of Martin and Little (1990) linking gender stability to gender knowledge, neither gender knowledge nor gender stability predicted gender-linked behavior. Martin and Little (1990) found that gender stability was related to both children's gender knowledge and gender-linked preferences. It should be noted, however, that the present study measured gender-linked behavior, not verbalized preferences. Gender preferences are not always predictive of gender-linked conduct (Huston, 1983). Children's gender knowledge was highly correlated with age. Consistent with previous research (Bussey & Bandura, 1984; Signorella, 1989), gender knowledge was unrelated to gender behavior. This finding is not surprising since most children even at an early age are fully aware of the gender-linked stereotypes but show substantial variation in gender-linked behavior.

The relation between children's anticipatory self-evaluative reactions for gender-related behavior and their actual behavior is consistent with predictions from social cognitive theory. Awareness or knowledge of the gender linkages of objects and activities alone will not produce behavior in line with the stereotypes unless one is motivated to conform to them. What is required is a mech-

anism that links knowledge to action. The present study provides supportive evidence for a self-regulatory mechanism rooted in an internalized standard as an important guiding and motivating link between gender knowledge and gender-linked conduct. These findings add to a growing literature on the self-regulation of conduct by verifying the operation of this mechanism in children's gender development.

The findings taken as a whole reveal that from an early age children adopt traditional patterns of gender-linked conduct. Neither gender constancy nor gender knowledge appear to guide this conduct. Rather, children learn the social sanctions against cross-sex behavior and social approval for same-sex behavior and direct their own behavior accordingly. They, in turn, influence their peers by approving and disapproving reactions to conform to the prevailing social standards. Eventually, children adopt self-evaluative standards for gender-linked behavior and regulate their own conduct through anticipatory self-sanctions.

Given the influential role that self-evaluative standards play in the self-regulation of gender-linked conduct, the appropriate next stage for research is to clarify the processes by which children construct self-regulative standards from the diverse sources of social influences that impinge upon them. In this construction process they must select, weight, and integrate information from a variety of sources including parents, teachers, peers, and the electronic media in forming their gender-linked standards (Bandura, 1986). It would be expected that as children's self-regulative functions develop, their gender-linked standards would have an increasing impact on their gender-linked behavior.

Gender-linked standards do not remain static. As children move increasingly into the larger community, they become aware of the diversity of gender-linked practices. Not only is the range of their social experiences expanded, but broader social changes alter the particular constellations of attributes that become linked to gender (Spence, 1985). In recent years, for example, long flowing locks and cooking skills have become compatible with masculinity. The developmental course that self-regulative standards take is thus another issue of considerable interest. The relations obtained in the present study are based on cross-sectional data. They need to be verified in experimental and longitudinal

studies that chart the emergence and changes in self-evaluative standards and their impact on gender-linked behavior.

Despite the emphasis in recent years on gender egalitarianism, the children in this study seem to be as stereotypically sex-typed as those of yesteryear. Where there was a break away from the stereotypic pattern, it was with girls rather than boys. A number of previous studies have shown that girls are less sex-typed than boys (Katz & Boswell, 1986) and that their sex-typed behavior is more modifiable than that of boys (Katz, 1986). It is hardly surprising that children's gender-linked conduct continues to conform to stereotypic gender-linked standards. Traditionally female-related activities and characteristics are still less valued than male-related ones (Connor & Serbin, 1978; Hall & Halberstadt, 1980; Zalk & Katz, 1978). There is little incentive for boys to abandon the status and privilege accorded the male role, unless females are portrayed as possessing the same status and benefits accorded males (Bandura, Ross, & Ross, 1963; Bussey & Bandura, 1984).

Certain classes of behaviors and attributes, such as toy play and dress and hair styles, convey highly salient and concrete gender-related information that is easily realized even by very young children, so it is not surprising that gender-linked knowledge and conduct emerge in these aspects. Different clothing styles and activities remain gender linked across the life span, but stereotypic gender conceptions extend beyond these highly salient aspects to include a vast array of human activities. Stereotypic gender-role socialization has reverberating effects into adulthood. A good case in point are the psychosocial influences that shape women's beliefs in their self-efficacy for different occupational pursuits (Bandura, 1991c; Betz & Hackett, 1986; Matsui, Ikeda, & Ohnishi, 1989). Women judge themselves highly efficacious for occupations traditionally held by women but ineffectual to master the demands of vocations dominated by men, even though they have the ability for them. The instilled self-efficacy beliefs have substantial impact on their career choice and development (Lent & Hackett, 1987).

The marked sex segregation that occurs from about 3 years of age onward contributes importantly to strong adherence to stereotypic gender-linked standards (Maccoby, 1990). However, children whose parents espouse and model gender egalitarianism,

who are in educational systems that foster such standards, and who interact with peers who endorse them are more apt to develop egalitarian gender-linked standards. Unlike moral standards, where there are incentives for selective engagement of self-regulative control (Bandura, 1986, 1991a), there are no parallel incentives for disengaging stereotypic gender-linked standards. Pressure from parents alone is unlikely to achieve egalitarian standards and conduct in children unless the peer group and other significant elements in the culture endorse them (Weisner & Wilson-Mitchell, 1990). Because of the overwhelming sex segregation of children and strong pressures for conformity from the peer group, stereotypic gender-linked standards may be particularly stable and resistant to modification in the absence of sweeping social changes.

Social cognitive theory accords an influential role to institutional structures and sanctions in shaping gender roles. However, structural influences on individual behavior are mediated, in large part, through self-referent processes (Bandura, 1991b). This causal structure requires integration of sociocultural determinants with personal determinants. Studies that relate changing societal valuation of gender-linked activities to children's construction of personal standards hold considerable promise in furthering our understanding of the self-regulation of gender-role development.

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# Preventing AIDS Theories and Methods of Behavioral Interventions

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Plenum Press • New York and London  
1994

## Social Cognitive Theory and Exercise of Control over HIV Infection

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### INTRODUCTION

Prevention of infection with the acquired immunodeficiency syndrome (AIDS) virus requires people to exercise influence over their own behavior and their social environment. Societal efforts designed to control the spread of AIDS have centered mainly on informing the public about how the human immunodeficiency virus (HIV) is transmitted and how to safeguard against such infection. It is widely assumed that if people are adequately informed about the AIDS threat they will take appropriate self-protective action. Heightened awareness and knowledge of health risks are important preconditions for self-directed change. Unfortunately, information alone does not necessarily exert much influence on refractory health-imparing habits. To achieve self-directed change, people need to be given not only reasons to alter risky habits but also the behavioral means, resources, and social supports to do so. Effective self-regulation of behavior is not achieved by an act of will. It requires certain skills in self-motivation and self-guidance (Bandura, 1986). Moreover, there is a major difference between possessing self-regulative skills and being able to use them effectively and consistently under difficult circumstances. Success,

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This is a revised and updated chapter which appeared in R. DiClemente (Ed.), *Adolescents and AIDS: A generation in jeopardy* (pp. 89–116). Newbury Park, CA: Sage Publications, Inc., 1992.

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*Preventing AIDS: Theories and Methods of Behavioral Interventions*, edited by Ralph J. DiClemente and John L. Peterson. Plenum Press, New York, 1994.

therefore, requires strong self-belief in one's efficacy to exercise personal control.

Perceived self-efficacy is concerned with people's beliefs that they can exert control over their own motivation, thought processes, emotional states, and patterns of behavior. People's beliefs about their capabilities affect what they choose to do, how much effort they mobilize, how long they will persevere in the face of difficulties, whether they engage in self-debilitating or self-encouraging thought patterns, and the amount of stress and depression they experience in taxing situations. When people lack a sense of self-efficacy, they do not manage situations effectively even though they know what to do and possess the requisite skills. Self-doubts override knowledge and self-protective action.

Numerous studies have been conducted linking perceived self-efficacy to health-promoting and health-impairing behavior (Bandura, 1991a; O'Leary, 1985). The results show that perceived self-efficacy can affect every phase of personal change; for example, whether people even consider changing their health habits, how hard they try should they choose to do so, how much they change, and how well they maintain the changes they have achieved. In addition to influencing health habits, a low sense of efficacy in coping with stressors activates autonomic, catecholamine, and endogenous opioid systems that can impair immune function (Bandura, 1991a; Maier, Laudenslager, & Ryan, 1985).

Translating health knowledge into effective self-protection action against AIDS infection requires social and self-regulative skills and a sense of personal power to exercise control over sexual and drug activities, the two major transmitter modes of the AIDS virus. As Gagnon and Simon (1973) have correctly observed, managing sexuality involves managing interpersonal relationships. Thus, risk reduction calls for enhancement of interpersonal efficacy rather than simply targeting a specific infective behavior for change. The major problem is not teaching people safer sex guidelines, which is easily achievable, but equipping them with skills and self-beliefs that enable them to put the guidelines consistently into practice in the face of counteracting influences. Difficulties arise in following safer sex practices because self-protection often conflicts with interpersonal pressures and sentiments. In these interpersonal situations the sway of coercive threat, allurements, desire for social acceptance, social pressures, situational constraints, fear of rejection, and personal embarrassment can override the influence of the best of informed judgment. Women have the lowest assurance in their power to exercise control over pressures by a desirable partner to engage in unprotected intercourse that potentially places them at risk of infection (Kasen, Vaughan, & Walter, 1992). Experiences of forced unwanted intercourse, which are not uncommon, lower women's sense of efficacy to negotiate safer sex (Heinrich, 1993). The weaker

the perceived self-efficacy, the more such social and affective factors can increase the likelihood of risky sexual behavior.

Exercise of personal control over sexual behaviors that carry risk of infection calls on skills and self-efficacy in communicating frankly about sexual matters and protective sexual methods and ensuring their use. Some of the people who perceive a personal risk of sexually transmitted disease are reducing the number of sexual partners and are more wary of engaging in sex with casual partners. Ignorance of a partner's sexual and drug activities has become a new risk factor. To rest self-protection on partners' reports of their sexual and drug history, however, is a hazardous safeguard. Sexual ardor and impression management can readily expurgate risky histories in personal disclosures. Most people in steady relationships see little need for protective measures through belief in their partner being monogamous and having negative sero-status. Youth often go through a series of relationships resulting in exposure to multiple partners, however, usually of unknown serostatus. Moreover, survey studies reveal that a majority of "monogamous" relationships are so in name rather than in actual practice. Because the AIDS virus is transmittable heterosexually, occasional sex with partners outside a monogamous relationship, especially those who have had bisexual or drug involvements, expands the range of potential risk for heterosexuals as well.

Subjective risk appraisal for AIDS infection is highly unreliable because infected individuals remain asymptomatic for a long time and their sexual and drug history often remain a private matter. Lacking knowledge of the behavioral history and serostatus of sexual partners, people tend to make their risk appraisals on the basis of social and physical appearances, which can be highly misleading. Given evidence that most males would lie about their sexual history to gain sex (Keeling, 1989), seeking protection through probing inquiry provides illusory safety. Indeed, the more strongly people believe in their personal ability to assess by inquiry the risk status of a new partner, the more likely they are to engage in unprotected intercourse (O'Leary, Goodhart, Jemmott, & Boccher-Lattimore, 1992). Hence, the development of communicative efficacy should center on skills for negotiating safer sex practices rather than for history taking of highly suspect reliability.

Even people who are well informed on safer sex guidelines often err in their subjective appraisal of the extent to which they are putting themselves at risk of HIV infection. Bauman and Siegel (1987) found that gay men practicing hazardous sex underestimate the riskiness of their behavior as judged against epidemiologically established linkage to seropositivity. Misappraisals of riskiness of one's sexual practices tend to be associated with underestimation of personal susceptibility to infection, with misbeliefs that risky sex with a few regular partners is safe, and erroneous beliefs that behavioral precautions that actually have no protective value (showering before and after sexual con-

tact, healthful regimens, inspecting partners for lesions) will render risky sex safe. Such findings underscore the need for risk-reduction messages not only to describe risky sexual practices but to correct common misbeliefs about irrelevant factors that invest risky practices with false safety.

In managing sexuality and intravenous drug use, people have to exercise influence over themselves as well as over others. This requires self-regulative skills in motivating and guiding one's actions. Self-regulation operates through internal standards, affective reactions to one's own conduct, use of motivating self-incentives, and other forms of cognitive self-guidance (Bandura, 1986, 1991b). Self-regulative skills thus form an integral part of risk-reduction capabilities. They partly determine the social situations into which people get themselves, how well they navigate through them, and how effectively they can resist social inducements to potentially risky behavior. It is not often that people deliberately set out to entangle themselves in highly risky activities. Rather, they make a series of seemingly innocuous choices that eventually culminates in risky involvements. Effective self-regulation, therefore, requires self-monitoring skills for recognizing and aborting potential entanglement scenarios early in the chain of portentous decisions. It is easier to wield control over preliminary choice behavior likely to lead to troublesome social situations than to try to extricate oneself from such situations while enmeshed in them. This is because the antecedent phase involves mainly anticipatory motivators which are amenable to cognitive control; the entanglement phase includes stronger social inducements to engage in high-risk behavior which are less easily manageable.

In some countries, such as those of Africa, Latin America, and the Caribbean, AIDS is almost exclusively a heterosexually transmitted disease, with untreated venereal diseases increasing susceptibility to HIV infection. In Europe and the United States, the route of heterosexual transmission is mainly via bisexuals and intravenous drug users infected by sharing contaminated needles. Southern Asian countries are witnessing a rapid spread of infection among intravenous drug users which then spreads to heterosexual partners and their newborns (Des Jarlais & Friedman, 1988b). Control of the spread of the AIDS virus by intravenous drug users requires risk-reduction strategies aimed at both drug and sexual practices. Relatively little effort has been devoted to developing interventions to prevent infection among intravenous drug users. This is a serious neglect because infected drug users are transmitting the virus heterosexually to their female sexual partners who, in turn, run a high chance of infecting their infants through perinatal transmission. As a result, AIDS is taking an increasingly heavy toll on women and children, especially among ethnic minorities in impoverished environs where drug use is prevalent. Those who continue to inject drugs intravenously, despite cognizance of the threat of AIDS infection, need access to sterile needles and knowledge on how to

disinfect needles to safeguard against transmission of the virus. They need to be taught protective sexual practices to avoid infecting their sexual partners and be persuaded to use them consistently.

#### PERCEIVED SELF-EFFICACY AND ADOPTION OF HEALTH PRACTICES

People's beliefs that they can motivate themselves and regulate their own behavior plays a crucial role in whether they even consider altering habits detrimental to health. They see little point to even trying if they believe they cannot exercise control over their own behavior and that of others. Even people who believe their detrimental habits may be harming their health achieve little success in curtailing their behavior unless they believe they have sufficient power to resist those who instigate it. This observation is corroborated in a longitudinal study of gay men's sexual behavior conducted by McKusick, Wiley, Coates, and Morin (1986). Several psychological factors that could influence sexual risk-taking behavior were assessed. These included perceived threat that one is potentially at risk of exposure to the AIDS virus; degree of peer support for adopting safer sexual behavior; social skills necessary to negotiate protective sexual behavior; level of self-esteem; and perceived self-efficacy that one can take protective actions that lessen the risk of AIDS infection. Belief in one's personal efficacy to exercise control over one's sexual behavior emerged as the best predictor of sexual risk-taking behavior. The lower the perceived self-efficacy, the higher the likelihood of engagement in sexual practices that carry a high risk of AIDS infection. Men who frequented bars and bath houses had a lower sense of efficacy than those who were committed to a monogamous relationship. Social skill in negotiating self-protective sexual activity was also associated with low-risk sexual practices.

The role of perceived self-efficacy in the adoption and maintenance of self-protective behavior is corroborated in other lines of research. Even though individuals acknowledge that safer sex practices reduce risk of infection, they do not adopt them if they believe they cannot exercise control in sexual relations (Siegel, Mesagno, Chen, & Christ, 1989). Perceived self-efficacy to negotiate condom use predicts safer sex practices in adolescents (Basen-Engquist & Parcel, 1992; Jemmott, Jemmott, & Fong, 1992; Jemmott, Jemmott, Spears, Hewitt, & Cruz-Collins, 1991; Kasen et al., 1992) and adults (Brafford & Beck, 1991; Heinrich, 1993; O'Leary et al., 1992). Alcohol and drug use in the context of sexual activity foster sexual behaviors at high risk of infection. Drugs and alcohol lower a person's perceived ability to adhere to safer sex practices (Kasen et al., 1992; Rosenthal, Moore, & Flynn, 1991). Among drug users, perceived self-efficacy predicts success in regular use of

clean needles and condoms with sexual partners (Kok, deVries, Mudd, & Strecher, 1991). Perceived self-efficacy is related to self-protective behavior both concurrently and longitudinally.

The spreading threat of AIDS has produced substantial changes in sexual practices in the gay community, as shown in reduction of high-risk sexual acts and number of sexual partners. In the study of longitudinal predictors, McKusick and his colleagues found that a strong sense of efficacy in exercising self-protective control, association with groups that made safer sex the norm, and knowledge of serostatus were the significant predictors of enduring reductions in high-risk sexual practices (McKusick, Coates, Morin, Pollack, & Hoff, 1990). The reductions in high-risk practices accompanying each of these three sources of influence are summarized in Figure 1. These longitudinal predictors underscore the importance of self-efficacy enhancement through skill development and alterations of subcommunity norms in programs designed to produce long-term behavior change.

## COMPONENTS OF EFFECTIVE SELF-DIRECTED CHANGE

Social cognitive theory explains human functioning in terms of triadic reciprocal causation (Bandura, 1986). In this causal model, which is summarized schematically in Figure 2, (1) personal determinants in the form of cognitive, affective, and biological factors, (2) behavior, and (3) environmental influences, all operate as interacting determinants of each other. An effective program of widespread change in detrimental health practices includes four major components aimed at altering each of the three classes of interacting determinants. The first is informational, designed to increase people's awareness and knowledge of health risks. The second component is concerned with development of the social and self-regulative skills needed to translate informed concerns into effective preventive action. The third component is aimed at skill enhancement and building resilient self-efficacy by providing opportunities for guided practice and corrective feedback in applying the skills in high-risk situations. The final component involves enlisting and creating social supports for desired personal changes. Let us consider how each of these four components would apply to self-directed change of behaviors that pose a high risk of AIDS infection.

### Informational Component

Efforts to encourage people to adopt health practices rely heavily on persuasive communications in health education campaigns. In such health messages, appeals to fear by depicting the ravages of disease are often used as

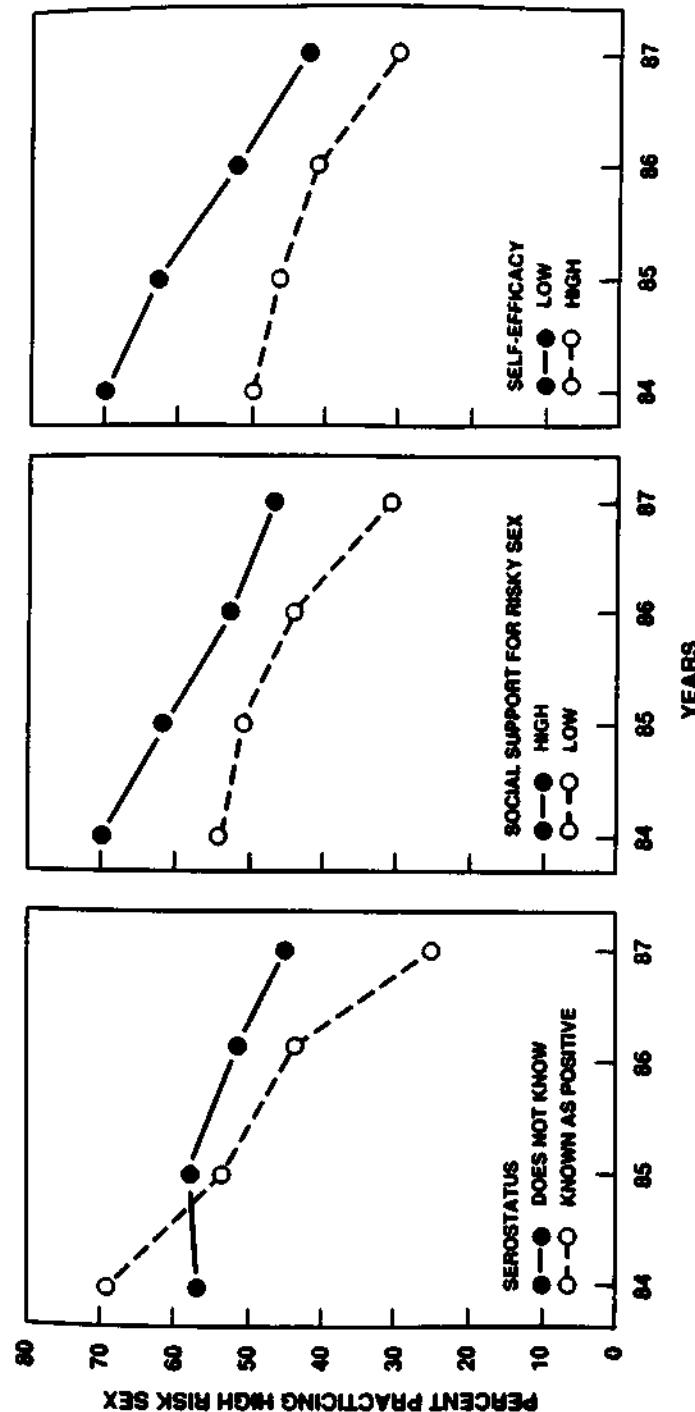
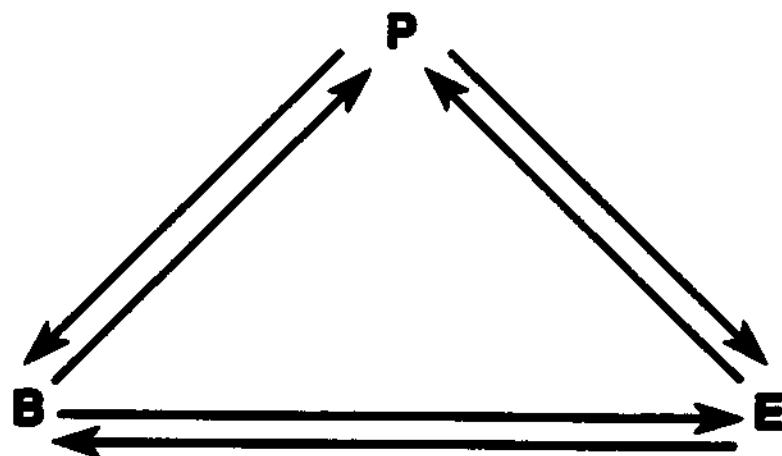


Figure 1. Changes in percent of homosexual respondents practicing high-risk sexual behavior over time as a function of knowledge of seropositive status, perceived self-efficacy to adhere to self-protective behavior, and perceived number of friends and acquaintances following a norm of risky sexual activities (McKusick, Coates, Morin, Pollack, & Hoff, 1990).



**Figure 2.** Schematization of triadic reciprocal causation. *B* signifies behavior; *P* the cognitive, biological, and other internal events that affect perceptions and action; and *E* the external environment.

motivators, and recommended preventive practices are provided as guides for action. People need enough knowledge of potential dangers to warrant action, but they do not have to be scared out of their wits to act, any more than homeowners have to be terrified to insure their households. Rather, what people need is sound information on how AIDS is transmitted, guidance on how to regulate their behavior, and firm belief in their personal ability to turn concerns into effective preventive actions. Responding to these needs requires a shift in emphasis from trying to scare people into healthy behavior to empowering them with the tools for exercising personal control over their health habits.

The influential role of people's beliefs in their personal efficacy in adopting preventive health practices is shown by Beck and Lund (1981). They studied the persuasiveness of health communications in which the seriousness of a disease and susceptibility to it were varied. Patients' perceived self-efficacy that they could stick to the required preventive behavior was a good predictor of whether they adopted the preventive practices. Fear arousal had little effect on whether or not they did so. Analyses of the mechanisms through which mass media health campaigns exert their effects similarly reveal that perceived self-efficacy plays an influential role in the adoption 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 self-regulative power, the more likely they are to adopt the recommended practices.

The relationship remains even when multiple controls are applied for a host of other possible influences.

To be most effective, health communications should instill in people the belief that they have the capability to alter their health habits and should instruct them on how to do it. Communications that explicitly do so increase people's determination to modify habits detrimental to their health (Maddux & Rogers, 1983). Entrenched habits rarely yield to a single attempt at self-regulation. Success is usually achieved through renewed effort following failed attempts. To strengthen the staying power of self-beliefs, health communications should emphasize that success requires perseverant effort, so that people's sense of efficacy is not undermined by a few setbacks to the point where they get discouraged and give up. Faultless self-regulation is not easy to come by even for pliant habits, let alone for addictive and sexual behavior. A strong sense of controlling efficacy is built by overcoming setbacks through perseverant effort. Unfortunately, the possibility that the AIDS virus is transmittable to the immunologically vulnerable through a few sexual contacts with infected partners or sharing a few contaminated needles does not leave much room for carelessness or occasional reversions to risky habits.

An increased research effort is needed to determine how preventive health communications should be framed to maximize their impact on perceived self-regulative efficacy. Self-efficacy theory provides one set of guidelines (Bandura, 1986). I shall consider later how symbolic modeling influences should be structured to maximize their psychosocial impact. Decision theory regarding risk perception and risky decisions provides other suggestions (Tversky & Kahneman, 1981). For example, people interpret information regarding risky activities in terms of potential gains and potential losses. There is some evidence to suggest that health communications are more persuasive if framed in terms of health losses to get people to check for maladies, but in terms of health benefits to get them to adopt preventive behavior (Rothman, Salovey, Antone, Keough, & Drake, *in press*). Meyerowitz and Chaiken (1987) found that health communications framed in terms of health benefits had less impact on perceived self-efficacy and behavior designed to detect maladies than communications framed in terms of health losses. They 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. The health communications fostered adoption of preventive health practices mainly by their effect on perceived self-efficacy. National education campaigns need to exploit more fully our knowledge of social influence processes, and the cognitive and affective mechanisms governing human motivation and behavior.

The preconditions for change are created by increasing people's awareness and knowledge of the profound threat of AIDS. They need to be provided

with a great deal of factual information about the nature of AIDS, its modes of transmission, what constitutes high-risk sexual and drug practices, and how to achieve protection from infection. This is easier said than done. Our society does not provide much in the way of treatment of drug addiction, nor is it about to provide refractory drug users with easy access to sterile needles and other drug paraphernalia. It has little experience in how to reach and educate drug users on how to disinfect needles to reduce the risk of AIDS infection.

In the sexual domain, our society has always had difficulty talking frankly about sex and imparting sexual information to the public at large. Because parents generally do a poor job of it as well, most youngsters pick up their sex education from other, often less trustworthy and reputable, sources outside the home or from the consequences of uninformed sexual experimentation. To complicate matters further, some sectors of the society lobby actively for maintaining a veil of silence regarding protective sexual practices on the belief that such information will promote indiscriminate sexuality. In their view, the remedy for the spreading AIDS epidemic is a national celibacy campaign for unweds and gays and faithful monogamy among the wedded. They oppose educational programs in the schools that talk about sex methods that provide protection against AIDS infection.

The net result is that many of our public education campaigns regarding AIDS are couched in desexualized generalities that leave some ignorance in their wake. To those most at risk, such sanitized expressions as "exchange of bodily fluids" is not only uninformative but can be misinformative by investing safe bodily substances with perceived infective properties. Even those more skilled in deciphering medical locutions do not always know what the preventive messages are talking about. For example, an intensive campaign spanning a full week, conducted at a university campus, included public lectures, numerous panel discussions, presentations in dormitories, and condom distribution, all of which were widely reported in the campus newspaper. A systematic assessment of students' beliefs and sexual practices conducted several weeks later revealed that more than a quarter of the students did not know what constitutes "safer sex," and some of them had misconceptions of safer sex practices that, in fact, would present high risk of infection (Chervin & Martinez, 1987). Other findings of this study, which will be reviewed later, document the severe limitations of efforts to change sexual practices by information alone.

The informational component of the model of self-directed change includes two main factors, the informational content of the health communications and the mechanisms of social diffusion. Detailed factual information about AIDS must be socially imparted in an understandable, credible, and persuasive manner. Social cognitive theories provide a number of guidelines on how this might be best accomplished (Bandura, 1986; McGuire, 1984;

Zimbardo, Ebbesen, & Maslach, 1977). However, developing effective AIDS prevention programs is only the first step; they must also be disseminated. Unlike other health risk-reduction campaigns which involve relatively prosaic habits, the risky habits for AIDS infection are laden with matters of illegalities and what are judged to be immoralities.

Informative health messages, however well designed, cannot have much social impact without effective means of dissemination. Because of their wide reach and influence, the mass media, especially television, can serve as major vehicles of social diffusion of information regarding health guidelines. For several reasons, however, a variety of diffusion vehicles must be enlisted in a public health campaign. High costs and restricted access to television limit its availability. Moreover, television networks typically adopt a conservative stance on controversial matters. They have resisted getting into the act for fear that talk of protective sex practices will jeopardize advertising revenue by arousing the wrath of some sectors of their viewing audience. This resistance would have weakened if the AIDS virus had spread rapidly through the heterosexual population across all sectors of society, thus making it a general societal problem rather than one confined to gays and drug users. It is unlikely that the television industry will offer much help as long as AIDS remains mainly a disease of poor minorities. Existing social, religious, recreational, occupational, and educational organizations can serve as highly effective disseminators of preventive health guidelines. Wide cultural diversity requires that the messages of risk-reduction campaigns for AIDS be tailored to socio-economic, racial, and ethnic differences in value orientations and disseminated through multiple sources to ensure adequate exposure (Mantell, Schinke, & Akabas, 1988).

Nontraditional social networks must be enlisted for high-risk groups who are beyond the reach of the usual community organizations. For example, in outreach programs, "streetwise" counselors have been highly successful in reaching drug populations (Watters et al., 1990). After they become known in the social circles of drug users, the counselors help them with referrals to drug treatment programs. They offer them explicit instruction in safer sex practices. They teach intravenous drug users how to reduce the risk of AIDS by disinfecting needles with ordinary household bleach which kills the HIV virus. The disinfection procedure, which had been rarely used before, was widely adopted and consistently applied. Although this outreach program also increased the use of condoms, the drug users were much more conscientious in disinfecting needles than in protecting their sexual partners against sexually transmitted infection. Such findings underscore the need for sexual partners to exercise personal control in protecting their own health.

A comprehensive national program regarding the growing AIDS threat must address broader social issues as well as risky health practices. This is

because the AIDS epidemic has far-reaching social repercussions. One of these issues concerns the widespread public fear of AIDS infection. Many people continue to believe that the AIDS virus can be transmitted by casual contact or by insect transmission and food handling, despite evidence to the contrary. Efforts by health professionals to dispel misapprehensions are discounted by many of those who are alarmed on the grounds that what is proclaimed safe currently may be discovered to be risky later. Recurrent disputes among researchers in the public media regarding risk factors for other diseases have eroded some of the credibility of medical expertise. Widespread public fear gets translated into advocacy of laws requiring sweeping mandatory blood testing and identification and social restriction of those with antibodies to the HIV virus.

In public perceptions of the AIDS threat, risky behavior gets transformed to risky groups. As AIDS imposes mounting financial burdens on society and strains medical and social service systems, members of high-risk groups tend to become targets of growing public hostility. Once entire groups get stigmatized because some of their members behave in risky ways, those who do not also become the objects of fear and hostility. The way in which they are treated socially may be dictated more by group identity than by their personal characteristics. Public alarm fueled by many misbeliefs enhances such stigmatization. Policy debates on how to control the spread of AIDS have become highly politicized. Prohibitionists argue that public health campaigns promote indiscriminate sex. Their critics argue that knowledge does not foster sexuality and that prohibitionists are intent at curtailing sex practices they find morally objectionable rather than at increasing the safety of sex. Uninformed public reactions to the AIDS threat require serious attention as do the risky health practices themselves, because they help to shape public policies and impose constraints on health education programs. Even societies that possess the necessary scientific knowledge, resources, and expertise can be immobilized by conflicts of values and morals from establishing psychosocial programs that can help to stem the tide of infection.

#### **Development of Self-Protective Skills and Controlling Self-Efficacy**

It is not enough to convince people that they should alter risky habits. Despite a high level of knowledge, many continue risky sexual and drug practices. People also need guidance on how to translate their concerns into efficacious actions. In the campus survey mentioned earlier (Chervin & Martinez, 1987), after exposure to the intensive educational campaign less than half of the students who were sexually active used safer sex methods designed to prevent infection with sexually transmitted diseases. Most of them even avoided talking about the matter with their sexual partners. Studies conducted

on other campuses similarly reveal that most sexually active students who are knowledgeable about AIDS do not adopt safer sex practices (Edgar, Freimuth, & Hammond, 1988). Among inner-city youth, neither a high level of factual knowledge about HIV transmission nor even knowing someone who was infected or had died of AIDS reduce behaviors that carry high risk of infection (Stiffman, Earls, Dore, & Cunningham, 1992). McKusick, Horstman, and Coates (1985) similarly found that gay men were uniformly well informed about safer sex methods for protecting against AIDS infection, but those who had a low sense of efficacy that they could manage their behavior and sexual relationships were unable to act on their knowledge.

The ability to learn by social modeling provides a highly effective method for increasing human knowledge and skills. A special power of modeling is that it can simultaneously transmit knowledge and valuable skills to large numbers of people through the medium of videotape modeling. Knowledge of modeling processes identifies a number of factors that can be used to enhance the instructive power of modeling (Bandura, 1986). Applications of modeling principles to AIDS prevention would focus on how to manage interpersonal situations and one's own behavior in ways that afford protection against infection with the AIDS virus. Both self-regulative and risk-reduction strategies for dealing with a variety of situations that promote risky behavior should be modeled to convey general guides that can be applied and adjusted to fit changing circumstances.

We saw earlier that human competency requires not only skills but also self-belief in one's capability to use those skills well. Indeed, results of numerous studies of diverse health habits and physical dysfunctions reveal that the impact of different methods of influence on health behavior is partly mediated through their effects on perceived self-efficacy (Bandura, 1992). The stronger the self-efficacy beliefs they instil, the more likely are people to enlist and sustain the effort needed to change habits detrimental to health. Modeling influences should, therefore, be designed to build self-assurance as well as to convey strategies for how to deal effectively with coerciveness for risky practices. The influence of modeling on beliefs about one's capabilities relies on comparison with others. People judge their own capabilities, in part, from how well those whom they regard as similar to themselves exercise control over situations. People develop stronger belief in their capabilities and more readily adopt modeled ways if they see models similar to themselves solve problems successfully with the modeled strategies, than if they see the models as very different from themselves (Bandura, 1986). To increase the impact of modeling, the characteristics of models such as their age, sex, and status, the type of problems with which they cope, and the situation in which they apply their skills, should be made to appear similar to the people's own circumstances.

### Enhancement of Social Proficiency and Resiliency of Self-Efficacy

Proficiency requires extensive practice and this is no less true of managing the interpersonal aspects of sexuality. After people gain knowledge of new skills and social strategies, they need guidance and opportunities to perfect those skills. Initially, people practice in simulated situations where they need not fear making mistakes or appearing inadequate. This is best achieved by role-playing in which they practice handling the types of situations they have to manage in their social environment. They receive informative feedback on how they are doing and the corrective changes that need to be made. The simulated practice is continued until the skills are performed proficiently and spontaneously.

Not all the benefits of guided practice are due to skill improvement. Some of the gains result from raising people's beliefs in their capabilities (Bandura, 1988b). Experiences in exercising control over social situations serve as self-efficacy builders. This is an important aspect of self-directed change because if people are not fully convinced of their personal efficacy they undermine their efforts in situations that tax capabilities and readily abandon the skills they have been taught when they fail to get quick results or suffer reverses. The important matter is not that difficulties rouse self-doubts, which is a natural immediate reaction, but rather the degree and speed of recovery from setbacks. It is resiliency in perceived self-efficacy that counts in maintenance of changes in health habits. The higher the perceived self-efficacy, the greater is the success in maintenance of health-promoting behavior (Bandura, 1992).

The influential role played by perceived self-efficacy in the management of sexual activities is documented in studies of contraceptive use by teenage women at high risk because they often engage in unprotected intercourse (Kasen et al., 1992; Levinson, 1986). Such research shows that perceived self-efficacy in managing sexual relationships is associated with more effective use of contraceptives. The predictive relation remains when controls are applied for demographic factors, knowledge, and sexual experience.

Gilchrist and Schinke (1983) applied the main features of the multicomponent model of personal change to teach teenagers how to exercise self-protective control over sexual situations. They received essential factual information about high-risk sexual behavior and self-protective measures. Through modeling they were taught how to communicate frankly about sexual matters and contraceptives, how to deal with conflicts regarding sexual activities, and how to resist unwanted sexual advances. They practiced applying these social skills by role-playing in simulated situations and received instructive feedback. The self-regulative program significantly enhanced perceived self-efficacy and skill in managing sexuality. Botvin and his associates provide

a comprehensive school-based program that teaches generative self-regulative skills for managing sexual activities and social pressures for alcohol and drug use (Botvin & Dusenbury, 1992).

The Jemmotts have developed and tested an AIDS prevention program incorporating the major elements of the self-regulative model, with additional features designed to dispel beliefs that condom use reduces sexual pleasure. Participants are provided with information about the cause, transmission, and prevention of AIDS. They receive guided mastery training to enhance their sense of efficacy to negotiate and manage condom use. They are taught how to eroticize condom use to remove the attitudinal barrier to using them (Jemmott & Jemmott, 1992). The program produced significant AIDS risk reduction in African-American male adolescents (Jemmott et al., 1992). Those who had the benefit of the program were more knowledgeable about infective risks, less accepting of risky practices, and reported engaging in lower levels of risky sexual behavior with fewer sexual partners in follow-up assessments than did those in a control condition. Jemmott and his colleagues compared their social cognitive program with informational interventions that increased knowledge either about AIDS prevention or general health promotion (Jemmott et al., 1991). The participants were sexually active African-American female adolescents recruited from a family planning clinic serving a low-income community. Compared to the information-only interventions, the sociocognitive program produced a greater sense of efficacy to negotiate condom use, more positive outcome expectations regarding sexual enjoyment with condoms, and stronger intentions to use condoms. These diverse effects were replicated with sexually active African-American female adolescents drawn from the inner city (Jemmott & Jemmott, 1992). The stronger the instilled sense of efficacy and eroticization of condoms the stronger the intention to use them. AIDS knowledge, in itself, did not affect intentions to use condoms. These reproducible benefits of the sociocognitive model are of particular interest because they are achieved with both male and female adolescents at high risk of HIV infection through frequent unprotected sexual activity.

Research by Kelly and his colleagues further attests to the substantial value of self-regulative programs for AIDS risk reduction (Kelly, St. Lawrence, Hood, & Brasfield, 1989). Gay men were taught through modeling, role-playing, and corrective feedback how to exercise self-protective control in sexual relationships and to resist coercions to engage in high-risk sex. Multifaceted assessments showed that they became more skillful in handling sexual relationships and coercions, they markedly reduced risky sexual practices, and used condoms on a regular basis. As shown in Figure 3, these self-protective practices were maintained in follow-up assessments. In contrast, a matched control group of gay men continued to engage in unprotected high-

risk sexual practices. In an extended follow-up, the majority of participants continued to adhere to safer sex practices, whereas the remainder, who had an earlier history of high-level risky behaviors, reported some behavioral lapses (Kelly, St. Lawrence, & Brasfield, 1991). The highly vulnerable need even more intensive guidance on how to avoid or to manage risky situations. The issue of behavioral lapse prevention will be considered later.

Combining factual information about health risks with development of risk-reduction efficacy produces good results. Because people learn and perfect effective ways of behaving under lifelike conditions, problems of transferring the new skills to everyday life are reduced. The guided mastery approach is readily adaptable in audio or videocassette format to self-protective behavior against HIV infection. Large-scale applications of self-regulative programs sacrifice the guided role-playing component. Instruction in imaginal rehearsal, however, in which people mentally practice dealing with prototypic troublesome situations, has been shown to boost perceived self-efficacy and improve actual performance in coping with threats (Bandura, 1986; Kazdin, 1978). Maibach and Flora (1993) tested the incremental benefits of cued cognitive rehearsal of self-protective strategies imbedded in videotaped modeling of how to manage potentially risky sexual activities. Cognitive rehearsal enhanced the power of symbolic modeling to strengthen a sense of personal efficacy to exercise self-protective control. The self-regulative approach, designed in a format suitable for mass distribution, has been shown to achieve some success in changing other refractory health-impairing behaviors (Sallis et al., 1986). Schinke and Orlandi (1990) are developing interactive computer formats as a vehicle for instructing youth in skills on how to manage unsafe drug and sexual activities. Participants role-play with computer characters what they would say and do in risky situations and receive instructive feedback for improving their strategies. These approaches are designed to augment the essential skill-development component in educational preventive programs that usually provide little or no opportunity to become proficient in what is being taught. The format is easily adaptable to different subcultural values, customs, and socioeconomic status.

Because of the high level of unprotected sexual activity and experimentation with drugs by adolescents, they are vulnerable to becoming a high-risk group as transmitters of the AIDS virus (Mantell & Schinke, 1990). Training materials need to be developed to assist parents and teachers on how to educate youngsters about AIDS. Winett and his colleagues devised a video prototype using modeling and cued rehearsal of self-protective skills for use in the home by parents and their teenagers (Winett et al., 1992). This home-based program increased knowledge about HIV transmission and prevention, fostered more open communication between parents and their teenagers regarding sexuality, increased family problem-solving skills, and taught teenagers strategies on

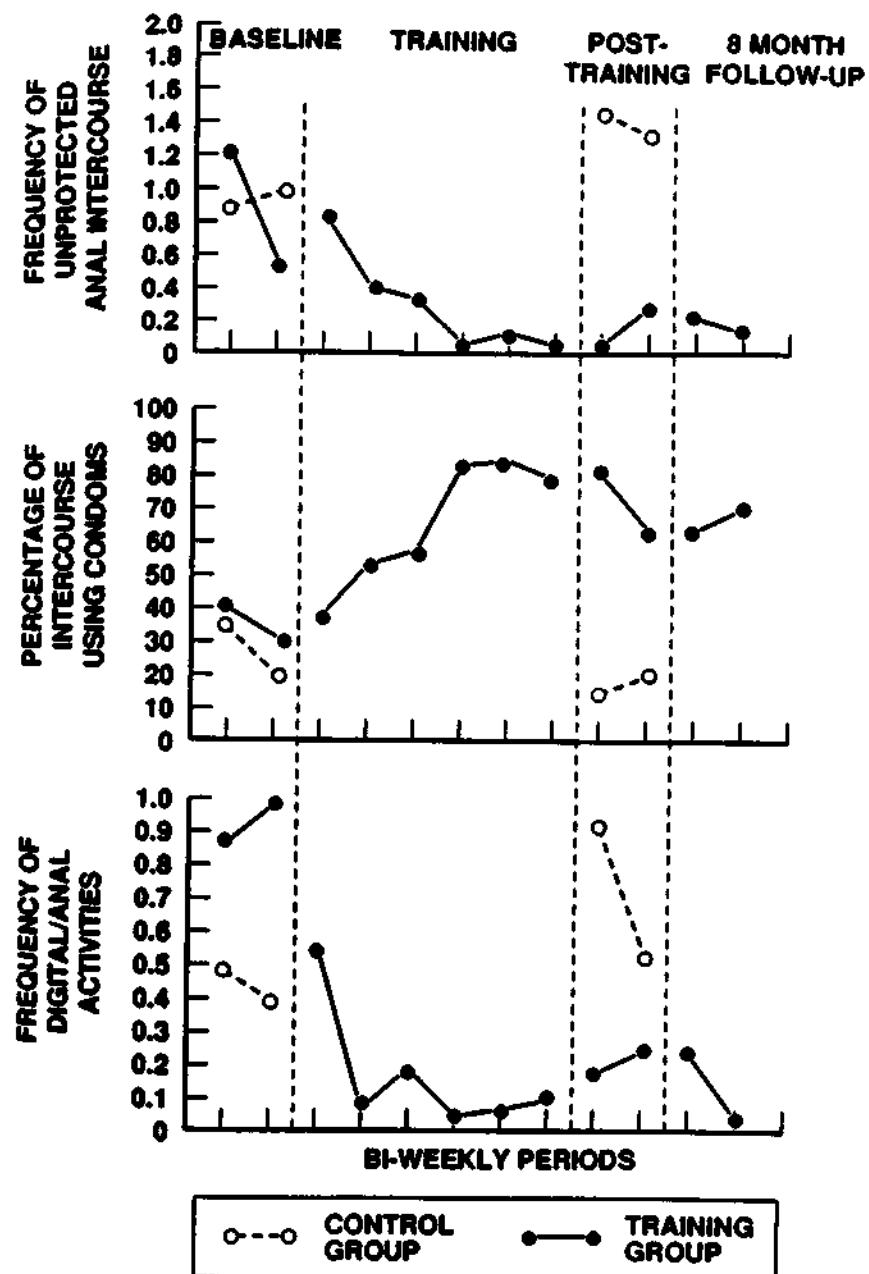


Figure 3. Frequency of unprotected anal intercourse, digital/anal activities, and proportion of condom use during intercourse by gay men who received the self-regulative program and those in a control group who did not. (Kelly, St. Lawrence, Hood, & Brasfield, 1989). Copyright 1989 by the American Psychological Association. Reprinted by permission.

how to manage common risk situations. Further efforts to increase the power of this familial approach are centered on augmenting the skill-development component. The guided mastery programs developed by Gilchrist and Schinke (1983) and Botvin and Dusenbury (1992) provide good prototypes for application in schools. Other channels of dissemination must be created, however, to reach teenagers who live in dysfunctional families and receive little guidance from school because of factional opposition to educational efforts that address self-protective behavior in an explicitly informative manner. A major segment of the teenage population can be reached by making informative audiotapes and videocassettes readily available in the settings they frequent to convey skills and peer norms for safer sexual practices. Among sexually active adolescents, those who can talk with their partners about the risks of HIV infection and perceive peer support for condom use tend to be consistent condom users (DiClemente, 1991).

Acquired immunodeficiency syndrome infection is spreading rapidly among intravenous drug users and to their sexual partners and offspring. Efforts to control this source of infection are directed mainly at curtailing the supply of drugs, instituting risk-reduction programs focused on disinfection and exchange of drug injection equipment, developing nonreusable syringes, and treating addictive conditions. These efforts must be supplemented by AIDS prevention programs designed to reduce the demand for drugs. As in other areas of habit change, informational campaigns alone will not do it. A comprehensive preventive effort must provide knowledge about the determinants, precipitants, and immediate and long-term consequences of drug use, alter the valuation of drugs, develop self-regulative and social skills to resist social pressures to use drugs, and cultivate social norms that discourage experimentation with and use of drugs. This is best achieved by school-based primary prevention programs that have proven effective in other areas of health promotion and risk reduction (Flora & Thoresen, 1988; Killen et al., 1989). Efforts at AIDS prevention are more likely to gain broad support if they are integrated into a comprehensive school-based program for health promotion rather than as a separate program.

The prototypic skills enhancement program developed by Gilchrist and Schinke (1985) has been successfully extended to the prevention and reduction of drug abuse by adolescents. This type of program informs adolescents about drug effects, provides them with interpersonal skills for managing personal and social pressures to use drugs, lowers drug use, and fosters self-conceptions as a nonuser (Gilchrist, Schinke, Trimble, & Cvetkovich, 1987). These findings are all the more interesting because they were achieved with ethnic and minority youth among whom substance abuse is prevalent. Adoption of a self-conception as a nonuser can produce major life-style changes. This is most likely to occur when the emergent new self-conception leads to severance of

social ties with substance abusers and sufficient social support is provided for immersion in nonuser social networks (Stall & Biernacki, 1986).

### Social Supports for Personal Change

People achieve self-directed change when they understand how personal habits threaten their well-being, are taught how to modify them, believe in their capabilities to marshall the effort and resources needed to exercise control, and have incentive to do so. However, personal change occurs within a network of social influences. Depending on their nature, social influences can aid, retard, or undermine efforts at personal change. This is especially true in the case of sexual and drug practices, which are subjected to strong social normative influences.

In social cognitive theory, normative influences regulate behavior through two regulatory systems—social sanctions and self-sanctions (Bandura, 1986). Social norms influence behavior anticipatorily by the social consequences they provide. Behavior that violates prevailing social norms brings social censure or other punishing consequences, whereas behavior that fulfills socially valued norms is approved and rewarded. People do not act like weather vanes, however, constantly shifting their behavior to conform to whatever others might want. Rather, they adopt certain standards of behavior and regulate their actions anticipatorily through self-evaluative consequences they create for themselves. Social norms convey standards of conduct. Adoption of personal standards creates a self-regulative system that operates largely through internalized self-sanctions (Bandura, 1989). People behave in ways that give them self-satisfaction, and they refrain from behaving in ways that violate their standards because it will bring self-censure. Anticipatory self-sanctions thus keep conduct in line with internal standards.

Normative consensus strengthens both its modeling and sanctioning functions. The normative influences that foster preventive measures center on the behavioral practices by which the virus is transmitted and on the cultural patterning of social relationships. Because of their proximity, immediacy, and prevalence, the interpersonal influences operating within one's immediate social network claim a stronger regulatory function than do general normative sanctions. The norms of the larger society are more distal and applied only infrequently to the behavior of any given individual because unfamiliar others are usually not around to react to it. Even when they are, if the norms of one's immediate network are at odds with those of the larger group, the reactions of outsiders carry less weight, and may be disregarded altogether. Among drug-dependent women, the more their friends use and regard condoms positively, the stronger the women's beliefs in their efficacy to overcome interpersonal barriers to safer sex practices (Mantell et al., 1993).

The findings further suggest that efficacy beliefs both mediate the influence of peer norms and operate independently on condom use. Thus, efficacy beliefs contribute to consistent use of condoms after controlling for the effects of peer attitudes and behavioral norms.

People who are fully informed on the modes of HIV transmission and effective self-protective methods acquire the virus only if they allow it to happen to themselves. They often allow it to happen because interpersonal, sociocultural, religious, and economic factors operate as constraints on self-protective behavior. Some of those most at risk must contend with sociocultural obstacles to the use of prophylactic methods that afford protection against HIV infection. The major burden for self-protection against heterosexually transmitted diseases usually falls on women. Unlike protection against pregnancy, where women can exercise independent control through oral or implant contraceptives, use of condoms requires them to exercise control over the behavior of men. Men who possess coercive power over their partners resist the use of condoms if, in their view, it reduces their sexual pleasure, threatens their sense of manliness and authority, casts aspersions on their faithfulness, and carries the frightening implication that they may be carriers of disease. It is difficult for women, especially those of poor and minority status who are most at risk, to press the issue in the face of emotional and economic dependence, coercive threat, and subcultural prescription of compliant roles for them (Mays & Cochran, 1988). Coercive sexual experiences erode women's sense of efficacy to exercise personal control over risky sex practices (Heinrich, 1993). Women who are enmeshed in relationships of imbalanced power need to be taught how to negotiate protected sex nonconfrontationally. Women who are well equipped with condoms run the risk of being viewed as promiscuous, which creates a further impediment to self-protective action.

At the broader societal level, attitudes and social norms must be altered to increase men's sense of responsibility for the social and health consequences of their sexuality. In societies where the virus is spread heterosexually through prostitution, economic conditions that thrust women into prostitution and drug dependencies that drive them to sell sex for drugs create major obstacles to preventive efforts. In short, if AIDS prevention programs are to achieve much success they must address the sociocultural realities that impose constraints on the exercise of self-protective measures.

In the case of high-risk sexual behavior, strong involvement in a social network supportive of self-protective practices, increases knowledge of risky behaviors, beliefs in efficacy, and adoption of safer sex practices (Fisher, 1988; McKusick et al., 1990). Risk reduction through alteration of subcommunity norms is an especially important vehicle for curbing the spread of AIDS among intravenous drug users. This is because drug use is often a socially shared activity. Restricted access to drug injection equipment and the legal problems

of being caught with it, promote risky shared use of drug paraphernalia. Shooting galleries involving widespread sharing of contaminated needles provide the most fertile ground for spreading the virus. Preventive efforts aimed at drug subcultures show that drug users are reachable and instructable in safer practices. Thus, provision of protective information by outreach workers about AIDS transmission, needle-exchange programs, and instruction on how to sterilize syringes can substantially reduce risky injection practices which can lower infection rates among those who continue the drug habit (Des Jarlais & Friedman, 1988a; Watters, Downing, Case, Lorvicic, Cheng, & Ferguson, 1990). Needle and syringe exchange programs do not propagate drug use, as some people have feared it might (Buning, 1991). Rather, exchange programs reduce needle sharing and curb the further spread of HIV infection among drug users. As Des Jarlais notes, most drug users now know about the modes of AIDS transmission, but many are still inadequately informed or misinformed about risk reduction techniques. For example, some dutifully wash needles in water or in other ways that do not kill the virus. Emerging subcommunity norms against needle-sharing behavior are a good predictor of reduction in risky injection practices among intravenous drug users (Des Jarlais & Friedman, 1988a). Although the subcommunity approach also serves as an excellent vehicle for enlisting drug users in treatment programs, there is not much that outreach workers can offer them because of the scarcity of treatment services.

Social influences rooted in indigenous sources generally have greater impact and sustaining power than those applied by outsiders for a limited time. A major benefit of community-mediated programs is that they can mobilize the power of formal and informal networks of influence for transmitting knowledge and cultivating beneficial patterns of behavior. A community-mediated approach is a potentially powerful vehicle for promoting both personal and social change in several ways. It provides an effective means for creating the motivational preconditions of change, for modeling requisite skills, for enlisting natural social incentives for adopting and maintaining beneficial habits, and for establishing protective practices as the normative standards of conduct. Generic principles of effective programs are readily adaptable at the subcommunity level to sociocultural differences in the populations being served. In the social diffusion of new behavior patterns, indigenous adopters usually serve as more influential exemplars and persuaders than do outsiders. Moreover, behavioral practices that create widespread health problems require group solutions that are best achieved through community-mediated efforts.

In their pioneering health-promoting programs, Farquhar and Maccoby have drawn heavily on existing community networks for transmitting knowledge and cultivating beneficial patterns of health behavior (Farquhar, Maccoby, & Solomon, 1984). This work provides a model of how to mobilize

community resources to disseminate health information and to convey explicit guides on how to change refractory health habits. A socially oriented program of personal change should be applied in ways designed to create self-sustaining structures within the community for promoting behavioral practices conducive to health. Persons in the community, who serve as local organizers, are taught how to design, coordinate, and implement the programs. By teaching communities how to take charge of their own change, self-directedness is fostered at the community level as well as at the personal level.

The substantial reductions in high-risk sexual practices by gay subgroups was achieved largely through effective self-empowering organization (McKusick et al., 1990; Stall & Paul, 1989). For example, in the unprecedented social and behavioral changes brought about by the gay community in San Francisco, the members educated themselves, made safer sex practices the social norm, devised and implemented their own instructional programs to prevent HIV transmission, and established mechanisms for diffusing this knowledge. Regular updates on new research findings and available treatments were issued, social support systems were created to counteract despair and encourage meaningful life pursuits in those suffering from opportunistic infections. There was active fostering of life-style changes that might enhance immune function to prolong the lives of those infected with the virus but not yet experiencing any symptoms. There have been some attempts at self-mobilization by drug-user subgroups for self-protective change, but these have been less successful (Friedman, de Jong, & Des Jarlais, 1988). Lack of educational and financial resources, illegalities surrounding drug activities, societal restrictions of the means for safer injection practices, mistrust, and the large amount of time devoted to supporting the drug habit, impede efforts at self-organization. These conditions create a greater need for external aid in subgroup organization for risk reduction in intravenous drug users.

## PREVENTION OF BEHAVIORAL Lapses

It is not unusual for some individuals to lapse into risky practices after having adopted safer ones. A minority revert either occasionally or completely to risky drug injection behavior or unprotected sexual behavior (Des Jarlais, Abdul-Quader, & Tross, 1991; Stall, Ekstrand, Pollack, McKusick, & Coates, 1990). Development of interventions for behavioral lapses is best advanced by interactional analyses of high-risk episodes rather than by search for correlates in demographic characteristics and measures of traits disembodied from the types of situational and social influences that can override self-regulatory efforts. For example, younger individuals are more likely to engage in high-risk behavior than are their older counterparts. Such a finding is neither

particularly informative nor provides any guidelines on how to maintain safer practices in problematic situations. Where each behavioral lapse carries high risk because of the relatively high prevalence of HIV infection among one's associates, individuals cannot wait for aging to protect them. While on average, younger individuals take fewer precautions than older ones, the differences within groups are usually much larger than the differences between groups. Progress in understanding human behavior and change is better achieved by clarifying the determinants of human behavior and the mechanisms through which they operate than by casting people into categories or subcategories. The research approach that is most informative and functional elucidates the high-risk episodes that arise recurrently and the modes of coping strategies that prove successful and those that are ineffectual in the interpersonal transactions.

In a retrospective analysis of high-risk episodes experienced by gay men, Kelly and his associates document the transactions that spawn lapses into behaviors that carry high risk of infection (Kelly et al., 1991). In these episodes, the individuals were unable to resist unsafe sex because of their partners' coercive pressures, misgivings and embarrassments over negotiating condom use, strong attraction and desire to please the partner, being caught up in a highly arousing intimacy without a condom, belief that condom use would reduce pleasurable sensations, revivifying pleasurable aspects of risky sex, being intoxicated, high on drugs, depressed, lonely, or distressed at the time, and conceding inefficacy to change risky practices. Those who were successful in protecting themselves against sexually transmitted infection used a variety of cognitive and behavior self-regulatory techniques to do so. They reaffirmed their personal efficacy to practice safer sex and informed their partners to that effect, they planned beforehand what they were willing to do and ensured they had condoms available, conjured up the positive outcomes of good health and the devastating consequences of AIDS, curtailed alcohol and drug use before sex, and guided the sexual activity toward the safer forms.

In managing refractory habits, effective self-regulators usually master a variety of strategies for managing risky situations and apply the strategies persistently and consistently (Bandura, 1986; Perri, 1985). A successful program of lapse prevention must equip people with cognitive and behavioral skills that enable them to exercise control over high-risk situations. Part of effective self-management is concerned with how to avoid hazardous situations that are avoidable and how to extricate oneself quickly should one venture into them. In addition to efforts aimed at lapse prevention for those who have altered their practices, there are always newcomers who need knowledge and skills on how to manage risky situations. Hence, prevention of HIV infections requires ongoing psychosocial programs that promote continuing adherence to self-protective behavior rather than a onetime campaign. Such programs

need to create enduring social supports for safer practices at the level of both community norms and personal networks.

Mariatt and Gordon (1985) provide a conceptual model of the relapse process for addictive behaviors in which self-regulatory efficacy operates as an influential factor. The common precipitants in failures in self-regulation include: inability to manage negative emotional states such as stress, depression, loneliness, boredom, and restlessness; social pressures to use the substance; and interpersonal conflict. The conditions that have been identified as relapse precipitants, indeed, undermine perceived self-regulatory efficacy regarding drug use (Sitharthan, McGrath, Cairns, & Saunders, 1991). Heroin users with a low sense of efficacy cannot resist pressures to use opiates even if ill or to refrain from sharing needles that involve high risk of infection. Perceived self-efficacy predicts regular use of clean needles both directly and by intentions to do so (Kok, deVries, Mudde, & Strecher, 1991). Neither attitudes toward drug use nor social norms contributed to safer injection practices.

Some researchers have added situational precipitants that include the settings of drug use and other reminders of the effects of previous drug use (Heather & Stallard, 1989). Situational reminders activate positive outcome expectancies of the pleasurable effects of drugs experienced in the past. Such expectations create motivators for drug use that tax self-regulatory capabilities. In addition, exposure to situations in which one formerly exercised poor control over substance use can activate thoughts of past failures that weaken beliefs in one's current self-regulative efficacy (Cooney, Gillespie, Baker, & Kaplan, 1987).

Perceived self-efficacy also plays an influential role in treatment outcomes for drug addiction. The stronger the perceived self-regulative efficacy instilled by treatment the more successful are opiate users in staying off drugs (Gossop, Green, Phillips, & Bradley, 1990). Gossop and his colleagues examined a variety of predictors of drug status at short and at long follow-up periods. There were two factors that consistently emerged as significant predictors of outcome. The first was perceived self-efficacy to refrain from drug use; the second was the existence of protective factors in the form of supportive associates and involvement in those purposeful occupational activities that contribute to a satisfying early life which help individuals remain drug free. Number of coping strategies predicted short-term drug status but was unrelated to long-term status. Perceived self-efficacy accounts for variation in follow-up drug status after multiple statistical controls are applied for the effects of protective factors, time in treatment, previous history of abstinence, and coping strategies. After completing inpatient detoxification programs, individuals are often urged to seek aftercare treatment in the community for their drug problem. Perceived self-efficacy to do what is necessary to gain entry into an af-

tercare program predicts whether or not they enter aftercare treatment (Heller & Krauss, 1991).

Viewed from the model of triadic reciprocal causation, efforts at relapse prevention need to be extended beyond personal changes to the social environment as well. Those who have become deeply enmeshed in a subculture of substance abuse have to restructure their way of life if they are to conquer their addiction. Extending the relapse prevention model to environmental change does not minimize personal efficacy but rather factors in its influential role in shaping the very environments people experience. The environment is not simply a fixed entity that inevitably impinges upon individuals. People select, construct, and negotiate environments partly on the basis of their self-beliefs of efficacy.

One way in which severely addicted individuals restructure their lives is by staying away from detrimental social environments that are avoidable and selecting beneficial environments that promote alternative desired life-styles (McAuliffe, Albert, Cordill-London, & McGarraghy, 1991). To the extent that they are equipped to manage inducements to use drugs in risky situations that are unavoidable, by their success in self-regulation they create a different environment for themselves than if they revert to drug-related routines. It is one thing to get into a beneficial environment, but another to experience success in it. To achieve lasting changes, individuals have to develop the competencies needed to gain acceptance and satisfaction in their new life-style. Treatments that address these diverse facets of life produce more enduring recoveries from addiction (McAuliffe et al., 1991).

## ATTITUDINAL IMPEDIMENTS TO DEVELOPMENT OF PSYCHOSOCIAL MODELS

Despite the considerable benefits of preventive measures, psychosocial research receives only a paltry 2 percent of the AIDS research budget (Siegel, Graham, & Stoto, 1990). There exist several attitudes that downgrade the priority for research into psychosocial determinants and mechanisms governing AIDS-related behavior and for further development of preventive programs for this deadly epidemic. One view, that is voiced recurrently, trivializes psychosocial approaches by regarding them as merely stopgap measures until a vaccine is discovered. This type of attitude reflects how disappointingly little has been learned from past experiences with behaviorally transmitted diseases.

The development of a generic preventive vaccine presents daunting challenges. The AIDS virus appears in differing subtypes and mutates rapidly, thus requiring new vaccines for changing viral strains. It invades immune cells and not only evades destruction by the body's defense system but turns

infected T-helper) cells into producers of more viruses, and eventually destroys the very cells that provide protective immunity. It remains latent for long periods, and it may become more virulent over time. Considering these baffling biological properties, the quest for a vaccine that will provide protective immunity against the changing forms of this virus is likely to be a prolonged, frustrating one. Because viruses merge into the host cells, the task of developing antiviral treatments that can kill the AIDS virus without destroying the host immune cells is a formidable one.

Even the more limited goal of slowing the progress of the disease or keeping it in check with antiviral drugs presents major problems of compliance with drug regimens because they produce toxicities creating severe side effects. Drugs that retard reproduction of the virus but do not eradicate it must be taken continually. Thus, in animals engrafted with human immune organs who have been infected with the HIV virus, the antiviral drug AZT reduces the virus to a very low level, but when the drug is withdrawn the infection flares (McCune, Namikawa, Shih, Rabin, & Kaneshima, 1990). Prolonged use of drugs that are beneficial in the short term by attacking nonresistant viral strains can give rise to new resistant strains and to serious physical damage that requires discontinuation of the drug. The virus usually develops resistance to given drugs or mutates in ways that outwit the drugs.

Sexually transmitted diseases, such as gonorrhea and syphilis, that have been with us for ages, have thwarted vaccine development. Discovery of effective treatments lowers the prevalence rates of a disease but does not eradicate it. With the development of a simple treatment for venereal disease, support for psychosocial control programs was curtailed, with a resultant rise in infection rates (Cutler & Arnold, 1988). The history of efforts to control diseases transmitted by behavior underscores the need for a multifaceted approach combining medical treatments with continuing psychosocial preventive programs. Contrary to the commonly voiced view, it is not that psychosocial preventive programs are of value because they provide the only means available to stem the spread of AIDS in the absence of vaccines or effective treatments. Rather, psychosocial programs constitute an integral part of a multifaceted public health strategy not only before, but even after effective treatments are found. The lessons from the past concerning behaviorally transmitted diseases should not be lost on the AIDS problem. Whether our advanced biotechnology will triumph over the AIDS virus, or the mutable virus will foil our biotechnology remains to be seen. Whatever the outcome may be, AIDS will remain with us as a continuing problem requiring ongoing psychosocial preventive programs.

Another downgrading view rests on the misbelief that psychosocial influences cannot effect much change in the transmissive risky behaviors because they serve potent drives. Amability of behavior to change differs considerably

depending on whether one seeks to eliminate certain kinds of gratifications or to alter the means of gaining those gratifications. It is much more difficult to get people to relinquish behavior that is powerfully reinforced than to adopt safer forms of the behavior that serve the same function. In the case of AIDS prevention, people who are not about to give up drugs or their preferred forms of sexuality can achieve substantial protection against HIV infection by substituting safer behaviors for risky ones. Multifaceted psychosocial programs that equip people with protective knowledge, with the means and self-beliefs to exercise effective personal control, and provide social supports for their efforts at personal change, can achieve highly beneficial results. Indeed, prevention programs that incorporate many of these elements have produced substantial reductions in risky sexual and drug-injection behaviors.

### IMMUNOLOGIC EFFECTS OF COPING EFFICACY

The discussion thus far has been concerned mainly with how social and self-regulative efficacy contribute to self-protective behavior. A psychosocial theory for the prevention and management of AIDS must address biological mechanisms as well as health-related behaviors. In accord with the biopsychosocial model of health and illness (Engel, 1977), psychosocial factors not only exercise control over behaviors that enhance or impair health, they also activate a wide range of biological processes that can affect susceptibility to infection. Infectious and chronic diseases are usually the product of interacting sets of determinants. The HIV virus operates in conjunction with other factors to produce the clinical manifestation of AIDS. Therefore, there is variability in whether exposure to the HIV virus will result in infection. That some people are better able than others to fight off local invasion by the virus is indicated by instances of individuals who have an ongoing sexual relationship with an infected partner but do not become infected. There is also considerable variability in the length of time before the latently infected individuals begin to develop clinical symptoms. Additionally, there is variability in the rate with which the disease progresses to the final stage of opportunistic infections and cancers as the ability of the immune system to fight infectious agents is severely impaired.

Physical cofactors account for some of the variability in immunological control of the latent virus and rate of disease development. It should be noted, however, that many of these physical cofactors that increase vulnerability to infection and disease progression, such as drug abuse, untreated venereal diseases that produce genital ulceration, and other activities that weaken health status, are largely the products of psychosocially determined behavior patterns. Not only do psychosocial influences breed many of the physical cofactors,

but coping efficacy may operate as a psychosocial cofactor that influences infectability and disease progression directly through its impact on immune function. The heavy focus on the inevitability of disease development given HIV infection has retarded research on cofactors that operate as contributors to the clinical manifestations of AIDS. Such knowledge identifies cofactors over which people can exercise some control and those that are not amenable to personal change.

Perceived coping self-efficacy can affect immune function through stress and depression. Perceived self-efficacy to exercise control over stressors plays a central role in human stress reactions (Bandura, 1988a). Exposure to stressors with ability to control them has no adverse biological effects. But exposure to the same stressors without the ability to control them activates autonomic reactions, catecholamine secretion and release of endogenous opioids (Bandura, Cioffi, Taylor, & Brouillard, 1988; Bandura, Taylor, Williams, Mefford, & Barchas, 1985; Maier et al., 1985; Shavit & Martin, 1987).

Biological systems are highly interdependent. The types of biological systems activated by a weak sense of coping efficacy are intricately involved in the regulation of the immune system. Indeed, a growing body of evidence shows that exposure to stressors with weak ability to exercise control over them impairs various facets of immune function (Jemmott & Locke, 1984; Kiecolt-Glaser & Glaser, 1987; Maier et al., 1985; Shavit & Martin, 1987).

Although the stress of coping inefficacy is immunosuppressive, there is suggestive evidence that providing people with the means for managing stress may be immunoenhancing, at least for some immunologic functions (Kiecolt-Glaser et al., 1986; Kiecolt-Glaser et al., 1985). Moreover, stress aroused while gaining coping mastery over acute stressors enhances different components of the immune system (Wiedenfeld, O'Leary, Bandura, Brown, Levine, & Raska, 1990). Several studies report findings that bear on the issue of whether psychosocial interventions may help to retard disease progression. Development of skills to manage stress has been shown to increase immune function in metastatic cancer patients (Gruber, Hall, Hersh, & Dubois, 1988), and to enhance cellular and humoral immune functioning in seropositive gay men in asymptomatic stages of HIV infection (Antoni, Schneiderman, Fletcher, Goldstein, Ironson, & Laperriere, 1990). The immune system includes multiple interacting subprocesses with intricate interconnections to other biological systems, all of which complicates evaluation of level of immunity. Whether the magnitude of the immunologic changes achieved in these studies is sufficient to have significant health consequences remains to be determined.

Another path of influence of coping inefficacy on immunocompetence is through the mediating effects of depression. A sense of personal inefficacy to fulfill desired goals that affect evaluation of self-worth and to secure things that bring satisfaction to one's life create depression (Bandura, 1988b; Kanfer

& Zeiss, 1983). When the perceived self-inefficacy involves social relationships, it can induce depression both directly and indirectly by curtailing the cultivation of the very interpersonal relationships that can provide satisfactions and buffer the effects of chronic daily stressors (Holahan & Holahan, 1987a, 1987b). Depression has been shown to reduce immune function and to heighten susceptibility to disease (Ader & Cohen, 1985). The more severe the depression, the greater the reduction in immunity (Irwin, 1988).

The evidence regarding immunoregulatory interactions, suggests that a severe sense of coping inefficacy may further impair the already damaged immune system of persons infected with the HIV virus and thus exacerbate the disorder (Kiecolt-Glaser & Glaser, 1988). Apart from the common environmental stressors with which people must cope, knowledge that one has contracted the AIDS virus, the accompanying stigmatization and major social repercussions, and the reality of progressive physical deterioration and anticipated death, create major new sources of stress and despondency. Ineffectual cognitive and behavioral coping with knowledge of seropositivity and with AIDS-related problems further heightens stress and depression (Namir, Woltz, Fawzy, & Alumbaugh, 1987).

Reactions to knowledge of seropositivity have undergone significant changes over the course of the AIDS epidemic. The early reactions of despair to the epidemic were supplanted by active pursuit of information, preventive programs, treatments, and life-style changes that might offer any hope of forestalling the onset of AIDS or prolonging the life of those in the symptomatic stage. These concerted psychosocial efforts curtailed the spread of HIV infection in gay populations. Significant progress is being made in treating the opportunistic infections that arise when immune systems are weakened by the virus. But the quest for drugs that would destroy the HIV virus or render AIDS a manageable disease is strewn with dashed hopes. As the AIDS epidemic continues to take its heavy human and emotional toll, collective enabling efforts are being replaced in many circles by a sense of despondency. The magnitude of the problem calls for increased commitment of resources to the crucial aspect of the pandemic over which we can command some control, stemming the spread of HIV infections through comprehensive preventive programs.

A multifaceted approach must address the burdensome affective dimensions of AIDS as well. Research conducted within the social cognitive framework has led to the development of self-management programs for alleviating stress and depression (Bandura, 1988b; Beck, 1976; Lewinsohn, Antonuccio, Steinmetz, & Teri, 1984; Lewinsohn & Clarke, 1984; Rehm, 1981; Taylor & Arnow, 1988). These psychosocial approaches equip people with coping skills to manage difficult problems and to reduce their level of emotional distress. Those who do not know how to exercise control over emotional strain can

be easily overwhelmed by daily confrontations with innumerable social stressors, progressive physical debilitation, bereavement experiences, and preoccupation with thoughts of their own death. Such severe chronic stressors adversely affect immunity (Kiecolt-Glaser & Glaser, 1988). The exercise of cognitive control over self-debilitating thought processes can further reduce the psychological toll of AIDS and enable patients to live out their lives as productively as they possibly can. The impact of AIDS on psychosocial functioning is, therefore, partly mediated by personal coping capabilities. Thus, some individuals who know they are infected but are still asymptomatic may sink into deep despondency, whereas others with an array of symptoms may struggle valiantly to continue a meaningful and productive life.

The conceptual model and supporting evidence reviewed in this chapter argue strongly for a multifaceted approach to the prevention and management of AIDS in which psychosocial interventions must play an influential role. With regard to prevention, equipping people with the cognitive and behavioral coping resources to exercise personal control over risky behaviors enables them to protect themselves from exposure to this most deadly of viruses. By their impact on stress, depression, and immunity, psychosocial factors can affect disease development and quality of adaptation to it. Neglect or downgrading of psychosocial models and programs will exact heavy personal tolls and impose mounting financial and social burdens on societies.

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## Chapter 6

# Social Cognitive Theory of Mass Communication

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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. 6.1).

Social cognitive theory is founded in an agentic perspective (Bandura, 1986, 2001a). 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

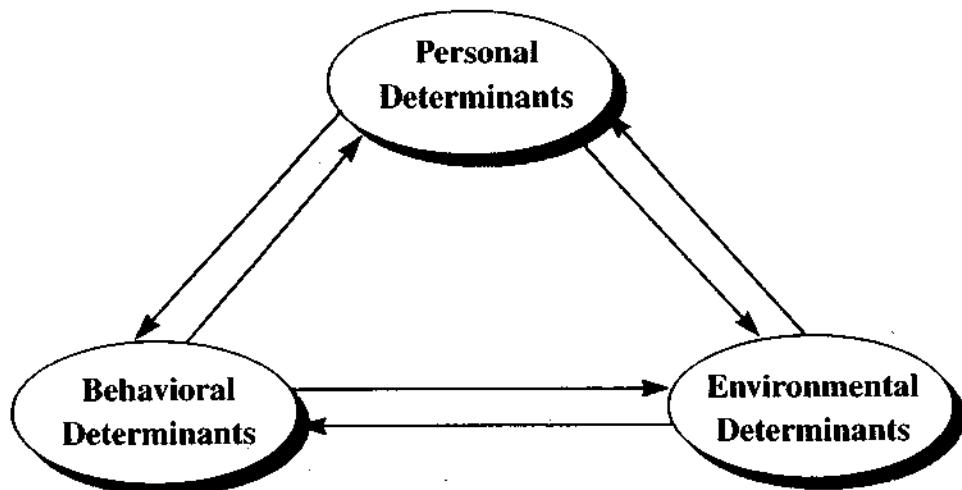


FIG. 6.1. Schematization of triadic reciprocal causation in the causal model of social cognitive theory.

plasticity, which is intrinsic to the nature of humans, depends on 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.

### 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 on *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 on 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; 2001a). 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, 2000b). 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 on the media's symbolic environment, the greater is its social impact (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 by symbolic modeling worldwide in ways that foster a globally distributed consciousness (Bandura, 1986, 2000d). 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 Fig. 6.2.

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 symbolically code and remember them. A second major subfunction governing observational learning concerns the construction of cognitive representations. In social cognitive theory, observers construct generative conceptions of styles of behavior from modeled exemplars rather than merely scripts of habitual routines. 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

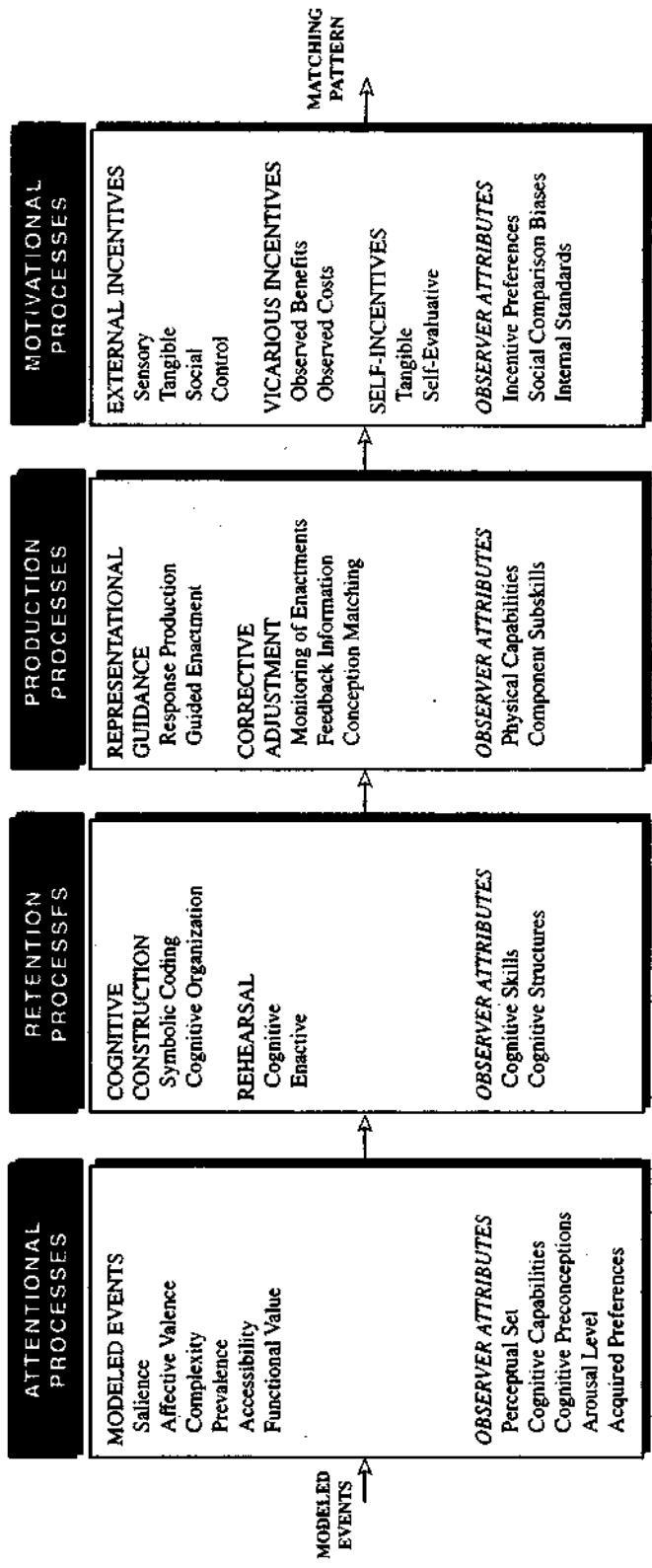


FIG. 6.2. The four major subfunctions governing observational learning and the influential factors operating within each subfunction.

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, which 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 variants of the behavioral style under differing conditions. Conceptions are rarely transformed into masterful performance on the first attempt. Monitored enactments serve as the vehicle for transforming knowledge 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 they find self-satisfying and 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 whatever the situation seems to call for (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. There 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: (a) extracting the generic features from various social exemplars, (b) integrating the extracted information into composite rules, and (c) 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 perceptions 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 inherent in their intrinsic qualities. The same outcome can function as a reward or punishment 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. Fig. 6.3 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 on them. Through convoluted verbiage, reprehensible conduct is made benign and those who engage in it are relieved of a sense of personal agency.

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-deterrants but also engages self-approval in the service of transgressive exploits. What was once morally condemnable becomes a source of self-valuation.

Ball-Rokeach (1972) attaches 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 its 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

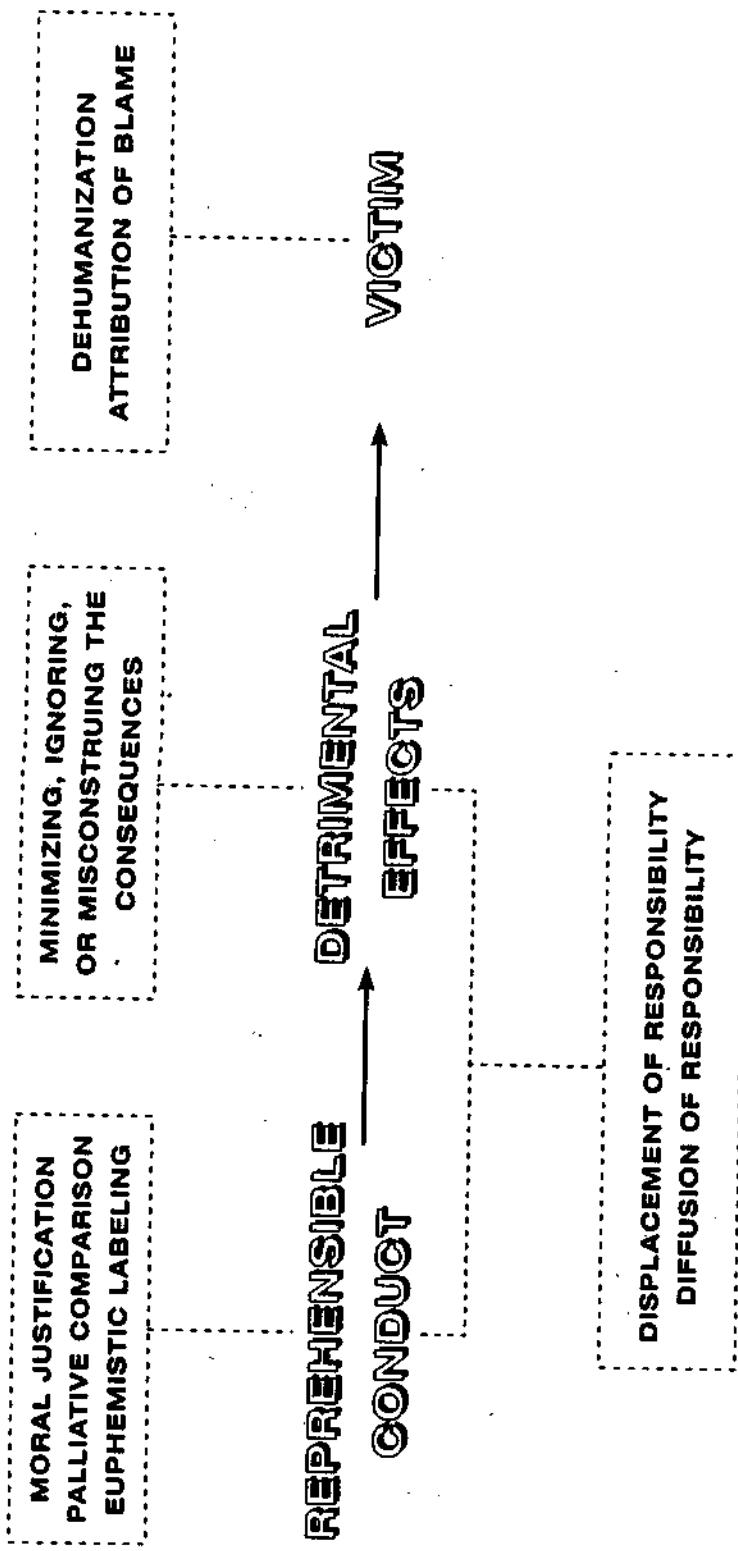


FIG. 6.3. Mechanisms through which self-sanctions are selectively activated and disengaged from detrimental conduct at critical points in the self-regulatory process.

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 their being personally responsible for them. 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-deterring 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 et al., 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 also 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.

The mechanisms of moral disengagement largely govern what is commonly labeled the "disinhibitory effect" of televised influences. 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

Televised 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). Televised influence is best defined in terms of the contents 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 (Bussey & Bandura, 1999; Buerkel-Rothfuss & Mayes, 1981; 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 prompts, emotion arousers, 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 preexisting 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) reviews 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

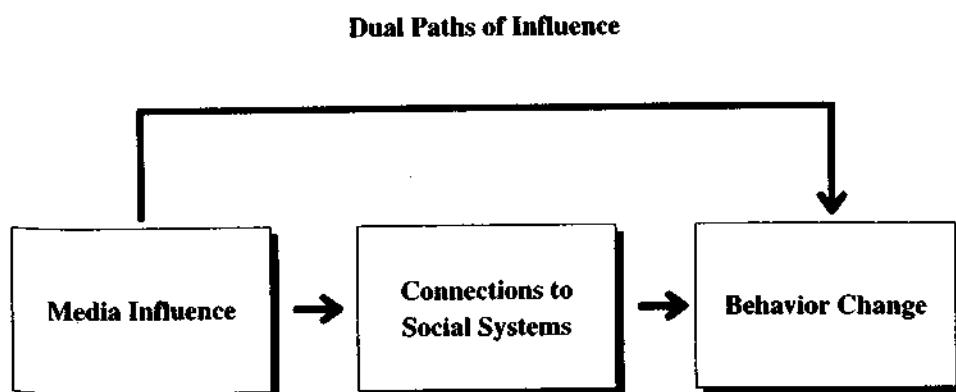
## **6. SOCIAL COGNITIVE THEORY OF MASS COMMUNICATION**

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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. 6.4). 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, 2001d). The major share of behavior changes is promoted within these social milieus. 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



**FIG. 6.4.** Dual path of communication influences operating on behavior both directly and medially through connection to influential social systems.

changes to fruition (Bandura, 2000c). 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, 2000d; Taylor, Winzelberg, & Celio, 2001).

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 independent 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, 2000d). 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, 2001b). 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 also 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 societywide levels (Bandura, 1997; Sabido, 1981; Singhal & Rogers, 1999; Winett, Leckliter, Chinn, Stahl, & Love, 1985).

There are three major components of a sociocognitive communications model for social change. The first component is a *theoretical model* that specifies the determinants of psychosocial change and the mechanisms through which they produce their effects. This knowledge provides the guiding principles. The second component is a *translational and implementation model* that converts theoretical principles into an innovative operational model by specifying the content, strategies of change, and their mode of implementation. The third component is a social *diffusion model* on how to promote adoption of psychosocial programs in diverse cultural milieus. It does so by making functional adaptations of the programs to different sociostructural circumstances, providing incentives and enabling guidance, and enlisting the necessary resources to achieve success.

In applications to the most urgent global problems, this communications model uses long-running dramatic serials on television or radio as the vehicle of change. The story lines model family planning, women's equality, environmental conservation, AIDS prevention, and a variety of beneficial life skills. The dramatizations inform, enable, guide, and motivate people to effect personal lifestyle changes and to alter detrimental societal norms and practices. The dramatizations further assist people in their efforts at personal and social change by linking them to enabling and supportive subcommunities and beneficial human services. Over 80 worldwide applications of this creative format in Africa, Asia, and Latin America are enhancing people's efficacy to exercise control over their family lives, raising the status of women to have a say in their reproductive and social lives, promoting contraceptive methods, lowering the rates of childbearing, and fostering adoption of AIDS prevention practices (Bandura, in press; Rogers et al., 1999; Vaughan et al., 2000). The higher the exposure to the modeled values and lifestyles, the stronger the impact (Rogers et al., 1999; Westoff & Rodriguez, 1995).

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 on its relative functional value.

### **Modeling Determinants of Diffusion**

Symbolic modeling usually functions as the principal conveyer 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 to 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 communitywide 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 just reviewed 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, 2000a).

### **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 is the incentive 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 established ways do. 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 is the incentive to innovate. 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 is their adoptability.

Analysis of the determinants and mechanisms of social diffusion should not becloud the fact that not all innovations are useful, nor is resis-

tance 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) has 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 by 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 emphasizes 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 bypass 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

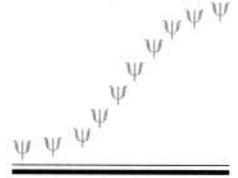
interactive electronic networking people link together in widely dispersed locals, exchange information, share new ideas, and transact any number of pursuits. Virtual networking provides a flexible means for creating diffusion structures to serve given purposes, expanding their membership, extending 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.

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# Growing Primacy of Human Agency in Adaptation and Change in the Electronic Era

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*The extraordinary advances in electronic technologies and global human interconnectedness present novel adaptational challenges and expanded opportunities for people to shape their social future and national life. The present article analyzes these pervasive transformational changes from an agentic theoretical perspective rooted in the exercise of perceived personal and collective efficacy. By acting on their efficacy beliefs, people ply the enabling functions of electronic systems to promote their education,*

*health, affective well-being, worklife, organizational innovativeness and productivity and to change social conditions that affect their lives. Technology influences, and is influenced by, the sociostructural nature of societies. The codetermining sociostructural factors affect whether electronic technologies and globalization serve as positive forces that benefit all or divisive ones in human lives.*

**Keywords:** Cyberworld, globalization, human agency, self-efficacy, self-regulation.

The revolutionary advances in electronic technologies are changing our world in fundamental ways. Life in the rapidly evolving cyberworld transcends time, distance, place, and national borders, and alters our conceptions of them. Instant communicative access worldwide is also transforming the nature, reach, speed, and loci of human influence. It alters how people communicate, educate, work, relate to each other, and conduct their business and daily affairs. In managing their various aspects of life, people now have the benefit of vastly expanded and diverse social networks. These rapidly evolving realities present new adaptational challenges and enlarged opportunities for people to exercise some measure of control over their personal development and to shape their national life.

Wrenching changes that dislocate and restructure lives are not new in history. What is new is the boundless scope and accelerated pace of human transactions and the growing globalization of human interconnectedness. Technology is but one component embedded in an intricate network of sociostructural influences. The development of new technologies, their applications, and societal impact are determined, in large part, by nontechno-

logical sociostructural factors operating interdependently within the larger totality of influences. No single factor in this multicausality plays a determining role in shaping the nature of society. Any theory of human adaptation and change in the electronic era must, therefore, consider the dynamic interplay of technological developments and a variety of psychosocial and structural determinants.

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Social cognitive theory provides an agentic conceptual framework within which to study how electronic technologies impact worldwide connectivity and personal and national lives (Bandura, 1986; 2001). People make choices and motivate and regulate their behavior on the basis of belief systems. Among the mechanisms of self-regulation none is more central or pervasive than beliefs of personal efficacy (Bandura, 1997). This belief system is the foundation of human agency. Unless people believe they can produce desired outcomes and fore-stall undesired ones by their actions they have little incentive to act or to persevere in the face of difficulties. Whatever other factors serve as guides and motivators, they are rooted in the core belief that one has the power to produce changes by one's actions. It is a key factor in how people construct and live their lives.

Personal goals and aspirations, rooted in a value system, provide further incentives and guides for action. People also regulate their life course by the outcomes they expect their efforts to produce. These outcomes may be the expected material costs and benefits, positive and negative social effects and one's self-evaluation. After people adopt personal standards they do things that give them self-satisfaction and self-worth and refrain from behaving in ways that bring self-reproach. Personal development and change would be easy if there were no impediments to surmount. How people view the opportunities and obstacles in their environment shapes the courses their lives take.

Self-efficacy is a key determinant because it affects behavior both directly and by its influence on these other determinants. Efficacy beliefs determine goals and aspirations (Bandura, 1991b; Locke & Latham, 1990). The stronger the perceived efficacy the higher the goal challenges people set for themselves and the firmer their commitment to them. Efficacy beliefs shape the outcomes people expect their efforts to produce (Bandura, 1997). Those of high efficacy expect favorable outcomes; those of low efficacy expect their efforts to yield poor results. Efficacy beliefs also determine how obstacles and impediments are viewed. People of low efficacy focus on costs and risks to be avoided rather than on opportunities (Krueger & Dickson, 1993; 1994). They are easily convinced of the futility of effort in the face of impediments. Those of high efficacy view impediments as surmountable through self-development and perseverant effort.

Numerous large-scale meta-analyses have been conducted on findings from studies involving diverse populations, with diverse experimental and analytic methodologies applied across diverse spheres of functioning at both the individual and collective level (Boyer

et al., 2000; Holden, 1991; Holden, Moncher, Schinke, & Barker, 1990; Moritz, Feltz, Fahrbach, & Mack, 2000; Multon, Brown, & Lent, 1991; Sadri & Robertson, 1993; Stajkovic & Lee, 2001; Stajkovic & Luthans, 1998). The converging evidence from these diverse lines of research verify that efficacy beliefs contribute significantly to the quality of human functioning.

People are producers as well as products of their social systems. Therefore, they have a hand in shaping their personal lives and the social and economic life of their society. Social cognitive theory extends the conception of human agency to collective agency (Bandura, 1997, 2001). People's shared belief in their combined power to achieve desired results is a key ingredient of collective agency. Perceived collective efficacy raises people's vision of what they wish to achieve, enhances motivational commitment to their missions, strengthens resilience to adversity, and enhances performance accomplishments.

Increasing complexities in technologies, social systems and the international economy present new dynamic realities demanding higher-order types of competencies. For example, in the modern workplace sweeping changes in technologies are mechanizing many of the everyday transactions and activities that were formerly done manually. In contemporary production systems, people manage computer-controlled machines that perform most of the routine work. We retool our production machines by changing the computer software. We design and test things using computer graphics rather than construct prototypes. The offices of today are run, in large part, by computerized information-management systems.

New technologies are displacing traditional jobs even in the delivery of services. We bank with automatic tellers, talk to recording machines that shepherd us through tortuous paths, pump gas from computerized equipment monitored remotely, and shop online for all sorts of goods by pushbutton. Bar code scanners tied to automated inventory management systems reorder merchandise without requiring inventory clerks and purchasing agents. The diverse activities of everyday life are now being increasingly conducted via transactions through online automated systems.

Korbin (1998) illustrates the staggering implications of what will be routine commercial transactions in the electronically integrated cyberworld. A German teenager buys, from a French virtual music store, a CD stored in a music company's computer in Ireland that is downloaded from a Web site in India, and paid for with electronic funds deposited in a bank in the Cayman Islands. This simple purchase is conducted entirely

through electronic transfer of information around the world with no shipment of a physical product or exchange of paper currency. How does one track, measure and regulate national economies? Who has jurisdiction over online activities when the cyberworld is disconnected from national territories? Will the distribution of transactions across diverse locations in the cyberworld produce global governance under international rules? If nonterritorial modes of governance are created, how will national sovereignty be linked to them?

## Educational Self-Development and Self-Renewal

The historical transition from the industrial to the information era has profound implications for educational systems. In the past, youth with limited schooling could get well-paying industrial and manufacturing jobs requiring minimal cognitive skills. Such options are rapidly shrinking. The emerging opportunities require high-level cognitive skills and self-regulatory capabilities to fulfill complex occupational roles and to manage the intricate demands of contemporary life.

The hope and future of people in a knowledge-based global society that is rapidly changing reside in their capacities for continual self-development and self-renewal. Educational systems must change their emphasis from mainly imparting knowledge to teaching students how to educate themselves throughout their lifetime. They have to be adaptable and proficient self-directed learners. Education for self-directedness is now vital for a productive and innovative society.

Information technologies are altering educational systems. Students can now exercise substantial personal control over their own learning. In the past, their educational development was dependent on the quality of the schools in which they were enrolled. Students now have the best libraries, museums, and multimedia instruction at their fingertips through the global internet for educating themselves independently of time and place. This shift in locus of initiative involves a major reorientation in students' conception of education in which they are agents of learning not just recipients of information.

Electronic media do more than just expand access to vast bodies of information. They also serve as a convenient vehicle for building virtual social networks for creating shared knowledge through collaborative learning and problem solving (Robey, Khoo, & Powers, 2000). Through interactive electronic networking, people link

together in dispersed locales, exchange information, share new ideas, and work collaboratively on projects. Cross pollination of ideas through worldwide connectivity can boost creativity synergistically in the co-construction of knowledge.

Information technologies are a tool not a panacea. They are only useful to those who choose to use them productively. Internet tutors can do little if students cannot motivate themselves to take advantage of what these systems have to offer. Students must develop skills in regulating the motivational, emotional and social determinants of their intellectual functioning, as well as the cognitive aspects. Efficacious self-regulators gain knowledge, skills and intrinsic interests in intellectual matters. Weak self-regulators achieve little self-development (Zimmerman, 1990).

Self-regulatory skills alone are not enough. They will contribute little if students cannot get themselves to apply those skills persistently in the face of difficulties, stressors and competing attractions. Firm belief in one's self-management efficacy provides the staying power. The stronger the students' perceived efficacy to manage their own learning, the higher their aspirations and accomplishments (Zimmerman & Bandura, 1994; Zimmerman, Bandura, & Martinez-Pons, 1992). Perceived self-efficacy for self-regulated learning enhances perceived self-efficacy to use the internet which, in turn, predicts success in managing internet-based self-instruction (Joo, Bong, & Choi, 2000). In research on knowledge construction through the internet, students with a high sense of self-regulatory efficacy are the ones who make the best use of internet-based instruction (Debouski, Wood, & Bandura, 2001). Those of low perceived efficacy for self-directed learning do not achieve much progress.

There is an educational disconnect between the rapidly evolving information technologies and the deficient development of students' high-level competencies and self-directive capacity. The efficacy impediment to adoption of information technologies is a systemic problem not just a personal one. School administrators and teachers who have a low sense of efficacy to manage computerized systems find them intimidating and make poor use of them (Hill, Smith, & Mann, 1987).

The educational enterprise has diverse developmental aims. The cognitive aim cultivates cognitive competencies, knowledge and meanings. The self-regulatory aim develops self-management skills for self-development and continual self-renewal. The valuational aim fosters adoption of personal standards and core values. The social aim promotes prosocialness and a sense of civic responsibility. The affective aim fosters self-eval-

utive and emotional well-being. The performance aim develops the operational abilities to translate knowledge into productive courses of action. These various facets of human development are intertwined. Development of these multifaceted competencies requires a multifaceted approach with instructional technologies used mainly for the things they can do well.

Evolving technologies are intricately woven into the fabric of social and institutional systems. Depending on their nature, these systems facilitate or impede the adoption of technological innovations. Therefore, how well nations develop their talent and provide enabling and supportive social systems are key factors in national technological capabilities. Given the critical role of psychosocial factors in the adoption and diffusion of innovations (Bandura, 1986; Rogers, 1995), one must guard against placing excessive hope in the technology itself.

Learners need live mentors to help build their self-regulatory efficacy, cultivate their aspirations, and to find meaning and direction in their intellectual pursuits. They need to learn media literacy skills on how to filter the avalanche of information, to analyze and evaluate it, and how to convert reliable information into knowledge and wisdom (Hobbs, 1998). The content of early schooling is perishable and long forgotten. But the valuational and self-regulatory capabilities last a lifetime as personal resources for continued self-development.

The development of internet literacy also holds high priority. We are entering a new era in which the construction of knowledge will rely increasingly on electronic inquiry. At present, about 50% of information is available solely in electronic form. Before long, most information will be available only in electronic form. Those lacking internet literacy will be cut off from critical information and disadvantaged in managing their daily life. Constructing knowledge through internet-based inquiry is a complex task. Information seekers face an avalanche of information in diverse sources of varying quality. Small changes in strategies can lead down radically different information pathways. It is hard to know whether one is on the right track or on an unproductive one. Knowing how to access, process, and evaluate this glut of information is vital for knowledge construction and cognitive functioning. People who doubt their efficacy to conduct productive inquiries and to manage the electronic technology, quickly become overwhelmed by the informational overload. Social cognitive theory provides guides for building the personal efficacy and cognitive skills needed to use the internet productively and creatively (Debouski, Wood, & Bandura, 2001).

The globalization of knowledge is altering the nature of higher educational systems and their practices. The university of this electronic era will continue to play a central role in generating knowledge, promoting informative syntheses, and aiding the search for meaning through discursive and reflective learning processes. But its teaching function will be more socially distributed and internationalized. Life in a knowledge-based society requires a highly educated citizenry capable of continual self-renewal through lifelong learning to manage the accelerated pace of informational and technological change. Mass social need calls for learning systems that can educate people worldwide. To fulfill this challenge, higher educational systems will have to change some of their structures, roles, and functions and enlarge the spectrum of people they serve.

Universities are beginning to extend their reach with internet courses offered independently or by pooling their intellectual resources in consortiums with other universities, libraries, museums and academic publishing houses in internet spin-off companies (Arenson, 2000). To augment the interpersonal dimension in distance learning, the more intensive online modes of instruction include video interactivity supplemented with local tutorial support systems in distant sites. Universities are also undertaking a new social application function by forming partnerships with industries that create and merchandise the products of patented scientific discoveries. Some of the higher education is being conducted on a large scale by national virtual universities that enable students to structure academic programs from a vast array of courses available in the cyberworld rather than in physical academic sites (Guri-Rosenblit, 1999). One such European model enlists the best professorial talent and didactic resources of a consortium of 40 public universities for their online academy conducted from the mainline University of Rome (Garito, 1999). New commercial enterprises are springing up that provide programs for professional upgrading and instruction in the more technically oriented fields to serve the specialized vocational needs of society. Through these diverse means, people worldwide who would otherwise be excluded from adequate education can have access to it.

The changes in educational agency, scope, and function are not without potential problems, however. There is concern about the fragmentation and standardized packaging of knowledge into saleable courseware. Information technology is not only a tool of dissemination. The medium can shape the pedagogy. Market-driven systems will favor the online pedagogy that is most marketable. There is also concern over constraining the free

exchange of knowledge if universities claim proprietorship over scientific discoveries in their laboratories for commercial purposes. As previously noted, education includes much more than acquisition of information. Human values, meanings, intellectual perspectives and civic commitments are fostered through immersion in inquiring communities rather than just by private reflection on external input. The challenge is to exploit the benefits of information technologies without embracing an insulated, socially disembodied cognitivism.

## Occupational Self-Regulation

A major part of people's daily life is spent in occupational activities. These pursuits do more than provide income for one's livelihood. They serve as a major source of personal identity, self-evaluation and social connectedness. Self-directedness is becoming a key factor in occupational life as well. In the past, employees learned a given trade and performed it much the same way during their lifetime in the same organization. The modern workplace requires a highly skilled, flexible workforce to meet diversified and rapidly changing job demands. Much of the world of work is now structured so that employees assume operational control in flexible self-managed teams (Beyerlein & Johnson, 1994). With the fast pace of change, knowledge and technical skills are quickly outmoded unless they are updated to fit the new technologies. Employees have to take charge of their self-development for a variety of positions and careers over the full course of their worklife (Bandura, 1997). The capacity for self-directedness is, of course, an essential personal resource in telework arrangements, where occupational activities are conducted at home or in a local facility. Under these arrangements, which are on the rise, people have to take charge of their own worklife.

Perceived self-efficacy affects, in diverse ways, the acceptance and use of electronic technologies in occupational pursuits. To begin with, students' beliefs in their efficacy shape their career choice and development (Betz, 2000; Lent, Brown, & Hackett, 1994). The higher the people's perceived efficacy to fulfill educational requirements and occupational roles the wider the career options they seriously consider pursuing, the greater the interest they have in them, the better they prepare themselves educationally for different occupational careers, and the greater their staying power in chosen challenging pursuits. Students' beliefs about their occupational efficacy and job preferences get formed at a surprisingly

early age (Bandura, Barbaranelli, Caprara, & Pastorelli, 2001).

Women and ethnic minorities constitute over half of the college population. Our society would have to draw on the talents of women and minorities to maintain its scientific, technological and economic viability. But our socialization practices undermine their efficacy for technological and scientific careers (Bussey & Bandura, 1999; Betz & Hackett, 1981). They tend to shun these types of occupational pursuits. Our societal response to this predicament is to import high-tech foreign nationals rather than grow our own from the untapped national source of talent.

Efficacy beliefs to master technological developments affect well-being and productivity in the modern workplace as well. Managers and employees of low computer efficacy learn little from computer-based tutorials and resist adopting new technologies (Ellen, 1988; Hill et al., 1987; Jorde-Bloom & Ford, 1988). During technological changeovers, those of high learning efficacy are more committed to change, more satisfied with their work and perform better (McDonald & Siegall, 1992).

Many organizational activities will be increasingly performed by members of virtual teams working together from scattered locations through computer-mediated transactions. Working remotely with little direct supervision across time, space, and cultural orientations can be quite taxing. Employees with high perceived efficacy for remotely conducted collaborative work have more positive job attitudes and achieve higher job performances than those of low perceived efficacy (Staples, Hulland, & Higgins, 1998).

## Organizational Productivity and Innovativeness

Efficacious adaptability has also become a premium at the organizational level. Organizations must be continuously innovative to survive and prosper in the rapidly changing global marketplace. They face the paradox of preparing for change at the height of success. Many fall victim to the inertia of success. They get locked into the technologies and products that produced their successes and fail to change fast enough to the technologies and marketplaces of the future.

There has been a phenomenal growth of digital technologies in Silicon Valley. Silicon Valley is not a place (Bronson, 1999). It is a flourishing entrepreneurial subculture distributed around the San Francisco Bay Area (Lee, Miller, Hancock, & Rowen, 2000). Innova-

tiveness largely involves creative syntheses of existing knowledge into new ways of thinking and doing things (Bandura, 1986). There is extensive cross-pollination of ideas in this milieu through a fluid regional network in which individuals with diverse expertise exchange ideas freely, celebrate risk taking, and accept failure as a natural part of innovative success. Close ties to universities that spawn creative ideas and ready availability of venture capital financing create the climate for innovation and reinforce the entrepreneurial spirit.

Entrepreneurs have to be willing to invest a great deal of time, effort, and resources in endeavors strewn with dashed hopes and take risks under uncertainty. It requires a resilient sense of efficacy to persevere in the face of repeated failures and setbacks in the face of tough odds inherent in innovative pursuits. Venturers of high efficacy judge themselves better able to beat the odds than venturers of lower efficacy (Krueger, 1994). Among patent inventors, it is those of high efficacy who are likely to start new business ventures (Baron, 1998). Venturers who achieve high growth in companies they have founded, or transformed those they have bought have a clear vision of what they wish to achieve, a firm belief in their efficacy to realize it, set challenging growth goals, and come up with innovative production and marketing strategies (Baum, 1994).

## **Widening Gaps and Equitable Distribution of Benefits**

There is much talk that inequity of access to electronic technology will widen gaps between sectors within societies and across different societies. The less advantaged will be left farther and farther behind. Discussions of possible remedies focus heavily on providing access to the physical technologies. Before long, the functions of the computer and video systems will be merged into an integrated system that will be widely available. The major barriers to equity of opportunity will be mainly sociostructural rather than technological. If access to educational offerings and other valuable sources of information is market driven, the inequities will center on affordability.

The growing social and economic divide between rich and poor nations presents more daunting challenges to make globalization more inclusive and equitable. Electronic technologies are not only unaffordable to poor nations, but they usually lack the educational, communicational, organizational and service infrastructures

and the energy technologies to adopt and manage digital systems. These deficits are not amenable to quick fixes. It requires heavy long-term investment of resources in poorer nations to reduce the educational divide needed to ensure that globalization creates a beneficial shared future.

Advocates promote new technologies but often ignore the sociostructural conditions that shape their use and impact on the society at large. As a result, innovations intended for the public good often exacerbate societal problems. Gotsch (1972) illustrates how the same agriculture innovation creates markedly different distribution of benefits in societies under different social structures. The example concerns the innovation of tube wells that enable farmers to grow a second crop using irrigation during the arid season.

In the social system of Pakistan, because of dissension among farmers who owned small farms, they could not pool their resources to purchase the innovation. Development agencies gave loans to the larger landholders, who installed the irrigation system with profitable results. None of the small landholders did so, with polarizing socioeconomic effects. In the cooperatively structured social system of Bangladesh, the owners of minifarms formed cooperatives and installed in partnership the technology they could not afford individually. They nearly doubled their profits. Thus, the same technology widened the disparity between social and economic classes in one society, but produced shared benefits in another one.

Failures to adopt new technological innovations are often attributed to contrarian dispositions of nonadopters. In many instances, the problem lies in sociostructural impediments rather than dysfunctional dispositions. For example, development agencies generally offer the greatest assistance to those who are better off and command the social influence to get preferential treatment. In an effort to produce more equitable benefits, Roling, Ascroft and Chege (1976) instructed resistant development agencies to identify less advantaged farmers who had consistently passed up agricultural innovations. After they were taught the innovation and given loans, virtually all adopted the innovation and passed it on to others.

All too often we take a narrow view of the diffusion of innovations. The spread of technologies in a society is a social and institutional matter, not just a technological one. One must look beyond the physical technology for guidance on how to achieve equitable benefits. The worth of innovations should be evaluated in terms of the social distribution of benefits as well as their aggregate utility. The values to which societies subscribe influence wheth-

er new technologies are used in ways that make life better for everyone or create widening disparities between sectors of society.

A more fundamental value issue concerns the purposes to which human talent and advanced technologies are put. For the most part, globalization is used to move financial capital, production, and trade around the world. It has spawned a hard-driving, competitive lifestyle measured mainly by marketplace values. Some of the intense market activities promote lavish consumption that neither use our finite resources wisely nor lead to a better quality of life (Ehrlich, Ehrlich, & Dailey, 1995). At the broader societal level, transnational market forces can erode or undermine valued cultural aspects of life when they are disregarded or considered detractors from profitability. Social bonds and civic commitments that lack marketability are especially vulnerable to erosion by global market forces. The specter of failure in the competitive global marketplace is often used to justify inequitable occupational and economic practices and neglect of social obligations that serve the common good.

There is more to society than the market place. Critics of globalization upbraid the presiders over transnational market forces for their failure to temper its excesses and to use it as a vehicle to better the human condition worldwide. They want it used globally for social ends as well to protect human rights and working conditions and to preserve the ecosystems needed to sustain a habitable global environment. European nations seem oriented toward a more balanced model of globalization designated as the "third way" to take advantage of its many benefits while preserving social and civic commitments to the society at large (Giddens, 2000). The benefits are promoted by investment in human enablement through education, equitable opportunity structures, and provision of necessary technical resources.

## Self-Regulation of Health

The field of health is another area in which evolving technologies are having considerable impact. In recent years, there has been a major change in the conception of health from a disease model to a health model. It is just as meaningful to speak of levels of vitality and healthfulness as of degrees of impairment and debility. Human health is heavily dependent on lifestyle habits and environmental conditions (McGinnis & Foege, 1993). As health economists amply document, medical care cannot substitute

for healthful habits and environmental conditions (Fuchs, 1974; Lindsay, 1980). The structuring of health promotion should begin with goals, not means. If health is the goal, biomedical interventions are not the only means to it. From the biopsychosocial perspective, improving health habits and creating healthful living environments yields the large health benefits.

The behavioral codetermination of health enables people to exercise some control over their vitality and quality of health. By managing their health habits, people can live longer, healthier, and slow the process of aging. To stay healthy, people should exercise, refrain from smoking, reduce the amount of dietary fat, keep blood pressure down, and develop effective ways of coping with stressors. If the huge health benefits of these lifestyle habits were put into a pill, it would be declared a spectacular breakthrough in the field of medicine.

The sociocognitive approach to health promotion is designed to inform, enable, motivate, and guide people to adapt habits that promote health and reduce those that impair it (Bandura, 2000). The social utility of health promotion programs can be enhanced by a stepwise implementation model. In this threefold stepwise approach the level and type of guidance is tailored to people's self-management capabilities and motivational preparedness to achieve desired changes. People with high self-efficacy and positive outcome expectations succeed with minimal guidance to accomplish the changes they seek. Those who have self-doubts about their personal efficacy to manage their health habits make half-hearted efforts to change and are quick to give up when they run into difficulties. They need additional support and guidance by interactive means to see them through tough times. Those who believe that their health habits are beyond their personal control need a great deal of personal guidance in structured mastery programs.

Societal efforts to get people to adopt healthful practices rely heavily on mass communications in health campaigns. Meyerowitz and Chaiken (1987) examined four mechanisms through which health communications could alter health habits: By transmission of factual information, fear arousal, change in risk perception, and enhancement of perceived personal efficacy to do what is needed. Health communications fostered adoption of preventive health practices to the extent they raised beliefs in personal efficacy. These findings indicate that the framing of health communications requires a change in emphasis from trying to scare people into health to empowering them with the self-management skills and self-beliefs needed to exercise control over their health habits.

Analysis of how mass media campaigns change health habits similarly reveal that these population-based approaches promote beneficial changes mainly in people with high perceived efficacy for self-management and positive expectations that personal changes will improve their health (Carey & Carey, 1993; Maibach, Flora, & Nass, 1991; Slater, 1989). Analysis of the impact of mass health campaigns further reveals that the translation of health knowledge to healthful habits is mediated through perceived self-efficacy (Rimal, 2000). The correlation of knowledge with healthful habits is increased among participants whose perceived efficacy is raised, but decreased among those whose self-efficacy is lowered.

The absence of individualized guidance limits the power of one-way mass communications. The revolutionary advances in interactive technology provide the means to increase the reach and productivity of health promotion programs. On the input side, the new technologies enable targeting and personally tailoring health communications to factors that are causally related to health behavior. These factors include sociodemographic status, efficacy beliefs, outcome expectations, and perceived impediments. Personalized communications are viewed as more relevant and credible, are better remembered and are more effective in influencing health behavior than general health messages (Kreuter, Strecker, & Glassman, 1999).

On the behavioral adoption side, interactive technologies provide a convenient means of individualizing the type and level of guidance needed to bring the desired changes to fruition. For example, DeBusk and his colleagues have developed an effective self-management model for health promotion and risk reduction that combines knowledge of self-regulation with enabling interactivity through computer-assisted implementation (DeBusk et al., 1994).

With the aid of the self-management system a single implementer can help many people in workplaces and in their homes to reduce habits that place them at risk for disease (Bandura, 2000; DeBusk et al., 1994; Clark et al., 1997; West et al., 2000). In long-term follow-up of patients suffering from coronary artery disease, those receiving the standard medical care by their physicians showed no change or a worsening of their condition. In contrast, those aided in self-management of health habits achieved big reductions in risk factors (Haskell et al., 1994). They also had much less build-up plaque on artery walls, fewer coronary events, fewer hospitalizations for coronary heart problems and fewer deaths. Among patients who have already suffered a heart attack, the self-management system is more effective in reducing

risk factors and increasing cardiovascular functioning than the standard medical post-coronary care (DeBusk et al., 1994).

The self-management system is well received because it is individually tailored to people's needs; provides continuing personalized guidance that enables people to exercise considerable control over their own change; it is a home-based program that does not require any special facilities, equipment, or attendance at group meetings that usually have high drop-out rates; it can serve large numbers of people simultaneously under the guidance of a single implementer; it is not constrained by time and place; it combines the high individualization of the clinical approach with the large-scale applicability of the public health approach; and it provides valuable health-promotion services at low cost.

In the present applications the computer is used as a coordinating and mailing system for guiding and supporting personal change. By linking the interactive aspects of the self-management system to the internet, one can vastly expand its availability for preventive and remedial guidance to people wherever they may live. The connectivity and capability for individualized interactivity of online systems provide an electronic vehicle for telehealth promotion.

Telehealth services and online interactive health promotion is the wave of the future. People will be receiving medical consultation directly in the home with ongoing monitoring of their health status for tailoring and adjusting health regimens. Those in outlying clinics, remote regions, and underserved sectors of society can receive health services under the guidance of specialists (Jerome et al., 2000). Through internationalization of health information and global connectivity, the internet can deliver health services online worldwide unfettered by geographical constraints. This is not just a vision. An internet joint venture created by Stanford and Yale Universities now provides physicians and nurses globally with instant expert information on patient care and teleconsultation services (Hubbs et al., 1997).

With increased life expectancy, minor dysfunctions have more time to develop into chronic diseases. The shift in the weight of disease from acute to chronic maladies will force societies to redirect their efforts from supply-side remedies aimed at containing costs to demand-side solutions that keep people healthy throughout their lifespan so they have no need for costly services. Otherwise, nations will be swamped with staggering health costs that consume valuable resources needed for national programs.

Psychosocial programs provide the public health vehicle for health promotion and disease prevention. We can amplify our impact on human health by making creative use of evolving interactive technologies that expand the scope and strength of health promotion efforts. Psychosocial programs for health promotion will be increasingly implemented via interactive internet-based systems. Individuals at risk for health problems typically shun preventive or remedial health services, but they will pursue online individualized guidance because it is readily accessible, convenient, and provides a feeling of anonymity. For example, young women at risk of eating disorders reduce dissatisfaction with their weight and body shape and alter disordered eating behavior through interactive internet-delivered behavioral guidance (Taylor, Winzelberg, & Celio, 2001).

The internet is transforming traditional medical relationships and how and where medicine is practiced. People are assuming more active roles in their health life. There are now over 100,000 medical Web sites in the United States alone flooding the health care marketplace. People are going to their computers to learn about diseases, possible diagnoses for what ails them, checking out the effectiveness of alternative treatments, looking into medications and their side effects. Pharmaceutical companies are now advertising prescription drugs directly to the public. Some people are ordering medications via the internet. They are turning to online self-help groups for guidance and social support.

There is a downside to some of the internet health services. People are engaging in extensive self-medication with a vast array of over-the-counter drugs, nutritional supplements, herbal therapies, and superficial psychosocial remedies marketed by purveyors of quick fixes. These self-medications are not without negative side effects. Moreover, uninformed self-care may be used for symptom relief that delays diagnosis and treatment of the source of maladies. The internet provides a ready vehicle for scam artists to peddle fraudulent cures and health products. Much of the health information on the internet may be inaccurate, erroneous, misleading or fraudulent. People need to be taught how to access and critically evaluate online health services to ensure that they are benefited rather than harmed by them. This requires the development of consumer protection systems that evaluate the accuracy and reliability of internet health services and guarantee the privacy and security of personal health information.

## Internet Technology in Sociopolitical Change

The internet technology is changing social and political processes. It provides vast opportunities to participate directly in sociopolitical matters of concern, and a ready vehicle for mobilizing grass-roots activity to promote desired changes in social practices and policies. The internet is swift, wide-reaching, and free of institutional controls. Political contests are shifting to the cyberworld where political pronouncements and partisan critiques are circulated instantly. The unfettered, pluralistic nature of the internet is also changing the locus of power of the news media. The cyberworld contains a multiplicity of voices. Online journalistic enterprises, serving diverse ideologies and vested interests, may eventually supplant oldline broadcast networks as the main purveyors of sociopolitical information.

There is much utopian talk of electronic democratization and the liberalizing force of the internet as a new political forum unimpeded by gatekeepers who command power. Here too, one must guard against excessive hope for a technological remedy for problems of political strife and representative governance. The internet technology distributes the capacity to communicate throughout society and across national borders. But it does not determine the quality of online communities and what gets communicated.

The online journalistic debut at the recent political convention in the United States hardly exemplified emancipation from the oldline broadcast gatekeepers and rekindling of political participation (Wayne, 2000). There was low public participation in the Websites and much of the online political discourse was rather sterile. As is usually the case, initial euphoria over the empowering effect of a tool gives way to sobering realization that sociocultural factors largely govern how that tool is used. Political Web sites are characterized more by insular polarization than by intelligent deliberation. In the chat rooms of everyday life, some of the discourse is edifying and enabling, but much of it is banal, misinformed, contentious and even hateful. More communication does not necessarily mean more enlightening discourse for human betterment.

Ready access to communication technologies will not necessarily enlist active participation unless people believe that they can achieve desired results by this means. Strong personal and collective efficacy determines whether people make their voices heard in cyberspace politicing and whether they play an active part in

bringing about meaningful changes in their lives (Bandura, 1997; Newhagen, 1994a, 1994b). This is another sphere of life where perceived efficacy will shape how the internet changes the face of social activism.

The joint influence of collective political efficacy and trust in the governmental system predicts the form and level of political activity (Seligson, 1980; Wolfsfeld, 1986). People who believe they can achieve desired changes through their collective voice and view their governmental systems as trustworthy participate actively in conventional forms of political activities. Those who believe they can accomplish social changes by perseverant collective action, but view the governing systems and officeholders as untrustworthy favor more confrontive and coercive tactics. The politically apathetic have little faith that they can influence governmental functioning through collective initiatives and are disaffected from the political system.

## **The Dark Side of Electronic Technologies**

The social benefits of electronic technologies do not come without costs. People are now becoming wired to their workplace, regardless of where they are. With wireless communication devices, that respect neither time nor place, worklife increasingly intrudes on familial, social, and recreational life. This creates new challenges to strike a balance between the competing priorities of life. Cellular devices are also intruding into and changing the quality of public spaces. Cellphone users impose their personal lives on public spaces much to the annoyance of those around them, especially when cellular behavior is flaunted with a sense of self-absorbed entitlement and personal importance. Electronic technologies are also eroding privacy in unprecedented ways. Based on internet transactions and browsing, people's financial and medical status and other details of their personal lives can be monitored, recorded, profiled, archived, and shared with or sold to third parties for marketing purposes or for other misuses. The selling of people's privacy is characterized euphemistically in Amazon.com's privacy policy as a "*transferable business asset*." For the most part, people are blissfully unaware that computers preserve electronic records, computer tracking systems can find the users and resurrect their online activities. In another form of personal invasiveness, wireless tracking chips embedded in wireless communication devices can pinpoint a person's whereabouts anywhere, anytime.

Rosen (2000) makes the interesting point that the most disquieting consequences of the erosion of privacy is that people will be viewed in terms of distorted personal identities constructed from fragmentary, decontextualized online activities. If people are to preserve some privacy and dignity they will have to reinstate control over the use of information about personal online behavior through technological, social, and legal remedies.

Online behavior differs from face-to-face behavior (Gackenbach, 1998; Kiesler, 1997). Anonymity and pseudonymity in interchanges in the cyberworld remove communication restraints, enlist wider participation in activities, beget freer expressions of personal views and elicit more intimate self-disclosure than in everyday relationships. The cyberworld self is clearly less restrained. In addition, social transactions in the cyberworld provide individuals with opportunities to explore different facets of personal identity unimpeded by the inhibiting force of status and power differentials (McKenna & Bargh, 2000). But concealment and depersonalization can also bring out the worst in people by removing personal and social sanctions for pernicious conduct (Froomkin, 1999).

Social cognitive theory of moral agency identifies eight mechanisms by which moral self-sanctions are selectively disengaged from detrimental conduct (Bandura, 1991a, 1999). The moral disengagement may center on the cognitive restructuring of transgressive conduct into a benign or worthy one by moral justification, sanitizing euphemistic language, and advantageous comparison; disavowal of a sense of personal agency by diffusion or displacement of responsibility; disregarding or minimizing the injurious effects of one's actions; and attribution of blame to, and dehumanization of, those who are victimized.

Rubin (1994) describes certain characteristics of electronic technologies that increase propensity for these forms of moral disengagement. Transgressive acts can be performed in privacy and anonymity toward depersonalized or faceless victims located thousands of miles away. Unlike breaking into offices to steal files, which is difficult to execute and escape detection, one can do so electronically with trivial effort without apparent tracks and the theft leaves the owner's property still in place. The moral disconnect makes it easy to behave transgressively. Social remedies for moral disengagement in the cyberworld should make it difficult for people to remove humanity and sanctions from their conduct.

The internet was designed as a highly decentralized system that defies regulation. Because anybody can get into the act and nobody is in charge, internet freelancers can use this unfettered vehicle for destructive purposes.

There are several unique features of electronic information technologies that make them perilous if used for harmful purposes. They are readily accessible, portable, easily implementable remotely by pushbutton, connected worldwide for far-reaching consequence, and they are exceedingly difficult to control. Societal vulnerabilities are enormously magnified because virtually all of the systems on which people depend in their everyday life are interdependently run by computer network systems. These can be easily knocked out, as shown by the computer student in the Philippines who wreaked havoc world-wide by crippling e-mail systems costing billions of dollars. Smart hackers can do much more serious damage. Cybercrime and cyberterrorism, enacted through the internet, is a dark side of the cyberworld that will increasingly command societal attention.

## Globalization of Televised Modes of Influence

The globalization of televised modes of influence is another major way in which the revolutionary advances in communication technologies are altering societies. Humans have evolved an advanced capacity for observational learning (Bandura, 1986). This enables them to enhance their knowledge and competencies through information conveyed by the rich variety of models. In the past, modeling influences were largely confined to the styles of behavior and social practices in one's immediate community. The advent of television 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 transcend the bounds of their customary environment.

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. A major significance of symbolic modeling lies in its tremendous scope and instructive power. Unlike learning by doing, which requires shaping individual actions through repeated consequences, 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. In their daily lives, people have direct contact with only a small sector of the environment. They work in the same setting, travel the same limited 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—what they see, hear, and read in the mass media—without direct experiential correctives. The more people's images of reality depend upon the media's symbolic environment the greater is its social impact (Ball-Rokeach & DeFleur, 1976). Video systems feeding off telecommunications satellites have become the dominant vehicle for disseminating symbolic environments. New ideas, values, and styles of conduct are now being rapidly diffused worldwide in ways that foster a globally distributed consciousness.

Global broadcasts now show sociopolitical conflicts as they are happening. This makes televised modeling a more influential vehicle for political and social change. Braithwaite (1994) provides evidence that the speed with which Eastern European rulers and regimes were toppled by collective action was greatly accelerated by televised modeling. The timing and form of collective action is better predicted by the force of modeling than by social structural conditions. The tactic of mass action modeled successfully by East Germans was immediately adopted by others living under oppressive rule.

A mass uprising by citizens of Ivory Coast dislodged the dictator Gueï who declared himself a winner of an election he was losing in the ballot count. The protesters modeled the militant strategy after the popular revolt against Milosevic in Yugoslavia who tried to annul an election in which he was defeated (Onishi, 2000). In commenting on the influential role of televised modeling in the popular uprising, a student protestor remarked, "The mistake Gueï made was to let us watch scenes from Belgrade."

Once a collective strategy has been shown to work, it is widely modeled (Bandura, 1986). However, televised modeling of civic strife in contests of power is a double-edged sword. It can fortify social control as well as promote social change depending on the depicted consequences of militant sociopolitical action. The Chinese dissidents were also emboldened by the German modeled success of forceful collective action. But the publicized results were markedly different. The Chinese populace watched on CNN the militia breaking down doors and arresting student activists. Live portrayal of brutal arrests helped to curb the spread of the uprising.

The vast body of knowledge on modeling is being widely applied for personal development and change (Bandura, 1997; Rosenthal & Stelfek, 1991). Symbolic modeling lends itself readily for society-wide applications through creative use of the electronic media. For example, the soaring population growth and the envi-

ronmental devastation it produces is the most urgent global problem. Sabido (1981) drew on social cognitive principles in creating radio and television dramatic serials that are being applied internationally with notable success in stemming this massive tide. The story lines model family planning, women's equality, environmental preservation, and a variety of effective life skills. The dramatizations inform, enable, guide, and motivate people to effect personal changes and to alter detrimental societal norms and practices (Bandura, in press).

Worldwide applications of this creative format in Africa, Asia and Latin America are raising people's perceived efficacy to control their family lives, enhancing the status of women in familial, social, and educational life, increasing adoption of contraceptive methods, and lowering the rates of childbearing (Bandura, 2002; Singhal & Rogers, 1999). A controlled study in Tanzania compared changes in family planning and contraception use in part of the country that received a radio dramatic series with the rest of the country that did not (Rogers et al., 1999). Families in the broadcast area adopted family planning and contraceptive methods at a higher rate than in the control part of the country. Story lines emphasizing safer sexual practices to prevent the spread of AIDS increased condom use and reduced the number of sexual partners (Vaughan et al., 2000). These macrosocial applications of media ingenuity in translating social cognitive principles into social practice illustrate how a small collective effort can make a huge difference in an urgent global problem.

## **Underminers of Collective Efficacy in Changing Societies**

As already noted, life in the societies of today is increasingly shaped by transnational interdependencies (Keohane 1993; Koehane & Nye, 1977). Because of extensive global interconnectedness, what happens economically and politically in one part of the world can affect the welfare of vast populations elsewhere. Remote transnational influences now have widespread local effects on people's occupational, social, and economic lives. Transnational forces are hard to disentangle let alone control. They challenge the efficacy of governmental systems to shape their own economic and national life. As the need for efficacious collective effort grows so does the sense of collective powerlessness.

Many of the contemporary conditions of life undermine the development of collective efficacy. There are no handy social mechanisms or global agencies through

which people can shape and regulate transnational practices that affect their lives. As nations wrestle with the loss of control, the public expresses disillusionment and cynicism over whether their leaders and institutions can work for them to improve their lives.

It has become fashionable to proclaim the demise of nation states. Lie (1996) has argued convincingly that globalization has changed the power relations of nation states not rendered them irrelevant. Transnational systems still have to operate through national institutional frameworks, human resources and operational infrastructures. It is not as though there is little or nothing nations can do about transnational forces. Under the new globalized realities, nation states increase their controlling leverage by merging into larger regional units such as the European Union. Other regional nation states will be forced to merge into larger blocks, otherwise they will have little bargaining power in transnational relations. These regional marriages do not come without a price. Paradoxically, to gain international control nations have to negotiate reciprocal pacts that require some loss of national autonomy and changes in traditional ways of life (Keohane, 1993). Some sectors of the society gain from the pacts, others lose.

Modern life is increasingly regulated by complex technologies that most people neither understand nor believe they can do much to influence. The very technologies that people create to control their life environment can become a constraining force that, in turn, controls how they think and behave. The social machinery of society is no less challenging. Bureaucracies thwart effective social action. Many of the bureaucratic practices are designed more to benefit the people who run the social systems than to serve the public. Those who exercise authority and control wield their power to maintain their advantages (Gardner, 1972).

Social efforts to change lives for the better require merging diverse self-interests in support of common core values and goals. Disagreements among different constituencies create additional obstacles to successful collective action. The recent years have witnessed growing social fragmentation into separate interest groups, each exercising its own power. Pluralism is taking the form of antagonistic factionalism. In addition, mass migration of people fleeing tyranny or seeking a better life is changing cultural landscapes. As societies become more multiethnic and globalized they are harder to unite around a national vision and purpose. Identity politics, decrying the dilution of nationhood, are on the rise.

The magnitude of human problems also undermines efficacy to find solutions for them. Profound global

changes arising from burgeoning populations, deforestation, desertification of croplands, ozone depletion and rapid extinction of species by razing their habitats are destroying the intertwined ecosystems that sustain life. Worldwide problems of growing magnitude instill a sense of paralysis that there is little people can do to reduce such problems. Global effects are the products of local actions. The strategy of, "Think globally, act locally," is an effort to restore in people a sense of efficacy that they can make a difference. We saw earlier how small collective efforts in macrosocial applications of social cognitive principles can have a huge impact on global problems.

## Concluding Remarks

It is widely proclaimed that digital technologies are determining the very nature of society. This type of view, depicting technology as a powerful force operating unidirectionally disembodied from the sociostructural context, instills a sense of inevitability about the form and direction societal changes will take. These new technologies admittedly function as a prominent element within societal systems that reaches deep into people's daily lives. But embracement of technological determinism masks the social and valuational forces that shape the uses to which technologies are put. In this reciprocal interplay, technology both influences, and is influenced by, the nature of social life. Investments in enabling social aspects of societies are needed to ensure that information technologies and globalization serve as a positive force rather than a divisive one in human lives.

### Author's Note

This article was presented as a Keynote Address at the conference "New Media in the Development of Mind" in Naples, Italy, October 2000.

Preparation of this article and some of the cited research were facilitated by grants from the Grant Foundation and the Spencer Foundation. Several sections of this article include revised and expanded material from "Social cognitive theory: An agentic perspective," in the *Annual Review of Psychology* (2001).

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# The Revised Scale for Caregiving Self-Efficacy: Reliability and Validity Studies

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Two samples of family caregivers (Study 1:  $N = 169$ ; Study 2:  $N = 145$ ) of cognitively impaired older adults were used to revise, extend, and evaluate a measure of perceived self-efficacy for caregiving tasks. The Revised Scale for Caregiving Self-Efficacy measures 3 domains of caregiving self-efficacy: Obtaining Respite, Responding to Disruptive Patient Behaviors, and Controlling Upsetting Thoughts. The 3 subscales show strong internal consistency and adequate test-retest reliability. Construct validity is supported by relationships between these 3 facets of perceived caregiving efficacy and depression, anxiety, anger, perceived social support, and criticism expressed in speech samples. The Revised Scale for Caregiving Self-Efficacy has potential uses for both research and clinical purposes.

THE construct of self-efficacy has been widely used among researchers to help explain a variety of reactions to long-standing, stressful experiences (Bandura, Taylor, Williams, Mefford, & Barchas, 1985; Brady, Tucker, Alfino, Tarrant, & Finlayson, 1997; Cappelli et al., 1989; Cozzarelli, 1993; Gill, Williams, Williams, & Hale, 1998; Resnick, 1998; Sullivan, LaCroix, Russo, & Katon, 1998). Self-efficacy has been conceptualized as a person's belief about her or his ability to organize and execute courses of action to manage given situations (Bandura, 1997). Self-efficacy beliefs have diverse effects on psychosocial functioning: They (a) determine whether coping behaviors will be initiated, how much effort will be expended, and how long effort will be sustained in the face of obstacles and aversive experiences and (b) affect vulnerability to emotional distress and depression (Bandura, 1997).

Although sometimes confused with global self-esteem, locus of control, or self-confidence, self-efficacy is a separate conceptual scheme that pertains to specific judgements that one can perform competently and capably in given situations. Self-efficacy is not a global entity, but rather varies across activity domains, task demands, and situational characteristics. Gerontologists have used self-efficacy to predict different aspects of functioning in older adults, including active grandparenting (King & Elder, 1998), intellectual functioning (Berry, West, & Dennehey, 1989), functional status following a decrease in physical capacity (Mendes de Leon, Seeman, Baker, Richardson, & Tinetti, 1996), physical activity in osteoarthritis patients (Rejeski, Craven, Ettinger, McFarlane, & Shumaker, 1996), and adherence to exercise following a structured exercise program (McAuley, Lox, & Duncan, 1993). Despite the fact that the self-efficacy model has been widely used in research on chronic stress and coping, this construct has only recently been applied to help explain the experiences of family caregivers of

persons with dementia (Gignac & Gottlieb, 1996; Zeiss, Gallagher-Thompson, Lovett, Rose, & McKibbin, 1999). This recent work suggests that self-efficacy theory holds significant promise for explaining the variability in family members' ability to cope with the chronic demands and challenges of caregiving.

Previous research on stress proliferation suggests that a personal sense of control or mastery plays several important roles in dementia caregivers. In their 3-year longitudinal study of caregiving processes and outcomes, Aneshensel, Pearlin, Mullan, Zarit, and Whitlatch (1995) found that a global sense of mastery and personal control had a direct effect of reducing depression over time. No support was found for mastery beliefs either mediating or moderating the effects of care-related stressors on depression. However, increased mastery over time also had indirect effects through lessening a sense of role captivity (i.e., feeling trapped in an unwanted role) and increasing perceived competence as a caregiver, both of which were related to depression. Conceptualized as a secondary intrapsychic strain, perceived caregiver competence was related to levels of family conflict and to role captivity, which were in turn associated with problematic patient behaviors (Aneshensel et al., 1995). These findings suggest that beliefs about competence and one's ability to affect events can have powerful and varied effects for caregivers of dementia patients. The measures used, however, were global in nature (i.e., four-item scales with ratings for general statements) and quite different from the conceptualization of self-efficacy discussed previously. This measurement strategy does not permit a closer examination of the role of context in influencing responses to these general items and limits our ability to predict caregiving-related outcomes. Bandura (1997) suggests that general efficacy beliefs do not create or determine specific efficacy beliefs. More specific caregiving-related

measures of self-efficacy may increase our ability to understand these complex relationships and selectively focus on different aspects for intervention.

Specifically, several concerns pertaining to caregiving can readily be identified and tested using the self-efficacy model. For example, one would expect that individuals with high self-efficacy expectations regarding their own ability to handle the challenges of caregiving effectively would be more likely to assume the role of primary caregiver following a family member's dementia diagnosis. These individuals would also be expected to persist in providing care as the patient's condition worsens and caregiving tasks become increasingly difficult (i.e., rather than seeking institutional placement), handle the caregiving role with relatively little emotional distress and depression, and require relatively little support to maintain their own physical and mental health. These effects occur in the context of an interaction of cognitions, affective reactions, and behaviors. In challenging situations, persons with low self-efficacy beliefs dwell on their personal deficiencies, the difficulties of the task, and the negative consequences of failure. Focus on these negative cognitions reduces motivation to initiate an activity, affects task persistence, and leads to negative affective states including depression, anxiety, and anger (Bandura, 1997). In addition, it may be vitally important to understand how self-efficacy beliefs for specific aspects of caregiving tasks influence individual caregivers. Understanding each caregiver's profile of beliefs about her or his abilities may identify areas of vulnerability in handling the myriad demands of a caregiving situation. Such information could guide professionals to target areas for improvement. Psychoeducational interventions targeting personal mastery of relevant skills could be effective ways to promote caregiver self-efficacy and well-being.

Before these and related hypotheses can be tested, the first challenge is to develop an adequate measure of caregiver self-efficacy across relevant domains. Although the work by Gignac and Gottlieb (1996) is an interesting attempt to examine efficacy beliefs in caregivers, their methodology involves a laborious strategy of extracting efficacy-related comments from narrative discussion. We believe that a simpler, more efficient means of assessing caregivers' efficacy beliefs is needed. Zeiss and colleagues (1999) have made recent progress toward this goal by developing preliminary measures to assess beliefs about abilities that are most salient for caregivers in various situations. The authors identified two important domains of caregiving. The first was composed of behaviors that caregivers could initiate or participate in to reduce their own distress and enhance well-being (e.g., social activities, hobbies, and rest or respite). This domain was referred to as Caregiver Self-Care Self-Efficacy. The second domain addressed caregiver behaviors in using problem-solving skills that have been related to psychological adjustment (Heppner & Anderson, 1985). This domain was called Problem-Solving Self-Efficacy. Items for the two self-efficacy measures were developed by Zeiss and colleagues (1999) from their prior experiences working with caregivers, and were pretested to fit the dual domains of self-efficacy in a format that would be understandable to elderly caregivers.

The preliminary scale development by Zeiss and colleagues (1999) reveals the advantages of viewing caregiver strengths and needs from a self-efficacy perspective. Results from item analyses suggested that the two scales reflect different caregiving domains and can be measured reliably. Examination of validity concerns indicated that the self-efficacy scales were related to indexes of caregiver distress. However, there were limitations that raised the need for further refinement of the scales: Some ceiling effects were noted, with caregivers rating themselves as highly confident on items that had been perceived as challenging during item development. Zeiss and colleagues (1999) suggested that future revisions of the measure include a broader range of items that better reflect difficult behavioral and emotional challenges.

Finally, items included in the preliminary measure did not reflect caregiver self-efficacy for handling distressing and unhelpful thoughts about their caregiving situation. According to Bandura (1997), efficacy beliefs are involved not only in the exercise of control over action, but also with the regulation of cognitions and affective states. The more efficacious caregivers feel about their ability to control distressing thoughts, the more likely they are to do so in a consistent and persistent manner. This is particularly relevant because one of the important aspects of health behavior change, as conceptualized by the cognitive-behavioral model, involves gaining control over disturbing and intrusive thoughts. Cognitive changes can then lead to affective regulation and behavior modification. Addressing unhelpful thoughts associated with providing care is particularly relevant to a caregiving population for which cognitive and emotional challenges may be frequent and ongoing.

#### *Purpose of Investigation*

The current research was conducted to correct limitations of the preliminary caregiving self-efficacy measures by developing and testing a revised instrument. Because some of the steps toward healthy behavioral change include control over one's cognitions, items reflecting the ability to manage distressing thoughts were included. This extension of self-efficacy to the regulation of one's own consciousness provides a broader assessment of caregiving self-efficacy and the means for guiding prevention and treatment interventions for caregivers.

Two independent samples consisting of family caregivers for individuals with dementia were used to develop the revised instrument. Data from Study 1 were used to assist in (a) item selection, (b) investigation of the structural and psychometric properties of the measure, and (c) an examination of initial support for construct validity. Study 2 data provided an opportunity to confirm the structural characteristics and psychometric properties of the scale and gather further evidence for construct validity using multimethod assessment strategies.

#### **Study 1**

##### **METHODS**

###### *Participants*

The first study was conducted in the San Francisco Bay area. The sample consisted of 169 women who were caring

for a family member with Alzheimer's disease or another dementing disorder (as confirmed by a physician's diagnosis). These caregivers were part of a sample of help-seeking caregivers participating in an ongoing randomized trial of psychoeducational classes designed to relieve caregiver distress. Participants were recruited using a variety of means including newspaper, radio, and television announcements; targeted mailings; and contact with churches, senior centers, medical clinics, and senior service professionals. Women 50 years or older who were primary caregivers of a parent, parent-in-law, or spouse with Alzheimer's disease or another dementing disorder were accepted into the study. Demographic characteristics of the participants in Study 1 are shown in Table 1; the sample consisted primarily of wives (57%) and daughters (39%) who had been providing care for almost 4 years on average. Participants were generally well educated, in good health, and Caucasian. Characteristics of the care recipients are displayed in Table 2. The majority of these individuals had cognitive impairments secondary to Alzheimer's disease or stroke, were primarily in the middle stages of dementia, and required assistance with an average of two activities of daily living.

#### Procedure

The Study 1 data used in this article were collected in a face-to-face administration with an additional packet of self-report psychosocial measures returned by mail. Only data collected prior to participants' involvement in the psychoeducational intervention were included in analyses.

#### Measures

**Scale for Caregiving Self-Efficacy.**—The 14 items from the original Self-Care Self-Efficacy and Problem-Solving

Table 1. Caregivers' Characteristics

Average characteristics	Study 1 (N = 169)			Study 2 (N = 145)		
	M	SD	%	M	SD	%
Age	63.8	(8.3)		60.2	(13.3)**	
Years of Education	14.5	(2.0)		13.6	(2.4)***	
Months of Caregiving	45.9	(45.3)		35.6	(27.8)*	
Beck Depression Inventory <sup>a</sup>	13.0	(6.5)		8.4	(7.1)***	
Female		100			80***	
Relationship to Care Recipient						
Spouse		56.8			46.2	
Child		39.1			46.2	
Other		4.1			7.6	
Median Income (in \$1000s)	30–40			20–30		
Ethnic Background						
Caucasian		89.4			84***	
Hispanic		6.4			0	
African American		2.1			16	
Asian or Pacific Islander		2.2			0	
Perceived Health						
Poor		2.4			6.3	
Fair		16.0			20.8	
Good		56.2			45.8	
Excellent		25.4			27.1	

<sup>a</sup>Study 2 Short-Form Beck Depression Inventory scores were prorated to be compatible with long-form scores in Study 1.

\*p ≤ .05; \*\*p ≤ .01; \*\*\*p ≤ .001.

Table 2. Dementia Patient Characteristics

Average characteristics	Study 1 (N = 169)		Study 2 (N = 145)	
	M	SD	M	SD
Age	77.9	9.6	77.3	9.0
Education	12.8	3.6	11.9	3.2**
Folstein Mini-Mental State Examination <sup>a</sup>	14.2	7.0	12.6	7.2
Activities of daily living	2.2	1.9	2.3	1.9
Community services used	1.8	1.4	1.7	1.3
Dementia diagnosis (%)				
Alzheimer's Disease		55		77***
Stroke/Multi-infarct		22		11
Parkinson's		8		2
Other dementia		15		9

<sup>a</sup>Normal score = 30.

\*p ≤ .05; \*\*p ≤ .01; \*\*\*p ≤ .001.

Self-Efficacy scales (Zeiss et al., 1999) were pooled; an additional 37 items were developed and added. This revision was done to expand the number of caregiving situations and to add the new dimension reflecting caregivers' ability to control unpleasant thoughts about caregiving. The additions provided a final pool of 51 items distributed across three hypothesized caregiving domains: (a) self-care and obtaining respite, (b) responding to disruptive patient behaviors, and (c) controlling upsetting thoughts activated by caregiving activities. For each item, caregivers were asked to rate their level of confidence (from 0% to 100%) that they could perform the activity if they gave it their best effort. Interview instructions emphasized the importance of honest appraisals of capability, rather than focusing on intention or past performances. To increase the sensitivity and predictive power of the measure, items reflect varying levels of challenge in each specific domain and are arranged in order of ascending difficulty (see Appendix for administration instructions).

**Dementia diagnosis.**—To ensure that all participants were in fact dementia caregivers, confirmation of a physician's diagnosis of Alzheimer's disease or another dementing disorder for all care recipients was obtained. The Folstein Mini-Mental State Examination (MMSE; Folstein, Folstein, & McHugh, 1975) was used to assess each patient's level of cognitive impairment. The MMSE has been shown to have high reliability and construct validity for moderate-to-severe cognitive impairment (Tombaugh & McIntyre, 1992). Severity of general impairment of the frail elder was assessed using the Activities of Daily Living (ADL; Katz, Ford, Moskowitz, Jackson, & Jaffe, 1963). The ADL measures caregivers' reports of their frail elder's functioning in basic activities such as bathing, toileting, feeding oneself, walking, and so forth. Scores range from 0 to 6; higher scores indicate greater impairment.

**Additional psychosocial measures.**—The questionnaire collecting demographic information included questions on age, education, the relationship to the elder (e.g., wife, daughter, other), and length of time as a caregiver. Perceived health was assessed by the item "How would you rate your overall health at the present time?" (Excellent,

good, fair, or poor; Mossey & Shapiro, 1982). In addition to a demographics questionnaire, caregivers were asked to list all formal services that they and their relative were receiving. Self-reported levels of anxiety were assessed with the Trait Anxiety Inventory (Spielberger, 1983), and self-reported levels of anger were assessed with the Trait Anger Expression Inventory (Spielberger, 1988). The Trait Anger Expression Inventory assesses anger experienced often (i.e., "How I generally feel") and consists of 10 items reflecting angry reactions and angry temperament. When used with adult samples, the Trait Anxiety and Trait Anger scales have good internal consistency and test-retest reliability (Jacobs, Latham, & Brown, 1988). Reliability and validity for these scales when used with older adults have not yet been established. Depression was assessed with the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961); the BDI consists of 21 symptoms of depression, including cognitive, behavioral, and vegetative symptoms. This measure is considered to have adequate reliability and concurrent validity when used with older adults (Gallagher, 1987).

Perceptions of availability of social support in the past month were assessed with the Arizona Social Support Interview Schedule (ASSIS; Barrera, 1980; Barrera, Sandler, & Ramsay, 1981). In addition to other aspects of social support, this interview measured the number of people (e.g., family, friends, neighbors, clergy, professionals) perceived as available to provide support in each of six domains. Rivera, Rose, Futterman, Lovett, and Gallagher-Thompson (1991) found the ASSIS to have high internal consistency when used with female caregivers; convergent and discriminant validity when used with older adults has not yet been established.

### *Hypotheses*

Two levels of hypotheses were tested, covering psychometric and construct validity aspects of scale development. Psychometrically, we expected that three subscales could be identified that had adequate internal consistency and factor structure. These factors were expected to reflect the domains identified conceptually: ability to obtain respite from caregiving, ability to respond to disruptive patient behaviors, and ability to control upsetting thoughts about caregiving.

If these scales could be constructed with acceptable psychometric properties, then hypotheses concerning the construct validity of the subscales would be tested. Differential predictions about the relationships between the three hypothesized subscales and other psychosocial factors were generated. Specifically, we expected size of the perceived available social-support network to be more closely associated with self-efficacy for obtaining respite than with the other two subscales. Social cognitive theory posits a bidirectional relationship between perceived coping efficacy and social support (Bandura, 1997). Indeed, the evidence shows that perceived social efficacy fosters the development of supportive relationships (Holahan & Holahan, 1987) and social support enhances perceived self-efficacy (Cutrona & Troutman, 1986; Major, Mueller & Hildebrandt, 1985). Although not synonymous with support, efficacy for obtaining respite from family and friends is directly

connected to one's sense of others as available to assist in a variety of ways. Anger was hypothesized to be more strongly associated with self-efficacy for calmly reacting to disruptive behaviors than with the other two subscales. This relationship is also conceptualized to be bidirectional: (a) Generally high levels of anger may reduce one's confidence in calmly responding to difficult behaviors, and (b) lower perceived capability to manage difficult patient behaviors will reduce the use of anger-management strategies, leading to increased anger. Anxiety was expected to be more strongly related to self-efficacy for controlling upsetting thoughts than to the other subscales. This domain of caregiving taps into a variety of worries commonly expressed by caregivers. Perceived difficulties in directly confronting and regulating such thoughts lead to decreased use of cognitive and behavioral coping strategies that are effective in reducing anxiety. Finally, low beliefs in self-efficacy across a variety of domains lead to a sense of failure and other negative cognitions about the self (Bandura, 1997). For this reason, we hypothesized that all three forms of self-efficacy would show a negative relationship with depression.

## **RESULTS**

### *Item Analysis*

We followed Crocker and Algina's (1986) recommendations for scale reduction. The distributions (i.e., mean, standard deviation, skewness, kurtosis) were examined for each of the 51 items of the Self-Efficacy (SE) for Caregiving Scale; items with high skewness, kurtosis, or with very low standard deviations were eliminated. This reduced the total item pool from 51 to 34. Separate internal-consistency analyses were conducted for items in each of the three hypothesized subscales to eliminate any items that resulted in a reduced Cronbach's alpha for that subscale. This required removal of only 1 item from the hypothesized Obtaining Respite subscale.

An oblique factor analysis (i.e., principal axis factoring; promax) was conducted on the 33 items. Items that failed to load .3 or higher on one factor, or that loaded greater than .3 on two or more factors, were eliminated; this resulted in dropping four items. A second factor analysis with the same extraction and rotation methods was run on the remaining 29 items, resulting in a nine-factor solution. Fifteen of the items loaded significantly on one of the first three factors, and 14 of the items loaded significantly on one of the last six factors (i.e., the last six factors each had two to three items with loadings greater than or equal to .3). These 14 items were eliminated to create a cleaner and more interpretable factor structure. The third and final factor analysis resulted in a solution consisting of 15 items loading on three factors, accounting for 62% of the variance. Table 3 lists the factors, their item content, their factor loading, and the eigenvalues for each factor. On the basis of these data, three subscales are proposed: SE = Obtaining Respite, SE = Controlling Upsetting Thoughts About Caregiving, and SE = Responding to Disruptive Patient Behaviors.

### *Subscale Distributions*

All three of the subscales were normally distributed and had acceptable levels of skewness; responses covered the

Table 3. Composition and Loadings for Self-Efficacy (SE) Items for Study 1 (S1) and Study 2 (S2)

Factor	Loading		Eigenvalues (% variance)	
	S1	S2	S1	S2
1: SE-Obtaining Respite			4.76 (32)	4.59 (31)
...Stay with care recipient for a day when you have errands to be done	.94	.90		
...Stay with care recipient for a day when you feel the need for a break	.85	.84		
...Stay with care recipient for a day when you need to see your doctor	.71	.71		
...Do errands for you	.64	.74		
...Stay with care recipient for a week when you need time for yourself	.58	.41		
2: SE-Controlling Upsetting Thoughts About Caregiving			3.0 (20)	2.8 (19)
...What a good life you had before care recipient's illness and how much you've lost	.86	.72		
...What you are missing or giving up because of care recipient	.83	.79		
...Future problems that might come up with care recipient	.71	.59		
...Unpleasant aspects of taking care of care recipient	.67	.62		
...How unfair it is that you have to put up with this situation	.59	.83		
3: SE-Responding to Disruptive Patient Behaviors			1.6 (10)	1.7 (11)
When care recipient asks you four times in the first hour after lunch when lunch is, can answer without raising your voice	.89	.94		
When he/she interrupts you for the fourth time while you're making dinner, can respond without raising your voice	.76	.66		
When you get angry because he/she repeats the same question over and over, can say things to yourself that calm you down	.62	.53		
When he/she forgets your daily routine and asks when lunch is right after you've eaten, can answer without raising your voice	.58	.75		
When he/she complains to you about how you're treating him/her, can respond without arguing back	.35	.30		

possible range of scores. Tests for internal consistency yielded high values: Cronbach's alphas were all greater than .80. Table 4 displays the intercorrelations between the three self-efficacy subscales and measures of depression, anxiety, anger, and social support. Psychometric data on the distributions and internal consistency for each scale are also shown.

As seen in Table 4, the three subscales are modestly correlated with each other. The SE-Obtaining Respite subscale shows low correlations with the two other self-efficacy subscales ( $r = .09$  and  $.15$ ), and SE-Responding to Disruptive Patient Behaviors was significantly correlated with SE-Controlling Upsetting Thoughts ( $r = .52$ ). Use of a total score reflecting the sum of all 15 items is contrary to the view of self-efficacy as domain specific and can mask sig-

nificant relationships between subscales and other constructs. For these reasons, we strongly advocate using scores for the three subscales rather than a total score.

#### Initial Evidence for Construct Validity

Support for construct validity of the subscales was based on differential predictions about the relationships between the three subscales and other psychosocial factors. Following the hypotheses outlined earlier, we examined correlations between the three subscales and measures of depression, anger, anxiety, and support network for evidence of convergent and discriminant validity of the self-efficacy subscales. The correlations in bold in Table 4 show that, as predicted, depression was significantly correlated with all three self-efficacy subscales. Trait anger was significantly related to SE-Responding to Disruptive Behaviors ( $r = -.41$ ), and trait anxiety was significantly associated with SE-Controlling Upsetting Thoughts ( $r = -.62$ ). Contrary to predictions, trait anxiety also showed a strong negative relationship to SE-Responding to Disruptive Behaviors ( $r = -.53$ ). Although the social network size perceived to be available was significantly related to SE-Obtaining Respite, this correlation was very modest ( $r = .16$ ).

#### Study 2

#### METHODS

##### Participants

The second study was conducted in the greater metropolitan St. Louis area. This sample consisted of 145 women and men who were caring for a relative or close friend with Alzheimer's disease or another dementing disorder (as confirmed by a physician's diagnosis). These caregivers were invited to participate in a measurement development study and were not recruited as part of any psychosocial-intervention research. Recruitment strategies were generally similar to those used in Study 1.

Demographic characteristics of the participants in Study 2 are shown in Table 1. Because depression was assessed differently in the two samples (in Study 1 with the BDI; in Study 2 with the short form BDI [BDI-SF]). Study 2 depression scores were converted by prorating them before they were compared with Study 1 depression scores. It can be seen that when compared with the sample in Study 1, participants in Study 2 were likely to be younger,  $t(232) = 2.8$ ,  $p \leq .01$ , less well educated,  $t(284) = 3.6$ ,  $p \leq .001$ , less depressed,  $t(281) = 5.6$ ;  $p \leq .001$ , less likely to be female,  $\chi^2(1, N = 314) = 37.2$ ,  $p \leq .001$ , and less likely to be Caucasian,  $\chi^2(3, N = 304) = 22.8$ ,  $p \leq .001$  and had been caregiving for a shorter period of time,  $t(284) = 2.5$ ;  $p \leq .05$ . The caregivers in the two studies were similar in income level, perceived health, and relationship to the care recipient. Characteristics of the care recipients in Study 2 are displayed in Table 2. The cognitively impaired patients in the two studies were similar in age, mental status scores, assistance required in activities of daily living, and number of community services used. Patients in Study 2 differed from patients in Study 1 by being less well educated,  $t(304) = 2.5$ ,  $p \leq .01$ , and more likely to have Alzheimer's disease

Table 4. Means, Standard Deviations, Ranges, Internal Consistency, and Correlations Between Self-Efficacy (SE) Subscales and Psychosocial Variables (Study 1; N = 169)

Variable	1	2	3	4	5	6	7
1. SE-Obtaining Respite	—						
2. SE-Responding to Disruptive Patient Behaviors	.15	—					
3. SE-Controlling Upsetting Thoughts	.09	.52*	—				
4. Beck Depression Inventory	-.16*	-.31***	-.44***	—			
5. Spielberger's Trait Anger	.04	-.41***	-.28***	.28***	—		
6. Spielberger's Trait Anxiety	-.14	-.53***	-.62***	.76***	.42***	—	
7. Available social support network	.16*	.13	.10	-.15	-.11	-.17*	—
M	50.8	59.4	62.2	12.9	16.7	44.0	10.2
(SD)	(30.8)	(21.9)	(23.5)	(6.8)	(4.5)	(9.6)	(4.0)
Skewness	-.08	-.05	-.50	.55	.86	.24	.31
Kurtosis	-1.2	-.68	-.52	.14	.48	-.01	-.39
Range	0-100	10-100	0-100	1-34	10-33	20-69	0-25
Cronbach's alpha	.88	.84	.86	.82	.91	.81	.84

Note: Entries in bold confirm hypotheses.

\*p ≤ .05; \*\*p ≤ .01; \*\*\*p ≤ .001.

as the primary diagnosis,  $\chi^2(3, N = 314) = 39.0, p \leq .001$ . Differences between the two studies in type of dementia diagnosis may be due to a higher reliance on the local chapter of the Alzheimer's Association for recruitment in Study 2.

#### Procedure

Study 2 data used in this article were collected in a face-to-face administration with an additional packet of self-report psychosocial measures returned by mail. Because research has demonstrated participant-selection biases in caregiver studies conducted in university and medical settings (Dura & Kiecolt-Glaser, 1990), all data were collected in participants' homes or a location of their choice.

#### Measures

**Scale for Caregiving Self-Efficacy.**—The same pool of 51 items used in Study 1 was also administered orally and face-to-face in Study 2. To establish test-retest reliability, the first 100 participants were reassessed with the Scale for Caregiving Self-Efficacy 2 weeks after the first assessment. The entire sample was not assessed twice because of the costs of conducting additional administrations; this means that the lower sample size for Time 2 data does not reflect participants' refusing to participate in a second testing session. All participants who were asked to complete a second testing session agreed to do so and were assessed.

**Dementia diagnosis.**—The approach in Study 2 for determining dementia diagnosis and severity of cognitive impairment was the same as the approach used in Study 1.

**Psychosocial measures.**—Demographic information and trait anger were measured in a process identical to the measurement of these constructs in Study 1. Depression was measured with the 13-item BDI-SF (Beck & Beck, 1972; Beck, Rial, & Rickels, 1974). Use of the short form is supported by Scogin, Beutler, Corbishley, and Hamblin's (1988) findings of adequate internal reliability, criterion

group validity, and diagnostic sensitivity when used with depressed and nondepressed older adults. Because depression was assessed differently in the two samples, Study 2 depression scores were converted by prorating them before they were compared with Study 1 depression scores. Self-reported anxiety was assessed with the brief version of the Multiple Affect Adjective Checklist (MAACL)-Anxiety Subscale (Zuckerman & Lubin, 1965). In a review of measures for assessing affect in older adults, the MAACL was shown to have adequate internal and test-retest reliability (Gallagher, 1987). Perceptions of the availability of social support from family were assessed with the Perceived Social Support-Family Scale (Procidano & Heller, 1983). This measure has a distinct advantage over the social support measurement strategy used in Study 1 in that items are specific to families, who are most likely to assist with respite needs. Items reflect perceived support across a variety of domains (e.g., "My family gives me the moral support I need," "Members of my family are good at helping me solve problems," etc.). To expand variability and prevent ceiling effects, the original response options of "yes" or "no" were replaced with a rating scale from 1 (never) to 5 (always). Psychometric characteristics of this scale when used with older adults have not yet been established. Data presented in Table 5 indicate that all psychosocial measures had adequate internal consistency when used in Study 2. Because of high skewness, the trait anger score and the prorated BDI-SF were each transformed using a logarithmic function before being used in analyses.

**Five Minute Speech Samples.**—The construct of expressed emotion (EE) developed out of family-interaction research examining the role of family environment on schizophrenia. As an index combining criticism and emotional overinvolvement, expressed emotion ratings of family members can be obtained from The Five Minute Speech Sample (FMSS). Unlike the original Camberwell Family Interview (Vaughn & Leff, 1976), examiners do not have to be trained in the coding system to administer the FMSS task (Magana et al., 1986). Interrater reliability for the FMSS coding pro-

Table 5. Means, Standard Deviations, Ranges, Internal Consistency, and Correlations Between Self-Efficacy (SE) Subscales and Psychosocial Variables (Study 2;  $N = 145$ )

Variable	1	2	3	4	5	6	7
1. SE-Obtaining Respite	—						
2. SE-Responding to Behaviors	.16	—					
3. SE-Controlling Upsetting Thoughts	.18*	.43***	—				
4. Short Form Beck Depression Inventory	<b>-.38***</b>	<b>-.34***</b>	<b>-.38***</b>	—			
5. Spielberger's Trait Anger	-.04	<b>-.45***</b>	-.31***	.25**	—		
6. MAACL Anxiety-brief	-.24**	-.20*	<b>-.37***</b>	.52***	.20*	—	
7. Perceived social support-family	<b>.47***</b>	.08	.10	-.30***	-.10	-.15	—
<i>M</i>	56.8	71.6	69.4	5.0	16.9	4.3	68.8
( <i>SD</i> )	(29.1)	(19.5)	(19.8)	(4.2)	(4.9)	(2.8)	(15.8)
Skewness	-.28	-.40	-.69	1.3	1.1	.31	-.49
Kurtosis	-.84	-.64	.09	2.0	2.1	-.80	.02
Range	0-100	22-100	4-100	0-22	10-38	0-10	22-100
Cronbach's alpha	.85	.82	.85	.82	.83	.80	.74

Note: MAACL = Multiple Affect Adjective Checklist. Entries in bold confirm hypotheses.

\* $p \leq .05$ ; \*\* $p \leq .01$ ; \*\*\* $p \leq .001$ .

cedures has been generally strong, with  $\kappa$ s ranging from .84 to 1.0 for the majority of raters (Leeb et al., 1991). Research has shown a reasonably high correspondence (75% agreement) between the Camberwell Family Interview and the FMSS (Magana et al., 1986). The FMSS coding system has been used in studies with a variety of populations, including families of patients with schizophrenia (Hahlweg et al., 1989; Magana et al., 1986), unipolar depression (Fiedler, Leeb, Ernst, & Kohlhoff, 1994), bipolar mood disorder (Miklowitz, Goldstein, Neuchterlein, Snyder, & Mintz, 1988), eating disorders (Van Furth, Van Strien, Van Son, & Van Engeland, 1993), head injury (Jacobs, 1990), and Alzheimer's disease (Vitaliano, Becker, Russo, Magana-Amato, & Maiuro, 1989; Vitaliano, Young, Russo, Romano, & Magana-Amato, 1993). Vitaliano and colleagues (1989) used the FMSS in their research with spousal caregivers of Alzheimer's patients and found that high EE ratings in caregivers were associated with more depression, more burden, and less anger control. Dementia caregivers' EE ratings were relatively stable (82%) over 15 to 18 months, were strongly linked to the ratings of criticisms in the speech sample, and were predictive of increased negative behaviors in the dementia patient over time (Vitaliano et al., 1993). On the basis of these findings, we obtained 5-min speech samples in the present study to examine criticism ratings and their relationship with self-efficacy.

At the beginning of the initial assessment session, each caregiver was audiotaped for 5 min while describing her or his family member who has dementia. The specific instructions were identical to those described by Magana-Amato (1998) and consisted of the following script:

I'd like to hear your thoughts about your [relative] in your own words and without my interrupting you with any questions or comments. When I ask you to begin, I'd like you to speak for 5 minutes, telling me what kind of person your [relative] is and how the two of you get along together. After you have begun to speak, I prefer not to answer any questions. Are there any questions you would like to ask before we begin?

The audiotapes and typed transcriptions for the speech samples of the 100 caregivers participating in both assessment times were sent to the University of California, Los Angeles, Family Project, which is the laboratory with the most expertise in the FMSS coding system. The entire sample was not coded because of the financial costs of having the samples rated at an outside laboratory. Eight of the audiotapes sent for rating were not coded for a variety of reasons, including poor audio quality ( $n = 4$ ), sample length not sufficiently long (i.e., caregiver stopped speaking after 2 to 3 min;  $n = 2$ ), and administrator gave improper instructions ( $n = 2$ ). This resulted in a subset of 92 samples that were rated in five categories: initial statement, relationship, criticism, dissatisfaction, and emotional overinvolvement.

On the basis of Hahlweg and colleagues' (1989) and Vitaliano and colleagues' (1993) findings of a strong relationship between criticism ratings and patients' behaviors, high critical subgroup (Crit) ratings and borderline critical (b/Crit) ratings were specifically examined in the current study. In accordance with FMSS coding procedures, caregivers were placed in a Crit subgroup if they had any one of the following: a negative initial statement, a negative relationship rating, or one or more criticisms on the basis of tone and/or content. Caregivers were placed in the b/Crit subgroup if they had one or more statements of dissatisfaction with the relative's unfavorable behaviors or characteristics (i.e., statements of dissatisfaction are not harsh enough to meet the criticism criteria). Caregivers were placed in the low critical subgroup if they met none of the above criteria. In the current study, the Crit and b/Crit subgroups were combined into one group; this was based on recommendations in the FMSS manual indicating that b/Crit and Crit subgroups may be combined when coding individuals who are reluctant to express strong attitudes about their relatives (Magana-Amato, 1998). This particularly fits with our experience of dementia caregivers. Analyses conducted in the present study compare caregivers in the Crit-b/Crit subgroup to those in the low criticism subgroup. A single rater conducted ratings used in the present study. However, a reliability check for all subgroup ratings by this rater and the author of the FMSS man-

ual resulted in perfect interrater reliability ( $\kappa = 1.0$ ; S. A. Zaden, personal communication, May 27, 1999).

### Hypotheses

As in Study 1, we tested two levels of hypotheses, covering psychometric and construct validity aspects of scale development. Psychometrically, we expected to be able to replicate the factor structure that was found using Study 1 data, resulting in the identification of three subscales with adequate internal consistency and test-retest reliability. The same relationships anticipated in Study 1 as supporting construct validity (i.e., between the self-efficacy subscales and measures of depression, anger, anxiety, and social support) were also expected in Study 2. In addition, we wanted to use a multimethod approach (Campbell & Fiske, 1959) to demonstrate construct validity. We hypothesized that caregivers placed in the Crit-b/Crit subgroup on the basis of their 5 min speech samples would have lower scores for SE-Responding to Disruptive Patient Behaviors and SE-Controlling Upsetting Thoughts than would caregivers in the low critical subgroup.

### RESULTS

#### Factor Analysis

The 15 self-efficacy items selected in Study 1 were examined with Study 2 data. Table 3 displays the eigenvalues and proportion of variance for the three identified factors and the factor loadings for individual items. The same oblique analysis strategy used in Study 1 resulted in a very similar factor structure for Study 2 data. Although the factor loading for the last item of the SE-Responding to Disruptive Patient Behaviors subscale just meets the .30 criteria for inclusion, it was retained in the final version to enhance the subscale's ability to reflect a range of caregiving experiences.

A structural equations approach to confirmatory factor analysis was also used to examine the relative fit of the simple three-factor solution to Study 2 data. The model that was tested specified three factors, with each item loading on one factor only. Several indices were examined to evaluate the fit of the structural model. A value of less than 3.0 for a chi square divided by its degrees of freedom (Carmines & McIver, 1981) is a commonly used indication of adequate fit. In the current model, this index was  $\chi^2(138.62)/df(87) = 1.59$ , which was clearly in the acceptable range of values. As a more conservative estimate, Bentler's comparative fit index (CFI) was used. This index has several advantages over other indexes: a 0 to 1 range, a small sampling variability, and the ability to estimate the relative difference in noncentrality of interest (Bentler, 1990). A Bentler CFI of .90 or greater is viewed as supportive of an adequate fit; the CFI for Study 2 data was .93. Finally, we examined the *t* values for the factor loadings; these values were all significant, with coefficients ranging from 3.7 to 13.3. The mean *t* value for the factor loadings was 9.0. In total, these results support the three-factor solution for the 15 self-efficacy items.

#### Distributions and Reliability

The psychometric characteristics of the three self-efficacy subscales using Study 2 data are shown in Table 5, along with information about the measures of depression,

anger, anxiety, and social support. In a pattern similar to that found in Study 1, the self-efficacy subscales showed strong internal consistency. Two-week test-retest reliability scores for the subscales were obtained in Study 2 (SE-Obtaining Respite:  $r_{12} = .76$ , SE-Responding to Disruptive Patient Behaviors:  $r_{12} = .70$ , SE-Controlling Upsetting Thoughts:  $r_{12} = .76$ ). These reliability coefficients are in the acceptable range, especially given our view of self-efficacy as different than global, traitlike constructs.

#### Convergent and Discriminant Validity

*Relationships with depression, anger, anxiety, and social support.*—Strong support for convergent and discriminant validity was found with data from Study 2, as can be seen in Table 5. The correlations that confirm the hypothesized patterns are given in bold. The magnitudes of the obtained correlations correspond to the hypothesized patterns: Anxiety, depression, and anger accompany the various facets of perceived self-efficacy, operating in concert. Although depression was significantly related to all three self-efficacy subscales, anger was most related to SE-Responding to Disruptive Patient Behaviors and anxiety was closely associated with SE-Controlling Upsetting Thoughts. The perceived efficacy to gain relief from the emotional strain of caregiving largely by social means was also uniquely related to perceived social support.

*Relationship between self-efficacy subscales and speech samples.*—Using independent sample *t* tests, caregivers in the Crit-b/Crit group ( $n = 34$ ) were compared with caregivers in the low criticism group ( $n = 58$ ) on their self-efficacy subscales. As predicted, Crit-b/Crit caregivers were significantly lower on SE-Responding to Disruptive Behaviors,  $t(90) = 3.61$ ,  $p \leq .001$ , and on SE-Controlling Upsetting Thoughts,  $t(90) = 2.14$ ,  $p \leq .05$  than were caregivers in the low criticism group. As anticipated, the two groups did not differ on SE-Obtaining Respite scores,  $t(90) = .38$ ,  $p = .72$ . Group means for the three self-efficacy subscales are displayed in Table 6.

*Concurrent validity.*—Responses from participants in the two studies were compared with each other as a final method of documenting construct validity. Caregivers in Study 1 were responding to an initial assessment before participating in an intervention study for distressed caregivers. Participants in Study 2, however, were not involved in a

Table 6. Relationship Between Self-Efficacy (SE) Subscales and Expressed Emotion (EE) Critical Ratings (Study 2;  $n = 92$ )

EE Critical Subgroups	SE for Obtaining Respite		SE for Responding to Disrupting Patient Behaviors		SE for Controlling Upsetting Thoughts	
	M	SD	M	SD	M	SD
High/borderline ( $n = 33$ )	58.3	30.8	62.8	21.1**	65.8	17.2*
Low ( $n = 59$ )	60.6	27.1	78.4	18.6	74.1	18.5

\*Differs from Low group at  $p < .05$ ; \*\*differs from Low group at  $p < .001$ .

treatment study and were expected to show less emotional distress. These differences are supported by the significant differences in depression scores for the two samples, shown in Table 1. It would be expected, therefore, that caregivers in Study 1 would report lower levels of self-efficacy for caregiving in the three domains measured by this scale. Results from a multivariate analysis of variance support this hypothesis,  $F(1,275) = 9.36, p \leq .001$ . Univariate results showed that participants in Study 1 had lower scores than Study 2 caregivers on all three subscales: SE-Obtaining Respite (Study 1:  $M = 49.8, SD = 30.6$ ; Study 2:  $M = 57.5, SD = 29.0$ ), SE-Responding to Disruptive Behaviors (Study 1:  $M = 59.3, SD = 21.8$ ; Study 2:  $M = 72.2, SD = 19.5$ ), SE-Controlling Upsetting Thoughts (Study 1:  $M = 62.0, SD = 23.6$ ; Study 2:  $M = 69.0, SD = 20.2$ ).

#### *Revised Scale for Caregiving Self-Efficacy*

The revised version of the measure, including administration instructions, is presented in the Appendix. Items are administered in order of the average difficulty level within each subscale, arranged from easiest to most difficult. This order was determined by combining the responses of participants in both studies in an attempt to reflect a population of caregivers experiencing a broad range of psychosocial distress. For the purpose of this article, the average confidence level and standard deviation are shown following each item, reflecting the mean response for this pooled sample ( $N = 314$ ). These mean confidence levels would not appear on a copy of the measure as it is used with actual caregivers. We strongly believe that this scale should be administered by an interviewer because of the complexity of the task and the need to evaluate caregivers' understanding of the concepts involved. We do not advocate administering this scale in a self-report, paper-and-pencil style, and have no reliability or validity data supporting that form of scale administration.

#### **General Discussion**

The literature on caregiving for a family member with dementia has clearly documented that many individuals find this role emotionally and physically challenging (Schulz, O'Brien, Bookwala, & Fleissner, 1995; Schulz, Visintainer, & Williamson, 1990). Self-efficacy has been suggested as an important construct in understanding individuals' reactions to caregiving-related stressors. Results of the present study support the use of the Revised Scale for Caregiving Self-Efficacy as an assessment tool in clinical and research settings. This measurement strategy offers a simple, effective way to assess caregiver self-efficacy that improves on both the original measures by Zeiss and colleagues (1999) and the work by Gignac and Gottlieb (1996).

A growing body of evidence from studies conducted with children and young adults shows that a high sense of coping efficacy, measured naturally or varied experimentally, reduces vulnerability to anxiety and depression (Bandura, 1997; Bandura, Pastorelli, Barbaranelli, & Caprara, 1999; Bandura et al., 1985; Cutrona & Troutman, 1986; Major et al., 1985; Olioff & Aboud, 1991). The present study extends this finding to middle-aged and elderly individuals coping with taxing interpersonal stressors. In contrast to the global,

omnibus measures of perceived caregiving competence and personal mastery used by Aneshensel and associates (1995) in their study of caregivers, the current scale provides information about a differentiated set of self-beliefs related to specific areas of functioning.

When caregivers face caregiving demands, those with low self-efficacy beliefs focus on negative aspects of the situation, including their personal deficiencies, the difficulties of the task, and the negative consequences of failure. We had proposed that individuals scoring lower on self-efficacy for obtaining respite would report less availability of help from family. In the present study, perceived self-efficacy to gain respite from the pressures of caregiving was related to perceived social support. Social cognitive theory posits a bi-directional relationship between perceived coping efficacy and social support (Bandura, 1997). Indeed, the evidence shows that perceived social efficacy fosters the development of supportive relationships (Holahan & Holahan, 1987) and social support enhances perceived self-efficacy (Cutrona & Troutman, 1986; Major et al., 1985). This is supported by the relationship found between low self-efficacy for obtaining respite and perceived support from family. As anticipated, the measurement of perceived social support from family in Study 2 was a more successful measure of support than Study 1's tally of number of people perceived to be available for assistance.

Focus on negative cognitions reduces motivation to initiate an activity, affects task persistence, and leads to negative affective states including depression, anxiety, and anger (Bandura, 1997). The extension of self-efficacy theory to the exercise of control over perturbing ideation and regulation of anger adds new knowledge regarding affect regulation. As predicted, confidence in one's ability to calmly respond to patient interruptions was negatively associated with anger levels, and confidence in the ability to control worry was linked to lower anxiety. Although we were unable to test the directions of causality, we would expect bi-directional links between these efficacy beliefs and affective reactions. On one hand, higher general levels of anger and anxiety may lead to lower evaluations of these specific efficacy domains in several ways: (a) by activating selective recall of mood-congruent memories (Schwartz & Clore, 1988) and (b) by providing an affective context the individual uses to judge likelihood of success (i.e., the individual may consider how she or he has performed in the past when angry or anxious). On the other hand, lower efficacy beliefs for calmly responding to disruptive behaviors and controlling anxious thoughts may also lead to increased anger and anxiety, respectively, over time. Self-efficacy theory suggests that low self-efficacy in these domains leads the caregiver to either not initiate or not persist in the use of behavioral coping strategies such as relaxation and engaging in pleasant events. These strategies have demonstrated effectiveness in treating depression, anxiety, and anger. Low self-efficacy may also decrease the likelihood of the caregiver using cognitive coping strategies such as challenging and replacing distorted thoughts; these strategies have also been effective in reducing negative affect.

Efficacy beliefs can be developed by four major sources of influence: guided performance mastery experiences, vi-

curious transmission of competencies and social comparison suggesting that one has what it takes to succeed, persuasive communications that one possesses certain capabilities, and alteration of physiological states and reactions or reinterpretation of them (Bandura, 1997). Although any of these types of influences can affect self-efficacy beliefs, personal-mastery experiences have been shown to have the greatest impact (Bandura, 1997). In addition to being of use for research purposes, it is our hope that the Revised Scale for Caregiving Self-Efficacy will also be of use to clinicians in selecting intervention strategies for caregivers. The information obtained from the three subscales can lead to an understanding of the relative strengths and skill deficits of caregivers and can point to the need to target specific caregiving skills and domains. Optimal performance involves both skills and the efficacy beliefs to use the skills. Interventions that allow individuals the opportunity to develop skills and practice them in their actual caregiving environment have the highest likelihood of success (Bandura, 1997).

Despite differences in the two samples, the instrument performed very consistently in terms of internal reliability and construct validity. Those participating in Study 1 differed from Study 2 participants in demographic characteristics (i.e., gender, age, and education), mental health (i.e., depression), and caregiving-related indexes (i.e., length of time as a caregiver, type of dementia diagnosis). We would argue that these differences in the two samples are a substantial strength of the study, rather than a limitation. The fact that the internal consistency and factor structures of the efficacy scales were so similar for two different samples adds to the generalizability of the findings. In both studies, the SE-Obtaining Respite subscale also showed a weaker relationship with the two other subscales. It is not surprising that SE-Responding to Disruptive Patient Behaviors and SE-Controlling Upsetting Thoughts were more highly correlated, because they both assess an ability to regulate emotional responses. Calmly reacting to disruptive behaviors requires a greater need to regulate anger, and the items assessed in the Controlling Upsetting Thoughts subscale reflect an ability to regulate anxious reactions. Likewise, it is not surprising that the test-retest reliability coefficients for the three subscales were acceptable but not extremely high. Efficacy beliefs are substantially different than the concept of personality traits and can vary in their sensitivity to recent experiences and contextual factors. A number of factors can lead to revisions in efficacy beliefs, causing less temporal stability (Bandura, 1997). Although showing enough temporal stability to justify use as an outcome measure, the subscales show the expected variability of an instrument that is sensitive to context.

We are also struck by the similarity of relationships from the two studies that support construct validity. Although some constructs (i.e., anger, depression) were assessed in both studies with the same measures, other constructs (i.e., anxiety, social support) were assessed using different measures. Again, the self-efficacy subscales showed the hypothesized convergent and discriminant relationships among the other constructs, despite these differences in sample characteristics and measurement approaches. Multitrait-multimethod strategies (Campbell & Fiske, 1959) have long been

advocated as perhaps the best way to demonstrate construct validity. For practical reasons, we were not able to fully cross construct (i.e., self-efficacy, anger, depression, anxiety, coping, and social support) with method (e.g., face-to-face, self-administered, audiotaped speech samples). We were, however, able to show that the three subscales of the Revised Scale for Caregiving Self-Efficacy administered orally were differentially related to other face-to-face measures, self-report measures, and the speech samples coded for criticism.

A notable weakness of the present study was the smaller proportions of male caregivers and African American caregivers. Sample sizes did not permit an examination of structural characteristics or reliability or validity analyses for male or non-Caucasian caregivers. The latter is important because of findings that African American caregivers report less subjective burden, greater caregiving satisfaction, and less perceived intrusion on their lives (Lawton, Rajagopal, Brody, & Kleban, 1992). Caregiving self-efficacy may result in better distributions (i.e., fewer ceiling and floor effects) than assessment of psychological distress, and thus provide a more sensitive assessment of intervention outcomes for African American caregivers.

The present data support the use of this measure when administered in an interview. Given the complexity of the measure and our experience that some caregivers require clarification, we do not advocate using a self-administered format for this measure. In a self-administered format, it is impossible to determine if caregivers have a full understanding of the instructions for making efficacy judgements, including the importance of honestly appraising current beliefs, using the full range of rating options, and understanding the intent of each item. Without the feedback and assistance provided in an interview, caregivers may have difficulty understanding the nature of the Controlling Upsetting Thoughts subscale and resort to rating the frequency of negative cognitions rather than their ability to control them. Future work is needed to investigate the reliability of the measure when administered in telephone interviews.

#### ACKNOWLEDGMENTS

This work was supported by Grant MH-43407 from the National Institute of Mental Health and Grant ALZ-TRG98 from the National Alzheimer's Association.

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Received March 1, 1999

Accepted October 8, 1999

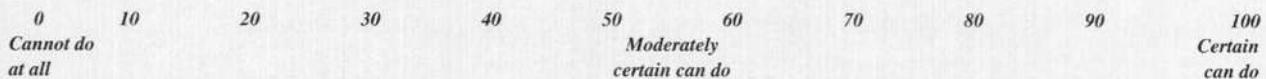
Decision Editor: Toni C. Antonucci, PhD

## Appendix

### *Administration Guidelines for the Revised Scale for Caregiving Self-Efficacy (2002)*

**Instructions:**

*"We are interested in how confident you are that you can keep up your own activities and also respond to caregiving situations. Please think about the questions carefully, and be as frank and honest as you can about what you really think you can do. I will read items which cover activities and thoughts that could come up for you as a caregiver. Please think about each one and tell me how confident you are that you could do each item. Rate your degree of confidence from 0 to 100 using the scale given below:*

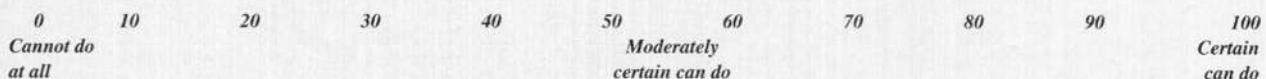


*For example, a rating of 20% confidence means that it is unlikely, but not totally out of the question for you to be able to perform the activity. A rating of 100% means that you are absolutely certain that you could perform the activity whenever you wished. A 50% confidence rating would mean that if you gave it your best effort, chances are about 50-50 that you could perform the activity. You can use any score between 0 and 100 (10, 20, 30, etc.) to express your confidence.*

*\*\*\*\*Please make all your ratings based on what you could do TODAY as the person you are NOW rather than on the person you used to be or the person you would like to be. Just rate how you think you would do as you are TODAY. Do you have any questions?"*

**A. PRACTICE RATING**

To familiarize caregiver with the rating form, please complete this practice item first. (Display Card #1)



*"If you were asked to lift objects of different weights right now, how confident are you that you can lift each of the weights described?"*

**Administrator:** Read the words "How confident are you that you can..." before every item.

**PHYSICAL STRENGTH**
**CONFIDENCE (0-100)**

1. Lift a 10 pound object \_\_\_\_\_
2. Lift a 20 pound object \_\_\_\_\_
3. Lift a 50 pound object \_\_\_\_\_
4. Lift a 100 pound object \_\_\_\_\_

**"How confident are you that you can do the following activities?"** (If necessary, say "If this is absolutely not applicable to your situation, let me know." Then put N/A). Read "How confident are you that you..." in every item; place this phrase just before the word "can" in the item. (Display Card #1)

**Self-Efficacy for Obtaining Respite**

- \_\_\_\_ 1. ...Can ask a friend/family member to stay with \_\_\_\_ for a day when you need to see the doctor yourself? ( $M = 71.4, SD = 34.4$ )
- \_\_\_\_ 2. ...Can ask a friend/family member to stay with \_\_\_\_ for a day when you have errands to be done? ( $M = 63.1, SD = 37.1$ )
- \_\_\_\_ 3. ...Can ask a friend or family member to do errands for you? ( $M = 62.4, SD = 36.2$ )
- \_\_\_\_ 4. ...Can ask a friend/family member to stay with \_\_\_\_ for a day when you feel the need for a break? ( $M = 57.1, SD = 37.8$ )
- \_\_\_\_ 5. ...Can ask a friend/family member to stay with \_\_\_\_ for a week when you need the time for yourself? ( $M = 27.4, SD = 36.2$ )

**Self-Efficacy for Responding to Disruptive Patient Behaviors**

- \_\_\_\_ 6. When \_\_\_\_ forgets your daily routine and asks when lunch is right after you've eaten, ... can answer him/her without raising your voice? (clarify that "answer" can be direct or a distraction.) ( $M = 74.4, SD = 25.9$ )
- \_\_\_\_ 7. When you get angry because \_\_\_\_ repeats the same question over and over, ... can say things to yourself that calm you down? ( $M = 65.8, SD = 25.4$ )
- \_\_\_\_ 8. When \_\_\_\_ complains to you about how you're treating him/her, ... can respond without arguing back? (e.g., reassure or distract him/her?) ( $M = 62.9, SD = 25.2$ )
- \_\_\_\_ 9. When \_\_\_\_ asks you 4 times in the first one hour after lunch when lunch is, ... can answer him/her without raising your voice? ( $M = 59.4, SD = 29.8$ )
- \_\_\_\_ 10. When \_\_\_\_ interrupts you for the fourth time while you're making dinner, ... can respond without raising your voice? ( $M = 58.7, SD = 29.7$ )

*"All caregivers sometimes have negative thoughts about their situation. Some thoughts may be brief and easy to get rid of. Other times, thoughts may be hard to put out of your mind, just like a silly tune is sometimes hard to get out of your mind. We would like to know how well you can turn off any of the following thoughts. Use the same confidence rating. Don't be concerned about how often the thoughts come up. We want you to rank your confidence that you can turn off or get rid of each type of thought when it does come up."*

(Administrator: When caregivers state that they have absolutely never had the thoughts in one of the items, put "N/A" (not applicable) on the line for rating confidence. Begin each item with the phrase, "How confident are you that you can control. . ." Display Card #1.)

**Self-Efficacy for Controlling Upsetting Thoughts about Caregiving**

- \_\_\_\_ 11. ...Thinking about unpleasant aspects of taking care of \_\_\_\_? ( $M = 68.5, SD = 25.4$ )
- \_\_\_\_ 12. ...Thinking how unfair it is that you have to put up with this situation (taking care of \_\_\_\_)? ( $M = 67.9, SD = 30.6$ )
- \_\_\_\_ 13. ...Thinking about what a good life you had before \_\_\_\_'s illness and how much you've lost? ( $M = 67.5, SD = 28.2$ )
- \_\_\_\_ 14. ...Thinking about what you are missing or giving up because of \_\_\_\_? ( $M = 66.0, SD = 25.2$ )
- \_\_\_\_ 15. ...Worrying about future problems that might come up with \_\_\_\_? ( $M = 55.8, SD = 29.6$ )

# 6

## THE ROLE OF SELECTIVE MORAL DISENGAGEMENT IN TERRORISM AND COUNTERTERRORISM

ALBERT BANDURA

Self-sanctions play a central role in the regulation of inhumane conduct. In the course of socialization, people adopt moral standards that serve as guides and deterrents for conduct. After personal control has developed, people regulate their actions by the sanctions they apply to themselves. They do things that give them self-satisfaction and a sense of self-worth. They refrain from behaving in ways that violate their moral standards because such behavior brings self-condemnation. Self-sanctions thus keep conduct in line with internal standards.

However, moral standards do not function as fixed internal regulators of conduct. Self-regulatory mechanisms do not operate unless they are acti-

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Some sections of this chapter include revised, updated, and expanded material from the following two sources:

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall. Copyright 1986 by Prentice Hall. Adapted with permission.

Bandura, A. (1990). Mechanisms of moral disengagement. In W. Reich (Ed.), *Origins of terrorism: Psychologies, ideologies, theologies, states of mind* (pp. 161-191). Cambridge, England: Cambridge University Press. Copyright 1990 by Cambridge University Press. Adapted with perm

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Bandura, A. (2004). The role of selective moral disengagement in terrorism and counterterrorism. In F. M. Mogahaddam & A. J. Marsella (Eds). *Understanding terrorism: Psychological roots, consequences and interventions* (pp. 121-150). Washington, DC: American Psychological Association Press.

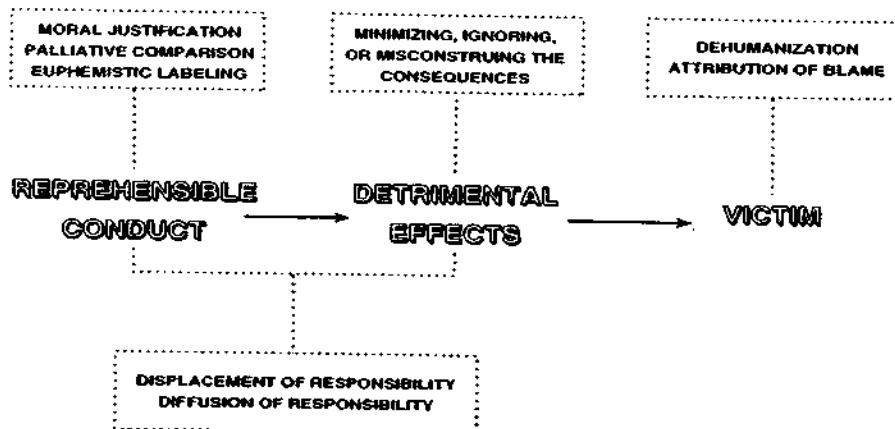
vated, and there are many psychological processes by which control reactions can be disengaged from inhumane conduct (Bandura, 1986). Selective activation and disengagement of moral self-sanctions permit different types of conduct despite the same moral standards. Figure 6.1 shows the locus in the process of moral control at which moral self-censure can be disengaged from reprehensible conduct. The disengagement may center on redefining harmful conduct as honorable by moral justification, exonerating social comparison, and sanitizing language. It may focus on agency of action so that perpetrators can minimize their role in causing harm by diffusion and displacement of responsibility. It may involve minimizing or distorting the harm that flows from detrimental actions. The disengagement may include dehumanizing the victims and blaming them for bringing the suffering on themselves.

The way in which these moral disengagement practices operate in the perpetration of inhumanities is analyzed in detail in later sections of this chapter.

These psychosocial mechanisms of moral disengagement have been examined most extensively in the area of political and military violence. This limited focus tends to convey the impression that selective disengagement of moral self-sanctions occurs only under extraordinary circumstances. Quite the contrary. Such mechanisms operate in everyday situations in which decent people routinely perform activities that further their interests but have injurious effects on others. Self-exoneration are needed to eliminate self-prohibitions and self-censure. This chapter analyzes how the mechanisms of moral disengagement function in terrorist operations.

Terrorism is a strategy of violence designed to promote desired outcomes by instilling fear in the public at large (Bassiouni, 1981). Public intimidation is a key element that distinguishes terrorist violence from other forms of violence. Unlike the customary violence in which victims are personally targeted, in terrorism the victims are incidental to the terrorists' intended aims, and the violence is used mainly as a way to provoke social conditions designed to further broader aims.

Several features of terrorist acts give power to a few incidents to induce widespread public fear that vastly exceeds the objective threat. The first terrorizing feature is the unpredictability of who will be targeted and when or where a terrorist act will occur. The second feature is the gravity of terrorist acts that maim and kill. With the magnified lethality of the weapons technology, terrorists can now wreak destruction on a massive scale. A third feature of terrorist acts that render them so terrorizing is the sense of uncontrollability that they instill. The fourth feature that contributes to a sense of personal and societal vulnerability is the high centralization and interdependence of essential service systems in modern life. A single destructive act that knocks out communications, transportation, and power systems and damages safe water and food supplies can instantly frighten and harm



*Figure 6.1. Mechanism through which moral self-sanctions are selectively activated and disengaged from detrimental behavior at different points in the self-regulatory process. From *Social Foundations of Thought and Action: A Social Cognitive Theory* (p. 376), by A. Bandura, 1986, Englewood Cliffs, NJ: Prentice Hall. Copyright 1986 by Prentice Hall. Reprinted with permission.*

vast numbers of people. The combination of unpredictability, gravity, vulnerable interdependence, and perceived self-inefficacy is especially intimidating and socially constraining (Bandura, 1990).

In coping with problems of terrorism, societies are faced with a dual task. The first is how to reduce terrorist acts; the second is how to combat the fear they arouse. Because the number of terrorist acts is small, the widespread public fear and the intrusive and costly security countermeasures pose the more serious problems. Utilitarian justifications can readily win the support of a frightened public for curtailment of civil liberties and violent counter-terrorist measures. A frightened and angered citizenry does not spend much time agonizing over the morality of lethal modes of self-defense.

The term *terrorism* is often applied to violent acts that dissident groups direct surreptitiously at officials of regimes to force social or political changes. So defined, terrorism becomes indistinguishable from straightforward political violence. Particularized threats are certainly intimidating to the martial and political figures who are personally targeted for assassination and create some apprehension over destabilizing societal effects. However, such threats do not necessarily terrify the general public as long as ordinary civilians are not targeted. As I show later, terrorist tactics relying on public intimidation can serve other purposes as well as serve as a political weapon.

From a psychological standpoint, third-party violence directed at innocent people is a much more horrific undertaking than political violence in which political figures are personally targeted. It is easier to get individuals who harbor strong grievances to kill hated political officials or to abduct

advisors and consular staffs of foreign nations that are alleged to support oppressive regimes. However, to cold-bloodedly slaughter innocent women and children in buses, department stores, and airports requires more powerful psychological machinations of moral disengagement. Intensive psychological training in moral disengagement is needed to create the capacity to kill innocent human beings as a way of toppling rulers or regimes or of accomplishing other political goals.

## MORAL JUSTIFICATION

One set of disengagement practices operates on the construal of the behavior itself. People do not ordinarily engage in reprehensible conduct until they have justified to themselves the morality of their actions. In this process, destructive conduct is made personally and socially acceptable by portraying it as serving socially worthy and moral purposes. People then act on a moral imperative. Moral justification sanctifies violent means.

Radical shifts in destructive behavior through moral justification are most strikingly revealed in military conduct. People who have been socialized to deplore killing as morally condemnable can be rapidly transformed into skilled combatants, who may feel little compunction at and even a sense of pride in taking human life. Moral reconstrual of killing is dramatically illustrated in the case of Sergeant York, one of the phenomenal fighters in the history of modern warfare (Skeyhill, 1928). Because of his deep religious convictions, he registered as a conscientious objector, but his numerous appeals were denied. At camp, his battalion commander quoted chapter and verse from the Bible to persuade him that under appropriate conditions it was Christian to fight and kill. A marathon mountainside prayer finally convinced him that he could serve both God and country by becoming a dedicated fighter.

The conversion of socialized people into dedicated fighters is achieved not by altering their personality structures, aggressive drives, or moral standards. Rather, it is accomplished by cognitively redefining the morality of killing, so that it can be done free from self-censuring restraints. Through moral sanction of violent means, people see themselves as fighting ruthless oppressors who have an unquenchable appetite for conquest or as protecting their cherished values and way of life, preserving world peace, saving humanity from subjugation to an evil ideology, and honoring their country's international commitments.

Over the centuries, much destructive conduct has been perpetrated by ordinary, decent people in the name of righteous ideologies, religious principles, and nationalistic imperatives (Kramer, 1990; Rapoport & Alexander, 1982; Reich, 1990/1998). Throughout history countless people have suffered

at the hands of self-righteous crusaders bent on stamping out what they considered evil. Voltaire put it well when he said, "Those who can make you believe absurdities, can make you commit atrocities." Adversaries sanctify their militant actions but condemn those of their antagonists as barbarity masquerading under a mask of outrageous moral reasoning. Each side feels morally superior to the other. Acting on moral or ideological imperatives reflects a conscious offense mechanism, not an unconscious defense mechanism.

The politicization of religion has a long and bloody history. In holy terror, perpetrators twist theology and see themselves as doing God's will. In 1095, Pope Urban II launched the Crusades with the following impassioned moral proclamation: "I address those present, I proclaim it, to those absent, Christ commands it. For all those going thither, there will be remission of sins if they come to the end of this fettered life." He then dehumanized and beastialized the Muslim enemies: "What a disgrace if a race so despicable, degenerate, and enslaved by demons, should overcome a people endowed with faith in Almighty God and resplendent in the name of Christ! Let those who once fought against brothers and relatives now rightfully fight against the barbarians under the guidance of the Lord."

Islamic extremists mount their jihad, construed as self-defense against tyrannical, decadent infidels who seek to enslave the Muslim world. Bin Laden ennobled his global terrorism as serving a holy imperative (Borger, 2001; Ludlow, 2001): "We will continue this course because it is part of our religion and because Allah, praise and glory be to him, ordered us to carry out jihad so that the word of Allah may remain exalted to the heights." In the jihad they are carrying out Allah's will as a "religious duty." The prime agency for the holy terror is thus displaced to Allah. By attribution of blame, terrorist strikes are construed as morally justifiable defensive reactions to humiliation and atrocities perpetrated by atheistic forces. "We are only defending ourselves. This is defensive jihad." By advantageous comparison with the nuclear bombing of Japan, and the toll of the Iraqi sanctions on children, the jihad takes on an altruistic appearance: "When people at the ends of the earth, Japan, were killed by their hundreds of thousands, young and old, it was not considered a war crime, it is something that has justification. Millions of children in Iraq are something that has justification." Bin Laden bestialized the American enemy as "lowly people" perpetrating acts that "the most ravenous of animals would not descend to." Terrorism is sanitized as "the winds of faith [that] have come" to eradicate the "debauched" oppressors. His followers see themselves as holy warriors who gain a blessed eternal life through their martyrdom.

Israeli prime minister Yitzhak Rabin's assassin was similarly acting on a divine mandate, using the rabbinical pursuer's decree as moral justification. In his view, those who give over their people and land to the enemy must be killed. As he explained, the killing was meant to prevent transfer of land to Palestinian control: "Maybe physically, I acted alone but what pulled the

trigger was not only my finger but the finger of this whole nation which, for 2,000 years, yearned for this land and dreamed of it."<sup>1</sup>

Paul Hill, the Presbyterian minister, also justified the killing of a doctor and his elderly assistant outside the abortion clinic as carrying out God's will: "God's law positively requires us to defend helpless people. God has used people, who are willing to die for their cause to save human life. I'm willing to do that" (see Footnote 1).

Although moral cognitive restructuring can be easily used to support self-serving and destructive purposes, it can also serve militant action aimed at changing inhumane social conditions. By appealing to morality, social reformers are able to use coercive, and even violent, tactics to force social change. Vigorous disputes arise over the morality of aggressive action directed against institutional practices. Powerholders often resist, by forcible means if necessary, pressures to make needed social changes that jeopardize their own self-interests. Such tactics provoke social activism. Challengers consider their militant actions to be morally justifiable because they serve to eradicate harmful social practices. Powerholders condemn violent means as unjustified and unnecessary because nonviolent means exist to effect social change. They tend to view resorting to violence as an effort to coerce changes that lack popular support. Finally, they may argue that terrorist acts are condemnable because they violate civilized standards of conduct. Anarchy would flourish in a climate in which individuals considered violent tactics acceptable whenever they disliked particular social practices or policies.

Challengers refute such moral arguments by appealing to what they regard as a higher level of morality derived from communal concerns. They see their constituencies as comprising all people, both at home and abroad, who are victimized either directly or indirectly by injurious institutional practices. Challengers argue that, when many people benefit from a system that is deleterious to disfavored segments of the society, harmful social practices secure widespread public support. From the challengers' perspective, they are acting under a moral imperative to stop the maltreatment of people who have no way of modifying injurious social policies because they are either outside the system that victimizes them, or they lack the social power to effect changes from within by peaceable means. Their defendants regard militant action as the only recourse available to them.

Clearly, adversaries can easily marshal moral reasons for the use of aggressive actions for social control or for social change. When viewed from divergent perspectives, violent acts are different things to different people. In conflicts of power, one person's violence is another person's selfless benevolence. It is often proclaimed that one group's criminal terrorist activity

<sup>1</sup>A copy of the newspaper article this material was extracted from is available from Albert Bandura, Department of Psychology, Stanford University, Stanford, CA 94305.

is another group's liberation movement fought by heroic freedom fighters. This is why moral appeals against violence usually fall on deaf ears.

### MORAL JUSTIFICATIONS AND THE MASS MEDIA

The mass media, especially television, provide the best access to the public because of its strong drawing power. For this reason, television is increasingly used as the principal vehicle of social and moral justifications of goals and violent means. Struggles to legitimize and gain support for one's causes, and to discredit those of one's foes, are now waged more and more through the electronic media (Ball-Rokeach, 1972).

Terrorists try to exercise influence over targeted officials and nations through intimidation of the public and arousal of sympathy for the social and political causes they espouse. Without widespread publicity, terrorist acts can achieve neither of these effects. Terrorists, therefore, coerce access to the media to publicize their grievances to the international community. They use television as the main instrument for gaining sympathy and support for their plight by presenting themselves as risking their lives for the welfare of a victimized constituency whose legitimate grievances are ignored. The media, in turn, come under heavy fire from targeted officials who regard granting terrorists a worldwide forum as aiding terrorist causes. Security forces do not like media personnel tracking their conduct, broadcasting tactical information that terrorists can put to good use, and interposing themselves as intermediaries in risky negotiation situations. Social pressures mount to curtail media coverage of terrorist events, especially while they are in progress (Bassiouni, 1981).

### ADVANTAGEOUS COMPARISON

How behavior is viewed is colored by what it is compared to. By exploiting the contrast principle, reprehensible acts can be made righteous. The more flagrant the contrasting inhumanities, the more likely it is that one's own destructive conduct would appear trifling or even benevolent. Thus, terrorists minimize their killings as the only defensive weapon they have to curb the widespread cruelties inflicted on their people under tyrannical regimes. In the eyes of their supporters, risky attacks directed at the apparatus of oppression are acts of selflessness and martyrdom. Those who are the objects of terrorist attacks, in turn, characterize their own retaliatory violence as trifling, or even laudable, by comparing it with the carnage and terror perpetrated by terrorists. In social conflicts, injurious behavior usually escalates, with each side lauding its own behavior but condemning that of its adversaries as heinous.

Advantageous comparisons also draw heavily on history to justify violence. Terrorists are quick to note that the French and Americans got their democracies through violent overthrow of oppressive rule, and the Jewish people got their homeland by paramilitary violence. Terrorists claim entitlement to the same tactics to rout those they regard as their oppressors. A former director of the CIA effectively deflected, by expedient comparison, embarrassing questions about the morality and legality of CIA-directed covert operations designed to overthrow an authoritarian regime. He explained that French covert operations and military supplies greatly aided the overthrow of oppressive British rule during the War of Independence, thereby creating the modern model of democracy for other subjugated people to emulate.

Social comparison is similarly used to show that the social labeling of acts as terrorism depends more on the ideological allegiances of the labelers than on the acts themselves. Airline hijackings were applauded as heroic deeds when East Europeans and Cubans initiated this practice, but condemned as terrorist acts when the airliners of Western nations and friendly countries were commandeered. The degree of psychopathology ascribed to hijackers varied depending on the direction of the rerouted flights. Moral condemnations of politically motivated terrorism are easily blunted by social comparison because, in international contests of power, it is hard to find nations that categorically condemn terrorism. Instead, they often back the perpetrators they like but condemn those they repudiate.

Violent countermeasures to deter terrorists from future assaults inevitably sacrifice innocent lives. Democratic societies face the fundamental moral dilemma of how to justify countermeasures that are taken to stop terrorists' atrocities without violating the values of their society in defense of those values (Carmichael, 1982). Because of many uncertain factors, the toll that counterterrorist assaults may take on innocent life is neither easily controllable nor accurately calculable in advance.

Moral justification of violent countermeasures by expedient comparison relies heavily on utilitarian principles. The task of making retaliatory violence morally acceptable from a utilitarian perspective is facilitated by two sets of judgments. First, nonviolent options are judged to be ineffective to achieve desired changes. This removes them from consideration. Second, utilitarian analyses affirm that one's injurious actions may prevent more human suffering than they cause. Curbing terrorism benefits humanity and the social order. Thus, on the assumption that fighting terror with terror will achieve a deterrent effect, it is argued that retaliatory assaults will reduce the total amount of human suffering.

As Carmichael (1982) noted, utilitarian justifications place few constraints on violent countermeasures because, in the utilitarian calculus, sacrificing the lives of some innocent persons can be greatly outweighed by halting terrorist massacres and the perpetual terrorizing of entire populations. However, the utilitarian calculus is quite slippery in specific applications.

Lethal countermeasures are readily justified in response to grave threats that inflict extensive human pain or that endanger the very survival of the society. However, the criterion of "grave threat," although fine in principle, is shifty in specific circumstances. Like most human judgments, gauging the gravity of threats involves some subjectivity. Moreover, violence is often used as a weapon against threats of lesser magnitude on the grounds that, if left unchecked, the threats may escalate to the point of extracting a heavy toll on human liberties and suffering. Gauging potential gravity involves even greater subjectivity and hence fallibility of judgment than does assessment of present danger. The future contains many uncertainties, and human judgment is subject to a lot of biases (Nisbett & Ross, 1980). Assessment of gravity prescribes the choice of options, but choice of violent options often shapes evaluation of gravity itself. Thus, projected grave dangers to the society are commonly invoked in the moral justification of violent means to squelch present objections. The perturbing appearance of national impotence in the face of terrorist acts creates additional social pressures on targeted nations to strike back powerfully.

### EUPHEMISTIC LANGUAGE

Language shapes the thought patterns on which people base many of their actions. Activities, therefore, can take on a markedly different character depending on what they are called. Euphemistic language is used widely to make harmful conduct respectable and to reduce personal responsibility for it (Lutz, 1987). Euphemizing can be an injurious weapon. People behave much more cruelly when assault actions are given a sanitized label than when they are called aggression (Diener, Dineen, Endresen, Beaman, & Fraser, 1975).

In an insightful analysis of the language of nonresponsibility, Gambino (1973) identified the different varieties of euphemisms. One form relies on sanitizing language. Through the power of sanitized language, even killing a human being loses much of its repugnancy. Soldiers "waste" people rather than kill them. What most people call bombs, the military calls "vertically deployed anti-personal devices." Bombing missions are described as "servicing the target," in the likeness of a public utility. The attacks become "clean, surgical strikes," arousing imagery of curative activities. The civilians the bombs kill are linguistically converted to "collateral damage." Many are victims of bombs that were "outside current accuracy requirements." Soldiers killed by misdirected missiles fired by their own forces are the tragic recipients of "friendly fire."

The agentless passive form serves as a linguistic device for creating the appearance that harmful acts are the work of nameless forces, rather than people (Bollinger, 1982). It is as though people are moved mechanically but are not really the agents of their own acts. Gambino further documented

how the specialized jargon of a legitimate enterprise can be misused to lend an aura of respectability to an illegitimate one. Deadly activities are framed as "game plans," and the perpetrators become "team players," a status calling for the qualities and behavior befitting the best sportsmen. The disinhibitory power of language can be boosted further by colorful metaphors that change the nature of destructive activities.

Cognitive restructuring of harmful conduct by moral justifications, sanitizing language, and expedient comparisons is the most effective set of psychological mechanisms for disengaging moral control. Investing harmful conduct with high moral purpose not only eliminates self-censure so destructive acts can be performed without personal distress and moral qualms. Sanctification engages self-approval in the service of destructive exploits. What was once morally condemnable becomes a source of self-valuation. Functionaries work hard to become proficient at them and take pride in their destructive accomplishments.

### DISPLACEMENT OF RESPONSIBILITY

Moral control operates most strongly when people acknowledge that they are contributors to harmful outcomes. The second set of disengagement practices operates by obscuring or minimizing the agentive role in the harm one causes. People will behave in ways they normally repudiate if a legitimate authority accepts responsibility for the effects of their conduct (Diener, 1977; Milgram, 1974). Under displaced responsibility, they view their actions as stemming from the dictates of authorities rather than from their own personal responsibility. Because they feel they are not the actual agent of their actions, they are spared self-condemning reactions.

In terrorism sponsored by states or governments in exile, functionaries view themselves as patriots fulfilling nationalistic duties rather than as freelancing criminals. Displacement of responsibility not only weakens moral restraints over one's own detrimental actions but diminishes social concern over the well-being of those mistreated by others (Tilker, 1970).

Self-exemption from gross inhumanities by displacement of responsibility is most gruesomely revealed in socially sanctioned mass executions. Nazi prison commandants and their staffs divested themselves of personal responsibility for their unprecedentedly inhumane acts (Andrus, 1969). They claimed they were simply carrying out orders. Self-exonerating obedience to horrific orders is similarly evident in military atrocities, such as the My Lai massacre (Kelman, 1973).

In an effort to deter institutionally sanctioned atrocities, the Nuremberg Accords declared that obedience to inhumane orders, even from the highest authorities, does not relieve subordinates of the responsibility for their actions. However, because victors are disinclined to try themselves as crimi-

nals, such decrees have limited deterrent effect without an international judiciary system empowered to impose penalties on victors and losers alike.

In psychological studies of disengagement of moral control by displacement of responsibility, authorities explicitly authorize injurious actions and hold themselves responsible for the harm caused by their followers (Milgram, 1974). However, the sanctioning of pernicious conduct in everyday life differs in two important ways from Milgram's authorizing system. Responsibility is rarely assumed that openly. Only obtuse authorities would leave themselves accusable of authorizing destructive acts. They usually invite and support harmful conduct in insidious ways by surreptitious sanctioning systems for personal and social reasons. Sanctioning by indirection shields them from social condemnation should things go awry. It also enables them to protect against loss of self-respect for authorizing human cruelty that leaves blood on their hands. Implicit agreements and insulating social arrangements are created that leave the higher echelons blameless.

Kramer (1990) described the great lengths to which Shiite clerics go to produce moral justifications for violent acts that breach Islamic law, such as suicidal bombings and hostage-taking. These efforts are designed not only to persuade themselves of the morality of their actions but also to preserve their integrity in the eyes of rival clerics and other nations. The Islamic religious code permits neither suicide nor the terrorizing of innocent people. On the one hand, the clerics justify such acts by invoking situational imperatives and utilitarian reasons, namely that tyrannical circumstances drive oppressed people to resort to unconventional means to rout aggressors who wield massive destructive power. On the other hand, they reconstrue terrorist acts as conventional means in which dying in a suicidal bombing for a moral cause is no different than dying at the hands of an enemy soldier. Hostages typically get relabeled as spies. When the linguistic solution defies credibility, personal moral responsibility is disengaged by construing terrorist acts as dictated by their foe's tyranny. Because of the shaky moral logic and disputable reconstruals involved, clerics sanction terrorism by indirection, they vindicate successful ventures retrospectively, and they disclaim endorsements of terrorist operations beforehand.

Nation states sponsor terrorist operations through disguised, roundabout routes that make it difficult to pin the blame on them. Moreover, the intended purpose of sanctioned destructiveness is usually linguistically disguised so that neither issuers nor perpetrators regard the activity as censurable. When condemnable practices gain public attention, they are officially dismissed as only isolated incidents arising through misunderstanding of what, in fact, had been authorized. Efforts are made to limit the blame to subordinates, who are portrayed as misguided or overzealous.

A number of social factors affect the ease with which responsibility for one's actions can be passed to others. High justification and social consensus about the morality of an enterprise aid in the relinquishment of personal

control. The legitimacy of the authorizers is another important determinant. The higher the authorities, the more legitimacy, respect, and coercive power they command, the more willing are people to defer to them. Modeled disobedience, which challenges the legitimacy of the activities, if not the authorizers themselves, reduces the willingness of observers to carry out the actions called for by the orders of a superior (Meeus & Raaijmakers, 1986; Milgram, 1974; Powers & Geen, 1972). It is difficult to continue to disown personal agency in the face of evident harm that results directly from one's actions. People are, therefore, less willing to obey authoritarian orders to carry out injurious behavior when they see firsthand how they are hurting others (Milgram, 1974; Tiltner, 1970).

Perpetration of inhumanities requires obedient functionaries. They do not cast off all responsibility for their behavior as if they were mindless extensions of others. If they disowned all responsibility, they would be quite unreliable, performing their duties only when commanded to do so. In situations involving obedience to authority, people carry out orders partly to honor the obligations they have undertaken (Mantell & Panzarella, 1976). In fact, they tend to be conscientious and self-directed in the performance of their duties. It requires a strong sense of responsibility to be a good functionary. One must, therefore, distinguish between two levels of responsibility: A strong sense of duty to one's superiors and accountability for the effects of one's actions. The best functionaries are those who honor their obligations to authorities but feel no personal responsibility for the harm they cause.

Displacement of responsibility also operates in situations in which hostages are taken. Terrorists warn officials of targeted nations that if they take retaliatory action they will be held accountable for the lives of the hostages. At different steps in negotiations for the hostages' release, terrorists continue to displace responsibility for the safety of hostages on the national officials they are fighting. If the captivity drags on, terrorists blame the suffering and injuries they inflict on their hostages on the officials for failing to make what they regard as warranted concessions to remedy social wrongs.

## DIFFUSION OF RESPONSIBILITY

The deterrent power of self-sanctions is weakened when the link between detrimental conduct and its effects is obscured by diffusing responsibility. This is achieved in several ways. Responsibility can be diffused by division of labor. Most enterprises require the services of many people, each performing fragmentary jobs that, taken individually, seems harmless. The partial contribution is easily isolated from the eventual function, especially when participants exercise little personal judgment in carrying out a subfunction that is related by remote, complex links to the end result. After activities become routinized into programmed subfunctions, people shift their

attention from the meaning of what they are doing to the details of their job (Kelman, 1973).

Group decision making is another common bureaucratic practice that enables otherwise considerate people to behave inhumanely, because no single individual feels responsible for policies arrived at collectively. Where everyone is responsible, no one really feels responsible. Social organizations go to great lengths to devise sophisticated mechanisms for obscuring responsibility for decisions that may affect others adversely. Collective action, which provides anonymity, is still another diffusion expedient for weakening self-restraints. Any harm done by a group can always be attributed in large part to the behavior of other members. People act more cruelly under group responsibility than when they hold themselves personally accountable for their actions (Bandura, Underwood, & Fromson, 1975; Diener, 1977; Zimbardo, 1969).

### DISREGARD OR DISTORTION OF HARMFUL CONSEQUENCES

To be able to perpetrate inhumanities requires more than absolving oneself of personal responsibility. Other ways of weakening moral self-sanc-tions operate by minimizing, disregarding, or distorting the effects of one's action. When people pursue activities that harm others, they avoid facing the harm they cause or minimize it. If minimization does not work, the evi-dence of harm can be discredited. As long as the harmful results of one's conduct are ignored, minimized, distorted, or disbelieved, there is little rea-son for self-censure.

It is easier to harm others when their suffering is not visible and when destructive actions are physically and temporally remote from their injurious effects. Our death technologies have become highly lethal and depersonal-ized. We are now in the era of faceless electronic warfare, in which mass destruction is delivered remotely with deadly accuracy by computer and laser controlled systems.

When people can see and hear the suffering they cause, vicariously aroused distress and self-censure serve as self-restrainers (Bandura, 1992). In studies of obedient aggression, people are less compliant to the injurious com-mands of authorities as the victims' pain becomes more evident and person-alized (Milgram, 1974). Even a high sense of personal responsibility for the effects of one's actions is a weak restrainer of injurious conduct when aggres-sors do not see the harm they inflict on their victims (Tilker, 1970).

Most organizations involve hierarchical chains of command, in which superiors formulate plans and intermediaries transmit them to functionaries who then carry them out. The farther removed individuals are from the de-structive end results, the weaker is the restraining power of injurious effects. Disengagement of moral control is easiest for the intermediaries in a hierar-

chical system—they neither bear responsibility for the decisions, nor do they carry them out or face the harm being inflicted (Kilham & Mann, 1974). In performing the transmitter role, they model dutiful behavior and further legitimize their superiors and their social policies and practices.

A Pulitzer Prize was awarded for a powerful photograph that captured the anguished cries of a little girl whose clothes were burned off by the napalm bombing of her village in Vietnam (Chong, 2000). This single humanization of inflicted destruction probably did more to turn the American public against the war than the countless reports filed by journalists. The military now bans cameras and journalists from battlefield areas to block disturbing images of death and destruction that can erode public support for resolving international dispute by military means. With the advent of satellite transmission, battles are now fought on the airwaves over "collateral damage" to shape public perceptions of military campaigns and debates about them. For example, in the escalating cycle of terrorism and military retaliation in the Middle East, the Arab news network, Al-Jazeera, airs graphic real-time images of death and destruction round-the-clock (El-Nawawy & Iskandar, 2002). In the Iraq war, reporters were again allowed to accompany combat forces to present a different perspective from the one broadcast by Al Jazeera. Satellite television has thus become a strategic tool in the social management of moral disengagement at the locus of the human consequences of lethal means.

The aim of terrorists is to inflict widespread destruction. The moral dilemma for targeted nations is how to conduct counterterrorist operations that abide by just war standards. The magnitude of civilian casualties accompanying military campaigns is typically minimized by focusing mainly on "collateral damage" resulting directly from military strikes. When the counterstrikes destroy power, water, sanitation, and food distribution systems, they leave in their wake ill and malnourished populations who face a daily struggle to survive. High-tech bombardment may reduce the number of civilians killed, but it vastly increases the human toll when it destroys a nation's infrastructure.

### ATTRIBUTION OF BLAME

Blaming one's adversaries or compelling circumstances for harmful acts is still another expedient that can serve self-exonerative purposes. In this process, people view themselves as faultless victims driven to extreme means by forcible provocation rather than acting on a deliberative decision. Conflictual transactions typically involve reciprocally escalative acts. One can select from the chain of events a defensive act by the adversary and portray it as the initiating provocation. Victims then get blamed for bringing suffering on themselves. Those who are victimized are not entirely faultless because, by their behavior, they contribute partly to their own plight. Victims can, therefore, be blamed for bringing suffering on themselves. By fixing

the blame on others or on circumstances, not only are one's own injurious actions made excusable, but one can even feel self-righteous in the process.

Victim blaming by ascription of responsibility figures prominently in attribution theory (Weiner, 1986). However, the mechanism by which blaming spawns inhumane conduct has received less attention. In social cognitive theory (Bandura, 1986), victim blaming functions as a means of disengaging moral self-sanctions that operate in concert with other means serving the same purpose.

Terrorist acts that take a heavy toll on civilian lives create special personal pressures to lay blame elsewhere. Irish Republican Army guerrillas planted a large bomb that killed and maimed many family members attending a war memorial ceremony in a town square in Enniskillen, Northern Ireland ("IRA 'Regrets' Bombing," 1987). The guerrillas promptly ascribed the blame for the civilian massacre to the British army for having detonated the bomb prematurely with an electronic scanning device. The government denounced the "pathetic attempt to transfer blame" because no scanning equipment was in use at the time.

Observers of victimization can be disinhibited in much the same way as perpetrators are by the tendency to infer culpability from misfortune. Seeing victims suffer maltreatment for which they are held partially responsible leads observers to derogate them (M. J. Lerner & Miller, 1978). The devaluation and indignation aroused by ascribed culpability, in turn, provides moral justification for even greater maltreatment. That attribution of blame can give rise to devaluation and moral justification illustrates how the various disengagement mechanisms are often interrelated and work together in weakening moral control.

Self-vindication is easily achievable by terrorists when legitimate grievances of maltreatment are willfully disregarded by powerholders so that terrorist activities are construed as acts of self-protection or desperation. Oppressive and inhumane social conditions and thwarted political efforts breed terrorists who often see foreign government complicity in their plight through support of the regime that they see as victimizing them. Those who become radicalized carry out terrorist acts against the regime as well as the implicated foreign nations. Violent countermeasures are readily resorted to in efforts to control terrorist activities when the social conditions breeding discontent and violent protest are firmly entrenched in political systems that obstruct legitimate efforts at change. It is much easier to attack violent protests than to change the sociopolitical conditions that fuel them. In such skirmishes, one person's victim is another person's victimizer.

## DEHUMANIZATION

The final set of disengagement practices operates on the targets of violent acts. The strength of moral self-sanctions partly depends on how perpe-

trators view the people toward whom the violence is directed. To perceive another as human enhances empathetic reactions through a sense of common humanity (Bandura, 1992). The joys and suffering of similar persons are more vicariously arousing than are those of strangers or of those divested of human qualities. Personalizing the injurious effects experienced by others also makes their suffering much more salient. As a result, it is difficult to mistreat humanized persons without risking self-condemnation.

Self-censure for cruel conduct can be disengaged or blunted by stripping people of human qualities. Once dehumanized, they are no longer viewed as persons with feelings, hopes, and concerns but as subhuman forms. They are portrayed as mindless "savages," "gooks," "satanic fiends," and the like. Subhumans are regarded as insensitive to maltreatment and influenceable only by harsh methods. If dispossessing one's foes of humanness does not weaken self-censure, then the latter can be eliminated by attributing demonic or bestial qualities to them. They become "Satanic fiends," "degenerates," "vermin," or other bestial creatures. It is easier to brutalize victims, for example, when they are referred to as "worms" (Haritos-Fatouros, 2002).

"Evil" has become very much in vogue as the current form of demonization. It conjures up the image of an unfathomable pernicious force that ruthlessly drives evildoers. As previously noted, inhumanities are typically perpetrated by people who can be quite considerate and compassionate in other areas of their lives. They can even be ruthless and humane simultaneously toward different individuals. This selectivity of moral engagement is strikingly illustrated by Goeth, a Nazi labor commandant. While dictating a letter replete with empathy and compassion for his ailing father, he sees a captive on the grounds who he thinks is not working hard enough. He whips out his revolver and callously shoots the captive. The commandant is both overcome with compassion and is savagely cruel at the same time. By using a description in the guise of an explanation, ready attribution of violence to evil stifles analysis of the determinants governing inhumane conduct.

Studies of interpersonal aggression give vivid testimony to the disinhibitory power of dehumanization (Bandura et al., 1975). Dehumanized individuals are treated much more punitively than those who have been invested with human qualities. When punitiveness does not achieve results, this is taken as further evidence of the unworthiness of dehumanized persons, thus justifying even greater maltreatment. Dehumanization fosters different self-exonerative patterns of thought. People seldom condemn punitive conduct, and they create justifications for it when they are directing their aggression at persons who have been deprived of their humanness. By contrast, people strongly disapprove of punitive actions and rarely excuse them when they are directed at persons depicted in humanized terms.

Under certain conditions, the exercise of power changes the users in ways that are conducive to further dehumanization. This happens most often when persons in positions of authority have unconstrained coercive power

over others. Powerholders come to devalue those over whom they wield control (Kipnis, 1974). In a simulated prison experiment (Haney, Banks, & Zimbardo, 1973), even college students, who had been randomly chosen to serve as either inmates or guards and who had been given relatively unrestrained power, began to treat their charges in degrading, tyrannical ways. Thus, role assignment that authorized use of coercive power overrode personal characteristics in promoting punitive conduct. Systematic tests of relative influences similarly show that aggressive modeling and normative pressures exert considerably greater power over aggressive conduct than do people's personal characteristics (Larsen, Coleman, Forbes, & Johnson, 1972).

The overall findings from research on the different mechanisms of moral disengagement corroborate the historical chronicle of human atrocities: Conducive social conditions rather than monstrous people are required to produce heinous deeds. Given appropriate social conditions, decent, ordinary people can be led to do extraordinarily cruel things.

As alluded to in previous analyses, moral disengagement involves social machinations, not just personal intrapsychic ones. In moral justification, for example, people may be misled by those they trust into believing that violent means prevent more harm than they cause. The benefits that are socially declared may be exaggerated or just pious rhetoric masking less honorable purposes. Cultural prejudices shape which human beings get grouped and dehumanized and the types of depraved attributes ascribed to them. Social systems are structured in ways that make it easy for functionaries to absolve themselves of responsibility for the effects of their actions. Communication systems can be institutionally managed in ways that keep people uninformed or misinformed about the harm caused by the collective action. In summary, moral disengagement is a product of the interplay of both personal and social maneuvers.

### PROMOTION OF EMPATHIC HUMANENESS THROUGH MORAL ENGAGEMENT

Psychological research emphasizes how easy it is to bring out the worst in people through dehumanization and other means of self-exoneration. The sensational negative findings receive the greatest attention. Thus, for example, the aspect of Milgram's research on obedient aggression that is most widely cited is the evidence that good people can be talked into performing cruel deeds. However, to get people to carry out punitive acts, the overseer had to be physically present repeatedly ordered them to act cruelly as they voiced their concerns and objections and accepted responsibility for any harm caused. Orders to escalate punitiveness to more intense levels are largely ignored or subverted when remotely issued by verbal command. As Helm and Morelli (1979) noted, this is hardly an example of blind obedience triggered by an authoritative mandate. Moreover, what is rarely noted is the

equally striking evidence that most people steadfastly refuse to behave cruelty, even in response to strong authoritarian commands, if the situation is personalized by having them see the victim or requiring them to inflict pain directly rather than remotely.

The emphasis on obedient aggression is understandable considering the prevalence and severity of people's inhumanities toward one another. However, there is considerable theoretical and social significance in the power of humanization to counteract cruel conduct. Studies examining this process reveal that, even under conditions that weaken self-deterrants, it is difficult for individuals to behave cruelly toward others when they are humanized or even personalized a bit (Bandura et al., 1975).

Experimental research underscores the centrality of a sense of common humanity in the development of interpersonal empathy (Bandura, 1982). Seeing one's welfare as tied to the well-being of others arouses empathic reactions to their joys and sufferings. Conversely, competitive and discordant experiences, in which another's gain brings suffering to oneself, create counter-empathy. Similarly, people respond empathically to the emotional experiences of others simply depicted as in-group members, and counter-empathetically to those portrayed as out-group members, in the absence of having shared any experiences with them. If a sense of mutuality has been created, so that the joys and distresses of an out-group member foretell similar experiences for the observers, correlative outcomes transform disempathy to empathy. In the international strife sparked by the September 11th terrorist attack, both sides in the conflict trade heavily on polarizing rhetoric of "us" versus "them" with ascriptions of evil to each other (Mandel, 2002).

The exercise of moral agency has dual aspects, inhibitive and proactive (Bandura, 1999). 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. In the latter form of morality, people do good things as well as refrain from doing bad things. The investment of common humanity at each locus of moral self-regulation tends to foster humanness. In the exercise of proactive morality, people act in the name of humane principles even when social circumstances dictate expedient, transgressive, and detrimental conduct. They disavow the use of "worthy" social ends to justify destructive means. They are willing to sacrifice their well-being rather than accede to unjust social practices. They take personal responsibility for the consequences of their actions. They remain sensitive to the suffering of others. Finally, they see human commonalities rather than distance themselves from others or divest them of human qualities.

### TRANSFORMATIVE POWER OF HUMANIZATION

The transformative power of humanization is graphically illustrated in the midst of the military massacre in My Lai (Zganjar, 1998). An American

platoon, led by Lt. Calley, had massacred 500 Vietnamese women, children, and elderly men. Detailed analyses of the massacre in this village have documented how moral self-sanctions were disengaged from the brutal collective conduct (Kelman & Hamilton, 1989). A ceremony, 30 years in coming, was held at the Vietnam Veteran's Memorial honoring extraordinary heroism of prosocial morality in the midst of this carnage. Thompson, a young helicopter pilot, swooped down over the village of My Lai on a search and destroy mission as the massacre was occurring. He spotted an injured girl, marked the spot with a smoke signal, and radioed for help. Much to his horror, he saw a soldier flip her over and spray her with a round of bullets. Upon seeing the human carnage in an irrigation ditch and soldiers firing into the bodies, he realized that he was in the midst of a massacre.

He was moved to moral action by the sight of a terrified woman with a baby in her arms and a frightened child clinging to her leg. He explained his sense of common humanity, "These people were looking at me for help and there is no way I could turn my back on them." He told a platoon officer to help him remove the remaining villagers. The officer replied, "The only help they'll get is a hand grenade." Thompson moved his helicopter in the line of fire and commanded his gunner to fire on his approaching countrymen if they tried to harm the family. He radioed the accompanying gunships for help, and together they airlifted the remaining dozen villagers to safety. He flew back to the irrigation ditch where they found and rescued a 2-year-old boy still clinging to his dead mother. Thompson described his empathetic human linkage: "I had a son at home about the same age."

The affirmation of common humanity can bring out the best in people. The transformative power of humanization is further illustrated in a daughter's mission of vengeance (Blumenfeld, 2002). Her father, a New York rabbi, was shot and wounded in Jerusalem by Omar, a Palestinian militant. Twelve years later she set out to gain revenge by forcing him to confront his victim's humanity. In the course of exchanging letters under a concealed identity with the jailed gunman, the parental victim, militant gunman, and filial avenger were humanized in the process. In a dramatic courtroom parole hearing, the daughter identified herself to Omar as she pleaded for his release from prison, vowing he would never hurt anyone again. He wrote to her father likening his daughter to "the mirror that made me see your face as a human person," which "deserved to be admired and respected." This is a case of hatred that breeds escalative cycles of violence turned into mutual compassion. At the national level, Nelson Mandela singularly displaced hatred of apartheid with reconciliation by affirming common humanity.

### GRADUALISTIC MORAL DISENGAGEMENT

Disengagement practices do not instantly transform considerate persons into cruel ones who purposely set out to kill other human beings. Rather,

the change is achieved by gradual disengagement of self-censure. Terrorist behavior evolves through extensive training in moral disengagement rather than emerging full-blown at the outset. The path to terrorism can be shaped by fortuitous factors as well as by the conjoint influence of personal predilections and sociopolitical inducements (Bandura, 1982). Development of the capability to kill is usually achieved through an evolvement process, in which recruits may not recognize the transformation they are undergoing (Bandura, 1986; Franks & Powers, 1970; Haritos-Fatouros, 2002). The disinhibitory training is usually conducted within a communal milieu of intense interpersonal influences insulated from mainstream social life. The recruits become deeply immersed in the ideology and functional roles of the group. Initially, they are prompted to perform unpleasant acts that they can tolerate without much self-censure. Gradually, their discomfort and self-reproach are weakened to ever higher levels of ruthlessness through extensive performance and through extensive exposure to aggressive modeling by more experienced associates. The various disengagement practices form an integral part of the training for terrorism. Eventually, acts originally regarded as abhorrent can be performed callously. Inhumane practices become thoughtlessly routinized.

Escalative self-disinhibition is accelerated if violent courses of action are presented as serving a moral imperative, and the targeted people are divested of human qualities (Bandura et al., 1975). The training not only instills the moral rightness and importance of the cause for militant action; it also creates a sense of eliteness and provides the social rewards of solidarity and group esteem for excelling in terrorist exploits.

Sprinzak (1986, 1990) has shown that terrorists, whether on the political left or right, evolve gradually rather than setting out to become radicals. The process of radicalization involves a gradual disengagement of moral self-sanctions from violent conduct. It begins with prosocial efforts to change particular social policies and opposition to officials, who are intent on keeping things as they are. Embittering failures to accomplish social change and hostile confrontations with authorities and police lead to growing disillusionment and alienation from the whole system. Escalative battles culminate in terrorists' efforts to destroy the system and its dehumanized rulers.

#### MORAL DISENGAGEMENT IN THE MERCHANTISING OF DEATHLY WARES

The preceding analyses have been concerned mainly with how disengagement mechanisms are enlisted in the service of terrorist violence and in combating terrorism by violent means. These same mechanisms are also heavily enlisted by terrorist entrepreneurs, who supply militant states with the lethal tools to terrorize their own people or to equip the terrorist groups

they sponsor. Frank Terpil, who became a terrorist entrepreneur after he fell from grace at the CIA, provides vivid testimony to these psychological mechanisms (Thomas, 1982).

This deathly operation is especially informative because it reveals in stark detail that those who trade in human destruction do not do it alone. They depend heavily on the collective moral disengagement of a vast network of reputable citizens managing respectable enterprises. Terpil masked his death operations in the euphemisms of a legitimate business fulfilling "consumer needs" under the sanitized name Intercontinental Technology. To spare himself any self-censure for contributing to human atrocities, he actively avoided knowledge of the purposes to which his weapons would be put. "I don't ever want to know that," he said. When asked whether he was ever haunted by any thoughts of human suffering his deathly wares might cause, he explained that a weapons dealer cannot afford to think about human consequences. Banishing thoughts of injurious consequences frees one's actions from the restraints of conscience. "If I really thought about the consequences all the time, I certainly wouldn't have been in this business. You have to blank it off."

Probes for any signs of self-reproach only brought self-exonerative comparisons. When asked if he felt any qualms about supplying torture equipment to Idi Amin, Terpil replied with justification by advantageous comparison with employees' production of napalm at Dow Chemical. As he put it, "I'm sure that the people from Dow Chemical didn't think of the consequences of selling napalm. If they did, they wouldn't be working at the factory. I doubt very much if they'd feel any more responsible for the ultimate use than I did for my equipment." When pressed about the atrocities committed at Amin's torture chambers under the sanitized designation State Research Bureau, Terpil repeated his depersonalized view, "I do not get wrapped up emotionally with the country. I regard myself basically as neutral, and commercial." To give legitimacy to his "private practice," he claimed that he aided British and American covert operations abroad as well.

What began as a psychological analysis of the operator of a death industry ended unexpectedly in an international network of supporting legitimate enterprises run by upstanding conscientious people. The merchandising of terrorism is not accomplished by a few unsavory individuals. It requires a worldwide network of people, including reputable, high-level members of society, who contribute to the deathly enterprise by insulating fractionation of the operations and displacement and diffusion of responsibility. Some people manufacture the tools of destruction. Others amass the arsenals for legitimate sale. Others operate storage centers for them. Others procure export and import licenses to move the deathly wares among different countries. Others obtain spurious end-user certificates that get the weaponry to embargoed nations through circuitous routes. Still others ship the lethal wares. The cogs in this worldwide network include weapons manufacturers; former

government officials with political ties; ex-diplomatic, military, and intelligence officers who provide valuable diplomatic skills and contacts; weapons merchants and shippers operating legitimate businesses; money raisers to finance terrorist activities; and bankers laundering and moving money through legitimate financial systems. By fragmenting and dispersing subfunctions of the enterprise, the various contributors see themselves as decent, legitimate practitioners of their trade rather than as parties to deathly operations.

Even producers of the television program *60 Minutes* contributed to Terpil's coffers ("CBS Reportedly Paid 2 Fugitives," 1983). Terpil skipped bail to a foreign sanctuary after he was caught selling assassination equipment to an undercover FBI agent. He was tried in absentia. The District Attorney confronted the lead reporter of the program about a payment of \$12,000 to an intermediary for an interview with the fugitive, Terpil. The reporter pleaded innocence through various disengagement maneuvers.

### MORAL JUSTIFICATION IN THE USE OF COUNTERTERRORIST MEASURES

A comprehensive analysis of terrorism must also address how targeted nations grapple with terrorist violence. Hostage taking is a common terrorist strategy for wielding control over governments. If nations make the release of hostages a dominant national concern, they place themselves in a highly manipulable position. Tightly concealed captivity thwarts rescue action. Heightened national attention along with an inability to free hostages independently conveys a sense of weakness and invests terrorists with considerable importance and coercive power to extract concessions. Overreactions in which nations render themselves hostage to a small band of terrorists inspires and invites further terrorist acts. Hostage taking is stripped of functional value if it is treated as a criminal act that gains terrorists neither coercive concessionary power nor significant media attention.

Extreme retaliatory attacks that cause widespread death and destruction may advance the political cause of terrorists by arousing a backlash of sympathy for innocent victims and moral condemnation of the brutal nature of the attacks. To fight terror with terror often creates a ready supply of recruits prepared to die for their cause, even by suicidal martyrdom. Brute means also provide new justification for violence that escalates terrorism rather than diminishes it. Indeed, some terrorist activities are designed precisely to gain worldwide support for their cause and to provoke curtailment of personal liberties and other domestic repressive measures that might breed public disaffection with the system. Extreme countermeasures can, thus, play into the hands of terrorists.

Efforts to reduce societal vulnerabilities with better counterterrorist technologies beget better terrorist tactics and devices. A security officer char-

acterized such escalating adaptations well when he remarked that, "For every 10-foot wall you erect, terrorists will build an 11-foot ladder." Technological advances are producing more sophisticated terrorizing devices that increase societal vulnerability.

Some nations pursue the policy that terrorist acts will be promptly answered with massive deathly retaliation, whatever the cost, on the grounds that this is the price one must pay to check terrorism. Opponents of such policies argue that retaliatory overkill only fuels greater terrorism by creating more terrorists and increasing public sympathy for the causes that drive them to terroristic violence. Vigorous debates are fought over whether massive retaliation curbs terrorism or breeds an escalative cycle of terror.

At the geopolitical level, nations increase their vulnerability to terrorism by foreign marriages of convenience that prop up oppressive regimes. These life conditions, which spawn enmity, wrath, and political instability, become the breeding ground for terrorism. In the short-term solutions, terrorists must be routed and made to bear the consequences for their destructive acts. Here the issue of concern is whether military force is used in accordance with just war principles or in vengeful ways that violate the society's moral standards. The long-term solutions require promoting social reforms that better the life conditions of people. A focus on fighting violence with violence while neglecting needed long-term remedies is likely to produce an escalative cycle of terror and retaliation.

The preceding discussion has centered mainly on how terrorists invoke moral standards to justify human atrocities and selectively disengage these standards in conducting terrorist activities. Terrorism and fighting it with military force involve two-sided moral disengagement. Moral justification is brought into play just as surely as selecting and executing counterterrorist campaigns. This poses more troublesome problems for democratic societies than for totalitarian ones. Totalitarian regimes have fewer constraints against using institutional power to control media coverage of terrorist events, to restrict human rights, to sacrifice individuals for the benefit of the state rather than make concessions to terrorists, and to combat terrorist threats with lethal means. Terrorists can wield greater power over nations that place high value on human life and personal liberties. This constrains the ways they can act.

The terrorist attacks by the al-Qaeda network on U.S. consulates and military installations abroad and the devastating strike on the U.S. homeland presented a grave national threat with reverberating domestic and international consequences. It shattered the sense of national invulnerability, crippled major sectors of the society with worldwide economic repercussions, heightened cultural clashes between secular modernists and religious fundamentalists within Islamic nations and against Western nations, reordered geopolitical debates and international alliances, and launched widespread retaliatory military campaigns abroad to root out terrorist sanctuaries. It was

a different order of terrorism conducted by a well-financed elusive enemy operating through a worldwide network aimed at fomenting a holy war between the Western world and the Islamic world. The terrorist strikes called for national protective countermeasures to deter further terrorist attacks.

Fighting terrorism with military force presents moral dilemmas on the execution of military means. Midway through a nationwide study on selective disengagement of moral agency in support of military force, the nation witnessed the demolition of the World Trade Center and part of the Pentagon by the al-Qaeda network (McAlister, Bandura, Morrison, & Grussendorf, 2003). The terrorist strike raised the level of moral disengagement. The higher the moral disengagement, the stronger the public support for immediate retaliatory strikes against suspected terrorist sanctuaries abroad and for aerial bombardment of Iraq. Further research is needed to determine how the level of moral disengagement affects the form, scope, and intensity of countermeasures the public supports.

The just war principles of necessity, proportionality, discriminativeness, and humanity (Walzer, 1992) provide some guidelines for defensive military campaigns. They specify the just grounds for resort to military force and the form, scope, and intensity of military means that are morally defensible. Viewed from this framework, military counterstrikes are justified as the last resort after nonviolent means have been exhausted; the military campaign is limited to the level of force needed to eradicate the threat; and the counterstrikes are conducted in ways that minimize civilian casualties.

Just cause is a further principle of justifiability. A military intervention may fulfill the previously mentioned standards but be used for economic and strategic self-interest. The force must be used for a just cause rather than for vengeance, control of resources, or geopolitical advantage. Just causes can be undermined by brute means. Unilateral military intervention can also taint humanitarian intentions with geopolitical designs. The oft-ready transmutation of allies of convenience into foes and foes into allies of convenience creates skepticism about avowed just causes. By advantageous comparison, authoritarian regimes legitimize their own brutal practices against militant dissidents within their society by likening their brutality to the war on terrorism.

Morally calibrated countermeasures that involve restrained and discriminate use of military force help to gain and maintain domestic and international support. Cooperation with nation states is essential because uprooting terrorist threats must be pursued internationally. The aid of allies is even more critical for the tough and lengthy occupation and reconstruction programs required in the aftermath of war. Because of the geographic dispersion of the terrorist enemy, success requires a unified effort by countries to rid themselves of not only the terrorists in their midst but also of the ills within their societies that breed embittered and alienated populations. States must ameliorate these conditions largely by pushing for change from within. For-

eign unilateral interventions can readily convert, in the eyes of the Islamic world, an antiterrorism campaign into a holy intercultural war. Indeed, morally undisciplined force is likely to beget more embittered terrorists willing to die in defense of their values and way of life.

The mounting of a counterterrorist military campaign creates a moral suasion war through airwaves on the construal and justification of the interventions. M. B. Smith (2002) provides a thoughtful analysis of the metaphoric labeling of retaliatory countermeasures as "War on Terrorism." Actual wars involve battles between states that end with the emergence of a victor. In contrast, the al-Qaeda enemy is a decentralized, loosely interconnected network operating surreptitiously worldwide without clear boundaries and extending its reach by coordinating the activities of dispersed affiliates. It is a new type of global enemy that is mobile, has no fixed geographic boundaries, and cannot be eradicated by ousting a leader. Suicide terrorism as an act of martyrdom serves as one of its weapons that defies control. This creates a situation where an incomplete military end is likely because dismantling a terrorist operation in a particular locale does not eliminate the threat elsewhere. For example, with porous borders and proxy ground forces of suspect allegiance, the massive Afghanistan military campaign relocated rather than eradicated the core al-Qaeda leadership, that continues to operate as a resurgent terrorist force spreading terrorism worldwide against an expanded range of coalition foes. In addition to selecting targets of high symbolic and economic value, the broadened aim breeds fear internationally by hitting easily accessible targets that are neither predictable nor protectable. Given globally dispersed semi-autonomous terrorist cells with ample replacement recruits for captured or slain operatives, this is not a readily winnable war. Recurrent terrorist attacks heighten sociopolitical pressures to deploy electronic tracking systems for large-scale domestic and international surveillance.

War metaphors create a mindset for war that helps to mobilize patriotic public support for military initiatives. Gilovich (1981) documented the power of comparative framing of military operations in enlisting support for military means. For instance, in judging how the United States should respond to a totalitarian threat toward a small nation by another country, people advocated a more interventionist course of action when the international crisis was likened to Munich, representing political appeasement of Nazi Germany, than when it was likened to another Vietnam, representing a disastrous military entanglement. The U.S. National Security Advisor likened allied opposition to a United Nations authorization of the use of force against Iraq to the appeasement of Hitler in the 1930s (Bernstein & Weisman, 2003). The Prime Minister of Great Britain similarly equated the opponent in the UN Security Council with the Nazi appeasers of yesteryear. Confinement by no-flight zones, continuous aerial surveillance, and bombardment of defensive and communications facilities, and disallowance of oil revenues is hardly

appeasing treatment. Likening the terrorist threat to the so-called "axis of evil" to the axis powers of World War II provided further moral justification for military action. To bring the threat by comparative framing even closer to home, preemptive disarmament of Iraq was likened to the Cuban missile crisis.

The war metaphor also supported wartime restrictions on privacy rights and civil liberties. Justification by advantageous historical comparison vindicated the restrictions. The public was reminded that Lincoln did it during the Civil War, and Roosevelt did it during World War II. Under a high sense of personal vulnerability, concern for personal safety outweighs protection of privacy and civil liberties. Indeed, antiterrorism laws, granting the government broad domestic surveillance powers to access, scan, and profile information on personal activities without public oversight and accountability, received widespread public support.

One must distinguish between justification of self-defense by military force and justification of the military means used in the pursuit of the just cause. Routing al-Qaeda from their sanctuaries in Afghanistan was justifiable in terms of just war standards. It was achieved with remarkable swiftness by combining unrelenting aerial bombardment with Afghan warlords serving as the proxy army. Many of the international reactions, especially in Muslim societies, centered on the proportionality of force, the civilian toll, and the rightness of intention in the expansion of the war on terrorism to Iraq.

Drawing on historical contrast, the U.S. Defense Secretary acknowledged the inevitability of civilian causalities, but added, "We can take comfort in the knowledge that this war has seen fewer tragic losses of civilian life than perhaps any war in modern history" (Shanker, 2002). The military architect of the campaign downplayed reports of civilian casualties on the grounds that they are impossible to estimate reliably: "And so all of us have opted not to do that" (Coille, 2002). In the public view, precision-guided weapons spare innocents.

Televised scenes of Afghans celebrating the rout of the brutally tyrannical Taliban regime documented the humanitarian aspect of the military campaign. Civilian liberation from state terrorism with virtually no Allied casualties and seemingly minimal "collateral damage" persuaded even vocal critics of the use of lethal force that military means could serve as a humanitarian intervention. Some prominent liberals became humanitarian hawks promoting the use of military power. Aerial bombardment together with proxy ground forces, which worked surprisingly well in Kosovo and speedily in Afghanistan, represent a model of warfare that the general public could support with few moral qualms. Ill-fitting metaphors can spawn military initiatives that beget continuing terrorism rather than restore public safety. Kosovo has become the operative metaphor for the times (Packer, 2002). Routing the autocratic regime from Kosovo in a finite military operation did not incite a

worldwide Serbian network to terrorize the United States and its Allies. By contrast, routing al-Qaeda from Afghanistan relocated much of the terrorist menace in an open-ended battle with Islamic extremists operating worldwide in the name of a holy war.

The sorrowful experience in Vietnam created low tolerance for a protracted war that piles up casualties and erodes public support. As a consequence, military doctrine now favors "overwhelming force" that gets the job done fast with minimal combat casualties. In Iraq, this doctrine took the form of a massive missile barrage to paralyze the enemy with "shock and awe." A devastating assault is hard to square with the discriminateness, proportionality, and casualty standards of morally justifiable war. Vigorous debates will be fought over the justness of the lethal means in the geopolitical war.

Satellite broadcast technology heightened the war of words and imagery regarding "collateral damage." Whereas the Western media were highlighting the humanitarian benefits of military force, Al-Jazeera satellite television was showing vividly the heavy civilian toll of the military campaign in Afghanistan along with constant images of carnage from the Israeli-Palestinian conflict. Discriminate aerial bombardment requires reliable ground intelligence to spot the enemy. To spare Allied lives, the feuding Afghan warlords did the ground fighting and provided some of the ground intelligence. Reports of questionable reliability wreaked havoc on families bombed in villages and wiped out political rivals where tribal factions sought advantage in local power struggles.

*Collateral damage* extends beyond the direct impact of military strikes on civilians. Al-Jazeera expanded the meaning of *collateral damage* to the disastrous aftermath of the military campaign—a war-ravaged infrastructure and huge displaced populations in squalid refugee camps left to fend for themselves without the basic necessities of life. With Allied reluctance to commit security ground forces that would put their soldiers in harm's way, feuding warlords took control over their fiefdoms, some resumed the lucrative international heroin trade, and others even restored the medieval tyranny, especially toward women, that was so brutally practiced by the Taliban. Generous payments to the warlords, the allies of convenience, to fight the war and to hunt the al-Qaeda and the Taliban nourished a state of national anarchy.

The hunt for the elusive al-Qaeda got downgraded, and bin Laden was declared irrelevant in favor of a preemptive military campaign against Iraq. The metaphoric war on terrorism evolved into an actual one. The initial labeling of the war on terrorism as a "crusade" fought under the code name "Infinite Justice" suggesting, in Arabic translation, the trumping of God as the ultimate authority, inflamed Islamic fundamentalists. Leaders of the Christian Right poured fuel on the fire by characterizing the Prophet Muhammad as a terrorist and Palestinians as interlopers who must be stripped of control of the holy land, thus rekindling the religious crusade of yore.

Opponents of going to war with Iraq questioned the rightness of intention. Many critics worldwide voiced distrust and cynicism that the war on terrorism provided a pretext for promoting less pious agendas (Clymer, 2002). The rush to preventative war roused the undercurrent of indignation among alienated allies over how the United States uses its matchless power and sought to counterbalance it with threats to veto a war resolution. Critics warned that unilateral resort to awesome military power, embellished with grandiose visions, would make the world more liable to terrorism than safer from it. Bin Laden, who had been presumed dead, resurfaced on Al-Jazeera praising recent terrorist strikes, trumpeting the evil intentions of the poised infidel invaders, and calling Islamists worldwide to action to disable the enemy.

Saddam's regime was militarily boxed in by no-flight zones with continuous aerial surveillance by Allied warplanes and bombardment of defense and communication facilities. Some nations questioned the justification of the priority accorded to the threat and timing of a preemptive strike against Iraq that did not seem to pose much of a threat under the stringent containment. They viewed the planned invasion as a war of choice, not necessity. Critics of a military invasion and occupation argued that UN inspectors destroyed more weapons of mass destruction than did the Gulf war. The Military containment and deterrence had worked for over a decade. They prescribed a coercive, but nonviolent alternative, including an expanded and intensified inspection program backed up by an arms embargo, unfettered aerial surveillance, extensions of the no-flight zone nationwide, and multinational soldiers to guard inspected military installations and prevent rearmament (Walzer, 2003). They lobbied for forceful inspecting and dismantling weapons of mass destruction and their production facilities under the international charter and auspices rather than through armed invasion with its prolonged aftermath of uncertain scope and magnitude.

The utilitarian standard provided justification for armed intervention as a necessity even if it had to be done unilaterally. A preemptive strike would prevent a projected massive future threat to humanity. The public was reminded that Hussein was a monstrous despot who terrorized and gassed his own people and invaded a neighbor state. Containment was dubbed a failure and dismissed as an option, and the magnitude of the threat was amplified. Although militarily contained and apparently not tied to al-Qaeda, in defiance of UN resolutions, Hussein was a deceptive obstructionist to arms inspection and was producing chemical and biological weapons that he might pass on to organized or freelancing terrorists. Moreover, his efforts to create atomic weapons posed an even graver international threat. The utilitarian justification presented a stark contrast: Inflict small harm now preemptively or suffer massive human destruction by a nuclearly armed despot. The projected human threat was personalized and made to be immense and pervasive because a "dirty" nuclear bomb could be smuggled into any city and detonated. No one was safe any longer from a nuclear strike. The clear choice

in this humanitarian crisis: responsible preventive military offensive or international timidity. The President maintained that the military overthrow of Saddam's regime was morally obligatory to defend the American people against this grave threat. In the stark contrast of the dichotomous options and the rightness of the cause, moral considerations and potential international repercussions held low priority for a frightened populace.

The utilitarian benefits of a military campaign against Iraq were vigorously contested (Kaysen, Miller, Malin, Nordhaus, & Steinbruner, 2002). The U.S. administration depicted the outcomes in predominately positive terms—removal of a horrific regional threat of mass destruction, democratization of a despotic regime, and liberation of its terrorized people. Critics argued that the planned intervention was mischaracterized as a “preemptive” war that forestalled an imminent attack by an enemy, when, in fact, it was a “preventive” war to disarm and supplant a regime reined in and constrained militarily and by severe economic sanctions.

They voiced concern about a new doctrine of anticipatory military self-defense against a presumptive threat in future years. The critics (Kaysen et al., 2002) enumerated a host of potentially disastrous consequences of military intervention. It would inflame the Muslim world and only escalate international terrorism; derail the global efforts to eradicate the terrorism spawned by the al-Qaeda network and other Islamic terrorist groups; expand the ranks of ultraconservative Islamists and undermine the efforts of modernists and reformers working toward an Islamic pluralism; unleash ethnic warfare in the Mideast region; damage relationships and partnerships with allies; subvert international laws that protect the rights of nations and ensure the equitable application of the laws; undermine the nation’s moral position as a force for good by violating its own values; and burden the nation with staggering long-term costs of warfare, occupation, peacekeeping, and national reconstruction.

The U.S. administration and their advisors countered the forecast of these sobering risky outcomes with a more optimistic consequential scenario. Saddam ruled by fear not loyalty, so an invasion would bring a quick end to his terrifying reign. Rejoicing of the liberated Iraqis would affirm the moral rightness of the military remedy. Rapid military success would turn detractors and private approvers into appreciative public supporters for the democratization not only of Iraq but of the entire region.

The Iraqi regime, depicted as an imminent and grave biochemical threat conspiring with terrorists and poised to unleash their weapons of mass destruction if attacked, was speedily routed as an enemy more in the likeness of rogue armed combatants than a mighty military machine. Geopolitical disputes arose over who should preside over the reconstruction of the nation and who should look for the chemical and biological weapons and nuclear facilities that were the main justification for the military invasion. Within this deeply fissured multireligious nation, the power vacuum was quickly filled

by exiles with political ambitions, ethnic separatists, and clerics jockeying for power to create an Islamic nation in opposition to a pluralistic secular one. The sociopolitical war presents more daunting challenges than did the military war.

Given the potential escalative chain of events, societies face the challenge of eliminating weapons of mass destruction in a morally defensible way. If terrorism is to be defeated, societies must address the life conditions that drive people to deadly terrorist missions. This is a daunting challenge not amenable to quick fixes. Islamic terrorists come mainly from populations living in an environment of poverty, political oppression, gross inequities, illiteracy, and a paucity of opportunities to improve their lives. More advantaged members who have been alienated and radicalized by embittering experiences in their efforts to promote the social changes they desire usually spearhead militant activism (Bandura, 1973; Sprinzak, 1990). In cultural milieus where suicide bombing is hailed as gaining blessed martyrdom, this mode of terrorism is institutionally embraced and socially applauded as divine retribution for the humiliation and suffering inflicted by the enemy (Lelyveld, 2001). Educational development provides the best means of escape from poverty and the promotion of national development. However, this institutional resource is squandered when educational systems are used more for indoctrination in reactionary theology than for cultivation of the talents needed to thrive in modern global society.

All too often, American foreign policy forges marriages of convenience with autocratic rulers who preside over their people with oppressive force to ensure self-preservation. These life conditions arouse the wrath of disaffected populations toward the United States and its allies for propping up the authoritarian regimes financially and militarily. The population is further inflamed by Islamic fundamentalists through the politicization of religion to rally support for terrorist operations against secularism and the supporters of the enemies of their medievalist strain of Islam. The scourge of terrorism presents a great humanitarian challenge on how to make it in people's self-interests to live together agreeably in a pluralistic society embedded in modernity and global interdependence. If the war on terrorism is to be won, it requires extensive enabling support of the moderate voices within these societies who have a progressive vision of how to integrate the benefits of modernization with humanist principles that uphold human rights, equality, and dignity.

# 5

## Social Cognitive Theory for Personal and Social Change by Enabling Media<sup>1</sup>

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### EDITORS' INTRODUCTION

*Albert Bandura is a leading proponent of social cognitive theory, and his work has directly influenced the development of the entertainment-education strategy. After receiving his doctoral degree from the University of Iowa in 1953, he joined the faculty at Stanford University where he has spent his entire career. His initial research centered on the prominent role of social modeling in human thought, affect, and action. The extraordinary advances in the technology of communications have made modeling a key vehicle in the diffusion of ideas, values, and styles of behavior. Another major focus of Bandura's work concerns the human capacity for self-directedness, which added to our understanding of how people exercise influence over their own motivation and behavior through self-regulative mechanisms. His most recent research is adding new insights on how*

<sup>1</sup>Preparation of this chapter was supported by grants from the Grant Foundation and the Spenser Foundation. The present chapter is a revision of one published in P. Schmuck, & W. Schultz (Eds.), *The psychology of sustainable development* (pp. 209-238). Dordrecht, The Netherlands: Kluwer.

*people's beliefs in their efficacy to exercise control over events that affect their lives contribute importantly to their attainments, resilience in the face of adversity, and psychological well-being. These different lines of research address fundamental issues concerning the nature of human agency.*

Social cognitive theory provides an agentic conceptual framework within which to analyze the determinants and psychosocial mechanisms through which symbolic communication promotes personal and social changes (Bandura, 1986, 2001a). To be an agent is to influence intentionally one's own functioning, and life circumstances. In this transactional view of self and society, people are producers as well as products of their social environment. By selecting and altering their social environment, they have a hand in shaping the course that their lives take.

Human adaptation and change are, of course, rooted in social systems. Therefore, personal agency operates within a broad network of sociostructural influences. Social structures embody rules, resources, and social sanctions designed to organize, guide, and regulate human affairs. These social systems are created, implemented, and altered by human activity. In this dynamic interplay, personal agency and social structure operate as interdependent determinants in an integrated causal structure rather than as a disembodied duality (Bandura, 1997; Giddens, 1984). The present chapter presents the core features of social cognitive theory for effecting personal and social change by mass communication.

Three major components in social cognitive theory promote psychosocial changes via symbolic communication (Bandura, 2001b). The first component is a **theoretical model** that specifies the determinants of psychosocial change and the mechanisms through which they produce their effects. This knowledge provides the guiding principles. The second component is a **translational and implementational model** that converts theoretical principles into an innovative operational model by specifying the content, strategies of change, and their mode of implementation. The third component is a **social diffusion model** on how to promote the adoption of psychosocial programs in diverse cultural milieus. Functional adaptations of the programs are made to different cultural circumstances that provide enabling guidance and enlist the necessary resources to achieve success.

## DUAL PATH OF INFLUENCE

In fostering large-scale changes, communication systems operate through two pathways (Fig. 5.1). In the direct pathway, communication media promote changes by informing, enabling, motivating, and guiding audience individuals. In the socially-mediated pathway, media influences are used to link participants to social networks and community settings. These places provide

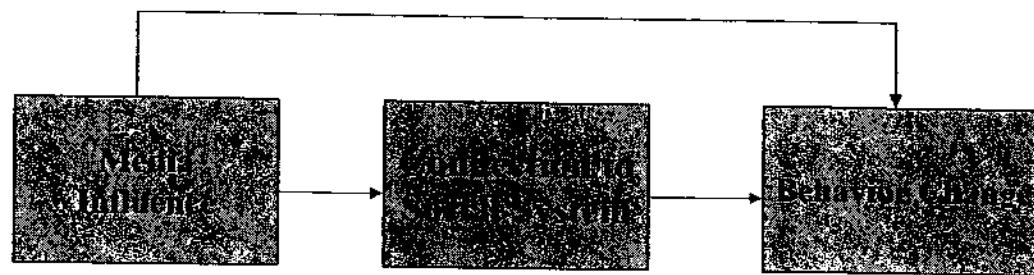
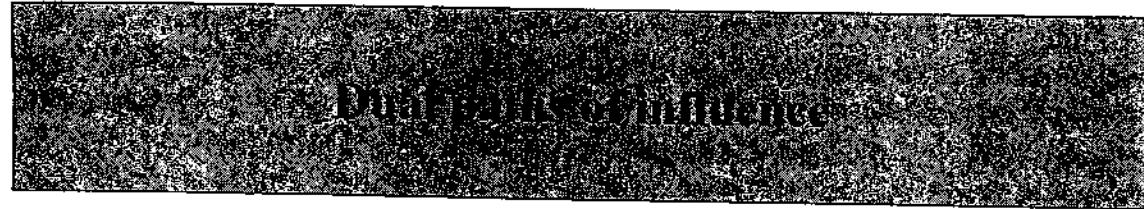


FIG. 5.1. Paths of influences through which communication affect psychosocial changes both directly and via a socially mediated pathway by linking viewers to social networks and community settings.

continued personalized guidance, as well as natural incentives and social supports for desired changes. The major share of behavioral and valuational changes are promoted within these social milieus. People are socially situated in interpersonal networks. For example, programs aimed at stemming a nation's burgeoning population growth link viewers to family planning services. Programs designed to raise the status of women link viewers to women's support groups. At a more informal level, media influences lead viewers to discuss and negotiate matters of import with others in their lives. In the informal mode of social mediation, the media set in motion transactional experiences that further shape the course of change. Socially mediated influences can have stronger impacts than direct media influence.

## SOCIAL COGNITIVE THEORETICAL MODEL

The present section summarizes the tenets of social cognitive theory that provide guidelines for constructing effective media production. A comprehensive theory of human behavior must explain how people acquire attitudes, values, styles of behavior, and how they motivate and regulate their level of functioning.

There are two basic modes of learning. People learn through the direct experience of rewarding and punishing effects of actions, and through the power of social modeling. Trial-and-error learning is not only tedious but hazardous when errors produce costly or injurious consequences. This process

is short cut by learning from the successes and mistakes of others. Another major advantage of modeling through the media is that it can reach a vast population simultaneously in widely dispersed locales. Video systems feeding off telecommunications satellites have become a dominant vehicle for disseminating symbolic environments. New ideas, values, and styles of conduct are now being rapidly diffused worldwide in ways that foster a globally distributed consciousness (Bandura, 2002).

### Social Modeling

Modeling influences serve diverse functions in promoting personal and social change (Bandura, 1986, 1997). They include instructive, motivational, social prompting, and social construction functions.

With regard to the instructive function, models serve as transmitters of knowledge, values, cognitive skills, and new styles of behavior. Observers also acquire emotional proclivities toward people, places, and objects through modeled emotional experiences. Observers learn to fear that which frightened or injured models, to dislike what repulsed them, and to like what gratified them. Self-debilitating fears and inhibitions can be eliminated by modeling that depicts effective coping strategies and instills a sense of coping efficacy.

The motivational function operates through the depicted benefits and detriments of modeled courses of action. Seeing others gain desired outcomes by their actions can create outcome expectancies that serve as positive motivators. Observed punishing outcomes can create negative outcome expectancies that function as disincentives for similar courses of action. The behavior of others also serves as social prompts that activate, channel, and support modeled styles of behavior. The types of models who predominate in a social milieu determine which human qualities are promoted from among many possible alternatives.

Televised portrayals of human nature, social roles, power relations, and the norms and structure of society shape the public consciousness (Gerbner, Gross, Morgan, Signorielli, & Shanahan, 2002). Media representations gain influence because people's social constructions of reality depend heavily on what they see, hear, and read rather than on what they experience directly.

It is one thing to learn new styles of behavior. It is another to put them into practice, especially in the face of impediments. Several motivators provide support for adopting new forms of behavior.

### Perceived Self-Efficacy

Among the mechanisms of self-influence, none is more central or pervasive than beliefs in one's efficacy to exercise control over one's functioning and

events that affect one's life. This core belief system is the foundation of human motivation and accomplishments (Bandura, 1997). Whatever course one takes, there are always dissuading difficulties. Unless people believe they can produce desired effects by their actions, they have little incentive to act or to persevere in the face of difficulties. Whatever other factors serve as guides and motivators, they are rooted in the core belief that one has the power to effect changes by one's actions.

Human well-being and attainments require an optimistic and resilient sense of efficacy because usual daily realities are strewn with difficulties. They are full of frustrations, conflicts, impediments, inequities, adversities, failures, and setbacks. These are the price of progress. People must have a strong belief in their own efficacy in order to sustain the perseverant effort needed to succeed. The functional belief system combines realism about tough odds, but optimism that one can beat these odds through self-development and perseverant effort.

People's beliefs in their efficacy can be developed in four ways: (1) through mastery experiences, (2) social modeling, (3) social persuasion, and (4) construal of physical and emotional states. The most effective way of instilling a strong sense of efficacy is through mastery experiences. Successes build a robust efficacy. Failures undermine it, especially in early phases of efficacy development. If people experience only easy successes, they come to expect quick results and are easily discouraged by failure. Resilient efficacy requires experience in overcoming obstacles through perseverant effort. Resilience is also built by training in how to manage failure so it becomes informative rather than demoralizing.

The second way to develop a sense of efficacy is by social modeling. Models are a source of inspiration, competencies, and motivation. Seeing people similar to oneself succeed by perseverant effort raises observers' beliefs in their own abilities. The failures of others can instill self-doubts about one's own ability to master similar challenges.

Social persuasion is a third mode of influence. Realistic boosts in efficacy can lead people to exert greater effort, which increases their chances of success. But effective efficacy builders do more than convey positive appraisals. They structure situations for others in ways that bring success and avoid placing them prematurely in situations where they are likely to fail. They measure success by self-improvement rather than by triumphs over others. Pep talks without enabling guidance achieve little.

People also rely partly on their physical and emotional states in judging their efficacy. They read their emotional arousal and tension as signs of personal vulnerability. In activities involving strength and stamina, people interpret their fatigue, aches, and pains as indicators of low physical efficacy. Mood also affects how people judge their efficacy. Positive mood enhances a sense of efficacy, while despondent mood diminishes it. The fourth way

of modifying efficacy beliefs is to reduce people's stress and depression, build their physical strength, and change misinterpretations of their physical states.

Efficacy beliefs regulate human functioning through four major processes: cognitive, motivational, emotional, and decisional. Perceived self-efficacy occupies a pivotal role in causal structures of social cognitive theory because efficacy beliefs affect human functioning not only in their own right, but through their impact on other determinants (Bandura, 1997).

Such beliefs influence whether people think pessimistically or optimistically, or in a self-enhancing or self-hindering way. Efficacy beliefs play a central role in the self-regulation of motivation through goal challenges and outcome expectations. It is partly on the basis of efficacy beliefs that people choose what challenges to undertake, how much effort to expend in the endeavor, how long to persevere in the face of obstacles and failures, and whether failures are motivating or demoralizing. The likelihood that people will act on the outcomes that they expect prospective behaviors to produce depends on their beliefs about whether or not they can produce the required performances. In the affective domain, a strong sense of coping efficacy reduces vulnerability to stress and depression in taxing situations and strengthens resiliency to adversity.

Efficacy beliefs also play a key role in shaping the courses that lives take by influencing the types of activities and environments that people choose. Any factor that influences choice behavior can profoundly affect the direction of personal development. Social influences operating in chosen environments continue to promote certain competencies, values, and interests long after the decisional determinant has rendered its inaugurating effect. Thus, by choosing and shaping their environments, people can have a hand in what they become.

## Collective Efficacy

Many of the challenges of life involve common problems that require people to work together with a collective voice to change their lives for the better. Social cognitive theory extends the conception of human agency to collective agency (Bandura, 2000). The strength of families, communities, school systems, business organizations, social institutions, and even nations lies partly in people's sense of collective efficacy that they can solve the problems they face and improve their lives through unified effort. People's shared belief in their collective power to realize the futures they seek is a key ingredient of collective agency.

Efforts at social change typically challenge power relations and entrenched societal practices. Successes do not come easy. To change their lives for the better, people have to struggle against dated traditions and normative constraints. For example, managing sexual and reproductive life requires

managing emotionally charged relationships embedded in power relations (Bandura, 1994). In societies with gendered power imbalances, women who want to reduce child bearing have difficulty talking to their husbands about contraceptive methods. The challenge is to enable women to discuss family planning and to provide them with the social support to do so. However, the major burden for contraception should not fall solely on women.

Efforts at change must address sociocultural norms and practices at the social system level. Because of the centrality of perceived efficacy in people's lives, media programs help to raise people's beliefs that they can have a hand in bringing about changes in their lives. For example, in applications of a radio drama in Tanzania, many women believed they had no control over family size. It was predetermined divinely, by fate, or by forces beyond their control. The radio drama raised their perceived efficacy to manage their reproductive life through family planning (Rogers, Vaughan, Swalehe, Rao, Svenkerud, & Sood, 1999).

People must be prepared for the obstacles they will encounter by modeling prototypic problem situations and effective ways of overcoming them. There are several ways of building resilience to impediments through social modeling. People are taught how to manage setbacks by modeling how to recover from failed attempts. They are shown how to enlist guidance and social support for personal change from self-help groups and other agencies in their localities. Seeing others similar to themselves succeed through perseverant efforts also boosts staying power in the face of obstacles.

## Goals and Aspirations

People motivate themselves and guide their behavior by the goals, aspirations, and challenges that they set for themselves (Bandura, 1986; Locke & Latham, 1990). Long-term goals set the course of personal change but they are too far removed to overrule competing current influences on behavior. Short-term goals motivate and provide direction for one's efforts in the here and now for incremental change. Goals have little impact unless they are translated into explicit plans and strategies for realizing them. Media programs, therefore, model how to translate a vision of a desired future into a set of achievable subgoals.

## Outcome Expectations

Human motivation and behavior are also affected by the outcomes that people expect their actions to produce. Outcome expectations can take three major forms. One set of outcomes includes the material, pleasurable, and aversive effects that the behavior produces. Behavior is also partly regulated by the social reactions it evokes. The social approval and disapproval that the

behavior produces is the second major class of outcomes. People adopt personal standards and regulate their behavior by their self-evaluative reactions. They take actions that give them self-satisfaction and self-worth, and refrain from behaving in ways that breed self-dissatisfaction.

### **Perceived Facilitators and Impediments**

Personal and social change would be easy if there were no impediments to surmount. The facilitators and obstacles that people see to changing their behavior are another influential determinant. Some of the impediments are personal ones that undermine efforts at change, such as profound self-doubts that one's efforts would make a difference. Other impediments are situational and structural. Beliefs of personal efficacy affect how formidable these impediments appear.

People who have a resilient sense of efficacy identify ways to overcome obstacles to change. Those who distrust their efficacy view impediments as insurmountable and are easily convinced of the futility of effort. They quickly abort their efforts when they run into difficulties, should they try. Efforts at socially oriented changes are designed to enhance the enabling aspects of social systems and to reduce the impeding aspects.

### **TRANSLATIONAL AND IMPLEMENTATIONAL MODEL**

The sociocognitive model for promoting society-wide changes, which has now been adopted worldwide, was pioneered by Miguel Sabido (1981) (Photo 5.1). This model uses long-running entertainment-education serial dramas with concurrent plots as the principal vehicle of change. The episodes depict in captivating drama the daily lives of people, some of whom are on adverse life-course trajectories, while others model resiliently effective ways to improve their quality of life. Hundreds of episodes get viewers deeply emotionally engaged in, and identified with, the modeled characterizations that provide enabling guides and incentives for personal and social change. The construction of the dramatic serials draws on the basic principles of social cognitive theory presented earlier.

### **Differential Modeling**

Three types of modeling influences are used in the entertainment-education approach: Positive, negative, and transitional. To take advantage of the attractive and aspirational value of prestigious modeling, culturally admired



PHOTO 5.1. Miguel Sabido and Albert Bandura discuss social cognitive theory and its applications in entertainment-education programs at the University of Southern California in 2001. (Source: Miguel Sabido. Used with permission.)

television models are selected to exhibit the beneficial styles of behavior. Social attraction increases the impact of modeling influences.

Characters representing relevant segments of the viewing population are shown adopting the beneficial attitudes and behavior patterns. Seeing people similar to themselves change their lives for the better not only conveys strategies for how to do it, but raises television viewers' sense of efficacy that they too can succeed. Viewers come to admire, and are inspired by, characters in their likenesses who struggle with difficult obstacles and eventually overcome them.

The episodes include positive models portraying beneficial lifestyles. Other characters personify negative models exhibiting detrimental views and lifestyles. Transitional models are shown transforming their lives by moving from uncertainty or discarding adverse styles of behavior in favor of beneficial ones. Differential modeling contrasts the personal and social effects of different lifestyles. Viewers are especially prone to draw inspiration from, and identify with, transforming models by seeing them surmount similar adverse life circumstances.

## Vicarious Motivators

Another feature of the dramatic productions enlists vicarious motivators for change. The personal and social benefits of the favorable practices, and the costs of the detrimental ones, are vividly portrayed. Depicted beneficial outcomes instill outcome expectations that serve as positive incentives for change.

Showing models discarding subservient roles and challenging inequitable, dated norms requires depiction of some negative reactions to reflect the social reality. These discordant episodes serve to model effective strategies for managing such events successfully, so that viewers come to believe that they can improve the quality of their lives by similar means used perseverantly. Many efficacy-enhancing elements are incorporated in the transactional episodes. For example, in reducing gender inequities, occasional references to accomplished women worldwide working to raise the status of women provide a source of inspiration and support.

In cultures where women are massively subjugated, changing entrenched cultural norms is a slow, gradual process. When large power differentials exist in gender relations, the modeled strategies must be judicious rather than blatantly confrontational which, in real life, can be risky. Male models personifying understanding and support of equitable normative practices can help to mitigate antagonistic social counteractions.

## Attentional Involvement

Melodramatic embellishments and emotive music give dramatic intensity to episodes to ensure the viewers' attentional involvement and a high level of viewing. Continued engrossment in a broadcast enhances its impacts.

## Symbolic Coding Aids

Still another feature is designed to increase the memorability of the modeled values and social practices. Epilogues summarizing the modeled messages are added to aid the symbolic coding of information for memory representation (see the chapter by Miguel Sabido in this volume).

## Environmental Support

It is of limited value to motivate people to change if they are not provided with appropriate resources and environmental supports to realize those changes. Enlisting and creating environmental support is an additional and especially helpful feature for promoting the social changes encouraged by the dramas.

In the monitoring feature of entertainment-education methodology, once a media program is aired, its producers monitor how audience individuals perceive the characters and the dramatized options and consequences. Corrective changes are made, if necessary, in the intervention. Negative modeling must be structured with special care because some audience individuals who subscribe to cultural stereotypes may side with the negative stereotype being modeled (Brown & Cody, 1991). Such unintended effects can be minimized by accenting the adverse consequences of the detrimental life style, and by having the negative models begin to express self-doubt about their life view and behavior.

### SOCIAL DIFFUSION MODEL

Effective psychosocial models of change usually have limited social impacts because of inadequate systems for their social diffusion. As a result, society does not profit from successful interventions for social change. Lack of expertise and resources in host countries further undermine perceived efficacy to produce long-running serials that can capture and hold public attention, and change behavior.

Population Communications International (PCI) and the Population Media Center (PMC) remove this impediment by serving as the mechanisms for diffusing globally the use of televised dramas to enhance the quality of family life, to promote gender equality, HIV prevention, and family planning (Ryerson, 1994, 1999). These two nonprofit organizations raise funds from various sources to cover production costs. Social cognitive theory (Bandura, 1986), communication theory (Rogers, 1995; Singhal & Rogers, 1999), and dramatic theory (Sabido, 2002) provide the generic principles of change. But their implementation in serial dramas requires functional adaptations to different cultural milieus.

These dramatic serials are created only on invitation by countries seeking help with intractable social problems. The Centers provide a nation's scriptwriters, producers, and actors with the technical assistance to construct dramas tailored to the societal problems, aspirations, and normative practices of the host country. This creative process involves a close collaborative partnership with local production teams aimed at enabling people to improve their life circumstances. To ensure sustainability of these productions, PCI or PMC workshops equip local partners with the skills to produce engrossing broadcasts for social change on their own.

These socially enabling dramas are not soap operas in which a wide array of characters are endlessly entangled in social conflicts and moral predicaments laced with interpersonal treachery. Nor are they superficial media campaigns marketing quick fixes to intractable social problems. Rather, the

sociocognitive genre dramatizes the everyday social problems with which people struggle, models suitable solutions, and provides people with incentives, support, and strategies for bettering their lives. In audience surveys, viewers report the many ways in which the characters in the dramas touch their personal lives. Functional relevance makes these serials immensely popular.

Long-running plot development fosters growing valuation of beneficial styles of behavior and devaluation of detrimental ones. In short, both genres involve storytelling, but they tell entirely different types of stories, serving markedly different purposes. To misconstrue the proactive enabling genre as an ordinary soap opera trivializes its markedly different structure and function.

The sociocognitive dramatizations using Sabido's approach are not aimed at simply changing attitudes, which often bear a weak relationship to behavior. When self-interest conflicts with personal attitudes, people readily find reasons to act in ways that belie their professed attitudes or to justify exemptions to them. As previously noted, the enabling dramatizations serve more powerful functions. They inform, enable, guide, and motivate people to effect changes in their lives. The dramatizations further assist people in their efforts at personal and social change by linking them to enabling and supportive sub-communities and beneficial human services.

These serial dramas are also not "family planning" interventions foisted on the women of poor nations by powerful outsiders. The dramatic productions address the problem of mounting population growth and possible solutions in broader human terms. In many societies women are treated more like property than as persons, denied equitable access to education, forced into prearranged marriages, and granted little say in their reproductive lives. Therefore, one of the central themes in the dramatizations is aimed at raising the status of women so they have equitable access to educational and social opportunities, have a voice in family decisions about child bearing, and serve as active partners in their familial and social lives. This theme involves raising men's understanding of the legitimacy of women making decisions regarding their reproductive health and family life. Moreover, the engrossing programs serve as an excellent vehicle for modeling a variety of functional life skills woven into familial and social transactions.

PCI and PMC serve as the vehicle for social diffusion and also promote cooperation and collaboration among nongovernmental organizations worldwide that are concerned with population growth, environmental and health problems, and human rights. Such alliances increase the chances of success by mobilizing and focusing people's efforts to improve the quality of life for themselves and their children. In addition, PCI and PMC work with professionals in the entertainment industry to heighten their sensitivity to ethnic stereotyping, human rights, health, population growth and environmental degradation in their media productions and to include themes related to these issues in the

story lines they create for various types of fictional dramas (see the chapters by David Poindexter and by William Ryerson and Negussie Teffera in this volume).

### Cultural and Value Analyses

As is true of any intervention, the use of communication to foster personal and social change raises ethical issues. Ethical evaluations will depend on who selects the types of changes to be promoted, the agents of change, the means used, and the choice and voluntariness of exposure to the influence. Extensive cultural and value analyses are conducted before dramas are developed and implemented. In this formative phase, focus groups, representing various constituencies in the society, identify problems of major concern to them and the obstacles they face. These data provide the culturally relevant information for developing realistic characters and engrossing functional plot lines. The host country production team, drawing on a wide variety of sources, including public health, religious organizations, women's groups, and other constituencies, identify unique cultural values and itemize the types of changes the dramatizations should encourage. Once a program is aired, producers monitor how viewers perceive the characters, with whom they are identifying, and the dramatized options for corrective changes if necessary.

Value disputes are often fueled by wrangling over stereotypes infused with emotive surplus meanings rather than deliberating about changes in real-life terms. The value issues are, therefore, cast in concrete terms of detriments and benefits of particular lifestyles. For example, initial religious and political opposition in Mexico to Miguel Sabido's serials promoting "family planning" turned to support when the nature of the social changes were presented concretely in a value matrix. The tangible values embody respect for human dignity and equitable familial, social, health, and educational opportunities that support common human aspirations. These dramatizations are thus grounded in the internationally endorsed human values codified in United Nations covenants and resolutions. The dramatized options and consequences enable people to make informed choices to improve their lives.

### GLOBAL APPLICATIONS OF THE SOCIOCOGNITIVE MODEL

The present chapter thus far has centered on the basic tenets of social cognitive theory and their social applications via translational and social diffusion models. The sections that follow illustrate concretely how these guiding principles have been applied world-wide to alleviate some of the most urgent

Different indicators are used to gauge the effectiveness of this model. In applications designed to bring down the population growth rate (Rogers et al., 1999), the indices include changes in family size preferences, prevalence of contraceptive use, and reduction in fertility rates. The direct impact of televised influences is affected by level of self-exposure to the modeled values and social practices. Viewership surveys, therefore, assess the reach of the programs, how often people are exposed to them, and how these programs affect viewers at a personal level. The socially mediated impact is measured in terms of the frequency with which people talk about the educational content modeled in the media dramatizations. These types of data permit more refined analyses of impacts as a function of level of self-exposure and social transactions that help to promote desired personal and social change.

As previously noted, serial dramas try to improve people's lives in a variety of ways. These broader social indices of impact include changes in people's sense of efficacy to manage and improve their lives, support of gender equality in opportunities for social and education growth, spousal abuse, health promotion, protection against HIV/AIDS infection, and environmental conservation practices. Some of the themes are unique to a given society, such as attacking the practice of dowry and arranged marriages in which women have no say in their choice of husband.

The outcomes selected for assessment represent the different spheres in which people seek to improve their lives. These socially important assessments need to be supplemented with measurements of the key psychosocial factors through which media influences affect personal and social change. As shown earlier, these sociocognitive factors include people's efficacy beliefs that they can effect changes in their lives by individual and collective action; the goals and aspirations they set for themselves; the material, social, and self-evaluative outcomes they expect their efforts to produce; and the social facilitators and impediments they see to improving the quality of their lives and shaping the social future. Assessment of these key determinants provides guides for the needed adjustments in the dramatizations to enhance their impact.

## Promoting National Literacy

Miguel Sabido (1981) first devised the essential elements and structure of the sociocognitive model in a television serial designed to promote enrollment in a national literacy program in Mexico. Literacy is, of course, a key element in personal and national development. He faced the challenge of using commercial television in the public interest without forfeiting viewership.

To reduce widespread illiteracy, the Mexican government launched a national self-instruction program. People who were skilled at reading were urged to organize small self-study groups in which they would teach others how to

read with instructional materials (a literacy manual) specifically developed for this purpose. The national appeal produced a disappointing social response, however. So Sabido created a year-long television serial with daily episodes to reach, enable, and motivate people with problems of illiteracy. The main story line in the dramatic series centered on the engaging and informative experiences of one self-instruction group. The implementation model involved creative translation of social cognitive theory into practice. The most popular soap opera performer was cast in the role of the literate model, to take advantage of prestigeful modeling. To enhance the impact of modeling through perceived similarity, she recruits a cast of characters who represent the different segments of the population with problems of illiteracy. Showing people similar to themselves mastering linguistic skills helped persuade viewers that they too possess the capabilities to master the skills that were being modeled. The name of the telenovela, *Ven Conmigo* (Come With Me) portrayed collective mastery of competencies and the accompanying benefits.

A prior interview survey revealed several personal demotivating barriers that dissuaded people from enrolling in the national program for adult literacy. Many believed that they lacked the capabilities to master such a complex skill. Others believed that reading skills could be acquired only when one is young. Still others felt that they were unworthy of having an educated person devote their time to help them. These self-handicapping misbeliefs were modeled by the actors and corrected by the television instructor as she persuaded them that they possessed the capabilities to succeed. The Mexican telenovela included humor, conflict, and engrossing discussions of the subjects being read. The episodes showed the models struggling in the initial phases of learning, and then gaining progressive mastery and self-pride in their accomplishments.

To provide vicarious motivators to pursue the self-education program, the dramatic series depicted the substantial benefits of literacy both for personal development and for national efficacy and pride. Melodramatic embellishments and emotive music gave dramatic intensity to the television episodes to ensure high involvement of the viewers.

Epilogues were used to increase memorability of the modeled messages. To facilitate media-promoted changes, all the instructional material (the manual) was provided by the governmental educational agency. In addition, the series often used real-life settings showing the actors obtaining the instructional material from an actual distribution center, and eventually graduating in a ceremony for actual enrollees in the adult literacy classes. Epilogues also informed the viewers of the national self-instruction program and encouraged them to take advantage of it. What a powerful motivator it turned out to be! On the day after an epilogue urged viewers to enroll in the literacy program, about 25,000 people descended on the distribution center in downtown Mexico

City to obtain their reading materials! The resulting traffic jam tied up vehicles for many hours.

Millions of viewers watched this serial drama faithfully. Compared to non-viewers, viewers of the dramatic series were much more informed about the national literacy program and expressed more positive attitudes about helping one another to learn. The rate of enrollment in the program was 99,000 in the year before the televised series, but shot up abruptly to 900,000 during the year of the broadcasts.

As people develop a sense of efficacy and competencies that enable them to exercise more control over their lives, they serve as models, inspiration, and even as tutors for others in the circles in which they move. This concomitant socially mediated influence can vastly multiply the impact of televised modeling. In the year following *Ven Conmigo*, another 400,000 people enrolled in the self-study literacy program. Through the socially mediated path of influence, televised modeling can set in motion an ever-widening, reverberating process of social change.

### **Environmental Sustainability by Stemming Population Growth**

Soaring population growth is destroying the ecosystems that sustain life, degrading the quality of life, and draining resources needed for national development. Underdeveloped nations are doubling their populations at an accelerating rate. Through a global effort, numerous socially enabling dramas are now being widely used in Africa, Asia, and Latin America to stem the tide of population growth. The host countries that sought help are struggling with widespread poverty and are on a trajectory of doubling their populations over a relatively short period. Burgeoning demographic forces overwhelm efforts at social and economic development.

Unless people see family planning methods as improving their welfare, they have little incentive to adopt them. Sabido developed a series of dramas to reduce the population growth rate in Mexico (Sabido, 1981). Through modeling with accompanying outcomes, the dramas portrayed the process as well as the personal, social, and economic benefits of family planning. The positive family life of a smaller-sized family, whose wife worked in a family planning clinic, was contrasted with that of a married sister overburdened with a huge family and accompanying impoverishment and misery.

Much of the drama of *Acompaname* (Accompany Me) focused on the married daughter from the large family, who was beginning to experience severe marital conflicts and distress over her rapidly expanding family. She served as the transitional model, living in her parents' home, a despairingly crowded and impoverished environment. In dramatic scenes she expresses

emotionally her desire for a voice in her family life, to cease having unwanted babies, and to break the cycle of poverty that condemned her family to an inner-city slum with inability to care adequately for her children. She turns to her aunt for help, which serves as the vehicle for modeling a great deal of information about how to manage marital discord and machismo behavior, how to deal with male resistance to contraception and family planning, how to communicate openly in the family, and how to escape the many problems caused by a family overburdened with children.

As the drama unfolds, the young couple is shown gaining control over their family life and enjoying the accruing benefits with the help of a family planning clinic. A priest occasionally appeared in the drama, emphasizing the need for responsible family planning by limiting the number of offspring to those the family can afford to raise adequately. At the end of episodes, viewers were informed in epilogues about existing family planning services to facilitate media-promoted behavior changes.

Compared to nonviewers, heavy viewers of the dramatic serial in Mexico were more likely to link lower childbearing with social, economic, and psychological benefits. They also developed a more positive attitude towards helping others plan their family (Sabido, 1981). Records of family planning clinics revealed a 32% increase in the number of new contraceptive users over the number for the previous year before the series was televised. People reported that the television portrayal served as the impetus for consulting the health clinics. National sales of contraceptives rose from 4% and 7% in the preceding two baseline years, to 23% in the year the television program was broadcast.

### **Generalization Through Functional Adaptations**

Applications of the generic model in India and Kenya illustrate its generalizability through functional tailoring to diverse cultural practices. Efforts to bring down the rate of population growth must address not only the strategies and benefits of family planning, but also the role and status of women in societies in which they are treated as subservient. In some societies, the equity problems stem from machismo dominance; in others, from marriage and pregnancy at the onset of puberty with no say in the choice of husband or the number and spacing of children; and in still others from dispossession by polygamous marriages. In some societies, women are subjugated to the point where they are repeatedly beaten and are not even allowed to turn on a family radio.

The television program in India, *Hum Log* (We People), was designed to raise the status of women, as well as to promote a smaller family norm. It addressed a variety of themes about family life in the context of broader social

norms and practices (Singhal & Rogers, 1999). Subthemes devoted particular attention to family harmony amidst differences among family members, elevation of the status of women in family social and economic life, educational opportunities and career options for women, son preference and gender bias in child rearing, the detriments of dowry, choice in spouse selection, teenage marriage and parenthood, spousal abuse, family planning to limit family size, youth delinquency, and community development. Some of the characters personified positive role models for gender equality; others were proponents of the traditional subservient role for women. Still others were transitional models. A famous Indian film actor reinforced the modeled messages in epilogues.

The melodramatic series was immensely popular in India, enjoying top viewership on television, and a massive outpouring of letters in the hundreds of thousands from viewers offering advice and support to the characters. A random sample of 1,100 viewers reported that they had learned from the television program that women should have equal opportunities and a say in decisions that affect their lives, that programs advancing the welfare of women should be encouraged, that cultural diversity should be respected, and that family size should be limited. The more aware viewers were of the messages being modeled, the greater was their support of women's freedom of choice in matters that affected them and of planning for small families (Brown & Cody, 1991; Singhal & Rogers, 1999).

Intensive interviews with village inhabitants revealed that the dramatizations spark serious public discussions about the broadcast themes concerning child marriages, dowry, education of girls, benefits of small families, and other social issues (Papa, et al., 2000). These social transactions went beyond talk to collective community action aimed at changing inequitable normative practices and improving the future. Indeed, one village sent to the broadcaster a large poster letter signed by its inhabitants stating that they would work to eradicate the practice of dowry and child marriages (both illegal in India, but widespread). The enrollment of girls in elementary schools rose from 10% to 38% in one year of the broadcasts.

Many impediments exist to sociocultural change, but their force weakens over time as new ideas gain support and collective benefits outweigh the social costs of dated institutional arrangements. In another Indian village young boys and girls created a self-help action group to promote the changes modeled in the serial drama (Law & Singhal, 1999). These system-level effects illustrate how dramas that address the social problems that people face in enabling ways can spawn the development of collective efficacy.

A story line in a Kenya radio drama revolved around the inheritance of land and the impoverishing effect of large families. The serial drama, broadcast via radio in order to reach rural people, was the most popular program on the air. Contraceptive use increased by 58% and desired family size declined by 24%.

Quantitative analyses, including multiple controls for possible determinants, revealed that the mass media were a major contributor to Kenya's declining birthrate per woman and the reduction in the rate of population growth (Westoff & Rodriguez, 1995).

China, the most populous nation in the world, faces a projected doubling of its current population to the two billion mark in about 70 years. This enormous population growth will have devastating effects on ecological systems. The Chinese one-child policy heightens the traditional cultural preferences for sons. The drama, *Baixing* (Ordinary People), addresses the discriminatory gender bias in Chinese society and fosters psychosocial changes to supplant coercive institutional controls on fertility with voluntary adoption of contraceptive practices and a preference for small families. The television drama graphically portrays the tragedy and injustice of social practices that force women into arranged marriages they do not want and into bearing baby girls that spouses do not want. Viewers are inspired and strengthened by the determination and courage of female characters who challenge the subordinate status of women, and who strive to change detrimental cultural practices. The gender inequity themes seek to raise the valuation of women and expand enabling opportunities for them to become active participants in the social and economic life of Chinese society.

The diverse applications of the sociocognitive model have yielded uniform research findings. The dramatic serials are an extraordinarily effective vehicle for reaching vast numbers of people over a prolonged period. Viewers get deeply involved in the lives of the televised characters. Airing of the televised serials is followed by preference for smaller families and adoption of contraceptive methods. The strength of the social impact increases as a function of level of exposure to the broadcasts (the dose effects). The more that people watch the media program, the more they talk about the educational issues that are aired, the more supportive they are of gender equality, the higher their perceived efficacy to regulate their reproductive behavior, and the more likely they are to adopt contraceptive methods.

### **Control on Other Independent Variables**

Research by Westoff and Rodriguez (1995) shows that the conditional relationship is not an artifact due to more advantaged and efficacious individuals being heavier television viewers. The impact of media exposure on adoption and consistent use of new methods of contraception remained after controlling for life-cycle status, number of wives and children, and a host of socioeconomic factors such as ethnicity, religion, education, occupation, and urban-rural residence. Internal analyses of survey data revealed that the media influence was a major factor in raising motivation to limit fertility and to adopt contraception practices.

In Tanzania, containing seven regions with separate broadcasting transmitters, the radio drama was aired in six regions with the other major region serving as a control. Compared to the control region, the radio dramatizations raised viewers' perceived efficacy to determine their family size, decreased their desired number of children, increased the ideal age of marriage for women, increased approval of family planning methods, stimulated spousal communication about family size, and increased use of family planning services and adoption of contraceptive methods (Rogers et al., 1999). The impact on family planning was replicated (after 1995) when the serial was later broadcast in the control region. As in the Kenya research, the more often people listened to the radio broadcasts, the more that married women talked to their spouses about family planning and the higher their rate of adoption of contraceptive methods. These diverse effects remained after multiple controls for a host of other potential determinants. The fertility rate declined more in the 2-year period of the serial dramas than in the previous 30 years without any change in socioeconomic conditions and little change in death rate (Vaughan, 2003).

Some of the radio episodes targeted sexual practices that risk infection with the AIDS virus. Compared to residents in the control region, those in the broadcast regions increased belief in their personal risk of HIV infection through unprotected sexual behavior, talked more about HIV infection, reduced their number of sexual partners, and increased condom use (Vaughan, Rogers, & Swalehe, 1995; Vaughan, Rogers, Singhal, & Swalehe, 2000). The number of condoms distributed annually by the National AIDS Control Program in Tanzania remained low in the control region, increased substantially in the broadcast regions, and increased significantly in the control region after exposure to the radio broadcasts. Perceived self-efficacy emerged as a significant predictor of reproductive behavior and risky sexual practices.

### **SUSTAINABILITY BY MODIFICATION OF CONSUMMATOR LIFESTYLES**

The present chapter focused on environmental conservation and sustainability through population stabilization. The fundings from many cross-cultural applications attest to the generalizability of the generic model with appropriate functional adaptations. It lends itself readily to other types of lifestyle changes, such as environmental conservation and consummatory practices to promote environmental sustainability. For example, an Indian serial centered on preserving the environment motivated villagers to take collective action to improve sanitation, reduce potential health hazards, adopt fuel conservation practices to reduce pollution, and to launch a tree-planting campaign (Papa et al., 2000). Moreover, villagers persuaded other villages to institute similar environmental practices.

If people are to make decisions supportive of sustained development, they need to be informed of the ecological costs of their consummatory practices and enabled and motivated to turn enlightened concern into constructive courses of action. This change is best achieved through multiple modes of communication (Singhal & Rogers, 1999). Many lifelong consummatory habits are formed during childhood years. It is easier to prevent wasteful practices than to try to change them after they have become deeply entrenched as part of a lifestyle.

To address the environmental problems created by over-consumption, PCI produced a video, *The Cost of Cool*, for distribution to schools that focused on the buying habits of teenagers (PCI, 2000). It tracks the ecological costs of the manufacture of everyday items such as Tshirts and sneakers. Providing teenagers with sound information helped them make informed choices in their buying habits. As one viewer put it, "I'll never look at a T-shirt in the same way." Popular entertainment, using formats such as music concerts, recordings, and videos, provide another vehicle for reaching youth populations, with themes addressing critical social issues, substance abuse, violence, teen sexuality, and gender equality. The impact of these complimentary approaches requires systematic evaluation. The increasing magnitude of the environmental problem calls for multifaceted efforts to alter behavioral practices that degrade the ecological supports of life.

In sum, the research cited here provides convergent evidence from diverse methodologies, multiple controls for a host of other potential determinants, multifaceted forms of assessments, diverse cultural milieus, adaptational themes, and domains of functioning. The findings attest to the social utility of the sociocognitive communication model for effecting personal and social change grounded in internationally endorsed human values with sensitive adaptations to cultural diversity. People enjoy the benefits left by those before them who collectively fought for social reforms that improved their lives. Their own collective efficacy will shape how future generations live their lives. The times call for social initiatives that enable people to play a part through their collective voice in bettering the human condition.

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## CHAPTER 2

# THE EVOLUTION OF SOCIAL COGNITIVE THEORY

ALBERT BANDURA

THE present chapter documents the evolution of social cognitive theory. Before retracing this theoretical odyssey, I will describe briefly the key tenet on which this theory is founded. Social cognitive theory adopts an agentic perspective to self-development, adaptation, and change (Bandura, 2001). To be an agent is to influence intentionally one's functioning and life circumstances. In this view, people are self-organizing, proactive, self-regulating, and self-reflecting. They are contributors to their life circumstances not just products of them.

### 2.1 AGENTIC PERSPECTIVE OF SOCIAL COGNITIVE THEORY

There are several core features of human agency. One such feature is intentionality. People form intentions that include action plans and strategies for realizing them. The second feature involves the temporal extension of agency through forethought. This includes more than future-directed plans. People set themselves goals and

anticipate likely outcomes of prospective actions to guide and motivate their efforts anticipatorily. A future cannot be a cause of current behavior because it has no material existence. But by being represented cognitively in the present, visualized futures serve as current guides and motivators of behavior.

Agents are not only planners and forethinkers. They are also self-regulators. They adopt personal standards, and monitor and regulate their actions by self-reactive influence. They do things that give them satisfaction and a sense of self-worth and refrain from actions that bring self-censure. People are not only agents of action. They are self-examiners of their own functioning. Through functional self-awareness they reflect on their personal efficacy, the soundness of their thoughts and actions, the meaning of their pursuits, and make corrective adjustments if necessary. Forethought and self-influence are part of a causal structure.

Human functioning is rooted in social systems. Therefore, personal agency operates within a broad network of sociostructural influences. In these agentic transactions, people create social systems to organize, guide, and regulate human activities. The practices of social systems, in turn, impose constraints and provide resources and opportunity structures for personal development and functioning. Given this dynamic bidirectionality of influence, social cognitive theory rejects a dualism between personal agency and a social structure disembodied from human activity.

## 2.2 CENTRALITY OF SOCIAL MODELING

Discontent with the adequacy of existing theoretical explanations provides the impetus to search for conceptual schemes that can offer better explanations and solutions to phenomena of import. Behaviorism was very much in vogue at the time I began my career. The process of learning occupied the central position in this form of theorizing. The prevailing analyses of learning focused almost entirely on learning through the effects of one's actions. The explanatory mechanisms were cast in terms of establishing connections between stimuli and responses at the peripheral level through reward and punish consequences. The behavioristic theorizing was discordant with the evident social reality that much of what we learn is through the power of social modeling. I found it difficult to imagine a culture in which its language, mores, familial customs and practices, occupational competencies, and educational, religious, and political practices were gradually shaped in each new member by rewarding and punishing consequences of their trial-and-error performances. This tedious and potentially

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hazardous process where errors are costly was shortcut by social modeling. In modeling, people pattern their styles of thinking and behaving after the functional ones exemplified by others.

The foremost proponents of behaviorism, Watson (1908) and Thorndike (1898), dismissed the existence of observational learning because, in their view, learning required performance of responses. The notion of learning by observation was too divergent to be given serious consideration. This was a durable legacy. Despite the centrality and pervasiveness of social modeling in everyday life, there was no research to speak of on modeling processes until the publication of *Social Learning and Imitation* by Miller and Dollard in 1941. They recognized modeling phenomena, but construed them as a special case of discrimination learning. A model provides a social cue, the observer performs a matching response, and its reinforcement strengthens the tendency to behave imitatively.

I found this conception seriously wanting on the determinants, mechanisms, and scope of observational learning. We launched a program of research on observational learning as it typically occurs in the absence of reinforced performance. We tested the determinants of observational learning and the mechanisms through which it works.

In a chapter entitled "Vicarious Processes: A Case of No-Trial Learning" (Bandura 1965), I presented the findings of our studies showing that observational learning requires neither response enactment nor reinforcement. Social modeling operated through four cognitive subfunctions encompassing attentional, representational, enactive translational, and motivational processes (Bandura, 1971a). I came under heavy fire from operant conditioners for whom nonreinforced modeling posed a major problem for their explanatory system (Baer, Peterson, and Sherman, 1967). They contended that reinforcement of some matching responses would establish imitation as a conditioned reinforcer.

We conducted research demonstrating that generalized imitation is governed by social beliefs and outcome expectations rather than by infused reinforcement (Bandura and Barab, 1971). When the functional value of modeled behavior was systematically varied, children faithfully adopted the behavior of a female model who rewarded them for doing so, but quickly ignored the behavior of a male model when it brought them no rewards. When the discriminability of the rewarded modeled behavior was varied, children adopted discriminable rewarded motor responses, ceased imitating discriminable nonrewarded verbal responses, but imitated nonrewarded responses that lacked features that would make them easily discriminable from the other rewarded response classes.

On the occasions when children modeled discriminable behavior in the nonrewarded class, this tendency was very much under cognitive control. Some of the children believed that the model demanded it ("I supposed to"), others performed nonrewarded imitations on the mistaken hope that the nonrewarding model would become more beneficent ("I thought if I kept trying lots of times

he might get used to it and start up giving candy like the lady did"); and still others acted like seasoned scientists testing hypotheses about outcome contingencies by systematically varying their behavior and observing its outcomes ("Sometimes I'd do it and sometimes no to see if I'd get any candy"). So much for conditioned reinforcers.

Theorists tend to focus selectively on explaining either human cognition or human action. As a result, the mechanisms governing the translation of thought into proficient performance have received little attention. The dual knowledge system (Anderson, 1980)—combining declarative knowledge with procedural knowledge embodying decision rules for solving tasks—was widely adopted as the solution to the translation problem. Explaining the acquisition of competencies in terms of factual and procedural knowledge may be adequate for cognitive problem solving where the implementation actions are trivially simple. However, in developing proficiency in complex styles of behavior procedural knowledge is not enough. It requires enlistment of multifaceted self-regulative operations and corrective feedback systems through which knowledge structures are converted to proficient performances. For example, a novice given factual information on how to ski, a full set of procedural rules, and then launched from a mountain top would most likely end up in an orthopedic ward or in an intensive care unit of a local infirmary.

We devised a series of experiments to test the notion that the behavioral translation operates through a conception-matching process (Carroll and Bandura, 1982, 1985, 1987, 1990). Cognitive representations conveyed by modeling serve as guides for the production of skilled performances and as standards for making corrective adjustments in the development of behavioral proficiency. Skills are usually perfected by repeated corrective adjustments in conception-matching during behavior production. Monitored enactment with instructive feedback serves as the vehicle for converting conception to proficient performance. The feedback accompanying enactments provides the information for detecting and correcting mismatches between conception and action. The behavior is thus modified based on the comparative information to master the desired competencies. The findings of these experiments added to our understanding of how cognitive representations, monitored enactments, and instructive feedback operate in concert in the development of competencies.

The value of a psychological theory is judged not only by its explanatory and predictive power, but also ultimately by its operative power to promote changes in human functioning. Social cognitive theory lends itself readily to social applications because it specifies modifiable determinants and how they should be structured based on verified mechanisms through which they operate. Knowledge of modeling processes provided informative guides on how to enable people to effect personal, organizational, and social changes (Bandura, 1969, 1997; Bandura and Rosenthal, 1978).

## 2.3 CORRECTING MISCONCEPTIONS ABOUT THE NATURE AND SCOPE OF MODELING

There were a number of entrenched misconceptions about the nature and scope of modeling that put a damper on the research and social applications of this powerful mode of learning. Progress in this area, therefore, required research designed not only to elucidate the determinants and mechanisms of social modeling, but to put the misconceptions to rest.

One such misconception was that modeling, construed as "imitation," could produce only response mimicry. Exemplars usually differ in content and other details but embody the same underlying principle. To cite a simple example, the passive linguistic form may be embodied in any variety of utterances. Research on abstract modeling (Bandura, 1986; Rosenthal and Zimmerman, 1978) showed that social modeling involved abstracting the information conveyed by specific exemplars about the structure and the underlying principles governing the behavior, rather than simple response mimicry of specific exemplars. Once individuals learn the guiding principle, they can use it to generate new versions of the behavior that go beyond what they have seen or heard. They can tailor the behavior to suit changing circumstances. Thus, for example, generic managerial skills, developed through modeling and guided enactments with instructive feedback, improve managerial functioning that, in turn, reduces employee absentee and turnover rates, and raises the level of organizational productivity (Latham and Saari, 1979; Porras, et al., 1982).

Another misconception, requiring retirement, held that modeling is antithetical to creativity. We were able to show how innovation can emerge through modeling. When exposed to models who differ in their styles of thinking and behavior, observers rarely pattern their behavior exclusively after a single source. Nor do they adopt all the attributes even of preferred models. Rather, observers combine various features of different models into new amalgams that differ from the individual modeled sources (Bandura, Ross, and Ross, 1963). Thus, two observers can construct new forms of behavior entirely through modeling that differ from each other by selectively blending different features from the variant models.

Modeling was shown to promote creativity in two main ways. Modeled unconventional ways of thinking increases innovativeness in others (Harris and Evans, 1973; Gist, 1989). Creativity usually involves synthesizing existing knowledge into new ways of thinking and doing things (Bandura, 1986). Organizations engage in a great deal of selective modeling of what is found to be effective (Bolton, 1993). People are too perceptive and do not have the time and resources to keep reinventing the core characteristics of successful systems, services, and products. They adopt advantageous elements, improve upon them, synthesize them into new forms, and tailor

them to their particular circumstances. These lines of research provided new insight into how selective modeling can, indeed, be the mother of innovation.

There was another oft-repeated misconception regarding the scope of modeling. Many activities involve cognitive skills on how to gain and use information for solving problems. Critics argued that modeling cannot build cognitive skills because thought processes are covert and are not adequately reflected in modeled actions, which are the end-products of the cognitive operations. This was a limitation of conceptual vision rather than an inherent limitation of modeling.

Meichenbaum (1984) showed that cognitive skills can be readily promoted by verbal modeling in which models verbalize aloud their reasoning strategies as they engage in problem-solving activities. The thoughts guiding their decisions and actions are thus made observable. During verbal modeling, the models verbalize their thought processes as they evaluate the problem, seek information relevant to it, generate alternative solutions, weigh the likely outcomes associated with each alternative, and select the best way of implementing the chosen solution. They also verbalize their strategies for handling difficulties, how to recover from errors and how to motivate themselves. Cognitive modeling proved to be more powerful in enhancing perceived self-efficacy and building innovative and other complex cognitive skills than the commonly used tutorial methods (Gist, 1989; Gist, Bavetta, and Stevens, 1990; Gist, Schwoerer, and Rosen, 1989; Debowski, Wood, and Bandura, 2001).

## 2.4 POWER AND REACH OF SYMBOLIC MODELING

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A growing influential source of social learning is the varied and pervasive symbolic modeling through the electronic media. A major advantage of symbolic modeling is that it can transmit information of virtually limitless variety to vast populations simultaneously in widely dispersed locales. Extraordinary advances in the technology of communication are transforming the nature, reach, speed, and loci of human influence. These technological developments have radically altered the social diffusion process. Video systems feeding off telecommunications satellites have become the dominant means for disseminating symbolic environments. New ideas, values, and styles of conduct are now being rapidly spread worldwide in ways that foster a globally distributed consciousness. The internet provides instant communicative access worldwide. This makes electronic modeling a powerful

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vehicle for transcultural and sociopolitical change (Bandura, 2002a; Braithwaite, 1994).

In this broadened function of social diffusion of innovation through symbolic modeling, I integrated sociocognitive theory with the knowledge from social network theory (Bandura, 1986, 2001; Rogers, 1995). Sociocognitive influences instruct people in new ideas and practices and motivate them to adopt them. Multilinked social networks provide the potential diffusion path through which they spread and are supported.

Through a collaborative partnership (Bandura, 2002c), the social cognitive approach combined three major components into a model for promoting society-wide changes. The first component is a *theoretical model*. It specifies the determinants of psychosocial change and the mechanisms through which they produce their effects. This knowledge provides the guiding principles. The second component is a *translational and implementation model*. It converts theoretical principles into an innovative operational model. It specifies the content, strategies of change and their mode of implementation.

Effective psychosocial models of change usually have limited social impact because of inadequate systems for their social diffusion. As a result, we do not profit from our successes. The third component is a *social diffusion model* on how to promote adoption of psychosocial programs in diverse cultural milieus. Each of these components serves a unique function requiring different types of expertise. The applications of social cognitive theory in Africa, Asia, and Latin America to alleviate some of the most urgent global problems document how these three competent functions evolved into a powerful model for social change (Bandura, 2002c).

Some forty years ago, I used modeling of novel physical and verbal styles of aggression toward a Bobo doll as the vehicle for studying the mechanisms of observational learning. The Bobo doll follows me wherever I go. The photographs are published in every introductory psychology text and virtually every undergraduate takes introductory psychology. I recently checked into a Washington hotel. The clerk at the desk asked, "Aren't you the psychologist who did the Bobo doll experiment?" I answered, "I am afraid that will be my legacy." He replied, "That deserves an upgrade. I will put you in a suite in the quiet part of the hotel." I recently was going through the Canadian customs in Vancouver. The customs' agent looked at the passport and asked, "Didn't you do the Bobo doll study?" She was a psych major at the University of British Columbia.

One morning I received a call from Miguel Sabido, a creative producer at Televisa in Mexico City. He explained that he was developing long-running serial dramas founded on the modeling principles to promote national literacy and family planning in Mexico (Sabido, 1981). These televised productions dramatize people's own everyday lives and the problems they have to manage. The enabling dramas help viewers to see a better life and provide them with the strategies and incentives that enable them to take the steps to achieve it.

Social cognitive theory provided the theoretical model. Sabido created the generic translational and implementational model. Based on the demonstrated success of this macrosocial approach, *Population Communication International* in New York designed the social diffusion model (Poindexter, 2004). They provide the resources, enabling guidance, and technical assistance to media personnel in the host nations to create serial dramas appropriate to their culture and the problems with which they are struggling. These worldwide applications are promoting national literacy, family planning in countries with soaring population growth, raising the status of women in societies that marginalize or subjugate them, curtailing the spread of HIV/AIDS infection, fostering environmental conservation, and in other ways bettering people's lives (Bandura, 2002c).

We often cite examples in the natural and biological sciences where knowledge pursued for its own sake has unforeseen human benefits. The knowledge gained from the early modeling experiments spawned, through interdisciplinary partnership, unimagined global applications forty years later to alleviate some of the most urgent global problems.

## 2.5 EXERCISE OF AGENCY THROUGH SELF-REGULATORY CAPABILITIES

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During this behavioristic era, learning was presumed to occur through classical and instrumental conditioning. In this conception, motivation was regulated by a crude functionalism grounded in rewarding and punishing consequences. This approach presented a truncated image of human nature given the self-regulatory capabilities of people to affect their thought processes, motivation, affective states, and actions through self-directed influence. As part of the development of the agentic theory of human behavior, I mounted a program of research aimed at elucidating the acquisition and function of self-regulatory capabilities (Bandura, 1971c; 1986). Before reviewing the development of this aspect of social cognitive theory, I will describe personal experiences that informed my theorizing and experimentation regarding self-regulatory mechanisms.

Theorists often get themselves into a disconcerting egocentric predicament. They exempt themselves from the theory they develop to explain how others behave. For example, Skinner argued that humans are shaped and controlled by environmental forces. As he put it, "Man does not act on the environment. The environment acts on him." But then he exhorted people to become agents of change and shape their society by dutifully applying his operant conditioning

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methods. It is amusing to see radical postmodernists arguing authoritatively for the correctness of their view that there is no one correct view. Physical eliminationists think, argue and act agentically but characterize other folks as simply epiphenomenal hosts of automata orchestrating their behavior under the illusion that they are personally influencing events.

The agentic theory of human self-development and functioning applies equally to the road I have traveled. I grew up in a tiny hamlet in northern Alberta, Canada. The one school in town was woefully short of educational resources. Because two teachers had to teach the entire high school curriculum, they were often poorly informed in key subject areas. We once pilfered the answer book for the trigonometry course and brought it to an abrupt halt. We had to take charge of our own learning. Self-directed learning was the means of academic self-development not a theoretical abstraction. The paucity of educational resources turned out to be an enabling factor that has served me well, rather than an insurmountable handicapping one. The content of courses is perishable, but self-regulatory skills have lasting functional value.

During summer vacations in high school, my parents, who had no formal schooling but placed a high value on education, encouraged me to seek experiences beyond the confines of this hamlet. I worked in a furniture manufacturing plant in Edmonton. The skills I acquired helped to support me through college in part-time work.

During another high school summer break, I ventured to the Yukon, where I worked in one of the base camps that maintained the Alaska highway from sinking into the muskeg. It contained an interesting mix of characters fleeing creditors, probationary officers, the military, and angry ex-wives demanding alimony payments. Alcohol was their main nutrient. They were brewing their own. One early morning they left jubilantly to distill their fermented mash only to return profoundly despondent. The grizzly bears had partied on their alcoholic mash. We were faced with animated grizzlies stumbling drunkenly in our camp. Fortunately, they were too uncoordinated to do much damage. Life amidst this frontier subculture of drinking and gambling elevated the survival value of personal resourcefulness and initiative. It provided me with a uniquely broad perspective on life.

In search of a benign climate, I enrolled in the University of British Columbia in Vancouver. Being short of the coin of the realm, I worked in a woodwork plant in the afternoons and took a heavy course load in the mornings to graduate early. I enrolled in the doctoral program at the University of Iowa. It was the center of Hullian learning theory, the dominant theoretical orientation in psychology at the time. Iowa equipped us with the values and tools to be productive scientists whatever future course our scholarly pursuits took. After I completed my doctoral study, I joined the faculty at Stanford University. I was blessed with illustrious colleagues, gifted students, and a university ethos that approaches scholarship, not

as a matter of publish or perish, but with puzzlement that the pursuit of knowledge should require coercion. Stanford provided considerable freedom to go wherever one's curiosity might lead.

The exercise of personal agency over the direction one's life takes varies depending on the nature and modifiability of the environment. The environment is not a monolith bearing down on individuals unidirectionally. Operative environments take three different forms: those that are *imposed*, *selected*, and *created*. There is the physical and sociostructural environment that impinges on people whether they like it or not. They do not have much control over its presence, but they do have leeway in how they construe it and react to it.

For the most part, the environment is only a potentiality with affordances and impediments, and rewarding and punishing aspects. The environment does not come into being until it is selected and activated by appropriate action. This constitutes the *selected* environment. Which part of the potential environment becomes the actual experienced environment thus depends on what people make of it and recruit from it. Under the same potential environment, individuals whose sense of efficacy is raised focus on the opportunities it provides, whereas those whose self-efficacy is lowered dwell on problems and risks (Krueger and Dickson, 1993; 1994).

And finally, there is the environment that is created. It did not exist as a potentiality waiting to be selected and activated. Rather, people create the nature of their situations to serve their purposes. Gradations of environmental changeability require increasing levels of personal agency, ranging from cognitive construal agency, to selection and activation agency, to constructional agency. People's beliefs in their personal and collective efficacy play an influential role in how they organize, create, and manage the life circumstances that affect the paths they take and what they become.

Given the meager educational resources and prevailing normative influences in this rural hamlet, the widely used psychological predictors would probably have me toiling in the fields in Northern Alberta, playing pool, and drinking myself to oblivion in the local beer parlor, which was the main pastime. Viewed from a non-agentic perspective, I should not have gone to college, I should not have attained a doctoral degree, I should not be teaching amidst the balmy palms at Stanford University, and I should not be writing this chapter.

There is much that people do designedly to exercise some measure of control over their self-development and life circumstances. But there is a lot of fortuity in the courses lives take. Indeed, some of the most important determinants of life paths occur through the most trivial of circumstances. People are often inaugurated into new life trajectories, marital partnerships, occupational careers through fortuitous circumstances (Austin, 1978; Bandura, 1986; Stagner, 1981).

A chance event is an unintended meeting of persons unfamiliar with each other. Although the separate chains of events in a chance encounter have their own causal

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determinants, their intersection occurs fortuitously rather than by design (Nagel, 1961). A seemingly insignificant fortuitous event can set in motion constellations of influences that alter the course of lives. These branching processes alter the linearity, continuity, and gradualism of life-course trajectories. The profusion of separate chains of events in everyday life provides myriad opportunities for such fortuitous intersects. This complicates immensely the prediction of human behavior.

Fortuitous events got me into psychology and my marital partnership. I initially planned to study the biological sciences. I was in a car pool with pre-meds and engineers who inrolled in classes at an unmercifully early hour. While waiting for my English class I flipped through a course catalogue that happened to be left on a table in the library. I noticed an introductory psychology course that would serve as an early time differ. I enrolled in the course and found my future profession. It was during my graduate school years at the University of Iowa that I met my wife through a fortuitous encounter. My friend and I were quite late getting to the golf course one Sunday. We were bumped to an afternoon starting time. There were two women ahead of us. They were slowing down. We were speeding up. Before long we became a genial foursome. I met my wife in a sand trap. Our lives would have taken entirely different courses had I showed up at the early scheduled time.

Some years ago I delivered a presidential address at the Western Psychological Convention on the psychology of chance encounters and life paths (Bandura, 1982). At the convention the following year an editor of one of the publishing houses explained that he had entered the lecture hall as it was rapidly filling up and seized an empty chair near the entrance. In the coming week he will be marrying the woman who happened to be seated next to him. With only a momentary change in time of entry, seating constellations would have altered and this intersect would not have occurred. A marital partnership was thus fortuitously formed at a talk devoted to fortuitous determinants of life paths!

Fortuitous influences are ignored in the causal structure of the social sciences even though they play an important role in life courses. Most fortuitous events leave people untouched, others have some lasting effects, and still others branch people into new trajectories of life. A science of psychology does not have much to say about the occurrence of fortuitous intersects, except that personal proclivities, the nature of the settings in which one moves, and the types of people who populate those settings make some types of intersects more probable than others. Fortuitous influences may be unforeseeable, but having occurred, they enter as contributing factors in causal chains in the same way as prearranged ones do. Psychology can gain the knowledge for predicting the nature, scope, and strength of the impact these encounters will have on human lives. I took the fortuitous character of life seriously, provided a preliminary conceptual scheme for predicting the psychosocial impact of such events, and specified ways in which people can capitalize agentically on fortuitous opportunities (Bandura, 1982, 1998).

Fortuity does not mean uncontrollability of its effects. People can make chance happen by pursuing an active life that increases the number and type of fortuitous encounters they will experience. Chance favors the inquisitive and venturesome, who go places, do things, and explore new activities. People also make chance work for them by cultivating their interests, enabling beliefs and competencies. These personal resources enable them to make the most of opportunities that arise unexpectedly. Pasteur put it well when he noted that, "Chance favors only the prepared mind." Self-development gives people a hand in shaping their life circumstances. These various proactive activities illustrate the agentic management of fortuity.

In our excursion into the nature of self-management, our laboratory studies explored the mechanisms of self-regulation. Our social applications translated theory into practice (Bandura, 1986, 1997). To exercise self-influence, individuals have to monitor their behavior, judge it in relation to a personal standard of merit, and react self-evaluatively to it. Some of the studies clarified how personal standards are constructed from the myriad of social influences. Others documented the regulatory power of self-reactive influences. Rational models of human behavior embraced the centrality of agency but they too, provided a truncated view of self-regulation rooted in the market metaphor. Behavior was said to be regulated by self-interest construed almost entirely in terms of material costs and benefits. We demonstrated that human motivation and performance attainments are governed not only by material incentives, but also by social incentives, and self-evaluative incentives linked to personal standards. People often settle for alternatives of marginal utility or even sacrifice material gain to preserve their positive self-regard. Some of our studies examined self-regulation under conflictual conditions where individuals are rewarded for behavior they devalue, or are punished for activities they personally value. Principled dissenters often find themselves in the latter predicament. Their sense of self-worth is so strongly invested in certain convictions that they will submit to maltreatment rather than accede to what they regard as unjust or immoral.

Operant conditioners defined self-regulation out of existence by rechristening it as "stimulus control" and locating it in the external environment (Catania, 1975). In rejoinders I relocated self-management in the sentient agent and reviewed the growing body of evidence on the means by which individuals exercise self-directedness (Bandura, 1976).

This was not a hospitable time to present an agentic theory of human behavior. Psychodynamicists depicted behavior as driven unconsciously by impulses and complexes. Behaviorists depicted behavior as shaped and shepherded by environmental forces. The cognitive revolution was ushered in on a computer metaphor. This conception stripped humans of agentic capabilities, a functional consciousness, and a self-identity. The mind as a symbol manipulator in the likeness of a linear computer became the conceptual model for the times. It was not individuals, but their subpersonal parts that were orchestrating activities nonconsciously.

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Control theories of motivation and self-regulation focused heavily on error correction driven by negative feedback loops in a machine metaphor of human functioning. However, self-regulation by negative discrepancy tells only half the story and not the more interesting half. Social cognitive theory posited dual control systems in self-regulation—a proactive discrepancy production system working in concert with a reactive discrepancy reduction system (Bandura, 1991c). In a series of studies we demonstrated that people are aspiring and proactive organisms not just reactive ones. Their capacity to exercise forethought enables them to wield adoptive control anticipatorily rather than being simply reactive to the effects of their efforts. They are motivated and guided by foresight of goals not just hindsight of shortfalls.

In these studies people motivated and guided themselves through proactive control by setting themselves challenging goals and performance standards that create negative discrepancies to be mastered. They then mobilized their effort and personal resources based on their anticipatory estimation of what it would take to fulfill those standards. Reactive feedback control came into play in subsequent adjustments of effort to achieve desired outcomes. After people attained the goals they have been pursuing, those of high perceived efficacy set a higher standard for themselves (Bandura and Cervone, 1986). The adoption of further challenges created new motivating discrepancies to be mastered.

A theory of self-regulation governed by forethought and affective self-reactions did not sit well with Powers (1991), the foremost advocate of control theory. In his view, the human organism is “nothing more than a connection between one set of physical quantities in the environment (input quantities) and another set of physical quantities in the environment (output quantities)” (Powers, 1978: 421). Cognitive and affective processes were dismissed as irrelevant because “we are not modeling the interior of the subject” (p. 432). We evaluated the adequacy of this austere mechanistic model, as well as the many control theories that take different forms depending on the mix of sociocognitive factors grafted on the negative feedback loop (Bandura, 1991*b*; Bandura and Locke, 2003).

The goal in theory building is to identify a small number of explanatory principles that can account for a wide range of phenomena. In the interest of comprehensive generality, social cognitive theory focuses on integrative principles that operate across differing spheres of functioning. The generality of the self-regulatory constituent in social cognitive theory was corroborated in the varied applications of this knowledge in educational development, health promotion, regulation, athletic performance, organizational functioning, and social change (Bandura, 1997; 2002*a*, 2004*c*; Frayne and Latham, 1987; Zimmerman, 1989).

The component subfunctions governing performance productivity were shown to operate similarly in the exercise of moral agency (Bandura, 1991*a*). After people adopt a standard of morality, their self-sanctions for actions that match or violate their personal standards serve as the regulatory self-influences. People do things that

give them self-satisfaction and a sense of self-worth. They refrain from behaving in ways that violate their moral standards because it will bring self-disapproval.

Moral standards do not operate as fixed internal regulators of conduct, however. There are a number of psychosocial mechanisms by which moral self-sanctions are selectively disengaged from inhumane conduct. The disengagement may center on making harmful practices personally and socially acceptable by portraying them as serving worthy purposes, and by exonerating social comparison and sanitizing language. It may focus on obscuring personal agency by diffusion and displacement of responsibility so that perpetrators do not hold themselves accountable for the harm they cause. It may involve minimizing, distorting, or even disputing the harm that flows from detrimental actions. And the disengagement may include dehumanizing, and blaming the victims for bringing the maltreatment on themselves.

Our analyses of moral agency showed that selective moral disengagement operates at a social systems level, not just individually. Organizations often find themselves in moral predicaments where its members perform activities or produce products that bring them profits and other benefits at injurious costs to others. Self-exonerations are needed to neutralize self-censure and to preserve a sense of self-worth. We examined the form that moral disengagement takes and the justificatory exonerations and social arrangements that facilitate their use in different detrimental corporate practices (Bandura, 1999a, 2004a; Bandura, Caprara, and Zsolnai, 2002).

The generality of the self-regulatory aspect of social cognitive theory was further illustrated in applications of this knowledge to the psychosocial effects of dysfunctions in self-regulation. Depending on the sphere of coping, self-regulatory dysfunctions can give rise to transgressive conduct, substance abuse, eating disorders, and chronic depression (Bandura, 1976, 1997).

## **2.6 THEORETICAL EXTENSION WITH THE COMPONENT SELF-EFFICACY**

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Psychodynamic theory, especially the psychoanalytic form, reigned over the fields of personality, psychotherapy, and the pop culture when I entered the field of psychology. The mid-1950s witnessed growing disillusionment with this line of theorizing and its mode of treatment. The theory lacked predictive power, nor did it fare well in therapeutic effectiveness. During this time I was examining the self-regulatory mechanisms by which people exercise control over their motivation,

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styles of thinking, and emotional life. As part of this line of research on the development and exercise of personal agency, we were devising new modes of treatment using mastery experiences as the principal vehicle of change. Talk alone will not cure intractable problems. Through guided mastery we cultivated competences, coping skills, and self-beliefs that enabled people to exercise control over their perceived threats.

We initially tested the effectiveness of this enabling approach with severe snake phobics. When people avoid what they dread, they lose touch with the reality they shun. Guided mastery quickly restores reality testing in two ways. It provides disconfirming tests of phobic beliefs by convincing demonstrations that what the phobics dread are safe. Even more important, it provides confirmatory tests that phobics can exercise control over what they find threatening.

Intractable phobics, of course, are not about to do what they dread. We therefore, created environmental conditions that enabled phobics to succeed despite themselves. This was achieved by enlisting a variety of performance mastery aids (Bandura, Blanchard, and Ritter, 1969; Bandura, Jeffery, and Gajdos, 1975). Threatening activities were repeatedly modeled to demonstrate coping strategies and to disconfirm people's worst fears. Intimidating tasks were reduced to graduated subtasks of easily mastered steps. Treatment was conducted in this stepwise fashion until the most intimidating activities were mastered. Joint performance with the therapist enabled frightened people to do things they would refuse to do on their own. Another method for overcoming resistance was to have phobics perform the feared activity for only a short time. As they became bolder the length of engagement was extended. After bold functioning was fully restored, self-directed mastery activities were arranged in which clients manage different versions of the threat on their own under varying conditions.

This proved to be a powerful treatment. It instilled a robust sense of coping efficacy, transformed attitudes toward the phobic objects from abhorrence to liking, wiped out anxiety, biological stress reactions, and phobic behavior. The phobics were plagued by recurrent nightmares for some twenty or thirty years. Guided mastery transformed dream activity and wiped out chronic nightmares. As one woman gained mastery over her snake phobia, she dreamt that the boa constrictor befriended her and was helping her to wash the dishes. Reptiles soon faded from her dreams. The changes endured. Phobics who achieved only partial improvement with alternative modes of treatment achieved full recovery with the benefit of the guided mastery treatment regardless of the severity of their phobic dysfunctions (Bandura, Blanchard, and Ritter, 1969; Biran and Wilson, 1981; Thase and Moss, 1976).

The 1960s ushered in remarkable transformative changes in the explanation and modification of human functioning and change (Bandura, 2004b). *Causal analysis* shifted from unconscious psychic dynamics to transactional psychosocial dynamics. Human functioning was construed as the product of the dynamic interplay

between personal, behavioral, and environmental influences. *Social labeling practices* regarding problems of living were changed. Problem behavior was viewed as divergent behavior rather than a symptom of a psychic disease. *Functional analysis* of human behavior replaced diagnostic labeling that categorized people into psychopathologic types with stigmatizing consequences. *Laboratory and controlled field studies* of the determinants of human behavior and the mechanisms through which they operate replaced content analyses of interviews. *Action oriented treatments* replaced interpretive interviews. The *modes of treatment* were altered in the content, locus, and agents of change.

Within a decade, the field was transformed by a major paradigm shift (Bandura, 2004b). New conceptual models and analytic methodologies were created. New sets of periodicals were launched for the rising stream of interest. New organizations were formed for the advancement of behaviorally oriented approaches. New professional conventions provided a forum for the exchange of ideas.

Psychodynamicists branded these new modes of treatment not only as superficial but dangerous. I was invited to present our program of research at the Langley Porter Clinic in San Francisco, a stronghold of psychodynamic adherents. The session began with a disparaging introduction to the effect that this young upstart will tell us seasoned analysts how to cure phobias! I explained that my host's "generous" introduction reminded me of a football contest between Iowa and Notre Dame in South Bend. Iowa scored a touchdown, which tied the score. As the player ran on the field to kick the extra point, coach Evashevski turned to his assistant coach and remarked, "Now there goes a brave soul, a Protestant attempting a conversion before 50,000 Catholics!"

Not all the critics of the psychodynamic model worshipped at the same theoretical altar. Some went the operant route as providing the best glimpse of the promised land. Others took the sociocognitive route. Vigorous battles were fought over cognitive determinants and their scientific legitimacy (Bandura, 1995; 1996). Operant analysts took the view that the only legitimate scientific enterprise is one that directly links observable environmental events to observable behavioral events (Skinner, 1977).

Scientific advances are promoted by two kinds of theories (Nagel, 1961). One form seeks relations between directly observable events but shies away from the mechanisms subserving the observable events. The second form focuses on the mechanisms that explain the functional relations between observable events. The fight over cognitive determinants was not about the legitimacy of inner causes, but about the types of inner determinants that are favored (Bandura, 1996). For example, operant analysts increasingly place the explanatory burden on determinants inside the organism, namely the implanted history of reinforcement. The implanted history is an inferred inner cause not a directly observable one. The dispute over internal determinants is not exclusively between behaviorists and cognitivists. There is a growing rift among operant analysts about the shift of emphasis

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within their own conceptual framework from models of environment-based control to organism-based control (Machado, 1993).

My entry into self-efficacy was serendipitous. In the development and evaluation of the guided mastery treatment, we focused on three fundamental processes: the power of the treatment to promote psychosocial changes; the generality or scope of the effected changes, and their durability or maintenance. Having demonstrated the power of this mode of treatment on each of these evaluative dimensions, I explored the possibility of a further function—the power of a treatment to build resilience to adverse experiences. The process of resiliency enhancement was based on the following rationale. The capacity of an aversive experience to reinstate dysfunctions depends, in large part, on the pattern of experiences in which it is embedded rather than solely on its properties. A lot of neutral or positive experiences can neutralize the negative impact of an aversive event and curtail the spread of negative effects. To test this notion, after functioning was fully restored, former phobics did or did not have the benefit of self-directed mastery experience with different versions of the threat.

In a follow-up assessment, the participants expressed deep gratitude to be rid of their phobia, but then explained that the treatment had a much more profound impact. Their lives had been debilitated socially, recreationally, and occupationally for twenty to thirty years. They were plagued by recurrent nightmares and perturbing ruminations. To overcome, within a few hours, a phobic dread that had constricted and tormented their lives was a transformational experience that radically altered their beliefs in their efficacy to exercise control over their lives. They were acting on their new self-efficacy belief and enjoying their successes, much to their surprise. These preliminary findings pointed to a common mechanism through which personal agency is exercised.

I mounted a multifaceted program of research to gain a deeper understanding of the nature and function of this belief system. To guide this new mission, the theory addressed the key aspects of perceived self-efficacy (Bandura, 1997). These include the origins of efficacy beliefs; their structure and function; their diverse effects; the processes through which they produce these effects, and the modes of influence by which efficacy beliefs can be created and strengthened for personal and social change. Diverse lines of research, conducted by a variety of investigators, provided new insights into the role of perceived self-efficacy in the fields of education, health promotion and disease prevention, clinical dysfunctions such as anxiety disorders, depression, eating disorders, substance abuse, personal and team athletic attainments, organizational functioning, and the efficacy of our social and political systems to make a difference in our lives (Bandura, 1995; 1997; Schwarzer, 1992; Maddux, 1995).

A major question in any theory of cognitive regulation of motivation, affect, and action concerns the issue of causality. A variety of experimental strategies were used to verify that beliefs of personal efficacy function as determinants of actions rather

than being merely secondary reflections of them (Bandura, 1997; Bandura and Locke, 2003).

The field of personality is deeply entrenched in trait thinking that characterizes individuals in terms of clusters of habitual behaviors. These are measured by decontextualized behavioral descriptors in one-size-fits-all global measures. In this approach, behavioral taxonomy replaced self-referent structure, processes, and functions. Behavioral clusters get reified as personality determinants. In a chapter on a "Social Cognitive Theory of Personality," I argued that personality determinants reside in agentic self processes not in behavioral clusters (Bandura, 1999b).

I receive a steady flow of e-mails requesting my all-purpose measure of self-efficacy or a couple of trait-like items that could be inserted in an omnibus questionnaire. Thus, another entry in the research agenda was to differentiate an agentic model of personality from a trait model (Bandura, 1999b). It also required purging misconceptions of constructs. *Self-efficacy* as a judgment of personal capability is not *self-esteem*, which is a judgment of self-worth, nor is it *locus of control*, which is a belief about whether outcomes flow from behavior or from extraneous forces.

## 2.7 TRIADIC MODEL OF HUMAN AGENCY

The theorizing and research on human agency has centered almost exclusively on personal agency exercised individually. However, this is not the only way in which people bring their influence to bear on events that affect how they live their lives. Social cognitive theory distinguishes among three different modes of human agency: individual, proxy, and collective.

The preceding analyses centered on the nature of the direct personal agency and the cognitive, motivational, affective, and choice processes through which it is exercised to produce given effects. In many spheres of functioning, people do not have direct control over the social conditions and institutional practices that affect their everyday lives. Under these circumstances, they seek their well-being, security, and valued outcomes through the exercise of proxy agency. In this socially mediated mode of agency, people try by one means or another to get those who have access to resources or expertise or wield influence and power to act at their behest to secure the outcomes they desire.

People do not live their lives autonomously. Many of the things they seek are achievable only through socially interdependent effort. I extended the conception of human agency to collective agency rooted in people's shared belief in their joint

capabilities to bring about changes in their lives by collective effort (Bandura, 2000, 2001). This made the theory generalizable to collectivistically-oriented cultures and activities. Self-efficacy theory (Bandura, 1997) distinguishes between the source of the data (i.e., the individual) and the level of the phenomenon being measured (i.e., personal efficacy or group efficacy). There is no group mind that believes. Perceived collective efficacy resides in the minds of members as beliefs in their group capability. All too often, because individual members are the source of the judgment of their group's efficacy, the assessment was misconstrued as the individual level of the measured phenomenon. It required clarification that appraisals of personal and group efficacy represent the different levels of collectivity, not the source of the judgment.

Contentious dualisms pervade outfielld pitting autonomy against interdependence, individualism against collectivism, and human agency against social structure reified as an entity disembodied from the behavior of individuals. It is widely claimed that Western theories lack generalizability to non-Western cultures. This prevailing claim had to be addressed empirically.

Most of our cultural psychology is based on territorial culturalism (Gjerde and Onishi, 2000). Nations are used as proxies for psychosocial orientations, which are then ascribed to the nations and its members and though they all thought and behaved alike. Residents of Japan get categorized as collectivists, those in the United States as individualists. Cultures are dynamic and internally diverse systems not static monoliths. There is a substantial diversity among societies placed in the same category (Kim, Triaudis, Kâğıtçibasi, Choi, and Yoon, 1994). There are large generational, educational, and socioeconomic differences among members of the same cultures (Matsumoto, Kudoh, and Takeuchi, 1996).

Analyses across activity domains and classes of social relationships revealed that people behave communally in some aspects of their lives and individualistically in many other aspects (Matsumoto, et al., 1996). They express their cultural orientations conditionally rather than invariantly depending on incentive conditions (Yamagishi, 1988). Given the intracultural and interdomain variability, and changeability of cultural orientations as a function of incentive conditions, the categorical approach masks this extensive diversity. Much of the cross-cultural research relies on bi-cultural contrasts. Members of a single collectivist culture are typically compared to those of a single individual one. Given the notable diversity, the dichotomizing approach can spawn a lot of misleading generalizations.

Not only are cultures not monolithic entities, but they are no longer insular. Global connectivity is shrinking cross-cultural uniqueness. Moreover, people worldwide are becoming increasingly enmeshed in a cyberworld that transcends time, distance, place, and national borders. In addition, mass transnational influences are homogenizing some aspects of like, polarizing other aspects, and creating a lot of cultural hybridizations fusing elements from diverse cultures. These new realities call for a more dynamic approach to cultural effects and for

broadening the scope of cross-cultural analyses. This is another area in which strongly held views placed a damper on research to test the scope of theoretical generalizability.

Social cognitive theory distinguishes between basic human capacities and how culture shapes these potentialities into diverse forms appropriate to different cultural milieus. For example, humans have evolved an advanced capacity for observational learning. It is essential for their self-development and functioning regardless of the culture in which people reside. Indeed, in many cultures, the word for "teach" is the same as the word for "show" (Reichard, 1938). Modeling is a universalized human capacity. But what is modeled, how modeling influences are socially structured, and the purposes they serve vary in different cultural milieus (Bandura and Walters, 1963).

I reviewed the findings of a growing number of studies that tested the structure and functional role of efficacy beliefs in diverse cultural milieus across a wide range of age levels, gender, and different spheres of functioning (Bandura, 2002b). The findings show that a strong sense of efficacy has generalized functional value regardless of the cultural conditions (Early, 1993; 1994; Matsui and Onglatco, 1992; Park, et al., 2000). Being immobilized by self-doubt and perceived futility of effort has little evolutionary value. But how efficacy beliefs are developed and structured, the forms they take, the ways in which they are exercised, and the purposes to which they are put vary cross-culturally. In short, there is a commonality in basic agentic capabilities and mechanisms of operation, but diversity in the culturing of these inherent capacities.

## 2.8 PROCESS OF THEORY BUILDING

I would like to conclude with a few general remarks regarding the process of theory building and the advancement of knowledge. Theorists would have to be omniscient to provide an ultimate account of human behavior at the outset. They necessarily begin with an incomplete theory regarding the determinants of selected phenomena and the mechanisms through which those determinants operate. There are few, if any, psychosocial factors that produce effects unconditionally. The plurality of determinants of human behavior, their intricate conditionality, and dynamic interactivity add complexity to the identification of functional relations. They are unravelable by intuitive analysis alone. Initial formulations prompt lines of experimentation that help to improve the theory. Successive theoretical refinements bring one closer to understanding the phenomena of interest.

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The present chapter traced the evolution of social cognitive theory and the way in which it was expanded in scope, generality, and social application. The full exposition of the theory, which falls beyond the scope of this chapter, specifies how the key determinants and governing mechanisms operate in concert in human self-development, adaptation, and change (Bandura, 1986). Theory building is socially situated rather than proceeds isolatedly. Hence, I added the conceptual contexts within which social cognitive theory evolved as part of the chronicle.

There is a lot of idealization in the pronouncements of how science is conducted. A prominent group of social scientists was once brought to a mountain retreat to prepare a report on how they went about their theory building. After a couple of days of idealized show and tell they began to confess that they did not construct their theories by deductive formalism. A problem sparked their interest. They had some preliminary hunches that suggested experiments to test them. The findings from verification tests led to refinements of their conception that in turn, pointed to further experiments that could provide additional insights into the determinants and mechanisms governing the phenomena of interest. Theory building is a long haul, not for the short winded. The formal version of the theory, that appears in print, is the distilled product of a lengthy interplay of empirically based inductive activity and conceptually based deductive activity.

Verification of deduced effects is central to experimental inquiry. The social sciences face major obstacles to the development of theoretical knowledge. Controlled experimental approaches are informative in verifying functional relations, but their scope is severely limited. They are precluded for phenomena that are not reproducible in laboratory situations because such phenomena require a lengthy period of development, are the products of complex constellations of influences by different social sources operating interactively, or are prohibited ethically.

Controlled field studies that systematically vary psychosocial factors under real-life conditions provide greater ecological validity, but they too are limited in scope. Finite resources, limits imposed by social systems on what types of interventions they permit, hard to control fluctuations in quality of implementation, and ethical considerations place constraints on controlled field interventions. Controlled experimentation must, therefore, be supplemented with investigation of naturally produced variations in psychosocial functioning linked to identifiable determinants (Nagel, 1961). The latter approach is indispensable in the social sciences.

Verification of functional relations requires converging evidence from different research strategies. Therefore, in the development of social cognitive theory, we have employed controlled laboratory studies, controlled field studies, longitudinal studies, behavior modification of human dysfunctions not producible on ethical grounds, and analyses of functional relations in naturally occurring phenomena. These studies have included populations of diverse sociodemographic characteristics, multiple analytic methodologies, applied across diverse spheres of functioning in diverse cultural milieus.

Empirical tests of a theory include the core theory, a set of auxiliary assumptions, operations presumed to create the relevant conditions, and the measures presumed to tap the key factors. Therefore, it is not the core theory alone that is being put to the test. Evidence of discrepancy between the theorized and observed outcomes leaves ambiguity about what is at fault within this complex mix. Considering the causal complexity of human behavior, the severe constraints on controlled experimentation, and the coupling of the core theory with auxiliaries, conditions, and measures, that themselves have to be well founded, the notion that a single counterinstance falsifies the theory is a pretentious illusion. But these inherent difficulties are no cause for investigatory resignation and despondency. Psychological theories differ in their predictive and operative success. A scientific enterprise can improve a theory to predict human behavior and to promote improvements in the human condition. Weak theories are discarded not because they are falsified, but because they are withered by so many limiting conditions that they have little predictive or operative value. When better theoretical alternatives exist, there is little to be gained in pursuing the verity or falsity of a theory that can, at best, explain behavior under only a very narrow range of conditions and has little to say about how to effect psychosocial changes.

It is one thing to generate innovative ideas that hold promise for advancing knowledge, but another to get them published. The publication process, therefore, warrants brief comment from the trenches. Researchers have a lot of psychic scar tissue from inevitable skirmishes with journal reviewers. This presents special problems when there is conceptual inbreeding in editorial boards. The path to innovative accomplishments is strewn with publication hassles and rejections.

It is not uncommon for authors of scientific classics to experience repeated initial rejection of their work, often with hostile embellishments if it is too discordant with what is in vogue (Campanario, 1995). The intellectual contributions later become the mainstays of the field of study. For example, John Garcia, who eventually was honored for his fundamental psychological discoveries, was once told by a reviewer of his often-rejected manuscripts that one is no more likely to find the phenomenon he discovered than bird droppings in a cuckoo clock.

Gaus and Shepherd (1994) asked leading economists, including Nobel Prize winners, to describe their experiences with the publication process. Their request brought a cathartic outpouring of accounts of publication troubles, even with seminal contributions. The publication hassles are an unavoidable but frustrating part of a research enterprise. The next time you have one of your ideas, prized projects, or manuscripts rejected, do not despair too much. Take comfort in the fact that those who have gone on to fame have had a rough time. In his delightful book *Rejection*, John White (1982) vividly documents that the prominent characteristic of people who achieve success in challenging pursuits is an unshakable sense of efficacy and a firm belief in the worth of what they are doing. This belief system provides the staying power in the face of failures, setbacks, and unmerciful rejections.

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In an effort to raise the odds of making it through the publication gauntlet, authors are increasingly resorting to countless citations and tacking on constructs from different theories. All too often, the eclectic additive approach is passed off as integrative theorizing presumably combining the best of different approaches. It is difficult to find a coherent theory in the conceptual stew. To curb the rising proliferation of citations, a recent incoming editor of a flagship psychology journal has imposed a limit on the number of items that are cited in an article. Scientific progress is better achieved by encompassing more fully higher-order factors within a unified theoretical framework, than by creating conglomerate models with constructs picked from divergent theories with the attendant problems of redundancy, fractionation, and theoretical disconnectedness.

Theory building is not a vocation for the thin-skinned. Theorists must be prepared to see their conceptions and empirical findings challenged, misconstrued, or caricatured, sometimes with *ad hominem* embellishments. For example, I am often amused to see myself miscast as both an orthodox behaviorist and a dualistic mentalist! (Bandura and Bussey, 2004). Theorists differ in the extent to which they allow such events to intrude on their time. Eysenck rarely let critiques go unanswered. Skinner rarely responded to them. I try to resist the pull to respond unless it can advance understanding of the issues in question. This is difficult to do knowing that an unanswered mistaken critique will be read by many as conceding its correctness.

There is much talk about the validity of theories, but surprisingly little attention is devoted to their social utility. For example, if aeronautical scientists developed principles of aerodynamics in wind tunnel tests but were unable to build an aircraft that could fly the value of their theorizing would be called into question. Theories are predictive and operative tools. In the final analysis, the evaluation of a scientific enterprise in the social sciences will rest heavily on its social utility.

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# Toward a Psychology of Human Agency

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**ABSTRACT**—*This article presents an agentic theory of human development, adaptation, and change. The evolutionary emergence of advanced symbolizing capacity enabled humans to transcend the dictates of their immediate environment and made them unique in their power to shape their life circumstances and the courses their lives take. In this conception, people are contributors to their life circumstances, not just products of them. Social cognitive theory rejects a duality between human agency and social structure. People create social systems, and these systems, in turn, organize and influence people's lives. This article discusses the core properties of human agency, the different forms it takes, its ontological and epistemological status, its development and role in causal structures, its growing primacy in the coevolution process, and its influential exercise at individual and collective levels across diverse spheres of life and cultural systems.*

Conceptions of human nature have changed markedly over time. In the early theological conceptions, human nature was ordained by original divine design. Evolutionism transformed the conception to one in which human nature is shaped by environmental pressures acting on random gene mutations and reproductive recombinations. This nonteleological process is devoid of deliberate plans or purposes. The symbolic ability to comprehend, predict, and alter the course of events confers considerable functional advantages. The evolutionary emergence of language and abstract and deliberative cognitive capacities provided the neuronal structure for supplanting aimless environmental selection with cognitive agency. Human forebears evolved into a sentient agentic species. Their advanced symbolizing capacity enabled humans to transcend the dictates of their immediate environment and made them unique in their power to shape their life circumstances and the course of their lives. Through cognitive self-regulation, humans can create

visualized futures that act on the present; construct, evaluate, and modify alternative courses of action to secure valued outcomes; and override environmental influences. In a later section, this article discusses the growing ascendancy of human agency in the coevolution process through the force of social and technological evolution.

## CORE PROPERTIES OF HUMAN AGENCY

Social cognitive theory adopts an agentic perspective toward human development, adaptation, and change (Bandura, 1986, 2001). To be an agent is to influence intentionally one's functioning and life circumstances. In this view, personal influence is part of the causal structure. People are self-organizing, proactive, self-regulating, and self-reflecting. They are not simply onlookers of their behavior. They are contributors to their life circumstances, not just products of them.

There are four core properties of human agency. One is *intentionality*. People form intentions that include action plans and strategies for realizing them. Most human pursuits involve other participating agents, so there is no absolute agency. Individuals have to accommodate their self-interests if they are to achieve unity of effort within diversity. Collective endeavors require commitment to a shared intention and coordination of interdependent plans of action to realize it (Bratman, 1999). Effective group performance is guided by collective intentionality.

The second property of human agency is *forethought*, which involves the temporal extension of agency. Forethought includes more than future-directed plans. People set themselves goals and anticipate likely outcomes of prospective actions to guide and motivate their efforts. A future cannot be a cause of current behavior because it has no material existence. But through cognitive representation, visualized futures are brought into the present as current guides and motivators of behavior. In this form of anticipatory self-guidance, behavior is governed by visualized goals and anticipated outcomes, rather than pulled by an unrealized future state. The ability to bring anticipated outcomes to bear on current activities promotes purposeful and foresighted behavior. When projected over a long time course on

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matters of value, a forethoughtful perspective provides direction, coherence, and meaning to one's life.

The third agentic property is *self-reactiveness*. Agents are not only planners and forethinkers. They are also self-regulators. Having adopted an intention and an action plan, one cannot simply sit back and wait for the appropriate performances to appear, as Searle (2003) noted in his analyses of the explanatory gap. Agency thus involves not only the deliberative ability to make choices and action plans, but also the ability to construct appropriate courses of action and to motivate and regulate their execution. This multifaceted self-directedness operates through self-regulatory processes in the explanatory gap to link thought to action (Bandura, 1991a; Carlson, 2002).

The fourth agentic property is *self-reflectiveness*. People are not only agents of action. They are also self-examiners of their own functioning. Through functional self-awareness, they reflect on their personal efficacy, the soundness of their thoughts and actions, and the meaning of their pursuits, and they make corrective adjustments if necessary. The metacognitive capability to reflect upon oneself and the adequacy of one's thoughts and actions is the most distinctly human core property of agency.

People do not operate as autonomous agents. Nor is their behavior wholly determined by situational influences. Rather, human functioning is a product of a reciprocal interplay of intrapersonal, behavioral, and environmental determinants (Bandura, 1986). This triadic interaction includes the exercise of self-influence as part of the causal structure. It is not a matter of "free will," which is a throwback to medieval theology, but, in acting as an agent, an individual makes causal contributions to the course of events. The relative magnitude of the personal contribution to the codetermination varies depending on the level of agentic personal resources, types of activities, and situational circumstances. Social cognitive theory rejects a duality of human agency and a disembodied social structure. Social systems are the product of human activity, and social systems, in turn, help to organize, guide, and regulate human affairs. However, in the dynamic interplay within the societal rule structures, there is considerable personal variation in the interpretation of, adoption of, enforcement of, circumvention of, and opposition to societal prescriptions and sanctions (Burns & Dietz, 1992).

Most human functioning is socially situated. Consequently, psychological concepts are socially embedded. For example, in an interpersonal transaction, in which people are each other's environments, a given action can be an agentic influence, a response, or an environmental outcome, depending arbitrarily on different entry points in the ongoing exchange between the people involved. In human transactions, one cannot speak of "environment," "behavior," and "outcomes" as though they were fundamentally different events with distinct features inherent in them.

A theory of human agency raises the issue of freedom and determinism. When viewed from a social cognitive perspective,

freedom is conceived not just passively as the absence of constraints, but also proactively as the exercise of self-influence in the service of selected goals and desired outcomes. For example, people have the freedom to vote, but whether they get themselves to vote, and the level and form of their political engagement, depends, in large part, on the self-influence they bring to bear. In addition to regulating their actions, people live in a psychic environment largely of their own making. The self-management of inner life is also part of the agentic process. Because self-influence is an interacting part of the determining conditions, human agency is not incompatible with the principle of regulative causality. Given that individuals are producers as well as products of their life circumstances, they are partial authors of the past conditions that developed them, as well as the future courses their lives take.

The cultivation of agentic capabilities adds concrete substance to abstract metaphysical discourses about freedom and determinism. People who develop their competencies, self-regulatory skills, and enabling beliefs in their efficacy can generate a wider array of options that expand their freedom of action, and are more successful in realizing desired futures, than those with less developed agentic resources (Bandura, 1986, 1997; Meichenbaum, 1984; Schunk & Zimmerman, 1994). The exercise of freedom involves rights, as well as options and the means to pursue them. At the societal level, people institute, by collective action, regulatory sanctions against unauthorized forms of social control (Bandura, 1986).

## MODES OF AGENCY

Social cognitive theory distinguishes among three modes of agency: individual, proxy, and collective. Everyday functioning requires an agentic blend of these three forms of agency. In personal agency exercised individually, people bring their influence to bear on their own functioning and on environmental events. In many spheres of functioning, however, people do not have direct control over conditions that affect their lives. They exercise socially mediated agency, or proxy agency. They do so by influencing others who have the resources, knowledge, and means to act on their behalf to secure the outcomes they desire (Baltes, 1996; Brandtstädt & Baltes-Gotz, 1990; Ozer, 1995).

People do not live their lives in individual autonomy. Many of the things they seek are achievable only by working together through interdependent effort. In the exercise of collective agency, they pool their knowledge, skills, and resources, and act in concert to shape their future (Bandura, 2000a). People's conjoint belief in their collective capability to achieve given attainments is a key ingredient of collective agency.

Self-efficacy theory (Bandura, 1997) distinguishes between the *source* of judgments of efficacy (i.e., the individual) and the *level* of the phenomenon being assessed (i.e., personal efficacy or group efficacy). There is no disembodied group mind that believes. Perceived collective efficacy resides in the minds of

group members as the belief they have in common regarding their group's capability. In a collectivity, members acting on their common beliefs contribute to the transactional dynamics that promote group attainments. The findings of meta-analyses show that perceived collective efficacy accounts for a good share of variance in quality of group functioning in diverse social systems (Gully, Incalcaterra, Joshi, & Beaubien, 2002; Stajkovic & Lee, 2001).

The collective performance of a social system involves interactive, coordinative, and synergistic dynamics that create emergent group-level properties not reducible solely to individual attributes. Group activities vary in the degree to which attainments require interdependent effort and collaborative contributions. Meta-analysis of research on collective efficacy corroborates that the more extensive the interdependence within a social system, the higher the predictiveness of the perceived efficacy of the collectivity (Stajkovic & Lee, 2001).

### AGENTIC MANAGEMENT OF FORTUITY

There is much that people do designedly to exercise some measure of control over their self-development and life circumstances. But there is a lot of fortuity in the courses lives take. Indeed, some of the most important determinants of life paths occur through the most trivial of circumstances. People are often inaugurated into new life trajectories, marriages, and careers through fortuitous circumstances (Austin, 1978; Bandura, 1986; Stagner, 1981). In their insightful volume on *The Travel and Adventures of Serendipity*, Merton and Barber (2004) documented the workings of fortuitous events in life trajectories.

A fortuitous event in social encounters is an unintended meeting of persons unfamiliar with each other. The physical sciences acknowledge indeterminacy at the quantum level in the physical world. Fortuitous events introduce an element of indeterminacy in the behavioral sciences. The separate paths that lead up to a fortuitous event have their own determinants, but they are causally unconnected until their intersection, at which point the encounter creates a unique confluence of influences that can alter the course of lives. The intersection, where the transactions take place, occurs fortuitously rather than by design (Nagel, 1961). Consider a true example of a fortuitous event at an address on the psychology of chance encounters (Bandura, 1982). An academic publisher entered the lecture hall as it was rapidly filling up and seized an empty chair near the entrance. He ended up marrying the woman who happened to be seated next to him. With only a momentary change in time of entry, seating constellations would have altered, and this intersect would not have occurred. A marital partnership was thus fortuitously formed at a talk devoted to fortuitous determinants of life paths!

A seemingly insignificant fortuitous event can set in motion constellations of influences that change the course of lives. These branching processes alter the continuity and linear pro-

gression of life-course trajectories. The profusion of separate chains of events in everyday life provides myriad opportunities for such fortuitous intersects. Even if one knew all the determinate conditions for particular individuals, one could not know in advance the intersection of unconnected events. Fortuitous intersects introduce probabilistic uncertainty that complicates long-range predictions of human behavior. Most fortuitous events leave people untouched, others have some lasting effects, and still others lead people into new trajectories of life. A science of psychology does not have much to say about the occurrence of fortuitous intersects, except that personal propensities, the nature of the settings in which a person moves, and the types of people who populate those settings make some types of intersects more probable than others. Fortuitous occurrences may be unforeseeable, but having occurred, they create conditions that enter as contributing factors in causal processes in the same way as prearranged ones do. Hence, psychology can advance knowledge on the effects of fortuitous events on life paths. Several lines of evidence identify personal attributes and the properties of the environments into which individuals are fortuitously inaugurated as predictors of the nature, scope, and strength of the impact that such encounters are likely to have on human lives (Bandura, 1982, 1986).

Fortuity does not mean uncontrollability of its effects. People can bring some influence to bear on the fortuitous character of life. They can make chance happen by pursuing an active life that increases the number and type of fortuitous encounters they will experience (Austin, 1978). Chance favors the inquisitive and venturesome, who go places, do things, and explore new activities. People also make chance work for them by cultivating their interests, enabling beliefs, and competencies (Bandura, 1998). These personal resources enable them to make the most of opportunities that arise unexpectedly. Pasteur (1854) put it well when he noted that "chance favors only the prepared mind" (cited in Bartlett, 1992, p. 502). Even that distinguished lay philosopher Groucho Marx is said to have insightfully observed that people can influence how they play the hand that fortuity deals them: "You have to be in the right place at the right time, but when it comes, you better have something on the ball." Self-development gives people a hand in shaping the courses their lives take. These various proactive activities illustrate the agentic management even of fortuity.

### NONAGENTIC THEORETICAL APPROACHES

In its brief history, psychology has undergone wrenching paradigm shifts. Behaviorists proposed an input-output model linked by an intervening but noncausal black box. This line of theorizing was eventually put out of vogue by the advent of computer technology. Creative thinkers filled the black box with symbolic representations, rules, and computational operations. The mind as a symbol manipulator, in the likeness of a linear computer, became the conceptual model for the times. Computerized serial

cognitivism was, in turn, supplanted by connectionist models operating through interconnected, multilayered, neuronal-like subsystems working simultaneously in parallel. In these models, sensory organs deliver up information to a multitude of subsystems acting as the mental machinery that processes the inputs and, through some type of integrating system, generates a coherent output automatically and nonconsciously out of the fragmentary neuronal activity.

These alternative theories differ in what they place in the mediating system—whether or not it includes determinative functions and the forms they take. Radical behaviorism posits a noncausal connector, computerized cognitivism posits a linear central processor, and parallel distributed connectionism posits interconnected, neuronal-like subunits. But the theories share the same bottom-up causation: input → throughput → output. In each of these models, the environment acts on the biological machinery that generates the output automatically and nonconsciously.

These nonagentic conceptions strip humans of agentic capabilities, a functional consciousness, and a self-identity. As Harré (1983) noted in this connection, it is not sentient individuals but their subpersonal parts that are orchestrating activities nonconsciously. In actuality, however, people act on the environment. They create it, preserve it, transform it, and even destroy it, rather than merely react to it as a given. These changes involve a socially embedded interplay between the exercise of personal agency and environmental influences.

### **PHYSICALISTIC THEORY OF HUMAN AGENCY**

One must distinguish between the physical basis of thought and its deliberative construction and functional use. The human mind is generative, creative, proactive, and reflective, not just reactive. The dignified burial of the dualistic Descartes forces one to address the formidable explanatory challenge for a physicalistic theory of human agency and a nondualistic cognitivism. How do people activate brain processes to realize given intentions and purposes?

Consciousness is the very substance of mental life. It provides the means to make life not only personally manageable, but also worth living. Without deliberative and reflective conscious activity, humans are simply mindless automatons. Cognitive capabilities provide us with the means to function as mindful agents. Consciousness encompasses multiple functions that reflect the difference between being conscious of an activity and consciously engaging in purposeful activity (Korsgaard, 1989). It includes a nonreflective component and a reflective awareness component, as well as a conceptual functional component operating mainly through the linguistic medium. The functional aspect of consciousness involves purposefully accessing and deliberatively processing information for selecting, constructing, regulating, and evaluating courses of action.

Consciousness is an emergent brain activity with higher-level control functions, rather than simply an epiphenomenal by-product of lower-level processes. Indeed, if the neuronal processes of common activities were automatically reflected in consciousness, it would be hopelessly cluttered with mind-numbing contents that would foreclose any functionality. When one is driving a car, for example, one's consciousness is filled with thoughts of other matters rather than simply mirroring the ongoing neuronal mechanics of driving.

Emergent properties differ in kind from their lower-level bases. For example, the novel emergent properties of water, such as fluidity and viscosity, are not simply the combined properties of its hydrogen and oxygen microcomponents (Bunge, 1977). Through their interactive effects, these components are transformed into new phenomena. Van Gulick (2001) made the important distinction between emergent properties and emergent causal powers over events at the lower level. In the metatheory enunciated by Sperry (1991, 1993), cognitive agents regulate their actions by cognitive downward causation and also undergo upward activation by sensory stimulation.

As previously noted, the evolutionary emergence of a language-processing system provided the essential neuronal structure for the development of a conscious agent species. Most human thinking operates through language, drawing on a vast knowledge base. The core agentic capabilities of intentionality, forethought, self-reaction, and self-reflection operate as hierarchically organized determinants. In a theory of cognitive functionalism (Eccles, 1974; Sperry, 1993), the patterns of neural activities characterizing interpretive and deliberative thought processes have a downward regulatory function over lower-level neural events that lead to action. These structural and functional properties are central to the exercise of human agency.

In acting as agents, individuals obviously neither are aware of nor directly control their neuronal processes and functional structures. Rather, they exercise second-order control. They do so by intentionally engaging in activities known to be functionally related to given outcomes. In pursuing these activities, over which they can exercise control, they activate and modify subpersonal neuronal events. For purposes of illustration, consider the following analogy. In driving an automobile to a desired place, the driver engages in coordinated acts of shifting gears, steering, manipulating the gas pedal, and applying brakes. These deliberate acts, which the driver can control directly, regulate the mechanical machinery to get the car safely to where the driver wants to go. But the driver has neither awareness nor understanding of the correlative microcombustion, transmission, steering, and braking processes subserving the driver's purposes. The deliberate planning of where to go on a trip, what route to take, and what to do when one gets there keeps the neuronal circuitry hard at work.

Consider also dual-level control in skill acquisition. Baseball coaches get novice pitchers to practice unique ways of throwing a

baseball in strategically designated situations that they know have an increased likelihood of discombobulating batters. In practicing and refining their pitching performances, over which they can exercise direct control, pitchers build and enlist the subserving neurophysiological machinery over which they unknowingly exercise second-order control. Enactments of functional activities at the controllable macrobehavioral level provide the means for agentic orchestration of the subserving events at the microneural level.

Much of psychological theorizing and research is devoted to verifying causal relations between actions and outcomes and the governing sociocognitive mechanisms. The fact that individuals have no awareness of their brain processes does not mean that they are just quiescent hosts of automata that dictate their behavior. Neuroimaging can shed light on how agentic causal beliefs and activities develop functional neuronal structures and orchestrate neurodynamics.

#### **PROACTIVE AGENTS VERSUS ONLOOKERS**

One must distinguish between understanding how the biological machinery works in implementing cognitive algorithms by the nervous system and how the biological machinery is orchestrated agentically for diverse purposes. To use an analogy, the laws of chemistry and physics explain how a television set produces images, but do not explain the endless variety of creative programs it implements. The creative neuronal activation must be distinguished from the neuronal mechanical production.

People are contributors to their activities, not just onlooking hosts of subpersonal networks autonomously creating and regulating their performances. People conceive of ends and work purposefully to achieve them. They are agents of experiences, not just undergoers of experiences. The sensory, motor, and cerebral systems are tools people use to accomplish the tasks and goals that give meaning, direction, and satisfaction to their lives. To make their way successfully through a complex world full of challenges and hazards, people have to make sound judgments about their capabilities, anticipate the probable effects of different events and courses of action, size up sociostructural opportunities and constraints, and regulate their behavior accordingly. These belief systems are a working model of the world that enables people to achieve desired futures and avoid untoward ones.

Research on brain development underscores the influential role that agentic action plays in shaping the functional structure of the brain (Diamond, 1988; Kolb & Whishaw, 1998). It is not mere exposure to stimulation but agentic action in exploring, manipulating, and influencing the environment that counts. By regulating their motivation and activities, people produce the experiences that form the functional neurobiological substrate of symbolic, social, psychomotor, and other skills. An agentic perspective fosters lines of research that can provide new in-

sights into the social and behavioral shaping of brain function. This is a realm of inquiry in which psychology can make unique contributions to the biopsychosocial understanding of human development, adaptation, and change. In nonreductive physicalism, all psychosocial phenomena have a physical basis. Research from an agentic perspective, however, goes beyond the anatomical localization and brain circuitry subserving human activities to advance knowledge about brain development and its functional organization by behavioral means (Dawson, Ashman, & Carver, 2000).

#### **ONTOLOGICAL AND EPISTEMOLOGICAL REDUCTIONISM**

A theory of human agency raises the question of reductionism. One must distinguish among three different forms of reductionism (Ayala, 1974). In ontological reductionism, mental events are physical entities and processes, not disembodied immaterial ones. Epistemological reductionism contends that the laws governing higher-level psychosocial phenomena are ultimately reducible to the laws operating at atomic and molecular levels. Methodological reductionism maintains that research on rudimentary processes is the really fundamental science that will explain psychosocial phenomena at higher levels of complexity. In the heyday of behaviorism, for example, elementary processes were explored with animal analogues, using mainly rats and pigeons.

Most theorists adopt the ontological view that mental events are brain activities and not immaterial entities. But how mind, characterized as higher cognitive processes, arises from lower-level physical processes remains an intractable problem. As for methodological reductionism, the knowledge gained through the study of rudimentary processes is generalizable to some aspects of human functioning, but there are limits as to what this approach can tell us about the complex human capacity for abstraction and symbolic thinking or the workings of societal systems. It is the epistemological form of reductibility that is most in contention. The major argument against it is that each level of complexity—atomic, molecular, biological, psychological, and social structural—involves emergent new properties that are distinct to that level and must, therefore, be explained by laws in its own right. Proponents of nonreductive physicalism are physicalists at the ontological level but nonreductionists at the epistemological level. Hence, physicality in the ontological sense does not imply reduction of psychology to biology, chemistry, or physics. Were one to embark on the epistemological reductibility route, the journey would traverse biology and chemistry and ultimately end in atomic subparticles. Because of emergent properties at higher levels of complexity, neither the intermediate locales nor the final stop in atomistic physicalism can fully account for human behavior.

As Nagel (1961) explained, there are several necessary conditions for reductibility: They include explicitness of theoretical

postulates for each specialized discipline, correspondence or connectability through theoretical terms in common, and derivability from the postulates of the reducing theory. Neither the concepts nor the predicates in psychological theories have representational counterparts in chemistry or physics. Nor is there an adequate set of bridging principles linking the vocabularies of the reduced and reducing theories, as required to fulfill the conditions of connectability and derivability. There are lively debates about the required preciseness in linkage between the reduced and reducing theories—debates about whether empirically established links between the two suffice or whether the bridging principles must provide logically necessary conceptual links (van Gulick, 2001).

Consider even the reduction of psychology to biology. Much of psychology is concerned with discovering principles about how to structure environmental conditions to promote given personal and social outcomes and with the psychosocial mechanisms through which the environmental influences produce their effects. This line of theorizing, much of it based on exogenous determinants, does not have corresponding concepts in neurobiological theory. How the neuronal machinery works and how to regulate it by psychosocial means are different matters. Knowing where things happen in the brain does not tell you how to make them happen. Each explanatory system is governed by its own set of principles that must be studied in its own level.

For example, knowledge of the locality and brain circuitry subserving learning can say little about the optimal levels of abstractness, novelty, and intellectual challenge; about how to get people to attend to, process, and organize relevant information; or about whether learning should be conducted independently, cooperatively, or competitively. Psychological science provides a rich body of knowledge regarding the conditions conducive to learning and the psychosocial mechanisms through which they operate. These social determinants reside in the structure of learning environments and in socially rooted incentive systems, enabling opportunity structures, and constraints (Bandura, 1986; Johnson & Johnson, 1985; Rosenholz & Rosenholz, 1981). These determinants operate through modeling, social norms, aspirations, and expectations conveyed in the practices of families, in peer relations, in school systems, and in socioeconomic life conditions (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996, 2001). These are the collective social dynamics of human learning. They have no conceptual counterpart in neurobiological theory and, therefore, are not derivable from it. The optimal learning conditions must be specified by psychological principles. A full explanation of human learning must, therefore, encompass both the psychosocial principles and the subserving neurobiological principles governing the processes of learning.

System-level emergence calls for theoretical plurality across biological, psychological, and social structural levels of function, with linkage between them rather than reductibility to a single superseding theory. The issue of reductionism in an ap-

plied social science must also be evaluated in terms of functional criteria. Can laws at the neuronal, molecular, or atomic levels tell us how to develop efficacious parents, teachers, executives, or social reformers? For reasons already given, the psychological level is required to provide such guidance.

## ORIGINS OF PERSONAL AGENCY

The newborn arrives without any sense of selfhood and personal agency. The self must be socially constructed through transactional experiences with the environment. The developmental progression of a sense of personal agency moves from perceiving causal relations between environmental events, through understanding causation via action, and finally to recognizing oneself as the agent of the actions. Infants exhibit sensitivity to causal relations between environmental events even in the first months of life (L. Lent, 1982; Mandler, 1992). They most likely begin to learn about action causation through repeated observation of contingent occurrences in which the actions of other people make things happen. Infants see inanimate objects remain motionless unless manipulated by other people (Mandler, 1992). Moreover, they personally experience the effects of actions directed toward them, which adds salience to the causative functions of actions. As infants begin to develop some behavioral capabilities, they not only observe but also directly experience that their actions make things happen. We can greatly enhance their learning that actions produce certain outcomes by linking outcomes closely to actions, by using aids that channel their attention to the outcomes they are producing, and by heightening the salience and functional value of the outcomes (Millar, 1972; Millar & Schaffer, 1972; Watson, 1979). With the development of representational capabilities, infants can begin to learn from probabilistic and delayed outcomes brought about by personal actions.

Development of a sense of personal agency requires more than simply producing effects by actions. Infants acquire a sense of personal agency when they recognize that they can make things happen and they regard themselves as agents of their actions. This additional understanding extends the perception of agency from action causality to personal causality. The differentiation of oneself from others is the product of a more general process of the construction of an agentic self. Proprioceptive feedback from one's activities and self-referent information from visual and other modalities during transactions with the environment aid in the early perception of an experiential self. Personal effects resulting from self-directed actions further identify the self as the recipient experiencing the effects. Thus, if touching a hot object brings pain, feeding oneself brings comfort, and entertaining oneself with manipulable objects generates enjoyment, such self-produced outcomes foster recognition of oneself as an agent. The self becomes differentiated from others through rudimentary dissimilar experiences. If stubbing one's toe brings pain, but seeing other people stub their toes brings no

personal pain, one's own activity becomes distinguished from that of other persons.

The construction of selfhood is not entirely a matter of private reflection on one's experiences. There is a social aspect to this process. As infants mature and acquire language, the people around them refer to them by personal names and treat them as distinct persons. With the development of language, social self-referent labeling accelerates self-recognition and development of self-awareness of personal agency. By about 18 months, infants have self-referent verbal labels and apply them to pictures of themselves, but not pictures of other people (Lewis & Brooks-Gunn, 1979). They differentiate themselves from others in their verbal labeling. As they become increasingly aware that they can produce effects by their actions, by about 20 months, they spontaneously describe themselves as agents of their actions and describe their intentions as they engage in activities (Kagan, 1981). Before long, they begin to describe the psychological states accompanying their actions. On the basis of growing personal and social experiences, an infant eventually forms a symbolic representation of him- or herself as a distinct self capable of making things happen.

There is also a great deal of intentional guidance that fosters infants' agentic capabilities (Heckhausen, 1987; Karniol, 1989; Papousek & Papousek, 1979). Parents create highly noticeable proximal effects of infants' actions, providing them with objects within their manipulative capabilities to encourage production of effects by actions and segment activities into manageable subskills. Parents also set challenges for their infants just beyond the infants' existing competencies. They adjust their level of assistance as infants pass through phases of mastery, offering explicit guidance in earlier phases of skill acquisition but gradually withdrawing aid as infants become more competent in mastering tasks on their own. These types of enabling strategies are highly conducive to the development of a sense of personal agency during the initial years of life.

The self is the person, not a homuncular overseer that resides in a particular place and does the thinking and acting. Selfhood embodies one's physical and psychosocial makeup, with a personal identity and agentic capabilities operating in concert. Although the brain plays a central role in psychological life, selfhood does not reside solely in the brain, any more than the heart is the sole place where circulation is located (Schechtman, 1997). A transplant of the brain of an extraordinary gymnast into an octogenarian's body will not produce a sense of self as a dazzling gymnast, as a single-organ view would imply. Nor are there multiple independent selves. Individuals wrestle with conflicting goals and courses of action. However, given but a single body, the choices finally made and the actions taken at a given time require unity of agency. Successful implementation of a chosen course of action also calls for coherent effort.

Adaptive functioning requires both appropriate generalization in the face of bewildering situational variation and perceptive discrimination to avoid dysfunctional overgeneralization.

People, therefore, vary in their behavior, with this variation conditional on circumstances. But these are instances of the same being doing different things under different life conditions, not different selves doing their separate things. One cannot be all things. Hence, people vary in how heavily they invest their personal identity in sociocultural, political, familial, and occupational aspects of life. A multifaceted self-view and variability in behavior reflect the complexity of human functioning, not fragmentation of agency.

Personal identity refers to self-characterizations of what one is. The continuity of personal identity resides more in psychological factors and the experiential continuity of one's life course than in physical constancy. Continuing self-identity in the midst of notable changes is preserved in memories that give temporal coherence to life (McAdams, 1996), in continuance of belief and value commitments that link the present to the past and shape the future, and in the connectedness of human relationships and one's lifework over time. As an agent, one creates identity connections over time (Korsgaard, 1996) and construes oneself as a continuing person over different periods in one's life. Through their goals, aspirations, social commitments, and action plans, people project themselves into the future and shape the courses their lives take. Personal identity is therefore rooted not only in phenomenological continuity, but also in agentic continuity.

Continuity in personal identity is not solely a product of an intrapsychic autobiographical process that preserves a sense of selfhood over time. Other people perceive, socially label, and treat one as the same person over the course of life despite one's physical changes. Personal identity is partially constructed from one's social identity as reflected in how one is treated by significant others. As the model of triadic reciprocal causation suggests, a sense of selfhood is the product of a complex interplay of personal construal processes and the social reality in which one lives.

## FOUNDATION OF HUMAN AGENCY

Among the mechanisms of human agency, none is more central or pervasive than belief of personal efficacy (Bandura, 1997). This core belief is the foundation of human agency. Unless people believe they can produce desired effects by their actions, they have little incentive to act, or to persevere in the face of difficulties. Whatever other factors serve as guides and motivators, they are rooted in the core belief that one has the power to effect changes by one's actions.

Belief in one's efficacy is a key personal resource in personal development and change (Bandura, 1997). It operates through its impact on cognitive, motivational, affective, and decisional processes. Efficacy beliefs affect whether individuals think optimistically or pessimistically, in self-enhancing or self-debilitating ways. Such beliefs affect people's goals and aspirations, how well they motivate themselves, and their perseverance

in the face of difficulties and adversity. Efficacy beliefs also shape people's outcome expectations—whether they expect their efforts to produce favorable outcomes or adverse ones. In addition, efficacy beliefs determine how opportunities and impediments are viewed. People of low efficacy are easily convinced of the futility of effort in the face of difficulties. They quickly give up trying. Those of high efficacy view impediments as surmountable by improvement of self-regulatory skills and perseverant effort. They stay the course in the face of difficulties and remain resilient to adversity. Moreover, efficacy beliefs affect the quality of emotional life and vulnerability to stress and depression. And last, but not least, efficacy beliefs determine the choices people make at important decisional points. A factor that influences choice behavior can profoundly affect the courses lives take. This is because the social influences operating in the selected environments continue to promote certain competencies, values, and lifestyles.

Many meta-analyses of the effects of efficacy beliefs have been conducted. They have included both laboratory and field studies of diverse spheres of functioning, with diverse populations of varying ages and sociodemographic characteristics, and in different cultural milieus (Boyer et al., 2000; Holden, 1991; Holden, Moncher, Schinke, & Barker, 1990; Moritz, Feltz, Fahrbach, & Mack, 2000; Multon, Brown, & Lent, 1991; Sadri & Robertson, 1993; Stajkovic & Luthans, 1998). The evidence from these meta-analyses shows that efficacy beliefs contribute significantly to level of motivation, emotional well-being, and performance accomplishments.

### MORAL AGENCY

The exercise of moral agency, rooted in personal standards linked to self-sanctions, is an important feature of an agentic theory of human behavior (Bandura, 1986). In the development of moral agency, individuals adopt standards of right and wrong that serve as guides and deterrents for conduct. In this self-regulatory process, people monitor their conduct and the conditions under which it occurs, judge it in relation to their moral standards and perceived circumstances, and regulate their actions by the consequences they apply to themselves (Bandura, 1991b). They do things that give them satisfaction and a sense of self-worth, and they refrain from behaving in ways that violate their moral standards because such conduct will bring self-condemnation. Thus, moral agency is exercised through the constraint of negative self-sanctions for conduct that violates one's moral standards and the support of positive self-sanctions for conduct that is faithful to one's moral standards.

People have the capability to refrain from acting, as well as to act. In the face of situational inducements to behave in inhumane ways, they can choose to behave otherwise by exerting self-influence. The moral knowledge and standards about how one ought to behave constitute the cognitive foundation of mo-

rality. The evaluative self-sanctions serve as the motivators that keep conduct in line with moral standards. Moral thought is translated into moral conduct through this self-reactive regulatory mechanism.

Moral agents commit themselves to social obligations and righteous causes, consider the moral implications of the choices they face, and accept some measure of responsibility for their actions and the consequences of their actions for other people (Keller & Edelstein, 1993). The types of activities that are designated as moral, their relative importance, and the sanctions linked to them are culturally situated. Hence, societies, and even subgroups within them, vary in the types of activities and social practices they consider to be central to morality (Shweder, 2003).

The exercise of moral agency has dual aspects—*inhibitive* and *proactive* (Bandura, 2004b; Rorty, 1993). The inhibitive form is manifested in the power to refrain from behaving inhumanely; the proactive form is expressed in the power to behave humanely. Thus, in exercising this dual nature of morality, people do benevolent things, as well as refrain from doing harmful things. When individuals strongly invest their self-worth in certain principles and values, they will sacrifice their self-interest and submit to prolonged maltreatment rather than accede to what they regard as unjust or immoral (Bandura, 1999b; Oliner & Oliner, 1988).

Moral standards do not function as unceasing internal regulators of conduct, however. Various psychosocial mechanisms can be used to disengage moral self-sanctions from inhumane conduct (Bandura, 1991b). Selective moral disengagement is most likely to occur under moral predicaments in which detrimental conduct brings valued outcomes. The disengagement may center on sanctification of harmful conduct by moral justification, self-exonerating social comparison, and sanitizing language. It may focus on obscuring personal agency by diffusion and displacement of responsibility, so that perpetrators do not hold themselves accountable for the harm they cause. It may involve minimizing, distorting, or even disputing the harm that flows from detrimental actions. And the disengagement may include dehumanizing, demonizing, and blaming the recipients of the injurious actions. Through selective moral disengagement, people who are considerate and compassionate in other areas of their lives can get themselves to support detrimental social policies, carry out harmful organizational and social practices, and perpetrate large-scale inhumanities (Bandura, 1999a).

In the nonagentic microdeterministic theories reviewed earlier, behavior is the product of nonconscious processes in which environmental inputs activate subpersonal modules that cause the actions. If people's actions are the product of the nonconscious workings of their neuronal machinery, and their conscious states are simply the epiphenomenal outputs of lower-level brain processes, it is pointless to hold people responsible for the choices they make and what they do. No one should be

held personally accountable for their harmful behavior—not transgressors for their crimes, police for abusive enforcement practices, prosecutors and jurors for biased sentencing practices, jailers for maltreatment of inmates, or the citizenry for the social conditions their public policies and practices breed. They can all disclaim responsibility for their actions. Their neural networks made them do it.

Analyses of neuroethics center mainly on the more parochial issues. They include the ethics of pharmacological manipulation of neural systems for self-enhancement and court-ordered management of offenders, breaches of privacy through functional neuroimaging intended to detect personal characteristics and cognitive and emotional states, genetic counseling, and the like (Farah, 2002). The more fundamental moral implications of neuroethics receive little notice, however.

The subpersonal workings of the biological machinery are nonethical. The issue of morality arises in the purposes to which behavior is put, the means that are used, and the human consequences of the actions. A deterministic thesis that humans have no conscious control over what they do, in fact, represents a position on morality. It is a position of moral nonaccountability that is socially consequential. Would a nonagentic conception of human nature erode the personal and social ethics that undergird a civil society? How would people create and maintain a civil society if its members were absolved of any personal accountability for their actions?

The capacity for moral agency is founded on a sense of personal identity, moral standards, and behavioral regulation through self-sanctions (Bandura, 1991b). This ability is acquirable. Social judgments of detrimental conduct are made in terms of personal controllability of the actions. For example, it is within individuals' capacity to stop at a red signal light. A driver who caused a fatal injury by running a red light would be held accountable for his actions. In moral agency, individuals can exercise some measure of control over how situations influence them and how they shape the situations. In the triadic interplay of intrapersonal, behavioral, and environmental events, individuals insert personal influence into the cycle of causation by their choices and actions. Because they play a part in the course of events, they are at least partially accountable for their contribution to those happenings.

Research conducted within the agentic perspective has furthered our understanding of the determinants and processes governing the development and exercise of moral agency (Bandura, 1991b, 1999a). These diverse lines of research clarify how individuals construct moral standards from the mix of social modeling, the moral values conveyed by evaluative social sanctions of their conduct, and intuition. They specify the processes by which people select, weigh, and integrate morally relevant information in making moral judgments. They explain the self-regulatory mechanisms linking moral judgments to moral conduct through self-sanctions. And they elucidate the psychosocial processes through which moral self-sanctions are

selectively engaged and disengaged in the management of moral predicaments.

## GENETIZATION OF HUMAN BEHAVIOR

We are currently witnessing an extensive "genetization" of human behavior. Social roles and human practices are increasingly being proclaimed to be driven by the inertia of ancient biological programming. Not all evolutionary theorists speak with one voice, however. Psychological evolutionists often take a more extreme deterministic stance regarding the rule of nature (Archer, 1996; Buss, 1995) than do many biological evolutionists (Dobzhansky, 1972; Fausto-Sterling, 1992; Gould, 1987; Gowaty, 1997). Psychological evolutionists are quick to invoke evolved behavioral traits as cultural universals. Natural selection operates through functional advantages of adaptive patterns in a given environment. Biological evolutionists, therefore, emphasize functional relations between organisms and local environmental conditions, underscoring the diversifying selection influence of variant ecological niches. Cultures evolve over generations and shape the ways people need to live to survive in the particular cultural milieu in which they are immersed (Boyd & Richerson, 1985, 2005). As Boyd noted (Dreifus, 2005), humans evolved in the tropics but hunt seals in the Arctic. Genes did not teach them how to build a kayak; their culture did.

Biology provides the information-processing architectures and potentialities and sets constraints. But in most spheres of functioning, biology permits a broad range of cultural possibilities. As Gould (1987) noted, the major explanatory dispute is not between nature and nurture, as the issue is commonly framed. Rather, the issue in contention is whether nature operates as a determinist that has culture on a "tight leash," as Wilson (1998) contended, or as a potentialist that has culture on a "loose leash," as Gould (1987) maintained.

Humans have created societies of diverse natures: aggressive and pacific ones, egalitarian and despotic ones, altruistic and selfish ones, individualistic and collectivistic ones, and enlightened and backward ones. Evidence supports the potentialist view. For example, people possess the biological capability for aggressive acts, but cultures differ markedly in aggressiveness (Allard, 1972; Gardner & Heider, 1969; Levy, 1969). There are also wide differences in aggression within the same culture (Bandura, 1973). Even entire nations, such as Sweden and Switzerland, have transformed from warring societies to pacific ones. The Swiss used to be the main suppliers of mercenary fighters in Europe. As they transformed into a pacific society, their militaristic vestige was evident only in the plumage of the Vatican guards. For ages, the Vikings plundered other nations. After a prolonged war with Russia, the populace rose up and forced a constitutional change (Moerk, 1995) that prohibited kings from starting wars. This political act promptly transformed a warring society into a peaceful one. Sweden is now a mediator for peace among warring nations. Cultural diversity

and the rapid transformative societal changes that have occurred underscore that the answer to human aggression lies more in ideology than in biology.

Biological determinists support a conservative view of society that emphasizes the rule of nature, inherent constraints, and limitations. They contend that people should not try to remake themselves and their societies against the rule of nature, as the determinists construe it. Biological potentialists give greater weight to enabling social conditions that promote self-development and societal change. They emphasize human possibilities and how to realize them. People have changed little genetically over the past millennium, but over the recent decades they have changed markedly in their beliefs, mores, social and occupational roles, cohabiting arrangements, family practices, and styles of behavior in diverse spheres of life. They have done so through rapid cultural and technological evolution.

### GROWING PRIMACY OF HUMAN AGENCY IN THE COEVOLUTION PROCESS

Dobzhansky (1972) reminded us that humans are a generalist species that was selected for learnability and plasticity of behavior, not for behavioral fixedness. Although not limitless, malleability and agentic capability are the hallmark of human nature. Because of limited innate programming, humans require a prolonged period of development to master essential competencies. Moreover, different periods of life present variant competency demands requiring self-renewal over the life course if the challenges of changing life circumstances are to be met. Adding to the necessity of changeability, the eras in which people live usher in technological innovations, shifts in socio-economic conditions, cultural upheavals, and political changes that make life markedly different and call for new advantageous adaptations (Elder, 1994). These diverse adaptational changes are cultivated by psychosocial means.

People are not just reactive products of selection pressures served up by a one-sided evolutionism. They are prime players in the coevolution process. Social cognitive theory does not question the contribution of genetic endowment. Indeed, this endowment provides the very neuronal structures and mechanisms for the agentic attributes that are distinctly human. These include generative thought, symbolic communication, forethought, self-regulation, and reflective self-consciousness. The uniqueness of humans resides in these self-directing and self-transforming capacities.

Other species are heavily innately programmed as specialists for stereotypic survival in a particular habitat. In contrast, through agentic action, people devise ways of adapting flexibly to remarkably diverse geographic, climatic, and social environments. They devise ways to transcend their biological limitations. For example, humans have not evolved morphologically to fly, but they are soaring through the air and even in the rarified atmosphere of outer space at breakneck speeds despite this

fundamental constraint. Agentic inventiveness trumped biological design in getting them airborne. People use their ingenuity to circumvent and insulate themselves from selection pressures. They create devices that compensate immensely for their sensory and physical limitations. They construct complex environments to fit their desires, many of which are fads and fashions that are socially created by aggressive marketing practices. They create intricate styles of behavior necessary to thrive in complex social systems, and through social modeling and other forms of social guidance pass on to subsequent generations accumulated knowledge and effective practices. They transcend time, place, and distance, as they interact globally with the virtual environment of the cyberworld.

Through contraceptive ingenuity that disconnected sex from procreation, humans have outwitted and taken control over their evolved reproductive system. They seek sex without reproductive outcomes, rather than strive to propagate their kind in large numbers. They are developing reproductive technologies to separate sex even from fertilization. Through genetic engineering, humans are creating biological natures, for better or for worse, rather than waiting for the slow process of natural evolution. They are now changing the genetic makeup of plants and animals. Unique native plants that have evolved over eons are disappearing as commercial horticulturalists are supplanting them with genetically uniform hybrids and clones. Not only are humans cutting and splicing nature's genetic material, but, through synthetic biology, they are also creating new types of genomes. Humans are even toying with the prospect of fashioning some aspects of their own biological nature by genetic design.

The creative power of human agency generally is downgraded in evolutionary accounts of human behavior, especially in the more biologically deterministic views propounded in psychological evolutionism. Given the growing human modifications of evolved heritages and creative circumventing of endowed limitations, the common notion that biological evolution provides the potential and culture can do only so much with it alleges greater physical constraints than does evidence from the extraordinary human achievements of inventive agency.

As testified to by the diverse modes of behavioral control, the psychosocial side of coevolution is gaining ascendancy through the agentic power to transform environments and what humans become. In short, we are an agentic species that can alter evolutionary heritages and shape the future. What is technologically possible is likely to be attempted by someone. We face the prospect of increasing effort directed toward social construction of our biological nature through genetic design. These developments present an enormous challenge regarding how to bridle unbounded genetic manipulation (Baylis & Robert, 2004). The values to which people subscribe, and the social systems they devise to oversee the uses to which their technological power is put, will play a vital role in what people become and how they shape their destiny.

Were Darwin writing today, he would be documenting the overwhelming human domination of the environment. Many of the species in our degrading planet have no evolutionary future. We are wiping out species and the ecosystems that support life at an accelerating pace. Unlike former mass extinctions by meteoric disasters, the current mass extinction of species is the product of human behavior. As the unrivaled ruling species atop the food chain, we are drafting the requiem for biodiversity. By wielding powerful technologies that amplify control over the environment, humans are producing hazardous global changes of huge magnitude—deforestation, desertification, global warming, topsoil erosion and sinking of water tables in the major food-producing regions, depletion of fisheries, and degradation of other aspects of the earth's life-support systems. Expanding economies fueling consumptive growth by billions of people will intensify competition for the earth's vital resources and overwhelm efforts to secure an environmentally and economically sustainable future. Myriad parochial interests create tough impediments to improving living standards globally through sustainable ecodevelopment in which economic growth preserves the environmental basis for it. Through collective practices driven by a foreshortened perspective, humans may be well on the road to outsmarting themselves into irreversible ecological crises.

The global ecosystem cannot sustain soaring population growth and high consumption of finite resources. Some of the global applications of social cognitive theory are aimed at abating this most urgent global problem, especially in less-developed nations that have experienced high fertility rates and doubling of their populations over a short period (Bandura, 2002a; Rogers et al., 1999). These applications also seek to curb the spreading AIDS pandemic and to raise the status of women in societies in which they are marginalized, disallowed aspirations, and denied their liberty and dignity. These worldwide applications combine the functions of three models in ways that augment widespread changes. They combine a theoretical model that provides the guiding principles, a translational and implementational model that converts theory into innovative practice, and a social diffusion model that fosters adoption of changes through functional adaptations to diverse cultural milieus.

These global applications in Africa, Asia, and Latin America use the enabling power and reach of the mass media, in the form of long-running serialized dramas, as the vehicle of personal and social change. They portray people's everyday lives, the impediments with which they struggle, and realistic solutions to those impediments. They inform, enable, and motivate people to take control of their reproductive life, to visualize a better future, and to take the steps to realize it. These types of changes help people break the cycle of poverty, improve their lives, and adopt reproductive and environmental practices that support ecological sustainability.

## EXERCISE OF AGENCY IN CULTURAL CONTEXT

A contentious dualism pervades the field of cultural psychology, pitting autonomy against interdependence, individualism against collectivism, and human agency against social structure reified as an entity disembodied from the behavior of individuals. It is widely claimed that Western theories lack generalizability to non-Western cultures. In truth, however, the relative weight given to individual, proxy, and collective agency varies cross-culturally and across spheres of life, but one needs all forms of agency to make it through the day, regardless of where one happens to live.

Most of cultural psychology is based on territorial culturalism. Nations are used as proxies for psychosocial orientations. For example, residents of Japan get categorized as collectivists, and those in the United States as individualists. But cultures are dynamic and internally diverse systems, not static monoliths. There is substantial diversity among societies placed in the same category. For example, collectivistic systems founded on Confucianism, Buddhism, and Marxism all favor a communal ethic. But they differ in values, meanings, and the customs they promote (Kim, Triandis, Kagitçibasi, Choi, & Yoon, 1994). Nor are so-called individualistic cultures a uniform lot. Americans, Italians, Germans, French, and the British differ in their brands of individualism. There is also diversity across regions within the same country. In the United States, the Northeast brand of individualism is quite different from the Midwestern and Western versions, which differ from that of the Deep South (Vandello & Cohen, 1999). Given the notable diversity, bicultural contrasts in which members of a single collectivist culture are compared with those of a single individualistic one can spawn misleading generalizations.

The differences associated with sociodemographic characteristics are even greater than the differences between cultures (Matsumoto, Kudoh, & Takeuchi, 1996). For example, there are generational and socioeconomic differences in communalism in collectivistic cultures. Analyses across activity domains and classes of social relationships further reveal that people behave communally in some aspects of their lives and individualistically in many other aspects (Freeman & Bordia, 2001; Matsumoto et al., 1996). They express their cultural orientations conditionally, depending on incentive conditions, rather than invariantly (Yamagishi, 1988). Measures of cultural traits cast in terms of faceless others and disembodied from domains of activity, social contexts, and incentive conditions mask this diversity upon which human adaptation is conditional. This multifaceted diversity underscores the conceptual and empirical problems of using nations as proxies for culture, and then ascribing global traits to a nation and its members as though they all believed and behaved alike (Gjerde & Onishi, 2000).

Not only are cultures not monolithic entities, but they are no longer insular. Global connectivity is shrinking cross-cultural uniqueness. Transnational interdependencies and global mar-

ket forces are restructuring national economies, and shaping the political and social life of societies. Advanced telecommunications technologies are disseminating ideas, values, and styles of behavior transnationally at an unprecedented rate. The symbolic environment, feeding off communication satellites, is altering national cultures and producing intercultural commonalities in some lifestyles. The growing role of electronic acculturation is fostering a more extensive globalization of culture. People worldwide are becoming increasingly enmeshed in a cyberworld that transcends time, distance, place, and national borders. In addition, mass migrations of people, and high global mobility of entertainers, athletes, journalists, academics, and employees of multinational corporations, are changing cultural landscapes. This intermixing creates new hybrid cultural forms, blending elements from different ethnicities. Growing ethnic diversity within societies conveys functional value to bicultural efficacy that can be used to navigate the demands of both one's ethnic subculture and the culture of the larger society.

These social forces are homogenizing some aspects of life, polarizing other aspects, and fostering considerable cultural hybridization (Holton, 2000). The new realities call for broadening the scope of cross-cultural research to include analyses of how national and global forces interact to shape the nature of cultural life. As globalization reaches ever deeper into people's lives, a strong sense of collective efficacy to make transnational systems work for them becomes critical to furthering their common interests and welfare.

One must distinguish between inherent capacities and how culture shapes these potentialities into diverse forms. For example, observational learning figures prominently in social cognitive theory. Humans have evolved an advanced capacity for observational learning. It is essential for their self-development and functioning regardless of the culture in which they reside. Indeed, in many cultures, the word for "learning" is the word for "show" (Reichard, 1938). Modeling is a universalized human capacity. But what is modeled, how modeling influences are socially structured, and the purposes they serve vary across cultural milieus (Bandura & Walters, 1963). Global applications of social cognitive theory to promote society-wide changes attest to the power of social modeling in diverse cultural milieus (Bandura, 2002a, 2006; Rogers et al., 1999; Vaughan, Rogers, Singhal, & Swalehe, 2000).

A growing body of research shows that a resilient sense of efficacy has generalized functional value regardless of whether one resides in an individualistically oriented culture or a collectivistically oriented one (Earley, 1993, 1994; Gibson, 1995). Being immobilized by self-doubt and believing in the futility of effort have little evolutionary advantage. But how efficacy beliefs are developed and structured, the ways in which they are exercised, and the purposes to which they are put vary cross-culturally. In short, there is cultural commonality in basic agentic capacities and mechanisms of operation, but diversity in

the culturing of these inherent capacities. In this dual-level analysis, universality is not incompatible with manifest cultural plurality. Kluckhohn and Murray summarized eloquently the blend of universality, commonality, and uniqueness of human qualities: Every person is in certain aspects like all other people, like some other people, like no other person (as cited in Muñoz & Mendelson, 2005).

Research testifies to the cross-cultural generalizability of self-efficacy theory. The factor structure of self-efficacy beliefs is essentially the same in different cultural systems (Pastorelli et al., 2001). Not only is the structure of self-efficacy beliefs comparable cross-culturally, but so are their functional properties. Regardless of whether the culture is American, Italian, Korean, or Chinese, the stronger the perceived self-efficacy, the higher the performance attainments (Bandura et al., 1996; Bong, 2001; Joo, Bong, & Choi, 2000; Shih & Alexander, 2000). The cross-cultural comparability of function is evident as well in the impact of efficacy beliefs on perceived occupational efficacy and career choice and development (Bandura et al., 2001; R. Lent, Brown, & Larkin, 1987; R. Lent, Brown, Nota, & Soresi, 2003). Even the mechanisms through which self-efficacy beliefs affect performance are replicated cross-culturally (Bandura, 2002b; Cheung & Sun, 2000; R. Lent et al., 2003; Park et al., 2000).

### GROWING PRIMACY OF HUMAN AGENCY IN DIVERSE SPHERES OF LIFE

The societies of today are undergoing drastic social, informational, and technological changes. The revolutionary advances in electronic technologies and globalization are transforming the nature, reach, speed, and loci of human influence. These new realities present new challenges and vastly expand opportunities for people to exercise some measure of control over how they live their lives. Wrenching changes that dislocate and restructure lives are not new in history. What is new is the boundless scope and accelerated pace of human transactions, and the growing globalization of human interconnectedness.

Life in the rapidly evolving cyberworld transcends time, place, distance, and national borders, and alters our conceptions of them. People now have instantaneous communicative access worldwide. It is transforming how people communicate, educate, relate to each other, and conduct their business and daily affairs. These transformative changes are placing a premium on the exercise of human agency to shape personal destinies and the national life of societies.

Most of our psychological theories were formulated long before the revolutionary changes in communications and the new social realities these technologies have created. Given the circumscribed situational boundedness of people's lives at the time, the traditional psychological theories focused heavily on behavioral transactions and contingencies operating within people's confined tangible environment. The situational tran-

scendence afforded by ready access to vast symbolic environments in the cyberworld has enabled people to take a stronger hand in shaping their lives. Consider some examples of the growing primacy of human agency in virtually every sphere of life.

In the educational field, students can now exercise greater personal control over their own learning. In the past, their educational development was heavily dependent on the quality of the schools in which they were enrolled. Students now have the best libraries, museums, and multimedia instruction at their fingertips through the global Internet, and they can use these resources for educating themselves. They can do this independently of time and place. This shift in the locus of initiative requires a major reorientation in students' conception of education. They are agents of their own learning, not just recipients of information. Education for self-directedness is now vital for a productive and innovative society. Proficient self-regulators gain knowledge, skills, and intrinsic interest in academic areas; deficient self-regulators achieve limited self-development (Schunk & Zimmerman, 1994; Zimmerman, 1989).

At the student, teacher, and school levels, a sense of efficacy contributes to academic development (Bandura, 1997; Pajares & Schunk, 2001). We are entering a new era in which the construction of knowledge will rely increasingly on electronic inquiry. Students with high perceived efficacy for self-regulated learning are the ones who make the best use of Internet-based instruction (Joo et al., 2000).

Health is another sphere of functioning in which the exercise of personal agency is gaining prominence. The health field is changing from a disease model to a health model. It is just as meaningful to speak of levels of vitality and healthfulness as to speak of degrees of impairment and debility. The quality of health is heavily influenced by lifestyle habits, which means that people can exercise some control over their health. Current health practices focus heavily on the medical supply side, and there is growing pressure on health systems to reduce, ration, and delay health services to contain health costs. The social cognitive approach, founded on an agentic model of health promotion, focuses on the demand side (Bandura, 2000b, 2004a). It promotes effective self-management of health habits that keep people healthy.

Increasing applications of the self-regulatory model are enhancing people's health status, improving the quality of their lives, and reducing their risk of disease and need for costly health services (Bandura, 2005; M. Clark et al., 1997; DeBusk et al., 1994; Holman & Lorig, 1992; Lorig & Holman, 2003). This self-regulatory model is being integrated into mainstream health care systems and adopted internationally (N. Clark et al., in press; Dongbo et al., 2003; Lorig, Hurwicz, Sobel, & Hobbs, in press). People's beliefs in their self-regulatory efficacy affect every phase in the adoption of healthful practices—whether they even consider changing their health habits, whether they enlist the motivation and perseverance needed to succeed

should they choose to do so, and how well they maintain the changes they have achieved (Bandura, 1997, 2004a).

A major part of people's daily life is spent in occupational activities. These pursuits do more than provide income for one's subsistence. They serve as a major source of personal identity, self-evaluation, and social connectedness. Beliefs of personal efficacy play a key role in occupational development and pursuits (Bandura, 1997; R. Lent, Brown, & Hackett, 1994). The capacity for self-renewal is becoming a prominent factor in a satisfying occupational life. In the past, employees learned a given trade and performed it much the same way throughout their lifetime in the same organization. The historic transition from the industrial to the information era calls for advanced cognitive and self-regulatory competencies. With the fast pace of change, knowledge and technical skills are quickly outmoded unless they are updated to fit the new technologies. Employees have to take charge of their self-development to meet the challenges of evolving positions and careers over the full course of their work lives. Those of high self-efficacy influence the course of their occupational self-development, are receptive to innovations, and make their work life more productive and satisfying by restructuring their occupational roles and the processes by which their work is performed (Frese, Teng, & Cees, 1999; Jorde-Bloom & Ford, 1988; McDonald & Siegall, 1992; Speirer & Frese, 1997).

Many occupational activities are increasingly conducted by members of virtual teams working together from scattered locations via the Internet. Working remotely across time, space, and cultural orientations can be taxing. A high sense of efficacy promotes positive attitudes for remotely conducted collaborative work and enhances group performance (Staples, Hulland, & Higgins, 1998).

Agentic adaptability has become a premium at the organizational level as well. Organizations must continuously innovate to survive and prosper in the rapidly changing global marketplace. They face the paradox of preparing for change at the height of success. Many fall victim to the inertia of success. They get locked into the technologies and products that produced their success and fail to adapt fast enough to the technologies and marketplaces of the future. The development of new business ventures and the renewal of established ones depend heavily on innovativeness and entrepreneurship. Turning visions into realities entails heavy investment of time, effort, and resources in ventures strewn with many difficulties, unmerciful impediments, and uncertainties. A resilient sense of efficacy provides the necessary staying power in the torturous pursuit of innovations. Indeed, perceived self-efficacy predicts entrepreneurship and which patent inventors are likely to start new business ventures (Baron & Markman, 2003; Chen, Greene, & Crick, 1998).

It is the organizations with a high sense of collective efficacy that create innovative changes that fit evolving technologies and global marketplaces (Bandura, 2000a). However, hard-driving

competitiveness raises value issues concerning the purposes to which human talent, advanced technologies, and resources are put. Some intense market activities promote lavish consumption that neither uses our finite resources wisely nor leads to a better quality of life. Many of these practices may be profitable in the short run, but, as previously noted, they are environmentally unsustainable in the long run.

The revolutionary advances in communications technology also enable people to bring their influence to bear on social and political matters in ways that were not possible before. The Internet technology gives people an instrument of global reach, free of centralized institutional controls and gatekeepers who reign over the mass media. People can now transcend time, place, and national borders to make their voice heard on matters of personal interest and concern. The Internet is not only a vehicle of unlimited social reach. It also serves as a means for building social networks by connecting disparate groups and individuals in pursuit of common cause. By coordinating and mobilizing decentralized self-organizing groups, people can meld local networks with different self-interests into a vast collectivity for unified action for common purpose (Shapiro, 2003).

The Internet is a tool that requires personal enablement for its effective use. It is individuals with a sense of personal and collective efficacy who voice their views and participate in social and political activities in the arena of the cyberworld (Bandura, 1997). But human agency does not come with a built-in value system. The Internet is a double-edged tool. Internet freelancers can use this unfiltered and unfettered forum to propagate hate and to mobilize support for detrimental social practices.

### CONCLUDING REMARKS

Viewed from the perspective of nonreductive physicalism, the field of psychology is not merely an ancillary branch of a more fundamental theoretical system. Psychology is the one discipline that uniquely encompasses the complex interplay among biological, intrapersonal, interpersonal, and sociostructural determinants of human functioning. As a core discipline, it is especially well suited to advance understanding of the integrated biopsychosocial nature of humans, and how they agentically manage and shape the everyday world around them. Today's world of accelerated social, informational, and technological changes with instant communicative access worldwide provides people with expanded opportunities to bring their influence to bear on events that affect their lives. The exercise of individual and collective agency is contributing increasingly, in virtually every sphere of life, to human development, adaptation, and change. At the broader social level, the challenges center on how to enlist these agentic human capabilities in ways that shape a better and sustainable future.

**Acknowledgments**—A major portion of this article was presented at the annual meeting of the American Psychological Society in Chicago, May 2004, for the James McKeen Cattell Award for Distinguished Achievements in Psychological Science. A few sections of this article include revised, updated, and expanded material from Bandura (2001).

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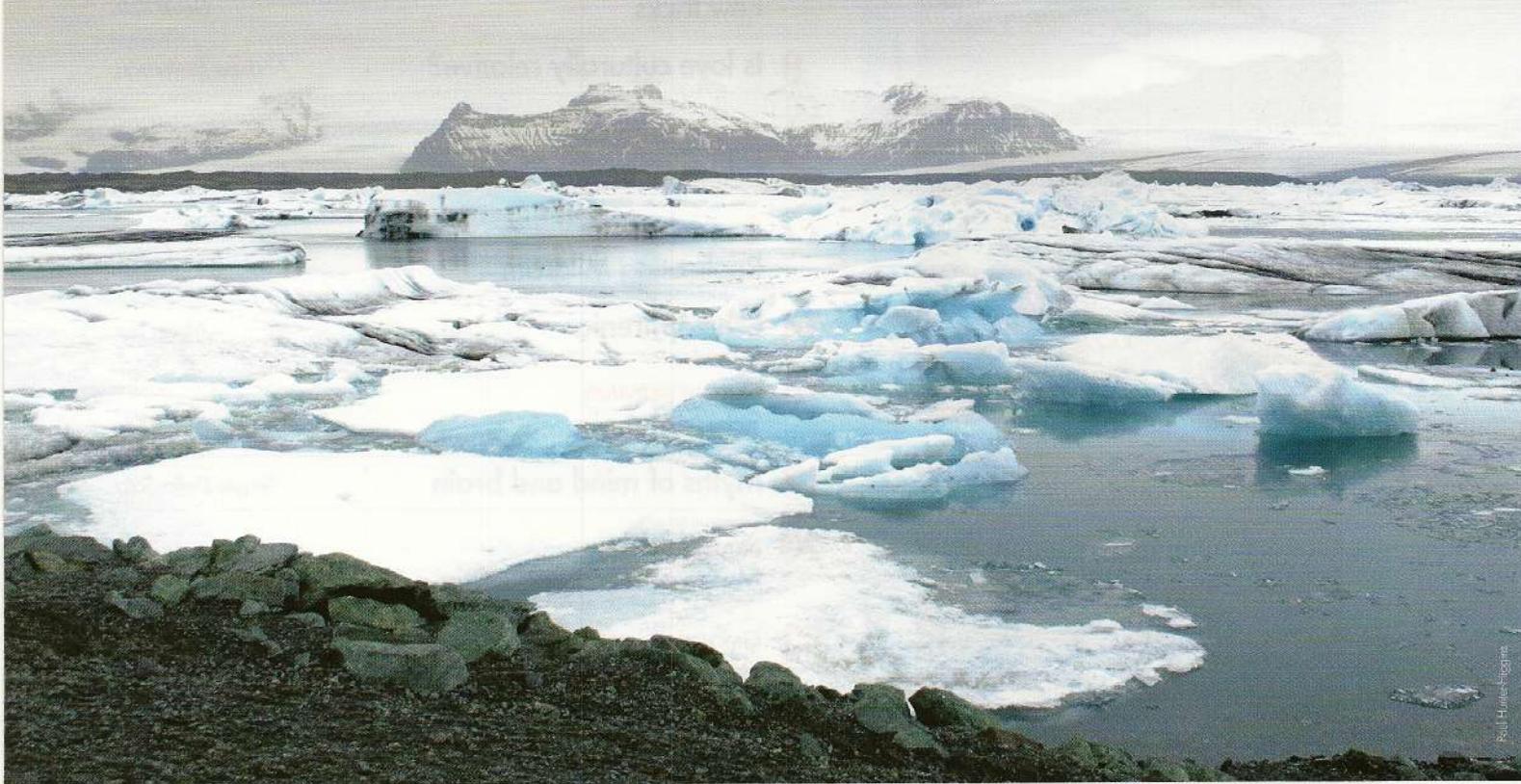
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# Environmental harm

Albert Bandura considers the damage that our behaviours are doing to our planet and makes recommendations for change, building on insights from psychology



Bill Hartley/Hartley

**A**s consumers, we are repeatedly bombarded with messages telling us to consider the environment and to save energy in the face of global climate change. As a psychology student, embarking on the first of what, I hope, will be many enjoyable journeys through this fascinating discipline, you may ask yourself, 'What does this really mean and how can I change my own behaviour and that of my family and friends, to make a real difference to saving this planet?'

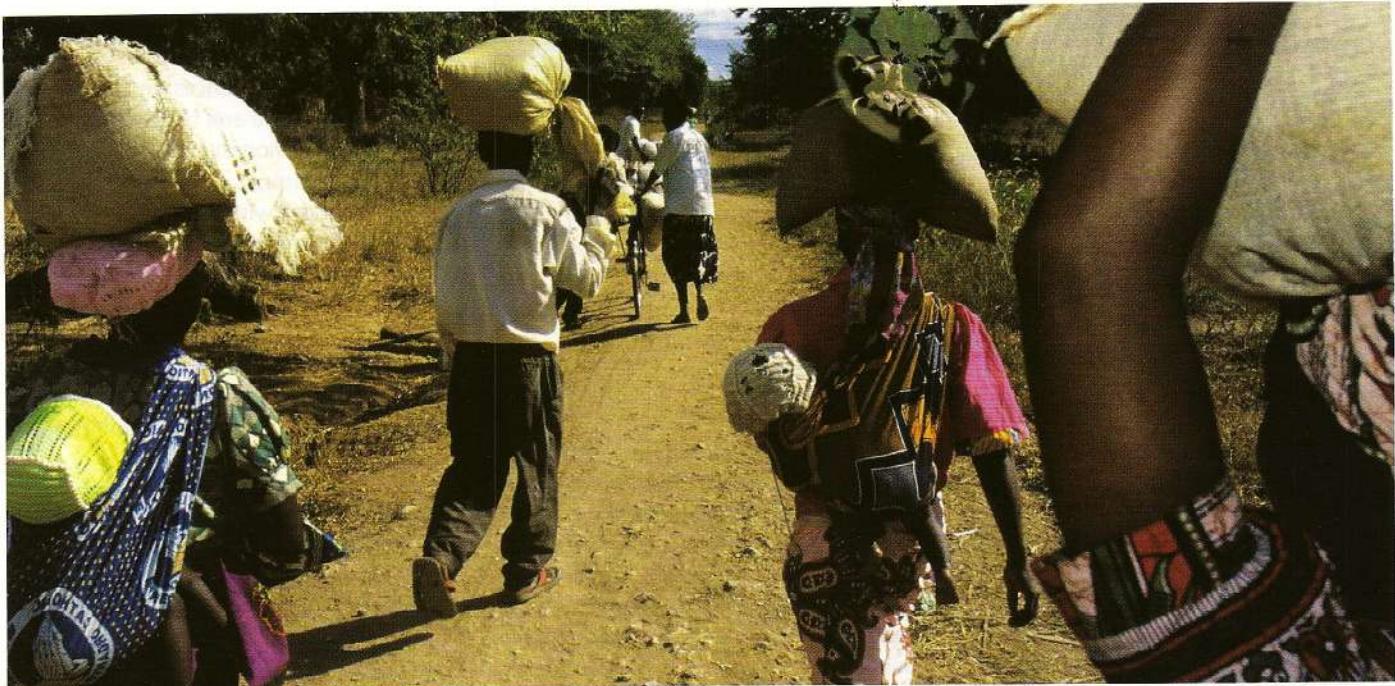
It would be impossible for me to give a full answer to these increasingly important questions, but what I want to do here

is to explain further some of the issues involved and to encourage you to reflect on the fact that, while you may be doing many positive things in terms of saving on energy for example, you may also be more than cancelling them out by increased consumption of goods and services. Furthermore, you may be attempting to justify this to yourself by using effective strategies that separate or 'disengage' your moral thinking from your behaviour. Do not use one of the mechanisms of moral disengagement — minimisation through social diffusion — to curb the use of self-exonerative moral disengagement.

The purpose of this article is to make you more aware of these actions and to encourage you to become 'moral stewards' of your environment, so that future generations will benefit from a cleaner, greener (not meaner) and safer world. Psychology has a huge role to play in this process and the price of *not* acting *now* for behaviour change is not worth imagining. We do not have much time and yet, paradoxically, we have all the choices and options for change.

## What is environmental harm?

We are witnessing hazardous global changes of mounting ecological consequences. These include deforestation, expanding deserts,



Henner Frankenfeld/NOMA/Sai Pictures

Severe weather events are causing drought in Malawi

global warming, melting ice sheets and glaciers, the flooding of low-lying coastal regions, severe weather events, topsoil erosion and sinking water tables in major food producing regions. In addition, fish stocks are being depleted, there is loss of biodiversity and our life support systems on earth are being degraded.

Our human behaviours, as rulers of the food chain, are wiping out species and ecosystems supporting life at an ever-accelerating pace. Attempts to offset these harmful global effects with the introduction of clean, green technologies, for example, are more than offset by a soaring world population of over 6 billion people, heading towards 9–10 billion by mid-century.

### How can psychology help?

A range of practical social, economic and political interventions have been put into action by countries and their governments around the world. However my argument is that, until we understand this on an individual, psychological level — our thoughts, feeling and actions — we will never make serious inroads into tackling this growing problem. As psychologists, we need to understand better and to communicate to others how we justify and rationalise how our own behaviours compromise the ecological health of our individual worlds. When these behaviours are taken together over the entire human race, they affect the whole planet.

The celebrated civil rights activist, Martin Luther King, once said, 'Be the change you

want to see.' We need to see ourselves for *who* and *what* we really are and what we are doing to our planet, before nature itself takes action as a consequence and threatens our survival. The selective 'switching off' of our own moral self-sanction serves as a barrier to collective actions in the wider society, so that we do not reverse or even stabilise the ecological degradation I have listed, despite our best intentions.

### Causes of environmental harm

According to Ehrlich et al. (1995), environmental degradation of human origin stems from three major sources:

- population size
- level of human consumption
- damage to ecosystems caused by technologies used to supply consumable products and to support our given lifestyles

Therefore, we need to consider these three factors in developing a comprehensive approach to environmental sustainability, including changes in our lifestyles and a reduction in population growth. Psychology can play a leading role in driving these changes, as it is concerned with our understanding of human behaviour and experience.

### The role of moral behaviour

Some of you may have read my earlier theories and research into moral development in psychology textbooks (alongside, no doubt, related theories of cognitive development). What I seek to do here is to

apply what we already know and understand about the nature of moral thinking to a cause that is far too important to ignore and that affects us all.

In the development of moral agency, we construct standards of 'right' and 'wrong' that serve as guides and deterrents from harmful practices. We do things that give us satisfaction and a sense of self-worth, and we try to refrain from behaving in ways that violate our moral standards, because such conduct will bring self-condemnation (rather like the role of the 'superego' in psychodynamic theory). Our moral conduct is regulated through an ongoing process of evaluative self-sanctions.

In addition to this, our moral self-sanctions can be selectively 'turned-off' or *disengaged* from harmful practices for many different reasons, even when we are considerate and compassionate in other areas of our lives. In extreme cases, individuals can be ruthless and humane at the same time towards others, depending on whom they choose to exclude from their particular category of humanity. They may do this in the name of so-called religious, political, social or economic doctrines (Bandura 1999, Zimbardo 2007).

Similarly, when it comes to environmental practices, the immediate rewards of consumptive lifestyles can easily override distant adverse effects, especially if they are slowly cumulative (Wenk 1979). We can see this in the incentive systems of business organisations that may be oriented strongly towards practices bringing short-term

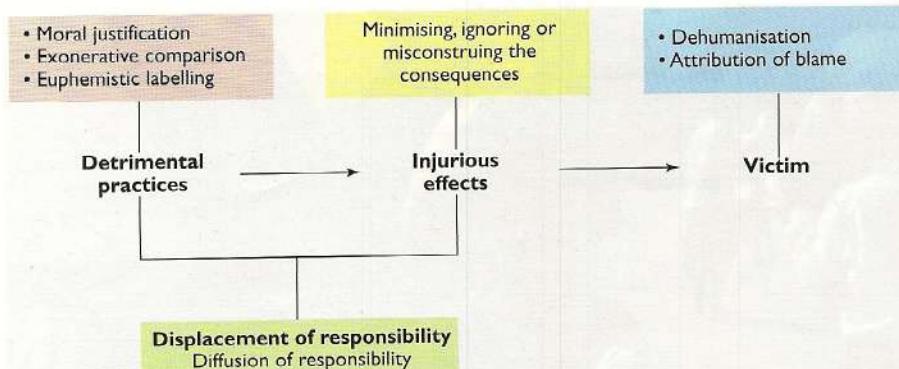


Figure 1 Psychosocial mechanisms for disengaging moral self-sanctions

profits rather than long-term benefits. Likewise, the politician may lobby for local projects that may not be environmentally friendly and the media tend to focus on the crisis of the day, rather than on long-term policy initiatives that avert future trouble.

On an individual level, we may pursue activities that serve our self-interests but that violate our moral standards — by inflicting human or environmental harm for example. In order to relieve the inner tensions that this may cause, we choose to separate our moral self-sanctions from detrimental social practices, making ourselves effectively 'free' from moral self-censure. The strategies that we use to perform these 'disengagement practices' at different stages in the process are both varied and complex, and I have illustrated some of these in Figure 1.

Three of these mechanisms operate at the so-called **behaviour locus**. Here we may transform harmful practices into worthy ones through, for example, social and moral justification, exonerative social comparison and sanitising language (the acid rain that is killing lakes and forests is disguised as 'transit particle depositions of unidentifiable sources'). This is the most effective set of disengagement practices, as it eliminates self-censure while also enhancing self-approval.

In two of the mechanisms operating at the **agency locus**, individuals are absolved of their personal accountability for harmful practices by displacement and diffusion of responsibility (the adage 'think globally, act locally' is an effort to restore personal responsibility for the environmental harm caused collectively). At the **outcome locus**, the harmful effects of the practices are disregarded, minimised or disputed, so there is nothing to feel bad about.

Finally, in the two remaining mechanisms operating at the **recipient locus**, the 'victims' who bear the brunt of worsening ecological conditions are marginalised, depersonalised and blamed for their plight.

Even the messengers of harmful effects and those working towards ecological sustainability are also derogated and discredited. Prince Charles, for example, receives a mixed reception when expressing his views on such matters. These mechanisms usually operate together interactively, rather than in isolation, at both the individual and social systems level. Therefore, we need to understand both individual behaviour and that of the norms, values and expectations of society to grasp fully how the moral disengagement process works in practice.



Prince Charles's warnings on ecological sustainability do not always get a good reception

Although we know that a group works through the behaviour of its members, collective moral disengaging is not simply the total of the moral beliefs of individual members. Rather, it is an *emergent* group phenomenon arising from interactive dynamics existing both within and between social systems. The whole (in this case, harmful environmental practices) is more than the sum of its parts (the individuals who justify and legitimise their harmful behaviours).

### The role of moral agency

The exercise of moral agency is part of the broader social cognitive theory (Bandura 2006). In taking a transactional view of self

and society, psychosocial functioning is the product of a dynamic interplay between intra-personal influences, in the form of cognitive, affective and biological determinants, the behavioural practices we engage in and environmental influences. Personal agency operates within a broad network of 'socio-structural influences', that is, social systems that are devised to organise, guide and regulate human behaviour. These rules and practices are not separate from human activity but, rather, are the product of them. In turn, they influence human development and functioning in a dynamic and mutually interactive way.

We can see this example most vividly in the tobacco industry, the products of which allegedly take the lives of more than 400,000 people in the USA each year. A network of otherwise considerate people, including agriculturists, tobacco executives, biotechnical researchers, movie actors, funded scientists and advertisers legitimise and justify their repressive social practices by a process of moral disengagement in which they see themselves as victimised defenders of human rights, fighting off those who would wish to ban people from the pleasures of smoking. They are able to diffuse their own personal agency or responsibility by working in and through sub-divisions of the complex web of the tobacco industry, seeing themselves as decent legitimate practitioners in the process.

### Social and moral justification

Unlike the other mechanisms of moral disengagement — which serve mainly to free harmful practices from moral consequences — social and moral justifications serve a dual function.

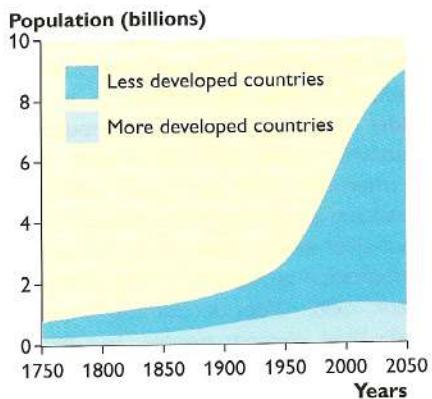
- First, sanctifying harmful practices as serving a worthy purpose enables people to preserve their sense of self-worth while engaging in harmful activities.
- Second, belief in this self-worth protects against self-censure of harmful behaviours and also engages self-approval by bringing social recognition and economic rewards for being successful at it.

We can therefore justify our actions on both social and moral grounds, free from the self-reproach that such behaviours would normally bring. This is an example of the means justifying the ends, as we further legitimise and justify our harmful actions.

Some of these social and moral justifications are aimed at dispelling concern over the population growth problem. As shown in Figure 2, population growth is soaring globally. However, further analysis shows

that developed nations are stabilising their populations, but developing ones — where most of the growth is occurring — are rapidly doubling their populations and many have quadrupled them since 1950.

Droughts produced by climate change have fuelled fights over scarce water and arable land in heavily populated Africa. Under these pressures, the fragile environment is becoming increasingly uninhabitable for millions of people. Masses of displaced refugees live in squalid camps fighting for the basic necessities of life. This is only a small preview of things to come. Even with the present population, millions of people are living in hovels in megacities. They are struggling to survive with scarcities of food, fresh water, basic sanitation, medical services and other necessities of life. Almost half of the earth's population lives in severe poverty on less than \$2 per day (Madrick 2003). Swelling populations are creating a humanitarian crisis.



Source: Population Reference Bureau (1998)

Figure 2 Population growth in developed and less developed countries

### Towards a solution

Were Charles Darwin writing an update of his book, *On the Origin of Species*, today, he would be documenting the overwhelming human domination of the environment, but not in the way that even he could have foreseen. Many of the species on our degrading planet have no evolutionary future. Through their actions, human beings are wiping out other species and the eco-systems that support life at an accelerating pace in a profoundly different way from former mass extinctions by meteoric disasters, plagues and floods.

We are now witnessing the growing primacy of human agency in the co-evolutionary process that, rightly or wrongly, interfered with the slow process of natural evolution. Expanding economies fuelling consumptive growth by billions of people are

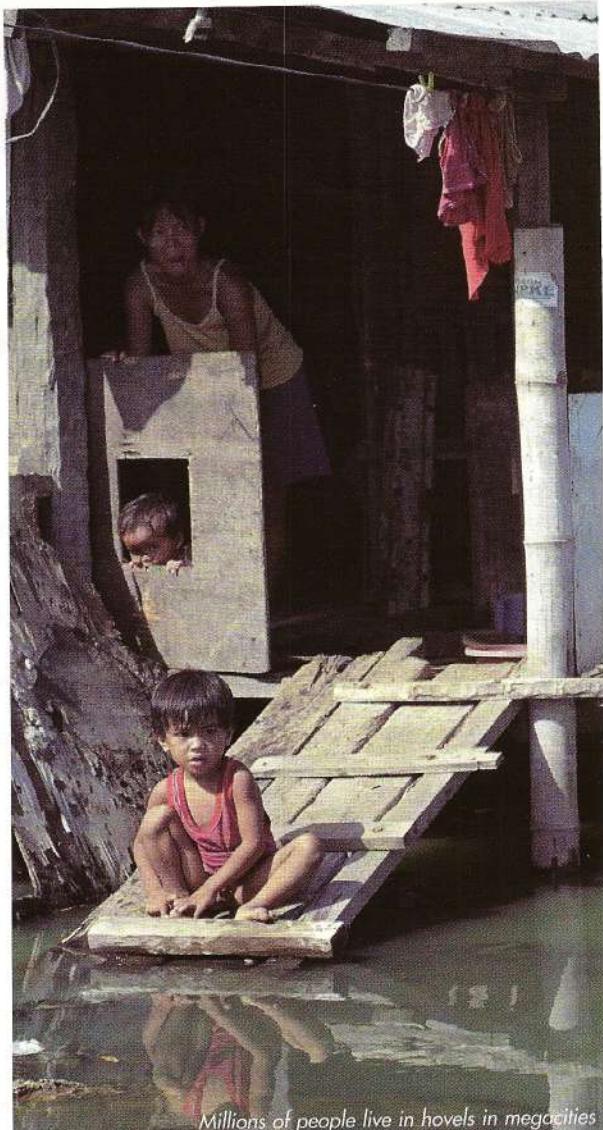
further intensifying competition for the earth's vital resources and overwhelming efforts to secure an environmentally and economically sustainable future. Collective practices focused on short-term gains and benefits, rather than long-term solutions, are making our problems even worse.

We can reverse this process by making a start on re-engaging (not disengaging) with our moral compass. This would involve the painful but possible process of facing the full consequences of our actions rather than denying, distorting or explaining them away for our own self-enhancement or self-protection, as described above. By removing our 'self' from the centre of things and considering the global picture, we can make a start on removing barriers hindering behaviour change. We can then work towards making ecologically sustainable practices that are good for us and our planet.

Psychology has a crucial role to play by shining a light on our own flawed motivations and incentives and enabling us to adopt the sustainable path. If we are to be responsible stewards of our environment for future generations, we must make it difficult to disengage moral sanctions from ecologically destructive practices. It is not too late.

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Millions of people live in hovels in megacities

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## SOCIAL COGNITIVE THEORY OF MASS COMMUNICATION

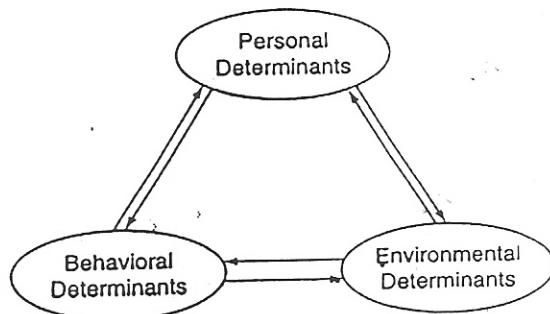
*Albert Bandura*

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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 these conceptions 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 (Figure 6.1).

Social cognitive theory is founded in an agentic perspective (Bandura, 1986; 2006c). People are self-developing, proactive, self-regulating, and self-reflecting, 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 of social systems, not just products of them. 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



*Figure 6.1 Schematization of Triadic Reciprocal Causation in the Causal Model of Social Cognitive Theory.*

## SOCIAL COGNITIVE THEORY

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 are specialized for processing, retaining, and using coded information. They provide the capacity for the very capabilities that are distinctly human—generative symbolization, symbolic communication, forethought, evaluative self-regulation, and reflective self-consciousness (Bandura, 2008). These capabilities are addressed in the sections that follow.

### 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 construct possible solutions to problems and evaluate their likely outcomes, without having to go through a laborious trial-and-error process. 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, 2004b). 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.

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, 2008). 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, 2000b). 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 amplifies 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 (Ball-Rokeach & DeFleur, 1976).

Most psychological theories were cast long before the advent of the 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, styles of behavior and social practices are now being rapidly diffused by symbolic modeling worldwide in ways that foster a globally distributed consciousness (Bandura, 1986, 2001). 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 (Bandura, 1986) that are summarized in Figure 6.2.

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 (Carroll & Bandura, 1990). This is achieved through a conception-matching process in which conceptions guide the construction and execution of behavior patterns which 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 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 costs 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

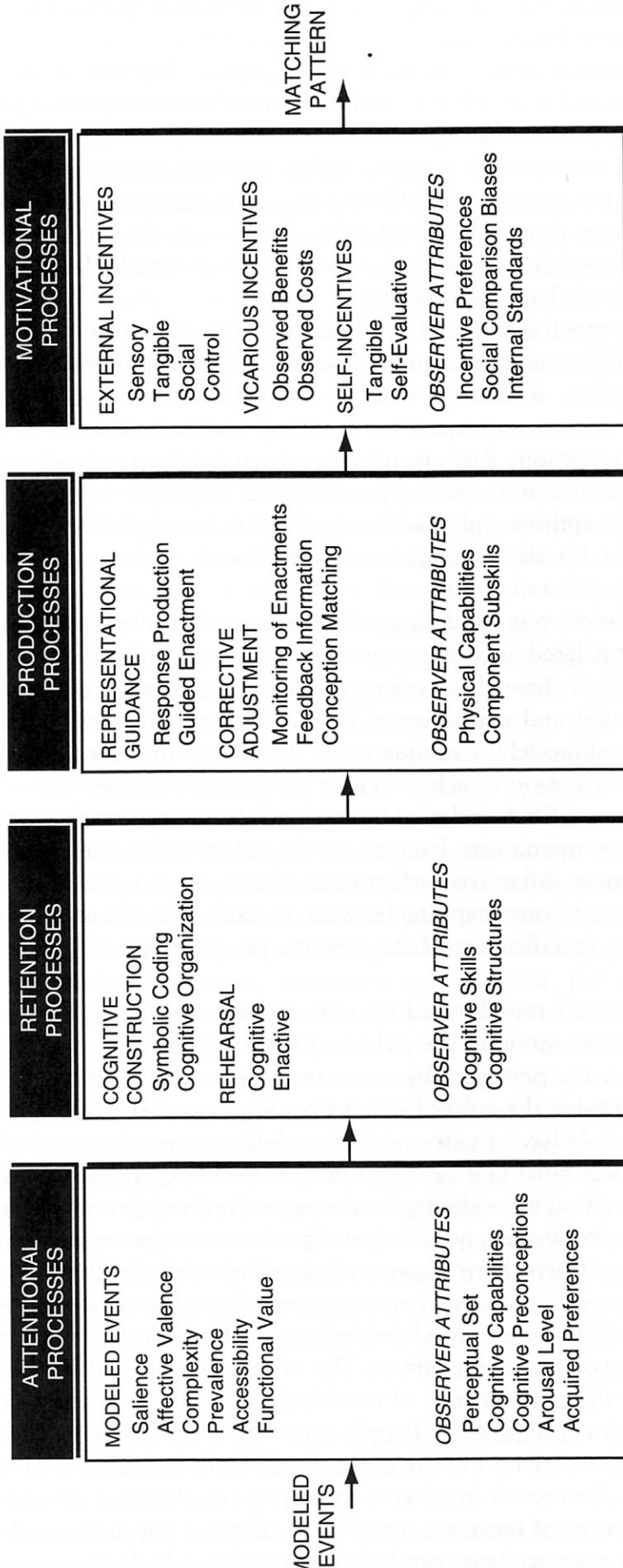


Figure 6.2 The Four Major Subfunctions Governing Observational Learning and the Influential Factors Operating within Each Subfunction.

activities they are most likely to pursue. They pursue activities they find self-satisfying and 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 whatever the situation seems to call for (Snyder & Campbell, 1982). They become adept at reading social situations and guiding their actions by expediency.

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.

Another type of conflict between social and self sanctions arises when individuals are socially punished for behavior they highly value. Principled dissenters and non-conformists 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. There 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.

### 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-based judgments and actions differ in specific content and other details but embody 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. Few innovations are entirely new. Rather, creativeness usually involves synthesizing existing knowledge into new ways of thinking and doing things (Bandura, 1986; Bolton, 1993). There is variety in the profusion of social modeling. Innovators select useful elements from different exemplars, improve upon them, synthesize them into new forms, and tailor them to their particular pursuits. Models who exemplify novel perspectives to common problems also foster innovativeness in others, whereas modeled conventional styles of thinking and doing things diminish creativity (Harris & Evans, 1973). In these ways, selective modeling serves as the mother of innovation.

### ACQUISITION AND MODIFICATION OF AFFECTIVE PROCLIVITIES

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 benign ones (Bandura, 1986; Cantor & Wilson, 1988; Dysinger & Ruckmick, 1993).

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; Williams, 1992). Values can similarly be developed and altered vicariously by repeated exposure to modeled preferences.

### 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

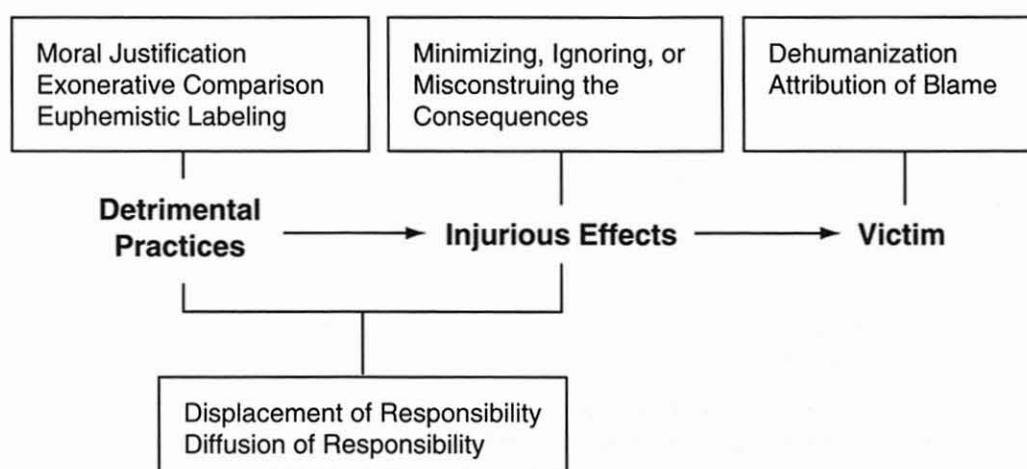
and underlying mechanisms. In addition to cultivating new competencies, modeling influences have strong motivational effects. Vicarious motivators are rooted in outcome expectations formed from information conveyed by the rewarding and punishing outcomes of modeled courses of action. Seeing others gain 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 extrinsic incentives (Bandura, 1986). The value of a given outcome is largely determined by its relation to other outcomes rather than inheres in their natural 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 social justifications and outcomes accompanying modeled transgressive conduct (Anderson et al., 2003; Bandura, 1973; Berkowitz, 1984; Malamuth & Donnerstein, 1984; Zillmann & Bryant, 1984). In social cognitive theory, the latter effects are governed, in large part, by incentive motivators and the exercise of moral self-sanctions. Transgressive conduct is regulated by two major sources of sanctions—social sanctions and 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-sanctions, people refrain from behaving in ways that violate their moral standards because such conduct will bring self-condemnation. Media portrayals alter perceived social sanctions by the way in which the consequences of different styles of conduct are portrayed. For example, televised violence is often exemplified in ways that weaken restraints over aggressive conduct (Goranson, 1970; Halloran & Croll, 1972; Larsen, 1968). In televised representations of human discord, physical aggression is a preferred solution, is acceptable, is usually successful and 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 moral standards have been adopted, they serve as guides and deterrents to conduct by the self-approving and self-reprimanding consequences. However, moral standards do not function as perpetual internal regulators of conduct. Self-regulatory mechanisms do not operate unless they are activated, and there are many processes by which moral self-sanctions can be disengaged from inhumane conduct (Bandura, 1991b, 1999b). By selective activation and disengagement of self-sanctions, people can vary in their conduct with the same moral standards. Figure 6.3 shows the points in the self-regulatory process at which moral control can be disengaged from censurable conduct.

One set of disengagement practices operates at the behavior locus on the construal of the conduct itself by *moral justification*. People do not ordinarily engage in reprehensible



*Figure 6.3 Mechanisms through Which Self-Sanctions are Selectively Activated and Disengaged from Detrimental Conduct at Critical Points in the Self-Regulatory Process.*

conduct until they have justified to themselves the morality of their actions. What is culpable is made personally and socially acceptable by using worthy ends to sanctify harmful means. People then act on moral imperative. How behavior is viewed is also colored by what it is compared against. Self-deplored acts can be made benign or even honorable by contrasting them with more flagrant inhumanities. *Exonerative comparison* relies heavily on moral justification by utilitarian standards. Violence is made morally acceptable by claiming that one's harmful actions will prevent more human suffering than they cause. Activities can take on a very different appearance depending on what they are called. Sanitizing *euphemistic language* 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.

Sanctifying pernicious conduct through moral justifications, sanitizing language, and exonerating comparisons is the most effective set of psychological mechanisms for disengaging moral self-sanctions. Investing harmful conduct with high moral purpose not only eliminates self-censure but also engages self-approval in the service of destructive exploits.

Ball-Rokeach (1972) attaches 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 initiatives 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 principal 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, 2004a; 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 people acknowledge that they are contributors to harmful outcomes. Another set of disengagement practices operates, at the agency locus, by obscuring or minimizing the agentic role in the harm one causes. 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 their being personally responsible for them. 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 personal agency is obscured by *diffusion of responsibility* for culpable conduct. Through division of labor, group decision making, and collective action, people can behave detrimentally without any one person feeling personally responsible (Kelman & Hamilton, 1989). Other ways of weakening moral conduct operate at the consequences locus by *minimizing*, *disregarding*, or *disputing the harmful effects* of one's activity. As long as the detrimental effects are out of sight and out of mind, there is little reason for self-censure to be activated.

The final set of disengagement practices operates at the victim locus. The strength of self-censure for detrimental conduct partly depends on how the perpetrators view the people toward whom the behavior is directed. To perceive another as human activates empathetic reactions through a sense of common humanity (Bandura, 1992). It is difficult to mistreat humanized persons without 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. While dehumanization weakens self-restraints against cruel conduct (Diener, 1977; Zimbardo, 2007), 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 (Bandura, 1999b; Berkowitz & Green, 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 on moral disengagement is clarifying how sanctioning social conditions fosters selective moral disengagement and the affective and psychosocial processes through which it regulates injurious conduct (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996; Bandura et al., 1975).

This line of research has been extended to analysis of how the diverse mechanisms of moral disengagement operate in concert at the social systems level. These systems include injurious corporate practices (Bandura, 1999b; White, Bandura, & Bero, *in press*), application of the death penalty at the public policy, jury, and executioner levels (Bandura, 2007; Osofsky, Bandura, & Zimbardo, 2005), support of military force (McAlister, Bandura, & Owen, 2006) in terrorism and counterterrorism (Bandura, 2004a), and ecological sustainability (Bandura, 2007). With the advent of satellite transmission, battles are now fought in the airways to shape public perceptions and support for military campaigns.

The same disengagement mechanisms are enlisted heavily by the television industry in the production of programs that exploit human brutality for commercial purposes (Baldwin & Lewis, 1972; Bandura, 2004b). High moral purposes are assigned to the taking of human life, in the likeness of a national character building service. "The government wants kids to think that there are values worth fighting for, and that's basically what the leads on our show are doing." "If people who break the society's code resist the law, we have to use violence to suppress them. In doing so we are in the mainstream of American morality." Modeling violent solutions to problems allegedly builds character and affirms society's legal imperative.

Producers often excuse commercialization of violence by contrasting it with outrageous inhumanities, as though one form of human cruelty exonerates other forms. Why pick on television, the scapegoat disclaimer goes, when societies fight wars. "To examine violence where the end result is a dead body on television glosses over the point. This evades the culpability of a whole society which permits wars."

Another variant in the comparative exoneration is to sanctify brutalizing excesses on television by pointing to revered masterpieces containing some violent episodes. "There is violence in Oedipus and Hamlet, and it permeates the Bible." Gratuitous televised violence ain't Shakespeare. Here are some examples of television practices masquerading behind Hamlet's cloak. "I wish we could come up with a different device than running the man down with the car as we have done this now in three different shows. I like the idea of the sadism, but I hope we can come up with another approach for it." "Last week you killed three men; what are you going to do this week?" When the television programs are exported to other countries, much of the gratuitous violence is deleted. But we overdose our own children on it.

Producers of violent fare are quick to displace responsibility for violent events, to other sources. "Television and motion pictures are fall guys for a sick society." "Are kids from unstable environments triggered by television violence? Their not having parents is a more serious problem." Producers disclaim using gratuitous violence by attributing evident excesses to the characters they create. Ruthless individuals, or even peaceful folks, confronted with mortal jeopardy demand acts of violence. One of the more candid script writers discounted the asserted dramatic requirement for violence as analogous to saying, "I never put cotton in a wagon that's not prepared for cotton—but I never use anything but a cotton wagon."

Personal responsibility for gratuitous violence is also obscured by diffusing responsibilities for the product. Rewriters alter writers' scripts; directors fill in the details of the scenarios; and editors shape how the filmed events are depicted by what they select from the lengthy footage. Diffusion of the production process reduces a sense of personal responsibility for the final product.

Another way of escaping self-censure is to misrepresent, deny, or ignore harmful effects. Modeling violent solutions is purported to serve a public therapeutic function

of draining viewers' aggressive drives. "Violence is a catharsis for kids." "Exposure to properly presented conflict which results in violence acts as a therapeutic release for anger and self-hatred." The claimed catharsis effect has long been discredited empirically. On the one hand the producers proclaim the therapeutic benefits of viewing violence, which are empirically refuted, but on the other hand they contend that the effects of televised violence can never be substantiated. "Nobody has been able to make a definitive statement about the effects of televised violence."

Viewers are divested of human sensitivities or invested with base qualities that justify serving them gory offerings. "Man's mind is connected to his stomach, his groin, and his fists. It doesn't float five feet above his body. Violence, therefore, cannot be eradicated." "Not as much action as some, but sufficient to keep the average bloodthirsty viewer fairly happy." The prevalence of violent content is attributed to the aggressive nature and desire of its viewers.

In fact, there is no relationship between the level of program violence and the Nielson index of program popularity (Diener & DeFour, 1978). Situational comedies and variety shows are the big draws. The answer to the prevalence of violent scenarios on TV lies in production costs and other structural factors, not in human craving for cruelty (Bandura, 1973; Brown, 1971).

Whenever a violent event occurs that stirs the public, the television networks run a predictable scenario. They assemble the cast of spokespersons for the major suspect sources of violence. The spokespersons promptly divert attention from their possible contributory influence by invoking and repudiating a single cause theory of violent conduct that no one really propounds. They portray themselves as convenient scapegoats and shift the blame to other contributors.

### SOCIAL CONSTRUCTION OF REALITY

Televised 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 have arisen over findings from correlational studies using global indices based on amount of television viewing (Gerbner, Gross, Morgan, & Signorielli, 1981; Hirsch, 1980). Televised influence is best defined in terms of the contents 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 (Bryant, Carveth, & Brown, 1981; 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 FUNCTION

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 beer 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 being 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, moral engagers and disengagers, social prompters, emotion arousers, and shapers of values and public 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 social sanctions. A novel example can both teach and prompt similar acts.

### MATCHING METHODOLOGIES WITH SEPARABLE MEDIA EFFECTS

Each modeling effect requires a distinct methodology to advance understanding of the determinants and mechanisms through which it produces its effects. Research on the effects of televised violence is illustrative of the tailoring of methodology to separable effects. The conceptual and methodological issues, however, apply to the analysis of other media effects as well. Different lines of research identified four major effects of exposure to televised violence: it can teach novel aggressive styles of conduct; weaken restraints over the performance of preexisting styles of aggressive behavior; desensitize and habituate viewers to human cruelty; and shape public images of reality.

In observational *learning effects*, people acquire attitudes, values, emotional proclivities and new styles of thinking and behaving from the activities exemplified by models (Bandura, 1986). The widely cited Bobo doll laboratory experiments were designed to clarify the attentional, representational, translational, and motivational processes governing observational learning (Bandura, Ross, & Ross, 1963). The methodology for measuring learning effects requires simulated targets rather than live ones so that viewers will reveal all they have learned. To use human targets to assess the instructive function of televised influence would be as nonsensical as to require bombardiers to bomb San Francisco, New York, or some other inhabited area in testing whether they have acquired bombing skills. In short, tests for learning effects use simulated targets not live ones, a point that commentaries on the Bobo doll experiments often fail to recognize.

There is a difference between learning and performance. Tests of whether modeling influences alter the likelihood that individuals will act aggressively, however they learned it, requires human targets. In *performance effects*, social modeling operates on behavioral restraints through self-regulatory influence and incentive motivators rooted in outcome expectations. As previously noted, utility of aggressive behavior is influenced by three major types of incentive motivators: direct, vicarious, and self-produced (Bandura, 1986). Modeling can also contribute to impulsive aggression by heightening emotional arousal that can undermine self-restraint (Bandura, 1973; Berkovitz, 1984).

Repeated exposure to violence can desensitize and habituate people to human cruelty. They are no longer upset by it. The *desensitization effect* requires tests of the lack of emotional arousal to depicted violence as a function of the amount of exposure (Cline, Croft, & Courrier, 1973). Habituation to human brutality is tested by the level of aggression viewers will tolerate before they are willing to intervene (Thomas, Horton, Lippincott, & Drabman, 1977). The final modeling effect is the shaping of public consciousness. The mass media convey basic images about the social and political structure of societies, their ideological orientations, the conventional stereotyping of different groups, and the power relations among them. Examination of the *social construction of reality* requires methodologies that link the images conveyed by the mass media to peoples' conceptions of the world around them (Gerbner, Gross, Morgan, Shanahan, & Signorielli, 2001).

Verifying the effects of media violence requires diverse methodologies because no single method can provide a full explanation of human behavior. Rather it requires converging evidence from complementary methodologies. The four major research

strategies include controlled laboratory experiments, correlational studies, controlled field studies, and naturalistic studies.

Controlled experimentation is well suited to verify the nature and direction of causation by systematically varying possible determinants and assessing the effects. Controlled experimentation has shed light on some of the determinants of aggressive behavior and the mechanisms through which they produce their effects (Anderson et al., 2003; Bandura, 1973). However, in the social sciences there are severe constraints on controlled experimentation. Its use is precluded for phenomena that are not producible in laboratory situations because they require a lengthy period of development, they are the product of complex constellations of influences from diverse social systems that are not manipulable or they are prohibited ethically. Experimental approaches are often mistakenly dismissed as "artificial." This, in fact, is their explanatory power. They address basic processes governing a given phenomenon and would lose their informative value if they mimiced surface similarities to the natural forms. Aerodynamic principles verified in wind tunnels got us airborne in gigantic airliners. Airplanes do not flap their wings like the flying creatures do in nature. The early inventors who tried to fly with flapping wings ended up in orthopedic wards.

Because there are limits to the variations one can produce experimentally, functional relations are examined in variations in natural concurrencies. Correlational studies establish whether violence viewing is related to aggressive conduct in everyday life (Anderson et al., 2003). But as the analytic mantra reminds us, correlation does not prove causation. Frequency of doctor visits correlates with patient deaths, but this does not mean the doctors are killing their patients. Correlations can arise through four different paths of influence: violence viewing fosters aggression; aggressive viewers are attracted to violent programs; the influence is bidirectional; or a third factor influences both aggression and violence viewing, creating a spurious causal relation. Multiple controls must be applied to rule out third-factor causation.

Controlled field studies help to clarify the directions of causation by systematically varying the level of exposure to media violence in the natural setting over a long period and assessing the level of interpersonal aggression as it occurs spontaneously in everyday transactions (Leyens, Camino, Parke, & Berkowitz, 1975). But this approach has certain limitations as well. One can never impose full control over naturally occurring events; social systems impose limits on the types of intervention they allow; it is difficult to maintain high fidelity of implementation over a lengthy period; experimental influences can spill over to control conditions; many important forms of aggression do not lend themselves to controlled manipulation; and ethical considerations place constraints on controlled field interventions.

The fourth method relies on informative naturalistic events (Philips, 1985). Some natural occurrences have characteristics that provide persuasive evidence of causality. They fit three criteria of a causative modeling relation. A highly novel style of behavior is modeled so there is no ambiguity about the source of their behavior. There is a temporal conjunction in which viewers exhibit the same style of behavior after the exposure. The behavioral watching occurs in the broadcast area.

Sometimes it is the fictional media that create an unintended natural experiment exemplifying social modeling (Bandura, 1978). The program called *Doomsday Flight* provides a notable example. In the plot line an extortionist threatens airline officials that an altitude sensitive bomb will be exploded on a transcontinental airliner as it descends below 5,000 ft. for the landing. In the end the pilot outwits the extortionist by selecting an airport located at an elevation above the critical altitude.

There was a substantial rise in extortion attempts using threats of altitude sensitive bombs. For two months following the telecasting of the program, there was an eight-fold increase in attempted extortions using the same scenario. Airlines were subjected to extortion threats a day or two after the program was shown as a rerun in different cities in the U.S. and abroad. Western Airlines paid \$25,000 to an extortionist in Anchorage the day after the rerun was shown. A San Francisco rerun was followed by an extortion threat to United on a flight to Hawaii. The extortionist was apprehended as he picked up the money package dropped from a helicopter. Miami experienced an extortion attempt the day after the rerun. The day after the program was shown in Sydney, Australia, an extortionist informed Qantas officials that he had placed an altitude sensitive bomb on a flight in progress. He also directed the officials to a locker containing such a bomb to prove that he was not bluffing. Qantas paid \$560,000 only to learn that the airliner contained no bomb. Following a showing of the "Doomsday Flight" on Montreal television, an extortionist used the bomb plot in an effort to extract a quarter of a million dollars from British Overseas Airways by warning that a barometric bomb was set to explode on a jet bound from Montreal to London when it descended below 5,000 ft. The hoaxter was unsuccessful because the airline officials, knowing the oft-repeated scenario, diverted the plane to Denver, which is at 5,339 ft. elevation. TWA bound for New York from Madrid was rerouted to the air force base in South Dakota, when a Madrid viewer called in the bomb hoax. A rerun in Paris produced the same extortion scenario.

An inventive hijacker, D. B. Cooper, devised an extortion technique in which he exchanged passengers for a parachute and a sizeable bundle of money. He then parachuted from the rear-door opening in a Boeing 207 which eliminates any danger of hitting the tail or stabilizers. Others were inspired by his successful feat. Within a few months there were 18 hijackers modeled on the parachute-extortion technique. It continued until a mechanical door lock was installed so that the rear exit could be opened only from the outside.

The preceding discussion demonstrates that social modeling has separable effects, each of which requires a distinct methodology to verify its determinants and governing mechanisms. Verification of the causative power of social modeling requires converging evidence from diverse analytic methodologies because no single method can do it alone. The common failure to distinguish among types of modeling effect linked to particular methodologies offering complementary evidence spawns a lot of misjudgments about media effects.

#### DUAL-LINK VERSUS MULTI-PATTERN 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 pre-existing 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 preexisting ones (Bandura, 1986; Williams, 1992).

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 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 two 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.

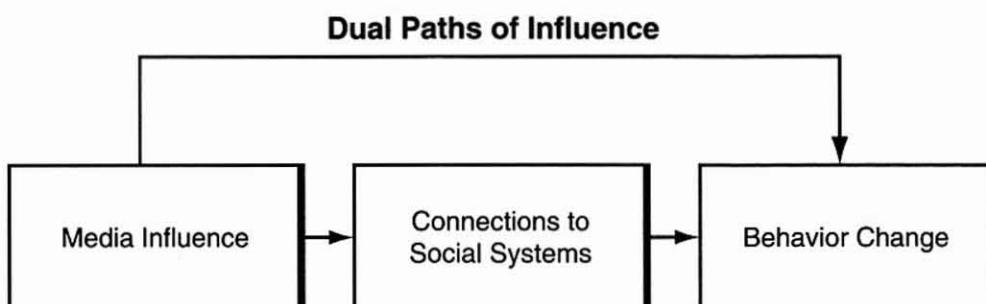
Modeling affects the adoption of new social practices and behavior patterns in several ways. It instructs people about new ways of thinking and behaving by informative demonstration or description. Learning about new things does not rely on a fixed hierarchy of sources. Efficacious modeling not only 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). As previously noted, 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 (Figure 6.4). 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, 2006a). The major share of behavior changes is promoted within these social milieus.

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, 2004c). 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, 2004c, 2006b; Taylor, Winzelberg, & Celio, 2001; Muñoz et al., 2007).

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 top-down model is characteristic mainly of the print media of yesterday. In this electronic era, communication technologies and global interconnectedness provide people with ready direct access to information worldwide independently



*Figure 6.4 Dual Path of Communication Influences Operating on Behavior Both Directly and Mediationaly through Connection to Influential Social Systems.*

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, 2002). 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 (Joo, Bong, & Choi, 2000; Newhagen, 1994a, b).

### INTEGRATING SOCIAL COGNITIVE AND SOCIAL DIFFUSION THEORY

Much of the preceding discussion has centered on 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 in diverse locales 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, 2002). 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 behavior are being modeled worldwide. The electronic media are coming to play an increasingly influential role in transcultural change.

The most ambitious applications of social cognitive theory are aimed at abating some of the most pressing global problems (Bandura, 2006a; Singhal, Cody, Rogers, & Sabido, 2004). These worldwide applications combine the functions of three models in ways that foster widespread changes. They combine a *theoretical model* that provides the guiding principles; a *translational and implementational model* that converts theory into innovative practice; and a *social diffusion model* that fosters adoption of changes through functional adaptations to diverse culture milieus.

Long-running serialized dramas serve as the principal vehicle for promoting personal and social changes. These productions bring life to people's everyday struggles and the effects of different social practices. The storylines speak ardently to people's fears, hopes, and aspirations for a better life. The dramatic productions are not just fanciful stories. They dramatize the realities of people's lives, the impediments with which they struggle and realistic solutions to them. The enabling dramas help viewers to see a better life and provide strategies and incentives that enable them to take the steps to achieve it. Hundreds of episodes allow viewers to form bonds to the models, who evolve in their thinking and behavior at a believable pace. Viewers are inspired and enabled by them to improve their lives.

This psychosocial approach fosters personal and social change by enlightenment and enablement rather than by coercion (Bandura, 1997). Global applications in Africa, Asia, and Latin America are helping to stabilize soaring population growth that is degrading the ecosystems that support life; raising the status of women in societies in which they are marginalized, disallowed aspirations and denied their liberty and dignity; curbing the spread of the AIDS epidemic; promoting national literacy; and fostering other changes that improve the quality of life.

Social cognitive theory analyzes social diffusion of new behavior patterns in terms of three constituent processes and the psychosocial factors that govern them (Bandura, 2006b). 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 conveyer 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. 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. The acquisition of personal resources includes not only knowledge and skills but also the self-belief in one's efficacy to use 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 efficacy in social diffusion is shown in their response to health communications aimed at fastening habits that promote health and reducing those that impair it. 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 by strengthening belief that one can exercise control. 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 pre-existing and created 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 above 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; 2000a).

Innovations require innovators. Turning visions into realities requires heavy investment of time, effort, and resources in ventures strewn with many hardships, unmerciful impediments, and uncertainties. A resilient sense of efficacy provides the necessary staying power in the tortuous pursuit of innovations. Indeed, perceived self-efficacy predicts entrepreneurship and which patent inventors are likely to start new business ventures (Chen, Greene, & Crick, 1998; Markman & Baron, 1999).

## ADOPTION DETERMINANTS

As noted above, 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 is the incentive 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 established ways do. Modeled benefits increase adoptive decisions. Modeling influences can, of course, impede as well as promote the diffusion process (Bandura, 1986). 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, artistic creations, and behavioral

patterns, 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 is the incentive to innovate. 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 is 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 faulty 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 (1983) has 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 casual 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 emphasizes the mutuality of influence in interpersonal communication. Bidirectionality of influence is in keeping with the agentic perspective of social cognitive theory (Bandura, 2006c, *in press*). 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 widely 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 in widely dispersed locales 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 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. With increasing interactivity through blogging and podpostings, Internet technology is interconnecting people globally in the virtual social networks of the cyberworld.

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.

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