Self-Regulation of 
Motivation Through 
Anticipatory and Self- 
Reactive Mechanisms

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Motivation is a general construct linked to a system of regulatory mechanisms that are commonly ascribed both directive and activating functions. At the generic level it encompasses the diverse classes of events that move one to action. Level of motivation is typically indexed in terms of choice of courses of action and intensity and persistence of effort. Attempts to explain the motivational sources of behavior therefore primarily aim at clarifying the determinants and intervening mechanisms that govern the selection, activation, and sustained direction of behavior toward certain goals.

Social cognitive theory distinguishes three broad classes of motivation (Bandura, 1986). One class of motivators is biologically based and includes biological conditions arising from cellular deficits and external aversive events that activate consummatory and protective behavior through physical discomfort. The early psycho-


logical theorists conceptualized motivation largely in terms of the energizing and directive functions of physiological activators. However, the activating potential of physiological states is under substantial anticipatory and generative cognitive control. For example, infants become active when they expect to be fed rather than solely when they are hungry (Marquis, 1941). Humans can be sexually stirred by erotic fantasies more than by hormonal injections (Beach, 1969). Similarly, the activating and directive influence of external aversive stimulation can be markedly altered by the way the aversive events and resulting sensations are construed (Bandura, 1991a; Cioffi, 1991; McCaul & Malott, 1984). Thus, even in the so-called biological motivators, human behavior is extensively activated and regulated by anticipatory and generative cognitive mechanisms rather than simply impelled by biological urges.

The second class of motivators operates through social incentives. In the course of development, physically positive experiences often occur in conjunction with expressions of others’ interest and approval, whereas unpleasant experiences are associated with disapproval or censure. Through such correlative experiences, social reactions themselves become predictors of primary rewarding and punishing consequences and thereby become incentives. People will do things to gain approval and refrain from activities that arouse others’ displeasure or wrath. By reversing the physical correlates, one could make smiles forebode suffering and scowls forewarn pleasure. The effectiveness of social reactions as incentives thus derives from their predictive value rather than inhering in the reactions themselves. For this reason the approval and disapproval of people who have power to reward and punish operate as stronger incentives than similar expressions by individuals who cannot affect one’s life. Indiscriminate praise that never carries any tangible effects becomes an empty reward, and disapproval that is never backed up with any tangible consequences becomes devoid of motivating power.

Several factors contribute to the durability of social incentives. The same expressions can predict an array of possible rewarding or punishing experiences. Disapproval, for example, may result in such unpleasant effects as physical punishment, loss of privileges, monetary penalties, dismissal from a job, or ostracism. An event that signifies diverse possible consequences will have greater po-
tency than one that portends only a single effect. Moreover, social reactions are not invariably accompanied by primary experiences: praise does not always bring material benefits, and reprimands do not always result in physical suffering. Unpredictability protects social and symbolic incentives from losing their effectiveness (Mowrer, 1960). Because of intermittency and diversity of correlates, social reactions retain their incentive function even with minimal primary support.

The third major source of motivators is cognitively based. In cognitively generated motivation, people motivate themselves and guide their actions anticipatorily by exercising forethought. They anticipate likely outcomes of prospective actions, they set goals for themselves, and they plan courses of action designed to realize valued futures. The capability for self motivation and purposive action is rooted in cognitive activity. Future events cannot be causes of current motivation or action, but by cognitive representation in the present, conceived future events are converted into current motivators and regulators of behavior. Forethought is translated into incentives and action through self-regulatory mechanisms. This chapter addresses cognitive motivators because most human behavior is activated and regulated over extended periods by anticipatory and self-reactive mechanisms.

One can distinguish three forms of cognitive motivators around which different theories have been built. These include causal attributions, outcome expectancies, and cognized goals. The corresponding theories are attribution theory, expectancy-value theory, and goal theory. Figure 1 summarizes schematically these alternative conceptions of cognitive motivation. We shall see later that certain basic mechanisms of personal agency, such as perceived self-efficacy, operate in all of these variant forms of motivation.

Attribution Theory

According to the attribution theory of motivation (Weiner, 1985), retrospective judgments of the causes of one’s performance have motivational effects. People who credit their successes to personal capabilities and their failures to insufficient effort will undertake difficult tasks and persist in the face of failure, because they see their out-
comes as being influenced by how much effort they expend. In contrast, those who ascribe their failures to deficiencies in ability and their successes to situational factors will display low striving and give up readily when they encounter obstacles.

Some writers have argued that reasons offered retrospectively should not be regarded as causes. This is obviously true for past actions, which precede ascribed causes and would therefore involve backward causation. But reasons for past performances that affect beliefs about personal control can cause future actions. Thus people who believe they failed because they did not work hard enough are likely to strive harder, whereas those who believe they failed because they lack ability are apt to slacken their efforts and easily become discouraged. However, causal attributions can serve different purposes. For example, Covington and Omelich (1979) provide evidence that causal attributions may sometimes function as self-serving excuses that do not change performance rather than as motivators. The question of when causal attributions function as excuses and when they are motivators warrants investigation.

The role of attributional processes in human motivation is clarified by research in which causal attributions for ongoing performances are systematically varied by arbitrary attributional feedback and then changes in perceived self-efficacy and performance are measured. The results indicate that causal attributions can influence achievement strivings, but the effect is mediated almost entirely through changes in perceived self-efficacy (Relich, Debus, & Walker, 1986; Schunk & Gunn, 1986; Schunk & Rice, 1986).

*Ability* attributions are accompanied by strong self-beliefs of efficacy, which in turn predict subsequent performance. *Effort* attributions have variable effects on self-efficacy beliefs. These diverse find-
ings raise the issue of the concept of ability in attribution theory. Attribution theorists usually treat ability as a fixed or stable internal property. High effort needed to achieve an outcome is taken as indicating low ability (Kun, 1977). In actuality, people vary in their conceptions of ability and alter their views on the relation between effort and ability with increasing experience (M. Bandura & Dweck, 1988; Dweck & Elliot, 1983; Nicholls & Miller, 1984). The presumptions of attributional theory fit the subgroup of people who regard ability as a stable entity. However, many individuals construe ability as an acquirable skill that is developed through effort. The harder you try, the more capable you become. For them, errors reflect inexperience in the activity that effort rectifies, rather than basic inability. High effort that begets rising accomplishments can thus enhance self-beliefs of efficacy (Schunk & Cox, 1986).

In judging their efficacy from performance, people use much more varied sources of enactive efficacy information than the four causal factors (effort, ability, task difficulty, chance) routinely assessed in attributional research. In addition to perceptions of task difficulty and amount of effort expended, they consider whether they performed under favorable or unfavorable conditions, the amount of external aid they received, their physical and emotional state at the time, and the pattern of their successes and failures with continued engagement in the activity. Positive or negative biases in the self-monitoring, cognitive representation, and retrieval of past successes and failures also affect self-efficacy judgments (Bandura, 1986).

The effect of effort attributions on self-efficacy beliefs will vary with different conceptions of ability and different configurations of efficacy-relevant information. Given these complicating factors, it is not entirely surprising that effort attributions do not bear a uniform relationship to self-efficacy beliefs. Regardless of whether effort attributions correlate positively or negatively with perceived efficacy, however, the stronger the self-efficacy belief, the better the subsequent performance (Schunk & Cox, 1986; Schunk & Gunn, 1986; Schunk & Rice, 1986).

The overall evidence reveals that causal attributions, whether in the form of ability, effort, or task difficulty, generally have weak or no independent effect on achievement motivation. The types of factors singled out by attributional theory convey efficacy-relevant
information and influence performance attainments mainly by altering people's belief in their efficacy. Occasionally, ability attribution emerges as an independent contributor to achievement motivation, but such direct effects tend to be small and equivocal.

Subjective weighting of attributional factors and self-efficacy appraisal involves bidirectional, rather than unidirectional, causation. The relative weight given to information regarding adeptness, effort, task complexity, and situational circumstances will affect self-efficacy appraisal. Self-beliefs of efficacy, in turn, bias causal attributions. Thus, people who regard themselves as highly efficacious tend to ascribe their failures to insufficient effort, whereas those who regard themselves as inepticacious view their failures as stemming from low ability (Collins, 1982; Silver, Mitchell, & Gist, 1989). Self-efficacy belief influences causal attributions for outcomes in social transactions as well as in cognitive activities (Alden, 1986).

Expectancy-Value Theory

People also motivate themselves and guide their actions anticipatorily by the outcomes they expect to flow from given courses of behavior. Expectancy-value theory was designed to account for this form of incentive motivation (Ajzen & Fishbein, 1980; Atkinson, 1964; Rotter, 1982; Vroom, 1964). These various formulations all assume that strength of motivation is governed jointly by the expectation that particular actions will produce specified outcomes and by the value placed on those outcomes. They differ mainly in what additional determinants are combined with expectancy and outcome value. Atkinson adds an achievement motive; Rotter adds a generalized expectancy that actions control outcomes; Ajzen and Fishbein add perceived social pressures to perform the behavior and pronoess to compliance; Vroom adds belief that the behavior is achievable through effort.

In its basic version, the expectancy-value theory predicts that the higher the expectancy that certain behavior can secure specific outcomes and the more highly those outcomes are valued, the greater is the motivation to perform the activity. The findings generally show that outcome expectations obtained by adding or multi-
plying these cognitive factors predict performance motivation (Feather, 1982; Mitchell, 1974; Schwab, Olian-Gottlieb, & Heneman, 1979). The amount of variance in performance motivation explained by this model is generally smaller than might be expected, however. This has stimulated spirited debates about the scope of the expectancy-value theory, its major assumptions, and the methods used for assessing and combining the cognitive factors.

According to maximizing expectancy models, people seek to optimize their outcomes. Questions have been raised, however, concerning the assumptions about how decisions are usually made. As several authors have correctly observed, people are not as systematic in considering alternative courses of action and in weighing their likely consequences as expectancy-value models assume (Behling & Starke, 1973; Simon, 1976). Alternatives are often ill defined. People rarely examine all the feasible alternatives or give detailed thought to all the consequences of even the options they do consider. More typically they pick, from a limited array of possibilities, the course of action that looks satisfactory rather than searching studiously for the optimal one. Moreover, they are sometimes inconsistent in how they order alternatives, they have difficulty assigning relative weights to different types of outcomes, they let the attractiveness of the outcomes color their judgments of how difficult it might be to attain them, and they opt for lesser outcomes because they can get them sooner. When faced with many alternatives and complexly contingent outcomes, they use simplifying decision strategies that may lead them to select alternatives that differ from those they would have chosen had they weighted and ordered the various factors as presupposed by the maximizing model.

The issue in question is not the rationality of the judgmental process. People often have incomplete or erroneous information about alternatives and their probable consequences, they process information through cognitive biases, and what they value may be rather odd. Decisions that seem subjectively rational to the performer, given the basis on which they were made, may appear irrational to others. Subjective rationality often sponsors faulty choices. There are too many aspects to a judgmental process where one can go astray to permit objective rationality (Brandt, 1979). The main issue in dispute concerns the correspondence between the postulated
judgmental process and how people actually go about appraising and weighting the probable consequences of alternative courses of action.

The types of anticipated incentives singled out for attention is another dimension on which expectancy-value theory often departs from actuality. Some of the most valued rewards of activities are in the self-satisfaction derived from fulfilling personal standards. The satisfaction yielded by personal accomplishments may be valued more highly than tangible payoffs. When these two sources of incentives conflict, self-evaluative outcomes often override the influence of tangible rewards (Bandura, 1986). Because incentive theories of motivation tend to neglect affective self-evaluative outcomes, self incentives rarely receive the consideration they deserve in the option/outcome calculus. Predictiveness is sacrificed if influential self incentives are overlooked. With regard to the scope of the expectancy-value model, even the elaborated versions include only a few cognitive motivators. In actuality, forethought about outcomes influences effort and performance through additional intervening mechanisms.

People act on their beliefs about what they can do as well as on their beliefs about the likely effects of various actions. The motivating potential of outcome expectancies is partly governed by people's beliefs about their capabilities. There are many activities that, if done well, guarantee valued outcomes, but they are not pursued by those who doubt they can do what it takes to succeed (Beck & Lund, 1981; Betz & Hackett, 1986; Dzewaltowski, Noble, & Shaw, 1990; Wheeler, 1983). Self-perceived inefficacy can thus nullify the motivating potential of alluring outcome expectations. Conversely, a strong sense of personal efficacy can sustain efforts over extended periods in the face of uncertain or repeatedly negative outcomes. Indeed, because ordinary social realities are strewn with impediments, failures, adversities, setbacks, frustrations, and inequities, it requires a resilient sense of personal efficacy to sustain the perseverant effort needed to succeed (Bandura, 1989).

In activities that call upon competencies, self-efficacy beliefs affect the extent to which people act on their outcome expectations. Some expectancy-value theories include an expectancy that effort will beget the requisite performance (Vroom, 1964). It should be noted, however, that perceived self-efficacy encompasses much
more than beliefs about how effort determines performance. Effort is only one of many factors that govern the level and quality of performance. People judge their capability for challenging activities more in terms of their perceptions of the knowledge, skills, and strategies they have at their command than solely on how much they can exert themselves. Performances that call for ingenuity, resourcefulness, and adaptability depend more on adroit use of skills, specialized knowledge, and analytic strategies than on sheer effort (Wood & Bandura, 1989a). Moreover, people who cope poorly with stressors expect that marred performances in intimidating situations will be determined by their self-debilitating thought patterns rather than by how much effort they mount. The harder they try, the more they may impair their execution of the activity. Expectancy theorists probably singled out effort as the sole cause of performance because the theory has usually been concerned with how hard people work at routine activities unimpeded by obstacles or threats. Hence, the aspect of self-efficacy that is most germane to how much is accomplished is people's perceived perseverant capabilities—that is, their belief that they can exert themselves sufficiently to attain designated levels of productivity.

Some confusion has been introduced into the expectancy literature by misconstruing the specifying criteria of a performance level as its outcomes. A performance is conventionally defined as "an accomplishment" or "something done"; an outcome, as "something that follows as a result or consequence of an activity." Three major classes of outcomes can be distinguished—material consequences, social reactions, and self-reactions. Thus, in a high-jump field event performance levels are defined in terms of height of jumps. A six-foot leap is the realization of a particular performance, not the outcome that flows from it. The outcomes are the results a six-foot leap produces—the social recognition, applause, trophies, monetary prizes, and self-satisfaction if it represents a superior attainment, or the social disappointment, forfeiture of material rewards, and self-criticism if it represents a deficient level of attainment. Similarly, in assessments of academic performance, letter grades of A, B, C, D, F are the specifying criteria of performance level, not the outcomes. Remove the letter indicants of performance level, and one is left with an indefinite or indescribable performance. The social reactions, personal benefits, costs, and affective self-reactions antici-
pated for an A-level performance, or for an F-level performance, constitute the outcome expectations. To conceptualize a performance level as the outcome of itself is to destroy the conventional meanings of performance and outcome.

The degree to which outcome expectations contribute independently to performance motivation varies depending on how tightly contingencies between actions and outcomes are structured, either inherently or socially, in a given domain of functioning. Because activities vary in their structural contingencies, there is no single relationship between judgments of self-efficacy and outcome expectations. For many activities, outcomes are determined by level of competence. Hence the types of outcomes people anticipate depend largely on how well they believe they can perform in given situations. Students do not expect to be showered with academic honors or prizes regardless of the adequacy of their scholarship. In most social, intellectual, and physical pursuits, those who judge themselves highly efficacious will expect favorable outcomes, whereas those who expect poor performances of themselves will conjure up negative outcomes. Thus, in activities in which outcomes are highly contingent on quality of performance, self-judged efficacy accounts for most of the variance in expected outcomes. When variations in perceived self-efficacy are partialed out, the outcomes expected for given performances do not have much of an independent effect on behavior (Barling & Abel, 1983; Barling & Beattie, 1983; Godding & Glasgow, 1985; Lee, 1984a, 1984b; Williams & Watson, 1985).

Self-efficacy beliefs account for only part of the variance in expected outcomes when outcomes are not completely controlled by quality of performance. This occurs when extraneous factors also affect outcomes, or when outcomes are socially tied to a minimum level of performance so that some variations in quality above or below the standard do not produce differential outcomes. In work situations, for example, compensation is fixed to some normative performance standard, but a higher level of productivity does not bring larger weekly paychecks. Perceived self-efficacy to fulfill the minimal standard will produce better expected outcomes than perceived self-inefficacy to reach that level. But variations in perceived self-efficacy above the minimum standard would not give rise to different expected outcomes. And finally, expected outcomes are indepen-
dent of perceived self-efficacy when contingencies are restrictively structured so that no level of competence by certain groups can produce desired outcomes. This occurs in pursuits that are rigidly segregated by sex, race, age, or some other factor. In such circumstances, people in the disfavored group expect poor outcomes however efficacious they judge themselves to be. Thus, for example, when athletes were rigidly segregated by race, black baseball players could not gain entry to the major leagues and the attendant benefits no matter how well they pitched or batted.

Recent efforts to increase the predictiveness of expectancy-value models have added an efficacy-like factor to the usual set of predictors (Ajzen, 1985). In the Ajzen and Fishbein (1980) model of reasoned action, the intention to engage in a course of action is governed by a personal determinant in the form of perceived outcomes and their valuation as well as a subjective normative determinant comprising perceived social pressures by significant others and one's motivation to comply with their expectations. Ajzen and his colleagues have shown that perceived control makes a significant independent contribution to performance within the expanded model, both directly and indirectly through its effects on intention (Ajzen & Madden, 1986; Schüfer & Ajzen, 1985). Indeed, in activities that are not subject to much social pressure, perceived self-efficacy carries most of the explanatory power (Dzewaltowski, et al. 1990). The predictiveness of other versions of expectancy-value theory is enhanced by including the self-efficacy determinant (de Vries, Dijkstra, & Kuhlman, 1988; McCaul, O'Neill, & Glasgow, 1988; Schwarzer, 1990; Wheeler, 1983).

There has been some dispute between goal theorists and expectancy-value theorists on the causal ordering of motivational determinants. Expectancy theorists contend that high goals enhance motivation because they have greater incentive value (Matsui, Okada & Mizuguchi, 1981). Goal theorists contend that expectancy-value factors exert their impact on motivation by their effects on personal goal setting. Studies testing these competing conceptions reveal that perceived capability and level of personal goals predict performance motivation (Mento, Cartledge, & Locke, 1980). Success expectancy and outcome valuation enhance performance indirectly by promoting goal adoption, rather than by operating directly on perfor-
mance. When success expectancy also affects performance directly, its independent contribution is small compared with personal goals (Garland, 1984).

Goal Theory

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. Motivation through pursuit of challenging standards has been the subject of extensive research on goal setting. Evidence from numerous laboratory and field studies involving heterogeneous task domains shows that enhancement of motivation by explicit challenging goals is a remarkably robust effect replicated across heterogeneous activity domains, settings, populations, social levels, and times (Locke & Latham, 1990; Mento, Steel, & Karren, 1987). Goals operate largely through self-referent processes rather than regulating motivation and action directly. The self-reactive influences by which personal standards create powerful motivational effects are analyzed in some detail in the sections that follow.

SELF-REACTIVE INFLUENCES AS MEDIATORS OF GOAL MOTIVATION

Motivation based on standards involves cognitive comparison. By making self-satisfaction conditional on matching adopted goals, people give direction to their actions and create self incentives to persist in their efforts until their performances match their goals. The anticipated self-satisfaction gained from fulfilling valued standards provides one source of incentive motivation for personal accomplishments. Perceived negative discrepancies between performance and the standard individuals seek to attain creates dissatisfaction that serves as another incentive motivator for enhanced effort. The motivational effects do not stem from the goals themselves, but rather spring from the fact that people respond evaluatively to their own behavior. Goals specify the conditional requirements for positive self-evaluation.
Activation of self-evaluation processes through internal comparison requires both comparative factors—a personal standard and knowledge of one's performance level. Neither performance knowledge without standards nor standards without performance knowledge can provide 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 a 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. In marked contrast, the combined influence of goals with performance feedback heightens motivation substantially. This is shown in Figure 2, which summarizes the level of self motivation in the presence of both, only one, or none of the comparative factors.

Although performance feedback alone is not a dependable motivator, it produces substantial variance in motivation that is explainable by the comparative structures individuals create for themselves. When they engage in an ongoing activity and are informed of their attainments, some set goals for themselves spontaneously (Bandura, & Cervone, 1983). Variations in personal goal setting are reflected in diversity in motivation (Figure 3). 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, and they in turn are outperformed by those who set themselves the more challenging goal of bettering their past endeavor. However, self-set goals alone do not in themselves have any continuing motivational impact on activities that provide little inherent feedback of performance level. These results from self-created comparative structures lend further support for the influential role of cognitive comparison in motivation through personal standards or goals.

Cognitive motivation based on goal intentions is mediated by three types of self-influences: they include affective self-evaluation, perceived self-efficacy for goal attainment, and ongoing adjustment of personal standards. As I have already pointed out, goals motivate by enlisting self-evaluative involvement in the activity. People seek self-satisfaction from fulfilling valued standards and are prompted to intensify their efforts by discontent with substandard perfor-
Figure 2. Mean percentage change in level of motivation under conditions combining goals with performance feedback, goals alone, feedback alone, or none of these factors. From Bandura, & Cervone, 1983, p. 1021. Copyright 1983 by the American Psychological Association. Reprinted by permission of the publisher.

mance. Both the positive and negative affective self-motivators operate in human pursuits, although discontent is more salient when performances fall short of what one seeks. But without the prospect of self-satisfaction from personal accomplishments, unremitting discontent would eventually take its toll on self motivation.

Perceived self-efficacy is another cognitive factor that plays an influential role in the exercise of personal control over motivation. It is partly based on their self-belief of efficacy that people choose what challenges to undertake, how much effort to expend in the endeavor, how long to persevere in the face of difficulties, and how much stress and despondency they experience in the face of difficulties and failures (Bandura, 1986, 1989). Whether negative discrepancies between personal standards and attainments are motivating or discouraging is partly determined by people’s belief that they can
attain the goals they set for themselves. Those who harbor self-doubt about their capabilities are easily dissuaded by failure. Those who are assured of their capabilities intensify their efforts when they fail to achieve what they seek, and they persist until they succeed.

That strong belief in one’s efficacy heightens level of effort and perseverance in difficult pursuits is corroborated by evidence across diverse domains of functioning for both children and adults (Bandura & Cervone, 1986; Brown & Inouye, 1978; Cervone, & Peake, 1986; Jacobs, Prentice-Dunn & Rogers, 1984; Schunk, 1984; Weinberg, Gould, & Jackson, 1979). Several paradigms have been used to verify that self-efficacy beliefs operate as causal factors in motivation. Some of these tests of causality introduce a trivial factor that is devoid of information to affect competency but can alter perceived self-efficacy. The impact of the altered self-efficacy beliefs on level of motivation is then measured. For example, studies of anchoring influences show that arbitrary reference points from which judgments
are adjusted either upward or downward can bias the judgments because the adjustments are usually insufficient. Cervone and Peake (1986) used arbitrary anchor values to influence self-efficacy judgments. Judgments made from an arbitrary high starting point biased students' perceived self-efficacy as problem solvers in the positive direction, whereas an arbitrary low starting point lowered students' judgments of their efficacy (Figure 4). The higher the instated perceived self-efficacy, the longer they persevered on difficult and unsolvable problems before they quit.

In a related study (Peake & Cervone, 1989), efficacy judgment was biased simply by having people judge their self-efficacy in relation to ascending or descending levels of possible attainment. The initial levels in these respective sequences served as anchoring influences that lowered or raised self-efficacy beliefs. Elevated self-beliefs of efficacy heightened effort, whereas lowered self-beliefs lessened effort on troublesome problems. In a further study, Cervone (1989) biased self-efficacy judgment through differential cognitive focus on things about the task that might make it troublesome or tractable. Dwelling on formidable aspects weakened people's belief in their efficacy, but focusing on doable aspects raised self-judgment of capabilities. The higher the altered self-efficacy beliefs, the longer people persevered in the face of repeated failure. In these various experiments, perceived self-efficacy predicts variance in motivation within treatment conditions as well as across treatments. Meditational analyses reveal that neither anchoring influence nor cognitive focus has any impact on motivation when variations in self-efficacy beliefs are controlled. These external influences thus exerted their effect on motivation entirely by mediating changes in self-efficacy beliefs.

A number of studies have been conducted in which self-efficacy beliefs are altered by bogus feedback unrelated to one's actual performance. People partly judge their capabilities through social comparison. Using this type of induction procedure, Weinberg, Gould, and Jackson (1979) showed that physical stamina in competitive situations is mediated by perceived self-efficacy. They raised the self-efficacy beliefs of one group by telling subjects they had triumphed in a competition of muscular strength. They lowered the self-efficacy beliefs of another group by telling subjects they had been outperformed by their competitors. The higher the illusory beliefs of phys-
Figure 4. Mean changes induced in perceived self-efficacy by anchoring influences and the corresponding effects on level of subsequent perseverant effort. From Cervone & Peake, 1986, p. 495. Copyright 1986 by the American Psychological Association. Reprinted by permission.

Figure 5. Mean level of physical stamina mobilized in competitive situations as a function of illusorily instated high or low self-percepts of physical efficacy. Drawn from data in Weinberg, Gould, & Jackson, 1979.
Figure 6. Mean changes in perceived self-efficacy induced by arbitrary normative comparison and the corresponding effects on level of subsequent perseverant effort. Drawn from data in Jacobs, Prentice-Dunn, & Rogers, 1984.

Physical strength, the more physical endurance subjects displayed during competition on a new task measuring physical stamina (Figure 5). Failure in the subsequent competition spurred those with a high sense of perceived self-efficacy to even greater physical effort, whereas failure impaired the performance of those whose perceived self-efficacy had been undermined. Self-beliefs of physical efficacy illusorily heightened in females and illusorily weakened in males obliterated large preexisting sex differences in physical strength.

Jacobs et al. (1984) used another variant of social self-appraisal—bogus normative comparison—as a way of altering self-efficacy beliefs. Individuals are led to believe, regardless of their actual performance, that they performed at high or low percentile ranks of an ostensibly normative group. Self-efficacy beliefs heightened by this means produce stronger perseverant effort (Figure 6). The regulatory role of self-efficacy beliefs, instated by arbitrary normative comparison, is replicated in perseverance in markedly different domains of functioning (Litt, 1988).

The combined evidence that divergent modes of efficacy induc-
tion produce convergent effects on motivation across a variety of pursuits adds to the explanatory and predictive generality of the efficacy mediator. Perceived self-efficacy determines not only level of effort expenditure, but how productively that effort is deployed. People who have a strong sense of efficacy engage in more efficient analytic thinking than do self-doubters (Wood & Bandura, 1989a). When faced with complex decisions, those who distrust their efficacy become erratic in their analytic thinking. Perceived self-efficacy can thus enhance performance through its effects on thought processes and deployment of strategies as well as on motivation. Moreover, in activities in which deficient performances can have untoward consequences, perceived self-inefficacy can impair functioning by generating disruptive cognitions and avoidant actions. The efficacy-activated cognitive and affective processes will be addressed later.

The goals people set for themselves at the outset of an endeavor are likely to change, depending on how they construe the pattern and level of progress they are making and readjust their aspirations accordingly (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 readjusting personal goals in light of one's attainments. Csikszentmihalyi (1979) examined what it is about activities that fosters continuing deep engrossment in life pursuits. The common factors found to be conducive to enduring motivation include adopting personal challenges in accordance with one's perceived capabilities and having informative feedback on progress.

Studies in which discrepancy levels are varied systematically and the self-reactive influences are measured before motivational change shed light on how these influences operate in concert in regulating motivation through goal systems. One experiment examined how self-evaluative and efficacy mediators contribute to motivation under a moderate negative goal discrepancy (Bandura, & Cervone, 1983). As shown in Figure 7, affective self-evaluation and perceived self-efficacy are good predictors of the degree of change in motivation when attainments fall short of the goal being pursued. Discontent over a substandard performance combined with high perceived self-efficacy for goal attainment produces a marked heightening of effort. A low sense of self-efficacy with low discon-
**Figure 7.** Mean percentage changes in motivational level under conditions combining goals and performance feedback as a function of different combinations of levels of self-dissatisfaction (S-DIS) and perceived self-efficacy for goal attainment (S-EFF). The left-hand panel shows the mean change in motivation for the entire session; the right-hand panel shows the mean motivational change between the initial and the final segment of the session. From Bandura & Cervone, 1983, p. 1024. Copyright 1983 by the American Psychological Association. Adapted by permission of the publisher.
Figure 8. Mean percentage changes in motivational level by people who are high or low in the self-reactive influences identified by hierarchical regression analyses as the critical motivators at each of four levels of preset discrepancy between a challenging standard and level of performance attainment. EFF signifies strength of perceived self-efficacy to attain a 50% increase in effort; DIS, the level of self-dissatisfaction with the same level of attainment as in the prior attempt; and S-G, the goals people set for themselves for the next attempt. The second set of graphs at the -4% discrepancy level summarize the results of the regression analysis performed with perceived self-efficacy averaged over the 30%-70% goal attainment range. From Bandura & Cervone, 1986, p. 108. Reprinted by permission of Academic Press, Inc.
tent over a substandard performance mobilizes little effort. Either high discontent or high perceived self-efficacy alone results in a moderate increase in motivation. The joint operation of the self-reactive influences even predicts whether motivation is enhanced, sustained, or debilitating over the course of a given attempt. Discontented self-efficacious subjects intensified their effort as time went on, whereas those who judged themselves unable to reach the goal and were satisfied with a substandard performance slackened their efforts and displayed a substantial decline in motivation as they continued the activity.

The three self-reactive influences exert differential impact on motivation when attainment diverges from the comparative standard over a wide range of discrepancies (Bandura & Cervone, 1986). After performing a strenuous task, individuals received prearranged feedback that their effort either fell markedly, moderately, or minimally short of the adopted standard or exceeded the standard. They then recorded their perceived self-efficacy for goal attainment, their self-evaluation, and their self-set goals, whereupon their motivational level was measured. Figure 8 portrays graphically how this set of self-influences operates in concert at each discrepancy level in the regulation of motivation.

Perceived self-efficacy contributes to motivation at all discrepancy levels. The stronger people's self-efficacy beliefs that they can meet challenging standards, the more they intensify their efforts. Discontent operates as an influential affective motivator when attainment falls substantially or moderately short of a comparative standard. The more self-dissatisfied people are with substandard attainment, the more they heighten their efforts. If they are quite satisfied with approximating or matching the standard again, however, self motivation invest increased effort. As people approach or surpass the initial standard, the new goals they set for themselves serve as an additional motivator. The higher the self-set goals, the more effort is invested in the endeavor. Taken together this set of self-reactive influences accounts for the major share of variation in motivation.

Self-reactive influences predict the impact of success, as well as of failure, on motivation. When attainments surpass challenging goals, people's belief in their efficacy and their self-set goals determine their level of motivation (Figure 8). Those who hold a strong
belief in their efficacy motivate themselves by setting even higher goal challenges that create new discrepancies to be mastered. Thus, notable attainments bring temporary satisfaction, but people enlist new challenges as personal motivators for further accomplishment. Those who doubt they could muster the same level of effort again lower their goals. Their motivation declines.

SELF-REGULATION AND THE NEGATIVE FEEDBACK MODEL

Many theories of self-regulation are founded on a negative feedback control system (Carver & Scheier, 1981; Lord & Hanges, 1987; Miller, Galanter, & Pribram, 1960). The basic structure of this type of regulatory system includes a behavior monitoring operation, a comparator, and an error correction routine. The system functions as a motivator and regulator of action through a discrepancy reduction mechanism. Perceived discrepancy between performance and the reference standard automatically triggers action to reduce the incongruity. Discrepancy reduction clearly plays a central role in any system of self-regulation, but in the negative feedback control system, self motivation matches the 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 can initially raise their level of motivation by adopting goals before they receive any feedback regarding their beginning effort (Bandura & Cervone, 1983). Negative feedback may help to keep them going, but it is not present antecedently to start them. That different self-regulatory systems operate in the initiation and continued control of motivation is shown in Figure 9. In the initial phase of the endeavor, individuals who had adopted a challenging goal enlisted a higher level of effort than those who performed with no goal other than to do their best. As they went on with the activity, those who continued to perform it with goals only or without goals displayed no further increases in motivation,
FIGURE 9. Portrayal of how proactive systems and reactive feedback systems operate in the initiation and continued regulation of motivation. Initially, subjects performed with goals (G) or no goals (NG). In the next phase, the goal subjects continued to perform with goals only (G) or with goals and performance feedback (GF). Drawn from data in Bandura & Cervone, 1983.

whereas the individuals who had the benefit of goals and performance feedback raised their level of motivation substantially. A theory of motivation control must explain how each new goal adoption motivates from the outset before the first performance feedback. The motivating starter is the anticipatory estimate of the level of effort needed to match the goal. Subsequent feedback provides instructive information on the corrective adjustments in motivation needed to attain or surpass the goal.

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 based on 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. As previously shown, after people attain the standard they have been pursuing, those who have a
strong sense of efficacy generally set a higher standard for themselves. Adopting 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 conform 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 attainment is construed. To capture the complexity of human self-regulation, such an executive control system must be invested with the evaluative agentic 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 performance 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 attainable or beyond one's reach.

In human endeavors, goal adjustments do not follow a neat pattern of ever-rising standards after personal accomplishments, nor do failures necessarily lower aspirations. Rather, because of interacting cognitive and affective factors, feedback of discrepancy has diverse effects on the self-reactive influences that mediate motivation and standard setting. This is shown in the study previously cited (Bandura & Cervone, 1986), in which people were led to believe that their attainments diverged from their original goal over a wide range of discrepancies. The variations in perceived self-efficacy and self-set goals at each discrepancy level are plotted in Figure 10.

Impact of Goal Discrepancy on Perceived Self-Efficacy. When people fail to fulfill a challenging standard, some become less sure of their efficacy and others lose faith in their capabilities, but many remain unshaken in their belief that they can attain the standard (Figure 10). Surpassing a taxing standard through sustained strenuous effort does not necessarily strengthen self-beliefs of efficacy. Al-
though for most people high accomplishment strengthens self-beliefs, a sizable number who drive themselves to hard-won success doubt they can duplicate the feat.

The latter findings raise the important issue of resiliency of self-beliefs of efficacy in the face of difficulties. There is a growing body of evidence that human accomplishment and positive well-being require an optimistic and resilient sense of personal efficacy (Bandura, 1986). This is because ordinary social realities are usually fraught with difficulties. They are full of impediments, adversities, failures, setbacks, frustrations, and inequities. Success usually comes through renewed effort following failed attempts. To abort efforts prematurely limits personal accomplishment. Therefore people must have a robust sense of personal efficacy to sustain the perseverant effort needed to succeed. White (1982) vividly documents that the striking common characteristic of people who eventually achieved eminence in their respective fields was an inextinguishable
sense of self-efficacy that enabled them to override innumerable rejections of their early work. Their resilient self-efficacy was combined with a steadfast belief in the worth of what they were doing.

**Affective and achievement benefits of optimistic self-efficacy belief.** It is widely believed that misjudgment produces dysfunction. Certainly, gross miscalculation can get one into trouble. But optimistic self-appraisals of efficacy that are not unduly disparate from what is possible can be advantageous, whereas veridical judgments can be self-limiting. Human skill is a generative capability, not a fixed property. What people can do in different situations depends on how well they orchestrate their subskills and stratagems and how hard they work at the task. Therefore the same capability can give rise to performances that are subpar, ordinary, or extraordinary for a particular person. When people err in their self-appraisal they tend to overestimate their capabilities. This is a benefit rather than a cognitive failing to be eradicated. If self-efficacy beliefs always reflected only what people can do routinely, they would rarely fail, but they would not mount the extra effort needed to surpass their ordinary performance.

Evidence suggests that it is often the so-called normals who are distorters in self-appraisal, but they distort in the positive direction. Anxious and depressed people have been compared in their skills and their self-beliefs with those who are unburdened by such problems. The groups differ little in their actual skills, but they differ substantially in their beliefs about their efficacy. People who are socially anxious are often just as socially skilled as the more sociable ones. But socially active people judge themselves much more adept than they really are (Glasgow & Arkowitz, 1975). Schwartz and Gottman (1976) have similarly shown that unassertive people know what to do but lack the efficacy to translate their knowledge into assertive action.

Depressed persons usually display realistic self-appraisals of their social competencies. The nondepressed view themselves as much more adroit than they really are. As depressed people improve in treatment, they show the self-enhancing biases that characterize the nondepressed (Lewinsohn, Mischel, Chaplin, & Barton, 1980). A similar pattern of advantageous self-appraisal is revealed in
laboratory tasks in which people perform actions and outcomes occur, but the actions exert no control over the outcomes. The depressed are quite realistic in judging they lack control. In contrast, nondepressed people believe they are exercising a good deal of control in such situations (Alloy & Abramson, 1979). After nondepressed people are made temporarily depressed, they become realistic in judging their personal control. When depressed people are made to feel happy, they overestimate the extent to which they exercise control (Alloy, Abramson, & Viscusi, 1981). Thus the depressed appear as realists, the nondepressed as confident distortionists.

Social reformers strongly believe that they can mobilize the collective effort needed to bring social change (Bandura, 1986; Muller, 1979). Although their beliefs and the collective sense of efficacy they instill in others are rarely fully realized, they sustain reform efforts that achieve lesser, but important, gains. Were social reformers to be entirely realistic about the prospects of transforming social systems, they would either forgo the endeavor or fall easy victim to discouragement. Realists may adapt well to existing realities, but those with a tenacious optimistic self-efficacy are likely to change those realities.

The emerging evidence indicates that the achievers, the innovators, the sociable, the nonanxious, the nonresistant, and the social reformers take an optimistic view of their personal efficacy to exercise influence over events that affect their lives. If not unrealistically exaggerated, such self-beliefs sustain the motivation needed for personal and social accomplishments.

**Effect of goal discrepancy on personal goal setting.** Self-beliefs of capability affect personal goal setting. The more capable people judge themselves to be, the higher the goals they set for themselves (Bandura & Cervone, 1986; Taylor, Locke, Lee, & Gist, 1984; Wood & Bandura, 1989a), and the more firmly committed they remain to their goals (Locke, Latham, & Erez, 1988). Hence the variable impact of discrepancy feedback on perceived self-efficacy is also reflected in personal goal setting. As can be seen in Figure 10, variation in the size of the performance discrepancy produced substantially different patterns of personal goal setting. When people receive prearranged feedback that their efforts fell markedly or moderately short of the goal they were pursuing, they either adhere to or lower their
goal. A strenuous effort that falls just short of a difficult standard has
diverse effects on personal goal setting. Many continue to strive for
it, others lower their sights, and still others set themselves an even
greater challenge.

It is widely assumed that accomplishment raises performance
standards. Studies of level of aspiration show that, indeed, people
generally set their goals slightly above their preceding attainment
(Festinger, 1942; Ryan, 1970). However, the use of simple tasks that
call for little effort limits the generality of the results from this line of
research. This is because in everyday life, significant accomplish-
ments usually require arduous effort over an extended period. In
such endeavors many interacting determinants, including fortu-
itous factors, contribute to achievement. Therefore people do not
necessarily expect to outdo each past accomplishment in an ever-ris-
ing series of triumphs. Knowledge of having surpassed a demand-
ing standard through laborious effort does not automatically lead
people to raise their aspirations (Figure 10). Those who have a high
sense of self-efficacy set themselves more challenging goals to ac-
complish. But some doubt they can muster the same level of la-
borious effort again, and they set their sights on simply trying to
match the standard they had previously pursued. Having driven
themselves to success, others judge themselves inept and repeat a demanding feat, and they lower their aspirations.

NEGATIVE DISCREPANCY AS AUTOMOTIVATOR

Self motivation has been explained by some theorists in terms of an
inborn automotivator operating through cognitive incongruity re-
duction. According to Piaget (1960), discrepancies between the cog-
nitive schemata children already possess and perceived events cre-
te internal conflict that motivates exploration of the source of
discrepancy until the internal schemata are altered to accommodate
the contradictory information. In this view, moderately discrepant
experiences, rather than markedly or minimally discrepant ones,
presumably arouse the cognitive perturbations regarded as neces-
sary for cognitive change.

The conceptual and empirical problems associated with this
equilibration model have been addressed elsewhere in some detail
and will not be reviewed here (Bandura, 1986; Kupfersmid & Wonderly, 1982). Studies of the relation between discrepancy level and inquisitiveness are inconsistent in their findings (Wachs, 1977). With regard to cognitive changes, people are inclined to adopt views that involve only small shifts from their own, but highly discrepant influences can be as effective, or even more so (Arbuthnot, 1975; Matey & Acksen, 1976; Walker, 1982). These findings are in accord with substantial evidence in social psychology showing that the more discrepant others’ views are from one’s own the more one’s views change (McGuire, 1985). Although discrepant influences foster cognitive changes, the changes are unrelated to level of cognitive conflict (Haan, 1985; Zimmerman & Blom, 1983). The impact of divergent influences seems to stem more from how persuasive they are than from how internally conflictful they happen to be. Social factors exert a powerful influence on how discrepant conceptions are cognitively processed and received. Simply demonstrating that children are bored by what they already know and easily discouraged by information that exceeds their cognitive-processing capabilities is a mundane finding that can be explained by any theory without requiring an automotivating mismatch mechanism.

As the preceding findings show, arousal of interest is not confined to events that differ only slightly from what one already knows; a moderate discrepancy of experience alone does not guarantee cognitive learning, nor is acquisition of knowledge dependent solely on internal cognitive conflict. There are many other motivators for bettering one’s knowledge and thinking skills. The substantial benefits of being able to predict the occurrence of events and to exercise control over those that affect one’s own well-being or that of significant others provide positive incentives for acquiring knowledge and cognitive and social competencies (Bandura, 1986). The self-satisfaction gained from progressive mastery and fulfillment of personal challenges serves as another enduring motivator. People often drive themselves for material gain, for social recognition, or in the pursuit of excellence.

There are other reasons why an automotivational system of the type proposed by Piaget might be viewed with considerable skepticism. An automatic self-motivator explains more than has ever been observed. If disparities between perceived events and mental structure were, in fact, automatically motivating, learning would be un-
remitting and much more unselective than it really is. As a rule, people do not persist in exploring most activities that differ moderately from what they know or can do. Indeed, if they were driven by every moderately discrepant event encountered in their daily lives they would be rapidly overwhelmed by innumerable imperatives for cognitive change. Effective functioning requires selective deployment of attention and inquiry. When faced with contradictions between evidence and their conceptions, people are much more likely to discount or reinterpret the “evidence” than to change their way of thinking. If people were motivated by an innate drive to know powered by negative discrepancy reduction, they should all be highly knowledgeable about the world around them and continually advancing to ever higher levels of reasoning. The evidence does not bear this out.

In the social cognitive view, people function as active agents in their own motivation rather than simply being reactive to discordant events that produce cognitive perturbations. Self motivation through cognitive comparison requires distinguishing between standards of what one knows and standards of what one desires to know. It is the latter standards, together with perceived self-efficacy, that exert selective influence over which of many activities will be actively pursued. Aspirational standards determine which discrepancies are motivating and which activities people will strive to master. Strength of self motivation varies curvilinearly with the level of discrepancy between standards and attainments: relatively easy standards are not sufficiently challenging to arouse much interest or effort; moderately difficult ones maintain high effort and produce satisfaction through subgoal achievements; standards set well beyond a person’s reach can be demotivating by fostering discouragement and a sense of inefficacy.

GOAL PROPERTIES AND SELF MOTIVATION

Goal intentions do not automatically activate the self-reactive influences that govern level of motivation. Certain properties of goal structures determine how strongly the self system will become enlisted in any given endeavor. The relevant goal properties are addressed next.
Goal specificity. The extent to which goals create personal incentives and guides for action is partly determined by their specificity. Explicit standards regulate performance by designating the type and amount of effort required to attain them, and they generate self-satisfaction and build self-efficacy by furnishing unambiguous signs of personal accomplishment. General intentions, which are indefinite about the level of attainment to be reached, provide little basis for regulating one's efforts or evaluating how one is doing. In studies of the regulative function of goals differing in specificity, clear, attainable goals produce higher levels of performance than general intentions to do one's best, which usually have little or no effect (Bandura & Cervone, 1983; Locke & Latham, 1990). Specific performance goals serve to motivate the unmotivated and to foster positive attitudes toward the activities (Bryan & Locke, 1967).

Goal challenge. The amount of effort and satisfaction that accompanies variations in goals depends on the level at which they are set. Strong interest and involvement in activities is sparked by challenges. When self-satisfaction is contingent on attainment of challenging goals, more effort is expended than if easy ones are adopted as sufficient. Locke postulates a positive linear relationship between goal level and performance motivation. A large body of evidence does show that the higher the goals, the harder people work to attain them and the better is their performance (Locke & Latham, 1990). However, the linear relationship is assumed to hold only if performers accept the goals and remain strongly committed to them. Most people, of course, eventually reject performance goals they consider unrealistically demanding or well beyond their reach. But people often remain surprisingly steadfast to goals they have little chance of fulfilling, even when given normative information that others reject them as unrealistic (Erez & Zidon, 1984). When assigned goals are beyond their reach and failure to attain them carries no cost, people try to approximate high standards as closely as they can rather than abandoning them altogether (Garland, 1983; Locke, Zubritzky, Cousins, & Bobko, 1984). As a result, they achieve notable progress even though the accomplishment of distal goal aspirations eludes them.

The generality of evidence of unshaken pursuit of unreachable goals must be qualified, however, by the fact that laboratory simula-
tions may differ from actual conditions on several important dimensions: the endeavor usually involves only a brief effort, failure carries no costs, and no opportunities exist for alternative pursuits. Unattainable goals are more likely to be abandoned when the activities require extensive investment of effort and resources, failure to meet the goals brings aversive consequences, and other activities are available in which one's efforts might be more fruitfully invested. When goals are set unrealistically high, strong effort produces repeated failure that can eventually weaken motivation by undermining perceived self-efficacy.

Much of the experimentation on level of goal challenges involves a single effort to achieve an individual goal. Social cognitive theory distinguishes between complementary regulative functions of distal goals and a graduated system of proximal subgoals in ongoing endeavors (Bandura, 1986). Superordinate distal goals give purpose to a domain of activity and serve a general directive function, but subgoals are better suited to serve as the proximal determinants of specific choice of activities and how much effort is devoted to them. Self motivation is best sustained through a series of proximal subgoals that are hierarchically organized to ensure successive advances to superordinate goals. The relation between probability of goal attainment and effort expenditure will differ for subgoals and for end goals. Pursuit of a formidable distal goal can sustain a high level of motivation if it is subdivided into subgoals that are challenging but clearly attainable through extra effort (Bandura & Schunk, 1981). To strive for unreachable subgoals is to drive oneself to relentless failure. By making complex tasks easier through subdivision into more manageable units, one can perhaps retain the power of goals that tend to have lesser impact on complex than on simpler activities (Wood, Mento, & Locke, 1987). It is not that challenging goals are necessarily ineffective or debilitating for complex pursuits, but that complex activities must be structured in ways that goals enhance and must helpfully channel efforts rather than misdirect them. When complex tasks are aidfully structured, challenging goals are transformed from debilitators to enhancers of performance (Earley, Connolly, & Ekegren, 1989; Earley, Connolly, & Lee, 1990).

The complementary regulation of motivation by hierarchical goals of differential achievability characterizes most of the strivings of everyday life. Long-range aspirations may remain unfulfilled, but
personal and social advancements are realized in the process of successful striving. In an ongoing pursuit, of course, the perceived difficulty of a superordinate goal does not remain constant. Progress toward a superordinate goal in the distant future alters subjective estimates of eventual success. As one comes closer to realizing distal goals, the task appears less formidable than when originally viewed from far down the line.

Goal proximity. As I suggested in the preceding discussion, the effectiveness of goal intentions in regulating motivation and action depends greatly on how far into the future they are projected. A proximate standard serves to mobilize self-influences and direct what one does in the here and now. Distal goals alone are too far removed in time to provide effective incentives and guides for present action. In the face of many competing attractions, focus on the distant future makes it easy to put off matters in the present on the belief that there is always ample time to mount the effort later.

Subgoals not only enlist self-reactive motivators, they also figure prominently in the development of self-efficacy (Bandura & Schunk, 1981). Without standards against which to measure their performance, people have little basis for gauging their capabilities. Subgoal attainment provides rising indicants of mastery for enhancing self-percepts of efficacy. By contrast, distal goals are too far removed in time to serve as favorable markers of progress along the way to ensure a growing sense of personal efficacy.

The standards against which attainments are compared also contribute, in several ways, to the development of intrinsic interest in the things being pursued. People develop enduring interest in activities at which they feel self-efficacious and from which they derive satisfaction. Challenging standards enlist sustained involvement in tasks needed to build competencies that foster interest. Moreover, when people aim for and master valued levels of performance, they experience a sense of satisfaction (Bandura & Cervone, 1983; Bandura & Jourden, 1991; Locke, Cartledge, & Knerr, 1970). The satisfactions derived from goal attainment build intrinsic interest, but when distal goals are used as the comparative standard, current attainments may prove disappointing because of wide disparities with lofty future standards. As a result, interest fails to develop even though skills are being acquired in the process. To the extent that
proximal subgoals promote and authenticate a sense of efficacious agency, they heighten interest by enhancing perceived personal causation (Bandura & Schunk, 1981). Perceived self-efficacy is thus a better predictor of intrinsic interest than is actual ability (Collins, 1982).

These diverse effects of proximal self-motivation are revealed in a study in which children who were grossly deficient and uninterested in mathematics pursued a program of self-directed learning under conditions involving either proximal subgoals leading to a distal goal, only the distal goal, or no reference to goals (Bandura & Schunk, 1981). Within each of the goal conditions, children could observe how many units of work they had completed in each session and their cumulative attainment. Under proximal subgoals children progressed rapidly in self-directed learning, achieved substantial mastery of mathematical operations, and developed an increased sense of efficacy (Figure 11). Distal goals had no demonstrable effects. Subgoal attainments also created intrinsic interest in arithmetic initially holding little attraction for the children (Figure 12). The value of proximal subgoals in cultivating intrinsic interest and promoting academic attainment is further corroborated by Morgan (1985) in an extended field experiment designed to improve the academic competence of college students. People not only perform better under goal proximity, but they much prefer a proximal to a distal focus (Jobe, 1984).

Like any other form of influence, goals can be applied in ways that breed dislike rather than nurture interests. Goals have their strongest positive psychological effects when they serve as mastery devices rather than as onerous dicta. As already noted, personal standards that subserve valued aspirations promote interest. But if goals assigned by others impose severe constraints and burdensome performance requirements, the pursuit can become oppressive. Because the effects of goals depend on their properties, propositions about the impact of goals on interest must be qualified by the nature and structure of the goals and the purposes they serve. Mossberger (1980) reports that goals enhance interest in dull tasks by infusing them with challenge but reduce interest on interesting tasks. Self-development would be poorly served if aspirations and challenges became dysfunctional for activities that normally hold some interest. Fortunately, this is not the case. An interesting activity with
a rising standard for success, which continues to present challenges, enhances intrinsic interest, whereas the same activity with a low level of challenge does not (McMullin & Steffen, 1982). If subgoals for an interesting activity are easily attainable, then more distal goals, which pose more of a challenge, may hold greater interest (Manderlink & Harackiewicz, 1984). Routine successes with no corresponding growth of competence create little enjoyment. Doing more of a tedious activity under the influence of performance goals will not increase liking for it (Latham & Yukl, 1976; Umstot, Bell, & Mitchell, 1976). In the studies in which proximal goals cultivate perceived self-efficacy and intrinsic interest, each subgoal presents new challenges in mastery of new subskills (Bandura & Schunk, 1981).

The combination of perceived self-inefficacy, self-devaluation, and diminished interest creates a state of self-demoralization. Subgoal structuring of pursuits can reduce the risk of such self-demor-
alization through high aspiration. Significant performance gains judged against lofty distal standards do not provide much of a sense of accomplishment because of the wide disparity between current attainment and aspiration. Thus, people can be making good progress but downplaying their accomplishments and getting discouraged. Hierarchical subgoals minimize disspiriting mismatches. I shall return shortly to the self-debilitating affective consequences of unfulfilled striving.

Goal proximity should be distinguished from specificity of planning, which includes not only temporal variation in goals but a host of other factors. For example, in studies comparing daily specific plans with monthly general plans, the detailed proximal system prescribes more onerous busywork in creating daily flow charts of when and where activities will be performed and in monitoring and recording one’s performances than does the distal general system (Kirschbaum, Humphrey, & Mallet, 1981; Kirschbaum, Tomar-
ken, & Ordman, 1982). Self-influence requiring excess busywork is usually less faithfully applied and has less beneficial results. The motivating potential of goal proximity is best revealed by varying only whether attainment is compared with close or distant standards without confounding proximal goals with more bothersome and time-consuming overseeing routines.

Efforts to clarify how goal proximity operates in self-regulatory mechanisms often encounter methodological obstacles because of spontaneous goal transformations during the course of pursuits. When encouraged to set themselves distal goals, many people quickly improvise their own more helpful proximal goals. They simply partition desired future attainments into more easily realizable subgoals (Bandura & Simon, 1977; Dubbert & Wilson, 1984; Weinberg, Bruya, & Jackson, 1985). Performance becomes the product of self-created goals rather than of externally assigned ones. The effects of proximal goals are untestable if uncontrolled personal goal setting largely eliminates experimentally assigned temporal variation in goals. Similarly, even when people simply monitor their performance, without any reference to goals, many begin to create goals for themselves (Bandura & Cervone, 1983). Self-set goals predict subsequent levels of performance motivation. The motivational advantage of goal proximity becomes most evident under conditions that minimize transformation of distal goals into proximal ones (Bandura & Schunk, 1981).

Variations in personal goal setting under prescribed distal goals illustrate the dual self-processes of exercising and undergoing influence. Regardless of whether studies of self-regulatory processes focus on self-monitoring of progress or on goal setting, people are not simply reactors to situational influences. They often transform them into self-influences that differ from what others intend. Theories that attempt, through regressive causal analysis, to reduce self-regulatory processes to situational control overlook the fact that people are not merely objects of change; they act as agents who give new form to situational influences. Such bidirectionality of influence supports a reciprocal model of self-regulation (Bandura, 1986).
HIERARCHICAL STRUCTURE OF GOAL SYSTEMS

Thus far, the discussion has centered on goal systems as a directive and motivational device and on 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 serve 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 act-self motivationpersonal significance. As I have previously shown, proximal goals generate self-satisfaction from personal accomplishment 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 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 suspending 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.

GENERIC GOAL ORIENTATIONS

People impose goal preferences on activities that reflect their basic orientations to achievement across a wide range of situations. This process has been the focus of research on how people's conceptions of ability affect the goals they pursue, which in turn determines the
quality of their intellectual functioning (M. Bandura & Dweck, 1988; Dweck & Leggett, 1988; Nicholls, 1984). Two major conceptions have been identified. In one perspective, intelligence is construed as an incremental skill that can be continually enhanced by acquiring knowledge and perfecting one's competencies. People with this conception adopt a learning goal. They seek challenging tasks providing opportunities to expand their knowledge and develop their competencies. Errors are regarded as a natural, instructive part of an acquisition process—one learns from mistakes. Such an outlook sustains task-oriented, perseverant effort in the face of failures. Capabilities are judged more in terms of personal progress than by comparison against the achievements of others. Mastery through effort is rewarding, whereas easy successes are boring or disappointing.

In the contrasting perspective, intelligence is construed as a more or less stable entity. Because quality of performance is regarded as diagnostic of intellectual capability, errors and performance insufficiencies carry personal threat and arouse concern over social evaluation of incompetence. Consequently, people adopting the entity view tend to favor goals of exhibiting established skills and to prefer tasks that minimize the risk of errors at the expense of learning something new. Prolonged expenditure of effort, which is the way most competencies are built, also poses threats because high effort is taken to indicate low ability. Those aiming to look smart through proficient performance are prone to measure their capabilities by comparison with the achievements of others. Effort is rewarded by a feeling of pride or relief over validation of intellectual status without having had to expend much effort.

The effect of these differential goal orientations on psychological functioning is revealed in experiments in which children have to cope with failure (Elliott & Dweck, 1988). Those who view intelligence as an entity and perceive themselves as deficient in it are easily debilitated by failure, whereas those subscribing to an incremental view take failure in their stride. It should be noted that the processes and correlates discussed here concern goal orientations, not types of people. Thus, when children who construe ability as a fixed attribute are encouraged to adopt a learning goal by portraying intelligence as an acquirable skill, they manage failure much more effectively. Even the same individual may construe ability as a fixed
aptitude in some domains of functioning and as an acquired aptitude in others.

**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 accomplishment. 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. Therefore functional relationships established at the individual level may require qualification 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 with 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 influence on quality of sociocognitive functioning.

Because organizational outcomes must be achieved through the coordinated efforts of others, some of the most important managerial decisions concern 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 mak-
ing 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 control experimentally. 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 situations where 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 organizational performance. Some of the factors involve nonlinear and compound decision rules combining incentive and social equity elements, making them especially difficult to discern (Brehm, Hagafor, & Johansson, 1980). The set of rules must 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.

In the management of such dynamic environments, self-regulatory mechanisms govern organizational attainments much as they do individual accomplishments (Wood & Bandura, 1986a). Perceived managerial self-efficacy enhances organizational performance both directly and indirectly through its influence on analytic strategies. The higher the perceived self-efficacy, the more systematic people are in applying analytic thinking to discover optimal deci-
sion rules. Analytic strategies contribute to organizational attainments beyond that of perceived self-efficacy.

The multifaceted nature of managerial activities and their mazy linkage to organizational accomplishments, however, introduces complexities in the relation between personal goals and group attainment. Personal goals are readily translatable into performance attainments when people have 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 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 effortless 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 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 proximal outcomes.

In studies of the management of group efforts, personal goals influence group performance by promoting effective managerial rule-learning strategies. However, they do not have a direct effect on performance. When one is faced with the task of managing a complex social environment, assigned goals that are exceedingly difficult to fulfill may even detract from organizational attainment by undermining perceived self-efficacy (Wood, Bandura, & Bailey, 1990).

The way people construe ability has substantial influence on the self-regulatory mechanisms that govern ongoing motivation and group accomplishments (Wood & Bandura, 1989b). Substandard performance is likely to carry markedly different diagnostic implica-
tions depending on whether ability is construed as an acquirable skill or as a relatively stable aptitude. When performance is viewed as skill acquisition in which one learns from mistakes, perceived self-efficacy is unlikely to be adversely affected by substandard performance, because errors become normative instructive elements in the acquisition of competencies rather than indicators of basic personal deficiencies. Construing performance as diagnostic of underlying cognitive aptitude greatly increases vulnerability to the adverse effects of failure on self-beliefs of efficacy.

Managers who perform the challenging managerial task under an experimentally induced entity conception of ability are beset by increasing doubts about their managerial efficacy. They become more and more erratic in their analytic thinking, lower their organizational aspirations, and achieve progressively less with the organization they are managing (Figure 13). In marked contrast, an induced conception of ability as an acquirable aptitude fosters a highly resilient sense of personal efficacy. Even though taxing goals are assigned that elude the managers, they remain steadfast in their perceived managerial self-efficacy, continue to set themselves challenging organizational goals, and use analytic strategies in ways that aid discovery of optimal managerial decision rules. Such a self-efficacious orientation, which is well suited for handling adversity, pays off in uniformly high organizational attainment.

Induced differential conceptions of ability bias how similar substandard performances at the outset are cognitively processed. Construing insufficient attainment as indicating personal deficiencies gradually creates an ineffectual self-schema in the particular domain of functioning, whereas construing 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 behavioral evidence confirming them. This produces an exacerbation cycle of motivational and performance impairment under the entity cognitive set and highly proficient functioning under the acquirable skill set.

Two aspects of the exercise of control are especially relevant to organizational change (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
Figure 13. Changes in perceived managerial self-efficacy, self-set goals relative to the preset standard, effective analytic strategies, and achieved level of organizational performance across blocks of trials under acquirable skill and entity conceptions of capability. Each trial block comprises six different production orders. From Wood & Bandura, 1989b, pp. 411-413. Copyright 1981 by the American Psychological Association. Reprinted by permission of the publisher.
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 and opportunities to exercise personal efficacy. 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 they are inefficacious are likely to effect little change even in environments that provide many 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 to exercise 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 their personal efficacy fully, 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 in difficult circumstances produces unshakable persisters. If people approach situations as largely uncontrollable, they are likely to exercise their efficacy weakly and abortively, which breeds failure. Over time, failure takes an increasing toll on perceived self-efficacy and beliefs about how much environmental control is possible.

Organizational simulation research underscores the influential impact of perceived controllability on the self-regulatory factors governing group attainments (Bandura & Wood, 1989). People who manage the simulated organization under a cognitive set that organizations are not easily changeable quickly lose faith in their managerial capabilities, even when performance standards are within easy reach, and they lower their sights for the organization (Figure 14). Those who operate under a cognitive set that organizations are controllable display a resilient sense of managerial efficacy, set themselves increasingly challenging goals, and use good analytic thinking to discover effective managerial rules. The divergent
Figure 15. Path analysis of causal structures. The initial numbers on the paths of influence are the significant standardized path coefficients (ps < .05); the numbers in parentheses are the first-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. From Wood & Bandura, 1989a, p. 379. Reprinted by permission of The Academy of Management.
Figure 14. Changes in strength of 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. Drawn from data in Bandura & Wood, 1989.
changes in these self-regulatory factors are accompanied by large differences in organizational attainment.

Path analyses reveal that as managers begin to form a self-schema concerning their efficacy through further experience, the performance system is powered more extensively and intricately by self-conceptions of efficacy (Figure 15). Perceived self-efficacy influences performance both directly and through its strong effects on personal goal setting. Personal goals, in turn, enhance organizational attainment directly and via the mediation of analytic strategies.

Social comparison operates as a primary factor in the self-appraisal of capabilities (Festinger, 1954; Suls & Miller, 1977), because most activities do not provide objective, nonsocial standards for gauging level of ability. People must therefore appraise their capabilities in relation to the performance of others. Most of the research on self-appraisal via social standards has centered on why people engage in social comparison, whom they choose to compare themselves with, and the attributes of the social referents that are singled out for the comparative self-appraisal (Suls & Miller, 1977; Suls & Mullen, 1982; Wood, 1989). Under the ordinary conditions of everyday life, people are continually confronted with comparative information, whether they seek it or not. To complicate further the process of self-appraisal, the patterns of comparative information often change across settings and over time.

The research on organizational management corroborates the influential role self-regulatory factors play in mediating the impact of social-comparative influences on motivation and collective attainments (Bandura & Jourden, 1991). Individuals managed the simulated organization under prearranged conditions in which they performed 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 as or superior to one's comparators sustained an efficacious self-regulatory orientation, although easy comparative triumphs incurred some demotivating effects through complacent self-assurance. Of special psychological interest are the comparative patterns of progressive mastery and progressive decline, which had striking contrasting ef-
fects on self-regulatory factors and organizational performance attainments (Figure 16).

Seeing oneself increasingly surpassed by similar social referents undermined perceived self-efficacy, disrupted analytic thinking, created unremitting 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, and transformed self-evaluation from discontent to satisfaction with accelerating progress. These positive self-regulatory changes were accompanied by a large rise in organizational attainment. Path analysis confirms that the contrasting performance trajectories are mediated by the changes in self-regulatory factors.

ASPIRATIONAL STANDARDS, ACHIEVEMENT MOTIVES, AND EXTERNAL INCENTIVES

Self motivation through self-reactive influence is a significant ingredient in a variety of motivational effects that come under different names. Achievement motivation is one such instance. High achievers tend to invest their self-satisfaction in attaining challenging goals; low achievers adopt easy goals as sufficient. The higher the aspirational standards people set for themselves, the harder they strive to fulfill them and the more likely they are to excel.

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. The motive is inferred from a given class of behavior and is then used to explain the activation of that class of behavior. 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; but need for achievement has no influence on performance independent 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 high goals 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 indexes of achievement motives lends causal priority to standard setting. Moreover, goal theory can explain rapid shifts in motivational level through changes 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, research on the mediating role of goals shows that incentives increase performance to the extent that they encourage people to set motivating goals for themselves (Locke, Bryan, & Kendall, 1968; Wright, 1989). In studies reporting mixed results on whether incentives influence performance predominantly or partially by their effect on self-set goals, subjects were given no information about their level of performance (Pritchard & Curtis, 1973). Self-evaluative motivators are not effectively activated in goal pursuits 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
prone to depression. When exposed to high attainments of others, the depressed judge their own accomplishments as less praiseworthy than do the nondepressed (Ciminero & Steingarten, 1978). Self-devaluative reaction to adverse social comparative appraisal is even more pronounced in depressed women (Garber, Hollon, & Silverman, 1979).

To mitigate the deleterious effects of social comparison, it is often recommended that human endeavors be structured so that people judge themselves in reference to their own standards and progress rather than by comparing themselves against others. Self-comparative standards provide the benefits of personal challenge and success experiences for self-development without the cost of individual social comparison. However, striving to meet one's own standards of excellence can be a source of self-devaluation if they are too stringent. In competitive, individualistic systems, social comparison inevitably intrudes on self-appraisal. Social arrangements in which one person's success is another person's loss or hindrance force social comparison unless one gives up competitive pursuits. But some leeway exists in how much weight individuals give to self-comparison and to social comparison in their self-appraisals (Bandura, 1990a; Frey & Ruble, 1990).

Continued progress in a valued activity does not necessarily ensure perpetual self-fulfillment. The pace at which activities are mastered can drastically alter self-evaluative reactions (Simon, 1979). Subjects received prearranged feedback of a decelerating pattern of improvement (improve fast initially but then taper off), or an accelerating pattern of improvement (improve slowly at first but then make large gains). Different rates of improvement produced strikingly different patterns of self-evaluation (Figure 17). Accomplishments that surpass earlier ones bring a continued sense of self-satisfaction. But people derive little satisfaction from smaller accomplishments, or even devalue them, after having made larger strides. People who are prone to depression display even greater affective reactivity to their rate of progress. They are more self-satisfied with accelerating strides, but they find even less satisfaction in modest improvements after large attainments. Early spectacular accomplishments reflecting notable proficiency can thus be conducive to later self-dissatisfaction even in the face of continuing personal attainment.
challenges and fulfill them to please themselves as well. Even simple feedback of progress or trivial extrinsic incentives can enhance performance motivation once self-satisfaction becomes invested in the activity. Satisfaction in personal accomplishment becomes the reward.

AFFECTIVE CONSEQUENCES OF GOAL DISCREPANCIES

Self-regulatory processes produce emotional effects that can alter level of performance motivation. Negative discrepancies between attainment and standards selected as indexes of personal merit can give rise to self-devaluation and despondent mood. Given stringent standards, even notable achievements appear trivial and undeserving of self-satisfaction. A growing body of evidence reveals that negative cognitive biases in the constituent processes of self-regulation increase vulnerability to depression (Kanfer & Hagerman, 1981; Rehm, 1981). Of special interest is evidence that faulty goal setting may be conducive to despondency and performance debilitation. Compared with nondepressed persons, the depressed tend to set higher standards for themselves relative to their attainments and to react less positively to similar successes and more self-critically to similar failures (Golin & Terrill, 1977; Loeb, Beck, Diggory, & Tuthill, 1967; Schwartz, 1974; Simon, 1979). Goal stringency 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).

Negative discrepancies in self-appraisal of capabilities by social comparison can also breed despondency. Perceived inability to accomplish valued performances that others find readily attainable creates a depressive mood and impairs cognitive functioning (Davies & Yates, 1982). Much attention has been given to the adverse effects of unfavorable social comparison. In studies that vary the social performance standard for comparative appraisal, the higher the accomplishments of similar others, the less satisfied people are with their own performance (Simon, 1979). The self-belittling effect of adverse social comparison is especially evident in persons who are
Figure 17. Strength of self-evaluative reactions exhibited by individuals who received feedback of a decelerating pattern of improvement (improve fast initially but then taper off) or an accelerating pattern (improve slowly at first but then make large gains). Positive numbers represent strength of self-approval; negative numbers indicate self-criticism. The graphs in the left panel are the self-evaluative reactions of normal individuals, and those in the right panel are for individuals prone to depression. In both the accelerating and decelerating patterns of improvement the individuals received the same performance score on the last trial to determine how rate of progress influences affective self-evaluation to the same eventual accomplishment. Drawn from data in Simon, 1979.

With success comes pressure to fulfill not only rising personal standards but social expectations. A noted composer put it well when he once remarked that, "The toughest thing about success is that you've got to keep on being a success." Those who experience spectacular early successes often find themselves wrestling with self-doubt and despondency if their later work falls short of their earlier triumphs. The Nobel Laureate Linus Pauling prescribed the absolute remedy for the woes of belittling self-comparison. When asked what one does after winning a Nobel Prize, he replied, "Change fields, of course!" The self-evaluation problem with spectacular accomplishments is by no means confined to creative endeavors. After a phenomenal long jump that shattered the existing world record by two feet, Bob Beamon avoided disappointment by never jumping again.
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 is needed that differentiates the conditions under which negative discrepancies will motivate, depress, or induce apathy.

Social cognitive theory posits that 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, 1986). Whether negative discrepancies are motivating or depressing will depend on one’s belief that one can match them. Negative disparities are likely to give rise to high motivation and low despondent mood for people who believe they have the efficacy to fulfill a difficult goal and continue to strive for it. Negative disparities are likely to diminish motivation and generate despondent mood for people who judge themselves unable to attain a difficult goal but continue to demand it 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 are likely to display the apathetic reaction. This would be reflected in lowered motivation without despondent mood.

Evidence for these differential processes comes from a study in which students received arbitrary feedback that their attainment on an intellectual task fell considerably short of a goal they had initially adopted (Bandura & Abrams, 1986). Their perceived self-efficacy for goal attainment, self-set goals, mood, and subsequent level of motivation were then measured. Different subgroups were identified in terms of whether they judged their efficacy for goal attainment to be high or low and whether they held to the difficult goal or abandoned it. The subgroups did not differ initially in mood or performance motivation. Figures 18 and 19 show how they changed in despondent mood and motivation after feedback that they had failed to fulfill the standard.

Continued adherence to the stringent goal with perceived inability to fulfill it induced despondent mood (Figure 18). The same
Figure 18. 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–). Drawn from data in Bandura & Abrams, 1986.

Figure 19. Percentage change in level of motivation 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–). Drawn from data in Bandura & Abrams, 1986.
level of failure did not create despondency in students who judged they could attain the difficult goal and continued to pursue it, or those who viewed the goal as beyond their capabilities and thus lowered their aim.

For men, failure heightened motivation in the perceived self-efficacious goal adherers but attenuated the efforts of the perceived self-inefficacious ones, regardless of whether they were goal adherers or goal abandoners (Figure 19). Failure had a more generalized adverse impact on women. Not only did the perceived self-inefficacious ones find it hard to motivate themselves, but even the self-efficacious goal strivers had difficulty mounting a high level of effort. Other data from control conditions in which students judged their level of productivity in the absence of performance feedback shed some light on the differential gender effects of failure. Women were realists in judging their productivity, whereas men had an inflated view of how much they had produced. This self-enhancing bias in males may account for the gender differences in the motivational impact of failure. Viewed from an inflated perceived level of accomplishment, the failure feedback would be especially jarring for men. The self-efficacious ones redoubled their efforts; the self-inefficacious ones could not get more out of themselves. For women, who downplayed their accomplishments, the negative feedback would simply validate their impression that this was an exceedingly difficult task at which to excel.

Thus far the discussion has been concerned with depression arising from perceived self-inefficacy to fulfill valued standards of achievement. Perceived inability to control other things people long for can also be depressing. This may involve inefficacy to cultivate social relationships (Holahan & Holahan, 1987a, 1987b; Stanley & Maddux, 1986), manage child rearing demands (Cutrona & Troutman, 1986; Oloff & Aboud, 1991), or handle other aspects of life that mean a great deal (Devins et al., 1982; Rosenbaum & Hadari, 1985). The greater the perceived self-inefficacy, the greater the depression.

Two biasing processes have been postulated in explaining how mood can affect self-efficacy judgment. According to the affective priming theory proposed by Bower, past successes and failures are stored as memories along with their affect (Bower, 1983). The set of memories provides the data base on which judgmental processes operate. Mood activates, through an associative mood network, the
subset of memories congruent with it. Thus negative mood activates the failure subset, whereas a positive mood activates the success subset. The spread of activation from the emotion node makes mood-congruent memories salient. Self-appraisal of efficacy is enhanced by selective recall of past successes but diminished by recall of failures. In the cognitive priming view, specific successes or failures that induce the affect also produce cognitions that cue thoughts of other past successes and failures. This view places greater emphasis on the thought content of the inducing event than on the aroused affect as the primer of other positive or negative thoughts. Cognitive availability biases self-efficacy judgment.

Kavanagh and Bower (1985) have shown that, indeed, induced positive mood enhances perceived self-efficacy, whereas despondent mood diminishes it (Figure 20). The effect of induced mood on self-efficacy judgment is widely generalized across diverse domains of functioning.

![Figure 20](image)

**Figure 20.** Mean strength of self-perceived efficacy across heterosexual, social, and athletic domains of functioning when efficacy judgments were made in a positive, neutral, or negative mood state. From Kavanagh & Bower, 1985, p. 515. Reprinted by permission of Plenum Publishing Corporation.
Mood and perceived self-efficacy undoubtedly influence each other bidirectionally. Kavanagh (1983) tested whether inducing events exert their effects on self-efficacy judgment through affective or cognitive priming. Happy and sad moods were induced by vivifying either a personal triumph or failure or a positive or negative fortuitous experience devoid of successful or failed efforts. The results, though qualified by gender differences, indicate that affect, rather than thought content, is the main carrier of the effect. Self-appraisal of efficacy was raised in a positive affect state and lowered in a negative affect state, regardless of whether the affect was induced fortuitously or through succeeded or failed effort. People then acted in accordance with their mood-altered efficacy beliefs, choosing more challenging tasks in a self-efficacious frame of mind than if they doubted their efficacy. The relation between perceived efficacy and challenge seeking is strongest under fortuitously induced affect. Despondency can thus lower self-efficacy beliefs, which weaken motivation and spawn poor performance, breeding even deeper despondency. In contrast, by raising perceived self-efficacy that heightens motivation and performance accomplishments, good mood can set in motion an affirmative reciprocal process.

Self-Regulatory Mechanisms in Anxiety-Related Motivation

Theories of motivation have traditionally emphasized the motivating influence of fear or anxiety (Dollard & Miller, 1950; Mowrer, 1960). Most of the research on anxiety as a motivator has been conducted within the framework of the two-factor theory. In this view, painful paired experiences create threats capable of arousing an anxiety drive that motivates defensive behavior. Defensive behavior that forestalls or removes the threat is reinforced by the resultant anxiety reduction.

Considerable research using a variety of procedures shows both aspects of the dual-process theory to be seriously wanting (Bandura, 1988b; Bolles, 1975; Herrnstein, 1969; Schwartz, 1978). Autonomic arousal is the principal index of a state of anxiety. The evidence reveals that anxiety is not the motivator of defensive behavior, nor does removal of threats by defensive behavior necessarily
strengthen it. More recently, anticipation of anxiety is invoked as the motivator. However, anticipated anxiety is ill equipped to assume the motivational function in that visualization of a bodily state can hardly serve as a motivator when the actual state does not do so.

It is interesting to speculate on why the belief that anxiety arousal controls avoidant behavior remains firmly entrenched in psychological thinking despite substantial evidence to the contrary. A possible answer lies in the force of confirmatory biases in judgments of causality (Nisbett & Ross, 1980). Confirming instances in which anxiety and avoidance occur jointly remain highly salient, whereas nonconfirming instances in which anxiety and approach behavior occur together or avoidance occurs without anxiety tend to be disregarded. It is not that the nonconfirming instances are any less prevalent. Quite the contrary. People commonly perform risky activities in spite of high anxiety. Thus, for example, actors with acute stage fright strut on stage, athletes engage in dangerous competitive activities while in a state of agitated apprehension, and students take intimidating examinations although beset by intense anticipatory anxiety. Similarly, people regularly take self-protective action without waiting for anxiety to impel them to action. They strap on seat belts to prevent injury, disinfect things to protect against infections, and disconnect electrical appliances before repairing them without having to conjure up an anxious state to move them to action. These types of disconfirming occurrences tend to be ignored in judging the relation between anxiety and avoidant behavior.

PERCEIVED SELF-EFFICACY IN ANXIETY AROUSAL

In social cognitive theory (Bandura, 1986), perceived ability to control potentially threatening events plays a central role in anxiety arousal and coping behavior. Threat is not a fixed property of situational events. Nor does appraisal of the likelihood of aversive happenings rely solely on reading external signs of danger or safety. Rather, threat is a relational property concerning the match between perceived coping abilities and potentially aversive aspects of the environment. Therefore, to understand people's appraisals of external threats and their affective and behavioral reactions to them it is nec-
sary to analyze their judgments of their coping abilities, which in
large part determine the subjective perilousness of environmental
events.

People who believe they can control potential threats do not
conjure up perturbing cognitions. But those who believe they can-
not experience high levels of anxiety arousal. They dwell on their
coping deficiencies, view many aspects of their environment as
fraught with danger, magnify possible threats, and worry about
perils that rarely, if ever, happen. Through such ineffectuals
thought they distress themselves and constrain and impair their
level of functioning (Lazarus & Folkman, 1984; Meichenbaum, 1977;
Sarason, 1975).

Several converging lines of evidence corroborate the influential
role of perceived control in anxiety and stress reactions (Averill,
1973; Levine & Ursin, 1980; Miller, 1980). A sense of personal control
can be achieved either behaviorally or cognitively. In behavioral con-
tral, individuals do things that forestall or attenuate aversive events.
In cognitive control, they operate under the belief that they can
manage threatening situations should they arise. Although actual
and perceived control are clearly distinguishable at the operational
level, there is often substantial variance between perception and ac-
tuality. Perceived self-efficacy operates anticipatorily in regulating
anxiety arousal in both forms of control.

Being able to control potential threats can diminish anxiety be-
cause the ability is used to reduce or prevent painful experiences.
But stress reduction by behavioral control involves much more than
simply curtailing painful events. The experiences accompanying
the exercise of behavioral control produce substantial cognitive changes
in perceived self-efficacy that continue to affect autonomic arousal
after the behavioral episodes have ceased (Bandura, Cioffi, Taylor, &
Brouillard, 1988). In the study cited, perceived self-ef-
ficacious ones experienced a high level of subjective stress and
autonomic arousal (Figure 21). Simply appraising one's capabilities
after the problem solving activity was over activated divergent au-
tonomic reactions—a rise in autonomic arousal in the perceived self-
inefficacious group and a sharp drop in the perceived self-efficacious group. The greater the increase in perceived self-efficacy the larger the drop in autonomic arousal.

In some studies of behavioral control, threatening events occur undiminished but are promptly transformed to nonaversive ones when their occurrence is personally controlled (Gunnar–von Gnechten, 1978). Here it is simply the exercise of initiatory control, not the curtailment of the events themselves, that reduces anxiety.
The anxiety-reduction effects stem from the sense of personal control rather than from increased predictability of aversive events (Gunnar, 1980). That a sense of control can diminish anxiety, even across markedly different domains of functioning, is strikingly demonstrated by Mineka, Gunnar, and Champoux (1986) in a developmental study. Monkeys who had been reared from birth under conditions in which they exercised control over access to food showed little fear or avoidance of novel threats months later, whereas the same threats were highly frightening to monkeys who could not develop a sense of control because food had been given to them independent of their actions. In situations in which the opportunity to wield behavioral control exists but is not exercised, it is the self-knowledge that one can exercise control that should one choose rather than its application that reduces anxiety reactions (Glass, Reim, & Singer, 1971). The power of unexercised illusory behavioral control to attenuate anxiety arousal was corroborated by Sanderson, Rapee, and Barlow (1989) in a study in which agoraphobics were equally exposed to panic-provoking stimuli. Exposure to the stimuli when subjects had freedom to use an illusory mode of control but never applied it rarely induced panic attacks, whereas under conditions of uncontrollability panic attacks and catastrophic cognitions were very frequent.

The converging lines of evidence indicate that much of the anxiety-reducing effects of behavioral control stem anticipatorily from perceived ability to control aversive events rather than simply from attenuating them when they occur. Therefore perceived control even without the actuality reduces anxiety. People who are led to believe they have some control over painful stimuli display lower autonomic arousal and less performance impairment than do those who believe they lack personal control, even though they are equally subjected to the painful stimuli (Geer, Davison, & Gatchel, 1970; Glass, Singer, Leonard, Krantz, & Cummings, 1973). Repeated failures arouse anxiety when ascribed to personal incapability, but the same painful experiences leave people unperturbed if ascribed to situational factors (Wortman, Panciera, Shusterman, & Hibscher, 1976).

That perceived self-efficacy operates as a cognitive mediator of anxiety arousal has been tested by creating different levels of perceived efficacy in phobics and relating them at a microlevel to differ-
ent manifestations of anxiety as the subjects cope with phobic threats. People display little affective arousal while coping with potential threats they regard with high efficacy. But as they confront threats for which they distrust their coping efficacy, subjective stress mounts, heart rate accelerates, and blood pressure rises (Bandura, Reese, & Adams, 1982). Understanding of the physiological mechanisms through which self-percepts of efficacy affect anxiety arousal was carried one step further by linking strength of perceived self-efficacy to release of catecholamines (Bandura, Taylor, Williams, Mefford, & Barchas, 1985). As in the previous research, after the range of perceived self-efficacy in phobics was expanded by modeling, phobics were presented with coping tasks they judged to be in their perceived low, medium, or high self-efficacy range. Epinephrine, norepinephrine, and dopac levels were low when phobics coped with tasks in their high perceived self-efficacy range (Figure 22). Self-doubt about coping efficacy produced substantial increases in these catecholamines. When presented with tasks that exceeded their perceived coping capabilities, the phobics instantly rejected them. Catecholamines dropped sharply. The dopac response differs markedly from that of the other catecholamines. Whereas epinephrine and norepinephrine dropped upon rejection of the threatening task, dopac rose to its highest level, even though the phobics had no intention of coping with the task. Dopac seems to be triggered by the mere apperception that environmental demands overwhelm one’s perceived coping capabilities.

In each of the preceding experiments, after level of anxiety is measured as a function of perceived self-efficacy, a guided mastery procedure is used to strengthen perceived coping self-efficacy to the maximum level for all previous levels of threat. When the different coping tasks are readministered, the previously intimidating threats no longer elicit differential autonomic or catecholamine reactivity. The combined results are consistent in showing that anxiety reactions to coping tasks differ when perceived self-efficacy differs but that anxiety reactions to the identical tasks are the same when perceived self-efficacy is raised to the same maximum level. Thus, perceived mismatch between perceived coping capabilities and task demands rather than the properties inherent in the tasks themselves is the source of variation in anxiety reactions. Perceived coping efficacy determines the subjective perilousness of environmental situa-
Figure 22. Median level of plasma catecholamine secretion as a function of perceived coping self-efficacy. From Bandura, Taylor, Williams, Mafford, & Barchas, 1985, p. 410. Copyright 1985 by the American Psychological Association. Reprinted by permission of the publisher.
tions. People view contact with potential threats as hazardous when they believe they cannot manage them safely, but they regard such encounters as nondangerous when they believe they can wield control over them.

THOUGHT CONTROL EFFICACY IN ANXIETY AROUSAL

Human activities are rarely devoid of risk. Moreover, many deleterious events are not completely under personal control. For example, even highly self-efficacious drivers may experience some apprehension on busy thoroughfares because they cannot always spot reckless drivers or forestall others from ramming them. It is therefore natural to give some thought to potential risks in any undertaking and to feel uneasy about them. But where the risks are extremely low, it is dysfunctional to magnify subjective dangers or to ruminate apprehensively to the point where it creates self-inflicted misery and impairs psychosocial functioning.

Perceived self-efficacy in thought control is a key factor in regulating cognitively generated arousal. Reducing vulnerability to distress through control over one’s own consciousness is summed up well in the proverb: “You cannot prevent the birds of worry and care from flying over your head. But you can stop them from building a nest in your head.” Studies of the effects of different properties of cognitions reveal that it is not the sheer frequency of disturbing cognitions, but the perceived inability to turn them off that is a major source of distress (Churchill & McMurray, 1990; Kent, 1987; Salkovskis & Harrison, 1984). Thus, the frequency of aversive cognitions is unrelated to anxiety level when variations in perceived thought control efficacy are partialed out, whereas perceived thought control is strongly related to anxiety level when frequency of frightful cognitions is partialed out (Kent & Gibbons, 1987). That perceived inefficacy to control highly intrusive thoughts is the major source of distress receives additional support in the research of Dickerson and his associates (Edwards & Dickerson, 1987; England & Dickerson, 1988). They found that a sense of inefficacy to turn off positive intrusive thoughts is just as distressing and attentionally disruptive as perceived inefficacy to turn off negative ones.
PERCEIVED SELF-EFFICACY AND AVOIDANT BEHAVIOR

Perceived coping self-efficacy regulates avoidance behavior in risky situations as well as anxiety arousal. The stronger the perceived coping self-efficacy, the more venturesome the behavior, regardless of whether self-beliefs of efficacy are strengthened by guided mastery experiences, modeling of coping strategies, or cognitive simulations of successful management of threats (Bandura, 1988a). The role of perceived self-efficacy and anxiety arousal in the causal structure of avoidant behavior has been examined in a number of studies. The results show that people base their actions on self-beliefs of efficacy in situations they regard as risky. Williams and his colleagues (Williams, 1987; Williams, Dooseman, & Kleifield, 1984; Williams, Kinney, & Falbo, 1989; Williams & Rappoport, 1983; Williams, Turner, & Peer, 1985) have analyzed by partial correlation numerous data sets from studies that measured perceived self-efficacy, anticipated anxiety, and phobic behavior. Perceived self-efficacy accounts for a substantial amount of variance in phobic behavior when anticipated anxiety is partialled out, whereas the relation between anticipated anxiety and phobic behavior essentially disappears when perceived self-efficacy is partialled out (Table 1). Studies of other threatening activities similarly demonstrate the predictive superiority of perceived self-efficacy over perceived dangerous outcomes in level of anxiety arousal (Hackett & Betz, 1985; Seligman, 1983; McAuley, 1985; Williams & Watson, 1985).

The dual control of anxiety arousal and behavior by perceived coping efficacy and thought control efficacy is revealed in a study of the mechanisms governing personal empowerment over pervasive social threats (Ozer & Bandura, 1990). Sexual violence toward women is a prevalent problem. Because any woman may be a victim, the lives of many women are distressed and constricted by a sense of inefficacy to cope with the threat of sexual assault. To address this problem at a self-protective level, women participated in a mastery modeling program in which they mastered the physical skills to defend themselves effectively against sexual assailants. Mastery modeling enhanced perceived coping self-efficacy and cognitive control efficacy, decreased perceived vulnerability to assault, and reduced the incidence of intrusive aversive thoughts and anxi-
Table 1
Comparison of the Relation Between Perceived Self-Efficacy and Coping Behavior When Anticipated Anxiety Is Controlled, and the Relation Between Anticipated Anxiety and Coping Behavior When Perceived Self-Efficacy Is Controlled

<table>
<thead>
<tr>
<th>Coping Behavior</th>
<th>Anticipated Anxiety With Self-Efficacy Controlled</th>
<th>Perceived Self-Efficacy With Anticipated Anxiety Controlled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Williams &amp; Rappoport (1983)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretreatment 1†</td>
<td>-.12</td>
<td>.40*</td>
</tr>
<tr>
<td>Pretreatment 2</td>
<td>-.28</td>
<td>.59**</td>
</tr>
<tr>
<td>Posttreatment</td>
<td>.13</td>
<td>.45*</td>
</tr>
<tr>
<td>Follow-up</td>
<td>.06</td>
<td>.45*</td>
</tr>
<tr>
<td>Williams, Dooseman, &amp; Kleifeld (1984)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretreatment</td>
<td>-.36*</td>
<td>.22</td>
</tr>
<tr>
<td>Posttreatment</td>
<td>-.21</td>
<td>.59***</td>
</tr>
<tr>
<td>Williams, Turner, &amp; Peer (1985)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretreatment</td>
<td>-.35*</td>
<td>.28</td>
</tr>
<tr>
<td>Posttreatment</td>
<td>.05</td>
<td>.72***</td>
</tr>
<tr>
<td>Follow-up</td>
<td>-.12</td>
<td>.66***</td>
</tr>
<tr>
<td>Telch et al. (1985)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretreatment</td>
<td>-.56***</td>
<td>-.28</td>
</tr>
<tr>
<td>Posttreatment</td>
<td>.15</td>
<td>.48**</td>
</tr>
<tr>
<td>Follow-up</td>
<td>-.05</td>
<td>.42*</td>
</tr>
<tr>
<td>Kirsch et al. (1983)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretreatment</td>
<td>-.34*</td>
<td>.54***</td>
</tr>
<tr>
<td>Posttreatment</td>
<td>-.48**</td>
<td>.48**</td>
</tr>
<tr>
<td>Arnow et al. (1985)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretreatment</td>
<td>.17</td>
<td>.77***</td>
</tr>
<tr>
<td>Posttreatment</td>
<td>-.08</td>
<td>.43*</td>
</tr>
<tr>
<td>Follow-up</td>
<td>-.06</td>
<td>.88**</td>
</tr>
<tr>
<td>Williams, Kinney, &amp; Falbo (1989)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Midtreatment</td>
<td>-.15</td>
<td>.65***</td>
</tr>
<tr>
<td>Posttreatment</td>
<td>.02</td>
<td>.47**</td>
</tr>
<tr>
<td>Follow-up</td>
<td>-.03</td>
<td>.71***</td>
</tr>
</tbody>
</table>

*p<.05. **p<.01. ***p<.001.
†The pretreatment phases of some of these experiments include only subjects selected for severe phobic behavior. They have a uniformly low sense of coping efficacy. In such instances, the highly restricted range of self-efficacy scores tends to lower the correlation coefficients in pretreatment phases.
Figure 23. Path analysis of the causal structure. The numbers on the paths of influence are the significant standardized path coefficients; the numbers in parentheses are the significance levels. The solid line to behavior represents avoidant behavior, the broken line represents participant behavior. From Ozer & Bandura, 1990, p. 483. Copyright 1990 by the American Psychological Association. Reprinted by permission of the publisher.

...tory arousal. These changes were accompanied by increased freedom of action and decreased avoidant social behavior. Path analysis of the causal structure revealed a dual path of regulation of behavior by perceived self-efficacy: one path of influence was mediated through the effects of perceived coping self-efficacy on perceived vulnerability and risk discernment; the second path of influence operated through the effect of perceived cognitive control self-efficacy on intrusive aversive thoughts (Figure 23). A strong sense of coping efficacy rooted in performance capabilities enhanced perceived self-efficacy to abort the escalation or perseveration of perturbing cognitions. Belief in personal capability to exercise control over potential threats makes it easier to dismiss intrusive aversive thoughts.

The evidence taken as a whole indicates that anxiety arousal and avoidant behavior are largely effects of perceived coping inefficacy rather than being causally linked. People avoid potentially threatening situations and activities not because they experience anxiety arousal or anticipate they will be anxious, but because they believe they will be unable to cope with situations they regard as risky. They take self-protective action regardless of whether they happen to be anxious at the moment. They often engage in risky activities at lower strengths of perceived self-efficacy despite high anxiety arousal as long as they entertain some prospect of success (Bandura, 1988b).
Self-Regulatory Mechanisms in Moral Motivation

The earlier discussion analyzed the mechanisms through which aspirational standards regulate motivation and personal accomplishments. In areas of functioning involving achievement striving and cultivation of competencies, the internal standards that are selected 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, violating moral standards is likely to generate much stronger affective self-reactions than is falling short of achievement standards.

Until recently, psychological interest in the domain of morality has centered almost exclusively on analyses of moral thought (Kohlberg, 1984). The conspicuous neglect of moral conduct reflects both the rationalistic bias of many theories of morality and the convenience of investigatory method. It is much easier to examine how people reason about hypothetical moral dilemmas than to study their actual conduct. But it is the morality reflected in conduct rather than that stated in moral pretensions that should be of central concern. People suffer from the wrongs done to them, however perpetrators might justify their harmful actions. A comprehensive theory of morality must explain how moral reasoning, in conjunction with other psychosocial factors, governs moral motivation and conduct.

Space does not permit a detailed exposition of moral motivation. The social cognitive theory of moral motivation has been presented elsewhere (Bandura, 1991b), and will only be summarized briefly here. 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 satisfaction and self-respect, and they refrain from transgressing because it gives rise to self-reproach. Societal codes and sanctions articulate collective moral imperatives as well as influenc-
ing social conduct. However, external sanctions are limited in their deterrent power because most transgressions 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 regulating moral conduct.

CONCEPTION OF MORAL AGENCY IN TERMS OF SELF-REGULATORY MECHANISMS

In the course of socialization, people develop moral standards from a variety of influences (Bandura, 1986). They base standards for judging their own conduct partly on how significant persons in their lives react to it. Standards are influenced through direct instruction in the precepts of conduct as well as through the evaluative reactions of others toward one’s actions. People not only prescribe self-evaluative standards for others, they also exemplify them in responding to their own behavior. The power of modeling in influencing standards of conduct is well documented.

The development of personal standards is a dynamic process (Bandura, 1991b). People do not passively absorb standards of conduct from whatever influences happen to impinge upon them. Rather, they construct generic standards from the numerous evaluative rules that are prescribed, modeled, and taught. The process is complicated because people often differ in the standards they model, and even the same person may model different standards in different social settings and domains of conduct. Moreover, those who serve as socialization influencers, whether designedly or unintentionally, often display inconsistencies between what they practice and what they preach. Personal standards must therefore be constructed within a network of conflicting social influences. Once standards are acquired, they guide and deter conduct by the consequences people produce for themselves (Bandura, 1986; Kurtines & Gewirtz, 1984).

Explanation of the relation between moral reasoning and conduct must specify the psychological mechanisms by which moral standards get translated into actions. In the stage theory of moral maturity (Kohlberg, 1971), the form of moral thought is not linked to
particular conduct. Level of moral maturity determines the type of reasons given for actions, not what actions should be taken. Thus each level of moral reasoning can be used to support or to disavow transgressive conduct. People may act prosocially or transgressively out of mutual obligation, for social approval, out of duty to a social order, or for reasons of principle. Immorality can be served as well—or better—by sophisticated reasoning as by simpler reasoning. Indeed, when people reason about moral conflicts they actually face in their environment, Kohlberg and his associates find that moral reasoning is more a function of the social influences operating in the situation than of stages of “moral competence” (Higgins, Power, & Kohlberg, 1984).

In social cognitive theory, moral conduct is regulated mainly by mechanisms of self-reactive influence. Moral agency operates through a set of psychological subfunctions. To influence their own conduct people have to monitor what they do. However, self-monitoring alone provides little basis for self-directed reactions. 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, its base rate of occurrence, and the degree of norm violation; 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, therefore, people must extract, weight, and integrate the morally relevant information in the situations confronting them. Factors that weigh heavily under some combinations of circumstances 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 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). We saw earlier that they contribute importantly to the development of self-regulatory functions. 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 social influences contribute to morality is by providing collective support for adherence to moral standards. The third way social realities affect moral functioning is by promoting selective activation and disengagement of moral self-regulation. I 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. 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 consequences arises when individuals are socially punished for behavior they highly value (Bandura, 1973). Principled dissenters and non-conformists often find themselves in this predicament. Here the relative strength of self-approval and social censure determines whether the behavior will be restrained or expressed. Should the threatened social consequences be severe, people hold self-praiseworthy acts in check 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-devalutative consequences outweigh the benefits of socially accommodating behavior, the social influences do not have much sway. The self-regulation of conduct operates through conditional application of moral standards, however. Self-sanctions can 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 injurious 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 permit different types of conduct with the same moral standards. Figure 24 shows the points in the self-regulatory process at which internal moral control can be disengaged from detrimental control.

These mechanisms of moral disengagement have been examined most extensively in the expression of aggressive conduct. But selective disengagement of moral self-sanctions is by no means confined to extraordinary inducements to aggression. People often experience conflicts in which behavior they themselves devalue 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. But 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, 1990b; Sanford & Comstock, 1971).
People then act on a moral imperative. Over the years, much reprehensible and destructive conduct has been perpetrated by ordinary, considerate people in the name of religious principles, righteous ideologies, and nationalistic imperatives (Rapoport & Alexander, 1982). Voltaire described this process well when he noted that "Those who can make you believe absurdities can make you commit atrocities."

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. Laboratory studies attest to the disinhibitory power of euphemistic language. People behave much more inhumanely when reprehensible behavior is given a sanitized label than when it is called what it is (Diener, Dineen, Endresen, Beaman, & Fraser, 1975). In an insightful analysis of the language of nonresponsibility, Gambino (1973) identifies the different varieties of euphemisms. Pal-
liative 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 one would ordinarily deplore can be made righteous by advantageous comparison with flagrant inhumanities. The more outrageous the comparison practices, the more likely it is that one's own destructive conduct will appear trifling or even benevolent. Advantageous historical comparisons are also often invoked to reconstrue and justify reprehensible conduct.

Cognitive restructuring of behavior through moral 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-deterrents 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 not ambiguous. 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 et al., 1975; Milgram, 1974). Under displacement of responsibility, people view their actions as springing from the dictates of authorities rather than feeling personally responsible for them. Since they do not regard themselves as the actual agents 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; Tilkert, 1970).

In laboratory studies of disengagement of self-sanctions through displacement of responsibility, authorities explicitly authorize injurious actions and hold themselves fully accountable for the harm
caused (Milgram, 1974). However, in the sanctioning practices of everyday life responsibility for detrimental conduct is rarely assumed so explicitly, because only obtuse authorities would leave themselves accusable of authorizing reprehensible acts. Sanctioners create self-absolving operations to escape not only adverse social consequences to themselves should advocated courses of action miscarry, but the loss of self-regard for sanctioning harmful practices. Therefore authorities usually invite and support detrimental conduct in insidious ways that minimize personal responsibility for what is happening.

Obedient functionaries do not cast off all responsibility for their behavior as though they were mindless extensions of others. It requires a strong sense of responsibility to be a good functionary. In situations involving displaced responsibility, people carry out orders partly to honor the obligations they have undertaken (Mantell & Panzarella, 1976). Therefore one must distinguish two levels of responsibility—duty to one’s superiors and accountability for the effects of one’s actions. The self system operates most efficiently in the service of authority when followers assume personal responsibility for being dutiful executors while relinquishing personal responsibility for the harm caused by their behavior. Followers who disowned responsibility without being bound by a sense of duty would be quite unreliable.

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. Most enterprises require the services of many people, each performing fragmentary jobs that seem harmless in themselves. The fractional contribution is easily isolated from the eventual function, especially when participants exercise little personal judgment in carrying out a subfunction that is related to the end result by remote, complex links. After activities become routinized into programmed subfunctions, attention shifts from the moral import of what one is doing to efficient engrossment in the details of one’s fractional 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. Collective action is still another diffusion expedient for weakening self-restraints. Any harm done by a group can always be ascribed, in large part, to the behavior of other members. People therefore act more harshly when responsibility is obfuscated by a collective instrumentality than when they hold themselves personally accountable for what they do (Bandura, Underwood, & Fromson, 1975; Diener, 1977; Zimbardo, 1969).

Additional ways of weakening self-deterring reactions operate through disregard for or distortion of consequences of action. When people choose 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 information given them about the potential benefits of the behavior but are less able to remember its harmful effects (Brock & Buss, 1962, 1964). People are especially prone to minimize injurious effects when they act alone and thus cannot easily escape responsibility (Mynatt & Herman, 1975). 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. Most social systems involve hierarchical chains of command in which superiors formulate plans and intermediaries transmit them to executors, who then carry them out. Disengagement of personal control is easiest for the intermediaries in a hierarchical system—they are either responsible for major decisions nor are party to their execution or personal witnesses of the effects (Kilham & Mann, 1974).

The final set of disengagement practices operates on the victims 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 acted upon. To perceive another as human enhances empathetic or vicarious reactions through perceived similarity (Bandura, 1991c). 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 dehu-
manized, they are no longer viewed as persons with feelings, hopes, and concerns but rather are seen as subhuman objects. If dispossessing antagonists of humanness does not blunt self-reproof, it can be eliminated by attributing bestial qualities to them (Gibson & Haritos-Fatouros, 1986; Ivie, 1980). When persons are given punitive power, they treat dehumanized individuals much more punitively than those who have been invested with human qualities (Bandura, Underwood, & Fromson, 1975).

Under certain conditions, exercising institutional power changes the agents in ways that are conducive to dehumanization. This happens most often when persons in positions of authority have coercive power over others and adequate safeguards for constraining the behavior of powerholders are lacking. Powerholders come to devalue those they control (Kipnis, 1974). Systematic tests of relative influences similarly show that social influences conducive to punitiveness exert considerably greater sway over aggressive conduct than do personal characteristics (Larsen, Coleman, Forges, & Johnson, 1971). The overall findings from research on the different mechanisms of moral disengagement corroborate the historical chronicle of large-scale inhumanities: it takes conducive social conditions rather than monstrous people to produce heinous deeds. Given appropriate social conditions, decent, ordinary people can be led to do extraordinarily cruel things.

Psychological research tends to focus extensively on how easy it is to bring out the worst in people through dehumanization and other self-exonerative means. However, of considerable theoretical and social significance is the power of humanization to counteract cruel conduct. Studies examining this process reveal that it is difficult for individuals to behave cruelly toward others when they are humanized or even personalized a bit. Such maltreatment would activate strong self-condemning reactions (Bandura, Underwood, & Fromson, 1975).

Imputing blame to one's antagonists is still another expedient that can serve in self-exoneration. In this process, people regard themselves as faultless self-defenders compelled to coercive action by forcible provocation. Injurious conduct thus becomes a justifiable defensive reaction to willful or foolish provocation. Self-exoneration can be similarly achieved by viewing one's injurious conduct as forced by circumstances rather than as a personal decision. By blam-
ing others or circumstances, not only are one's own actions made excusable, but one can even feel self-righteous.

Most of the research on attributional analysis of moral judgment is concerned with whether people view their behavior as determined by external circumstances or hold themselves responsible for it (Ross & DiTecco, 1975; Rule & Nesdale, 1976). Perceptions of causal responsibility are reduced if the harmful consequences of actions are viewed as unintended or unforeseeable, or if the actions arose from the dictates of the situation. Within the attributional framework, these factors are usually studied as mitigators of moral judgment rather than as disengagers of moral self-sanctions.

CONCLUDING COMMENT

The converging lines of evidence reviewed in this chapter testify to the paramount role self-regulatory mechanisms play in human motivation 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 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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