A Theory of Goal Setting & Task Performance

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Self-Regulation through Goal Setting

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The extant literature on goal setting through 1990 has been reviewed and integrated by Locke and Latham (1990a). The result was the development of a theory of goal setting with special emphasis on its practical implications for the motivation of employees in organizational settings. The purpose of the present paper is twofold. First, the theory is summarized and updated with respect to research completed since publication of the 1990 book. Second, the self-regulatory effects of goal setting are described. Emphasis is given to ways that people can use goals as a self-management technique.

GOAL SETTING THEORY

Goal setting theory (Locke & Latham, 1984, 1990a) is based on the simplest of introspective observations, namely, that conscious human behavior is purposeful. It is regulated by the individual's goals. Goal directedness, however, characterizes the actions of all living organisms including those of plants. Thus the principle of goal-directed action is not restricted to conscious action.

Binswanger (1990) has shown that goal-directed action is defined by three attributes: (1) *self-generation:* the source of energy is integral to the organism; (2) *value-significance:* the actions not only make possible but are necessary for an organism's survival; and (3) *goal-causation:* the resulting action is caused by a goal. In the case of vegetative action, goal-directed behavior in the present is caused by past instances of successful goal-directed action. For example a person's heart beats today because it beat successfully (i.e., facilitated survival) yesterday.

The lowest level of goal-directed action is physiologically controlled (e.g., plants). The next level, present in the lower animals, entails conscious self-regulation through sensory–perceptual mechanisms including

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pleasure and pain. Human beings possess a higher form of consciousness, the capacity to reason. They have the power to conceptualize goals and set long range purposes (Locke, 1969). Purposeful action in human beings is volitional (Binswanger, 1991). Thus, people must choose to discover what is beneficial to their welfare, they must set goals to achieve it, they must choose the means for attaining these goals, and then they must choose to act on the basis of these judgments.

The domain of goal setting theory lies within the domain of purposefully directed action. The theory focuses on the question of why some people perform better on work tasks than others. If they are equal in ability and knowledge, then the cause must be motivational. Goal setting theory approaches the issue of motivation from a first-level perspective; its emphasis is on an immediate level of explanation of individual differences in task performance (Ryan, 1970). The theory states that the simplest and most direct motivational explanation of why some people perform better than others is because they have different performance goals.

Goal setting theory, in sharp contrast to control theory, was developed inductively in that it was based on the accumulated research findings of literally hundreds of studies which were conducted over the past 25 years (Locke, in press). The initial research focused on the hypothesis that goals, given the person has the requisite ability, motivate action. Once this hypothesis was supported, research proceeded in several different directions. The generalizability of the initial findings was investivated by determining whether goal setting worked with different tasks and in different settings. In addition, there were attempts at lateral integration. This involved connecting goal setting with related concepts at the same level of abstraction, such as feedback, participation, incentives, self-efficacy, and satisfaction. Similarly, there were attempts at vertical integration. This involved tying goal setting to broad concepts such as values and personality. The theory also underwent elaborations through attempts to specify the mechanisms by which goal setting affects performance. And finally, attempts were made to identify moderators or boundary conditions for goal setting.

Goal Attributes

Two attributes of goals have been studied in relation to performance, namely *content* and *intensity*. With regard to content, two aspects have been the focus of the research to date. The first is *specificity*.

Goal content can vary on a continuum from vague ("work on this task") to specific ("try for a score of 62 correct on this task within the next 30 minutes"). The second aspect of content that has been studied is *difficulty*. (For an analysis of the effects of different operationalizations of

goal difficulty, see Wright, 1990.) Goals can be easy ("try to get 5 problems completed in the next 30 minutes"), moderate ("try to get 10 . . ."), difficult ("try to get 15 . . ."), or impossible ("try to get 50 . . ."). Difficulty is a concept of relationship; it pertains to the relationship between a person and a task or goal. Thus the same task or goal can be easy for one person and hard for another depending on the person's ability and experience. On the average, however, the higher the absolute *level* of the goal the more difficult it is for a person to achieve it.

Approximately 400 studies have examined the relationship of goal attributes to task performance. It has been found consistently that performance is a linear function of goal difficulty. Given adequate ability and commitment to the goal, the harder the goal the higher the performance. We attribute this finding mainly to the fact that people normally adjust their level of effort to the difficulty of the task undertaken and thus try harder for difficult than for easy goals. A scatter-plot based on some of the earliest studies of goal difficulty (derived from Locke, 1968) is shown in Fig. 1. This linear function is different in shape than the function in Atkinson's (1958) theory which relates *task* difficulty to performance. Atkinson's research showed a performance drop at the highest level of task difficulty, thus yielding an inverse U function. Knowing task difficulty, however, does not reveal the person's goals and thus makes it difficult to predict how well a person will perform the task (Locke &

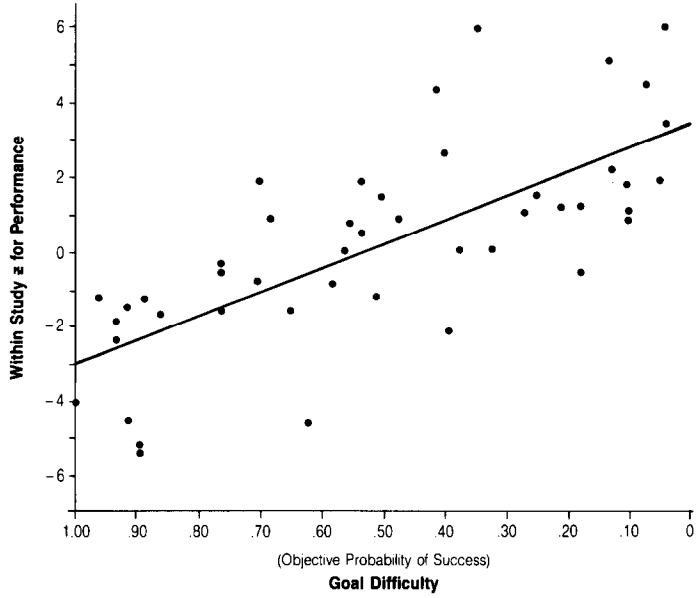

FIG. 1. The relation of goal difficulty to performance (based on Locke, 1968).

Latham, 1990a). Given sufficient ability, goal theory predicts a drop at high goal difficulty levels only if there is a large decrease in goal commitment. Performance levels out, of course, when the limits of ability are reached. The drop that may occur with hard goals on complex tasks is discussed at length below.

In an interesting study, Earley and Erez (1990) found that goals and specific norms function similarly in influencing performance. The norms were communicated as the normal or average performance of other people. If individuals were given specific goals and then different norms a week later, the latter regulated subsequent behavior. The converse occurred when information on norms preceded the assignment of goals. Meyer and Gellatly (1988) found that goals and norms affected each other and performance.

A second consistent finding pertaining to goal content is that specific and challenging or difficult goals lead to a higher level of performance than vague but challenging goals such as "do your best," vague but unchallenging goals, or the setting of no goals. The specific, difficult vs do best goal comparison has been a primary focus of study in goal setting research. The consistent superiority of the former is attributed to the fact that vague goals are compatible with many different outcomes, including ones that are lower than the person's actual best. For example, Kernan and Lord (1989) found that individuals with no specific goals generally evaluated their performance more positively than those with specific, hard goals in response to varying degrees of negative feedback. Mossholder (1980) obtained a similar finding. Similarly, Mento, Locke, and Klein (1990) found that people with do best goals anticipated more satisfaction from virtually every level of anticipated performance than did people with specific, hard goals. Thus maximum effort is not aroused under a do best goal. This is because the ambiguity inherent in doing one's best allows people to give themselves the benefit of the doubt in evaluating their performance. From the standpoint of self-regulation, a specific hard goal clarifies for the person what constitutes effective performance. The person is no longer able to interpret a wide range of performance levels as indicative of excellent performance.

Enumerative reviews of the literature (Latham & Yukl, 1975; Locke, 1968; Locke & Henne, 1986; Locke, Shaw, Saari, & Latham, 1981) found strong support for these first two sets of findings. These reviews also have been corroborated by meta-analysis (e.g., Mento, Steel, & Karren, 1987; Tubbs, 1986).

Evidence for the generalizability of the finding is substantial as well. For example, Latham and Lee (1986) found that the results generalize across laboratory and field settings, quantity and quality criteria, soft and hard criteria, and individual and group goals. Goal setting experiments

have been conducted with 88 different tasks including bargaining, driving, faculty research, health promoting behaviors, logging, maintenance and technical work, managerial work, management training, and safety. In reviewing this literature, Locke and Latham (1990a) found that although more total studies have been done in the laboratory than in field settings (239 vs 156), a greater variety of tasks have been used in field than in laboratory settings (53 vs 35). These data make clear that laboratory findings regarding goal setting generalize very well to field settings. The total number of subjects used in the goal setting studies reviewed by Locke and Latham (1990a) was nearly 40,000. These people included males, females, blacks, whites, managers, students, engineers and scientists, and college professors. While the overwhelming number of these studies were conducted in the United States and Canada, significant findings have been obtained in Australia, the Caribbean, England, Germany, Israel, and Japan. Thus it would appear that goal setting theory is applicable across cultures.

An exception to the usual findings was obtained by Mitchell and Silver (1990). They found no difference between specific, hard vs do best group goals on a task that involved building a tower with blocks. However, the trials were only 15 s in duration, a very short time for the effects of effort and persistence to take effect, especially considering that the task entailed careful balancing and coordination of block placement among members. Mitchell and Silver also found that group goals were superior to individual goals in their tower building task, since it required group cooperation. Using a different task and a longer trial length, Larson and Schaumann (1990) found that specific, hard goals led to better group performance than do best goals on a cooperative task so long as the groups cooperated with one another when it was necessary to do so.

A third content finding, but based on only two studies, is that goal specificity as such (that is, divorced from difficulty) affects the variability of performance (Locke, Chah, Harrison, & Lustgarten, 1989). Assuming performance is controllable, people with very specific goals show less variation in performance than people with vague goals. The reason is the same as that above. Vague goals allow many possible outcomes as compared with specific goals. For example, the goal to "take a walk" is compatible with a walk of 10 feet or 10 miles, whereas a goal of "walk one mile" is explicit for the goal setter.

The second attribute of goals that has been studied extensively is that of *intensity*. Intensity is a broad term referring to the scope, clarity, mental effort, etc., involved in a mental process (Rand, 1990). For example, in their study of goal intensity, Gollwitzer, Heckhausen, and Ratajczak (1990) found that subjects who thought most intensely and comprehensively about how to solve a problem (which involved attaining a

personal goal) were most likely to become committed to solving it and, more importantly, were most likely to take action to solve it.

The major aspect of goal intensity that has been studied in depth is *commitment*. Commitment refers to the degree to which the individual is attached to the goal, considers it significant or important, is determined to reach it, and keeps it in the face of setbacks and obstacles. It must be stressed, however, that the feeling of commitment does not automatically lead one to act in accordance with it. As Salancik (1977) noted, the ultimate proof of goal commitment is the action taken to attain it which in turn reflects the thinking (or lack thereof) which preceded it and the choice to act on that thinking (see Binswanger, 1991).

Goal commitment can operate both as a direct causal factor and as a moderator of performance. These effects are shown in Fig. 2. The direct effect operates when goal difficulty is held constant. Observe in Fig. 2 that when goals are high, high commitment leads to better performance than low commitment. This is because less committed people give up their hard goals in favor of easier ones (Erez & Zidon, 1984). When goals are low, on the other hand, high commitment may restrict performance because committed people will be loathe to raise their goals, whereas uncommitted people may set higher goals (perhaps because they want additional challenge).

The moderator effect is shown by the slopes of the two curves. When there is high goal commitment, there is a strong association between goals

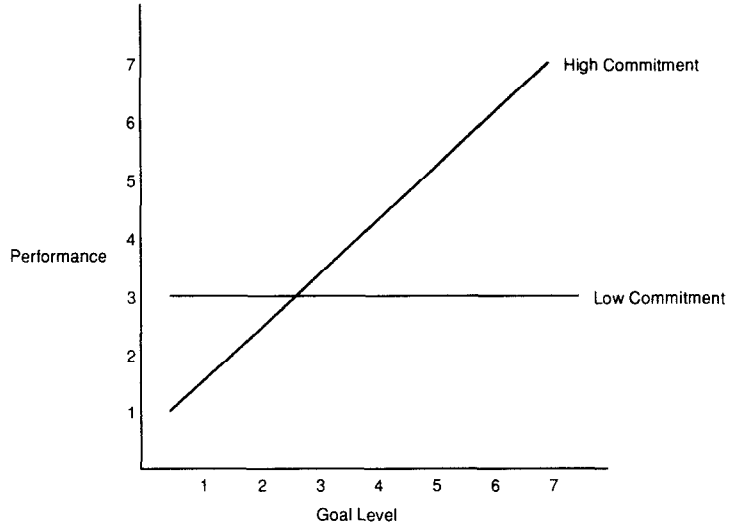

FIG. 2. Main and interaction effects of goals and commitment. Reproduced, by permission of the publisher, from Locke and Latham (1990a).

and performance; people are more likely to do what they say they will do. However, when commitment is low, people do not perform in line with their goals.

In the typical laboratory experiment as well as in many natural settings in which people are rewarded for compliance, gaining goal commitment is rarely a problem. In fact, Bassett (1979) viewed goal commitment as so routine that he argued that a theory of goal rejection rather than of goal commitment should be developed. Thus, it is not surprising that assigning people goals, accompanied by a rationale, leads to as high a level of goal commitment as having people participate in the setting of their goals.

Nevertheless, there has been considerable controversy in the literature concerning the effectiveness of assigned versus participatively set goals in achieving goal commitment and increasing performance on the part of subordinates. A series of 11 studies by Latham and colleagues generally showed little or no difference in the effectiveness of the two goal setting methods. In contrast, several studies by Erez and her colleagues showed that participatively set goals produced greater commitment than did assigned goals. To resolve this disagreement, Latham and Erez, with Locke as mediator, jointly designed a series of 4 studies in which the effect of methodological differences between the Latham and Erez studies were systematically assessed (Latham, Erez, & Locke, 1988). The results revealed that the main reason for the differences in their results was that Erez assigned goals with curt, brief "tell" instructions, whereas Latham assigned goals in a more supportive manner and provided a rationale for them. This "tell and sell" style used by Latham was found to be just as effective in increasing performance as was participation; and both styles were significantly more effective than the "tell" style that had been used by Erez.

More recently, Latham, Winters, and Locke (1991) have suggested that the key benefits of participation are not due to motivation (e.g., goal commitment) but rather to cognition (e.g., task strategy development). Their study found that although participation enhanced a self-report measure of goal commitment, it was not sufficient to make a difference in actual performance. In contrast, participation in developing effective task strategies had substantial effects on performance through the mediating effects of self-efficacy and the quality of the strategies which the subjects developed and used.

Factors which have been found to enhance commitment fall into two broad categories, namely, those which convince people that achieving the goal is *possible* and those which convince them that achieving the goal is *important* or appropriate (Klein, in press). The first class of factors raise the individual's expectancy of success or what Bandura (1982, 1986) has termed self-efficacy. These include ability, experience, training, informa-

tion about appropriate task strategies, past success, and internal attributions (e.g., Earley, 1986a; Hall & Foster, 1977; Locke, Frederick, Lee, & Bobko, 1984; Silver & Greenhaus, 1983).

Managers can play an important role in facilitating goal commitment in subordinates by persuading them that the goals are both attainable and important. This can be done by managers asserting their legitimate authority, conveying normative information, showing that the goals provide opportunities for self-improvement, challenging people to show what they can do, being physically present at the work site, being supportive and trustworthy, providing a convincing rationale for the goal, exerting reasonable pressure for performance, being knowledgeable about the task and job, and serving as a role model for the behavior they desire in the subordinate (e.g., Earley, 1986b; Likert, 1967; Mento *et al.*, 1990; Ronan, Latham, & Kinne, 1973; Podsadoff & Fahr, 1989). For a complete literature review see Locke, Latham, and Erez (1988) and Locke and Latham (1990a).

Goals that are assigned by legitimate authority figures typically influence peoples' personal goals. Instructions to try for a certain goal even carry over to later trials in which people are free to choose whatever goals they want to attain (Locke, Frederick, Buckner, & Bobko, 1984; Locke *et al.*, 1984). These findings are in alignment with Dember (1975), who, after examining the literature on the cognitive aspects of motivation, concluded that in certain settings being asked to do something is tantamount to being motivated to do it. A similar argument has been made by Salancik (1977). He stated that assigned goals lead to goal commitment because listening to the assignment without objection is in itself a form of consent. Moreover, assigning the goal implies that the recipient is capable of attaining it which in turn increases the person's self-efficacy regarding the task.

It should not be concluded from the above that the persuasive requests of authority figures compel commitment. Commitment is still a choice process; it is often easy for the manager to obtain precisely because the goal assignment *is* appraised as legitimate by the subordinate.

Peers can influence goal commitment by conveying normative information, by persuasion, and by serving as role models (Earley & Kanfer, 1985). In addition, they can generate competition.

Agreeing publicly to strive for a goal can also enhance commitment as compared with agreeing to it only in private (Hollenbeck, Williams, & Klein, 1989). Finally, rewards can affect goal commitment, but the manner in which these operate is not fully understood. It appears that large rewards are generally more effective than small ones in this regard; but rewards also interact with goal difficulty. Rewards offered for moderate or easy goals appear to raise commitment to those goals but to lower commitment to impossible goals, perhaps because people resent being

enticed by a bonus which they cannot attain (Mowen, Middlemist, & Luther, 1981; Wright, 1989). Thus bonuses for goal achievement may only be effective if the goals are, in fact, reachable (e.g., moderate). Under piece-rate payment, goals operate in the usual way, with difficult goals leading to the highest level of performance. This is because under piece-rate systems people are paid for performance and not for goal attainment as such (Locke & Latham, 1990a).

In an innovative study, Earley, Shalley, and Northcraft (in press) found that commitment/rejection processing time was longer for moderately difficult goals than for easy or hard goals. When subjects were given the choice, impossible goals were hastily rejected, whereas easy goals were readily accepted. In contrast, subjects required more thought to make a decision regarding commitment to moderate goals.

Goal Choice

The factors that affect goal choice are similar to those that affect goal commitment. The probability of choosing a given goal is increased if the individual thinks that it can be attained either because of ability or past success. People with high self-efficacy are more likely to choose difficult (high) goals than those with low self-efficacy (Locke *et al.*, 1984).

Choice is also affected by the person's belief that a given goal is appropriate or desirable. This can occur when a person is provided with normative information (Meyer & Gellatly, 1988), role models (Rakestraw & Weiss, 1981), competition (Mueller, 1983), or pressure (Andrews & Farris, 1972). However, the most direct method of influencing choice is simply for an authority figure to assign the goals. Not only do subordinates usually consider goal assignment to be legitimate, as noted earlier, but authority figures usually have the power to reward and punish employees for accepting or rejecting the assigned goals. The correlation between assigned and (subsequently) self-set goals is around .50, indicating that goal assignment does affect choice although it obviously does not totally determine choice (Locke & Latham, 1990a). In real life, choosing high goals, if they lead to high performance, is more likely to be rewarded than choosing low goals which lead to low performance and reward (Mento *et al.*, 1990).

Goals, Self-Efficacy, and Performance

We have shown that personal goals affect performance and that assigned goals influence personal goals. It remains to integrate these two concepts with that of self-efficacy. Self-efficacy, a key concept in Bandura's (1986) social–cognitive theory, refers to task-specific self-confidence. It is broader in meaning than effort–performance expectancy in expectancy theory in that self-efficacy includes all factors that could lead one to

perform well at a task (e.g., adaptability, creativity, resourcefulness, perceived capacity to orchestrate complex action sequences). Self-efficacy is measured by asking subjects whether they believe thay can attain each of a graded series of performance levels (self-efficacy magnitude) and by asking them to rate their degree of confidence in attaining each level (self-efficacy strength). It should be noted that some studies of expectancy theory have measured performance expectancy (E_1) in a similar way (Ilgen, Nebeker, & Pritchard, 1981).

It has been shown consistently that self-efficiency has powerful, direct effects on performance (Bandura, 1986). This finding holds when goals are manipulated as well. Thus both goals and self-efficacy have direct, independent effects on performance. In addition to affecting performance directly, self-efficacy can affect it indirectly by affecting personal goal choice and commitment to assigned goals. Finally, assigning goals influences self-efficacy in that people who are assigned challenging goals are more likely to have high self-efficacy than those who are assigned low goals since assigning high goals is in itself an expression of confidence (Salancik, 1977).

The above relationships are summarized in Fig. 3. We have added ability to this figure, because it has been found that it has independent effects on both self-efficacy and performance (Locke *et al.*, 1984). A recent series of studies by Earley and Lituchy (in press) showed considerable support for the model in Fig. 3. In two of the three studies, however, self-efficacy, while showing a significant first order *r*, did not add a significant increment to the performance relationship beyond that provided by goals. In one of these studies (grade performance), the self-efficacy correlation was approximately the same magnitude as that found by Wood and Locke (1987) who had used the same task. However, Wood and Locke's self-efficacy scale was more elaborate and they used a larger number of subjects. In their studies, the self-efficacy increment was significant. There is a possible explanation for the null result in the third study. The task was complex and the self-efficacy measure was taken after only two practice trials. A measure of self-efficacy may not be meaningful this early in the learning process on such a task.

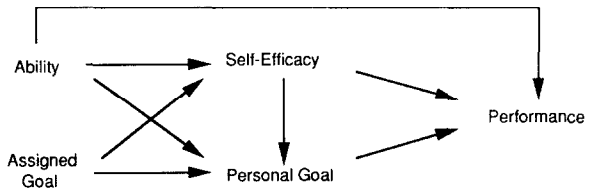

FIG. 3. Relation of ability, self-efficacy, goals, and performance.

Kernan and Lord (1990) claimed that expectancies do not affect performance on single goal tasks; however, they measured expectancy of goal achievement rather than expectancy of attaining each of a number of performance levels. Locke, Motowidlo, and Bobko (1986) have shown that the former is a poor method of measuring expectancy, because the referent for answering the item is different for each goal. Using the latter (performance-anchored) method, the results are significant and quite consistent (Locke & Latham, 1990a).

In contrast to self-efficacy and personal goal level, we have *not* found subjective goal difficulty to be useful in predicting performance (e.g., Yukl & Latham, 1978). The reason, we believe, is that measures of subjective goal difficulty are confounded. On the one hand, they are positively associated with goal level (which would imply a positive association with performance) and, on the other hand, they are negatively associated with self-efficacy (which would imply a negative association with performance). To the degree that the two associations cancel one another out, the net ability to predict performance is small (Locke & Latham, 1990a).

Goals, Valences, and Instrumentalities

Garland (1985) reported a *negative* relationship between goal level and valence measured as expected or anticipated satisfaction with attaining each of a number of performance levels. This finding was replicated by Klein (in press) and in a series of eight studies by Mento *et al.* (1990). The explanation for this finding is that goals are at the same time targets to shoot for and standards for evaluating one's performance (Bandura, 1986). This is shown graphically in Fig. 4. If one views one's goals as minimally acceptable levels of performance (Locke & Bryan, 1968), we can see that a person with low goals will be satisfied with reaching a low level of performance and thus even more satisfied with attaining more than this minimal level. A person with high goals, on the other hand, will be minimally satisfied only with reaching the high goal and thus will be quite dissatisfied with reaching the low goal. The person with moderate goals will be between the other two. Thus goals affect the "calibration" of the satisfaction scale, raising it when the goals are high and lowering it when the goals are low. Self-satisfaction, therefore, is harder to attain when goals are hard than when they are easy.

It might be assumed from this that people, therefore, should set only low goals in life because that would produce more satisfaction with less effort. However, there is another set of factors involved in choosing a goal. As noted above, in the real world, additional rewards typically come to the person who sets and achieves high rather than low goals. Thus high goals are more instrumental in gaining practical as well as psychological benefits than are low goals. Mento *et al.* (1990), for example, asked MBA

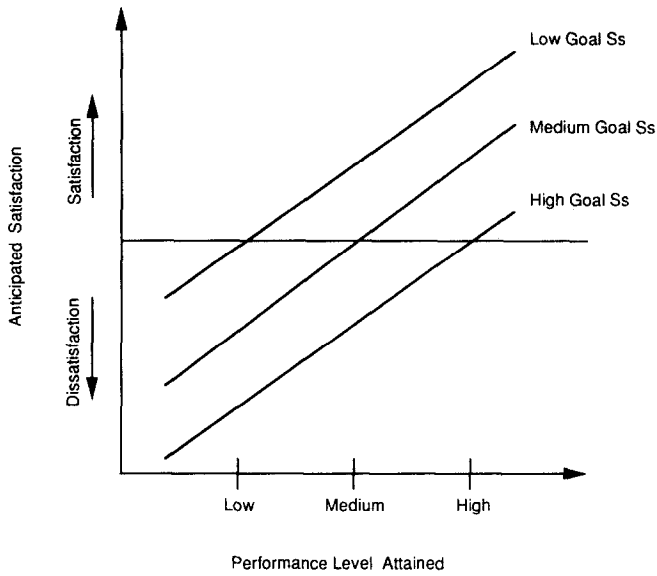

FIG. 4. Idealized valence functions for subjects at three goal levels. Reproduced, by permission of the publisher, from Locke and Latham (1990a).

students what the benefits would be to them of getting an A vs a B vs a C average. Their responses indicated that the higher the grade point average, the greater the anticipated benefits with respect to personal pride, school, future job, and life outcomes.

Figure 5 plots both the mean anticipated satisfaction and instrumentality with attaining each GPA. Observe that valence and instrumentality are related to goal level in opposite directions. The results for pride suggest how these seemingly contradictory results can be conceptually integrated. People who make pride contingent upon attaining high goals will be more motivated to attain them than to attain easy goals if their "higher level" purpose is to attain self-satisfaction. Such people will have to achieve more to be satisfied than a person who sets low goals, and commitment to high goals is reinforced by additional practical benefits. The desire for such benefits also may be tied to higher level values such as life or career ambition and their associated outcomes.

In view of the above, it could be asked why everyone does not set high goals. One answer is suggested in a previous section of this article. People consider not just what they want when setting goals, but what they think they can attain. People with low self-efficacy are unlikely to pursue goals beyond their perceived capability. Second, striving for high goals has costs with respect to effort, time, and other values. Thus goal choice reflects an integration of two types of considerations: those pertaining to

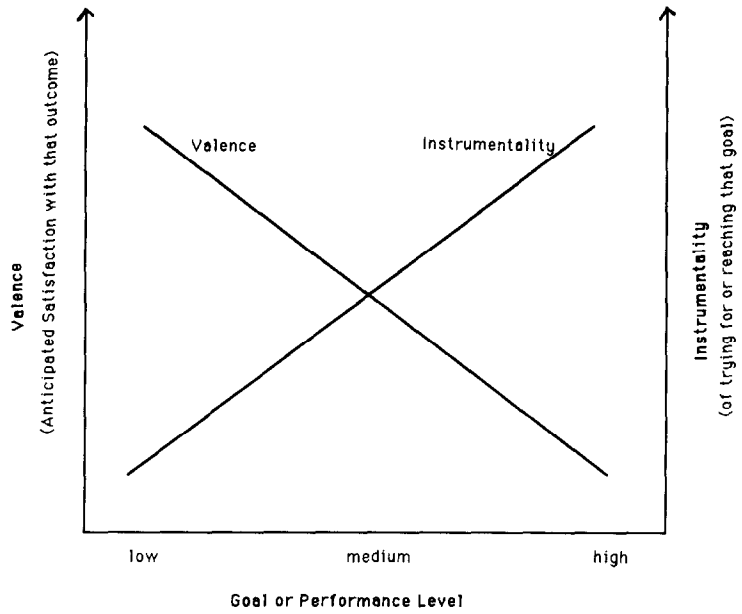

FIG. 5. The relation of valence and instrumentality to goal level.

what is possible and those pertaining to what, among the total array of possibilities, one wants.

Goals and Feedback

Few concepts in psychology have been written about more uncritically and incorrectly than that of feedback. In organizational settings the aphorism "what gets measured gets done" describes cogently the positive halo surrounding feedback. Actually, feedback is only information, that is, data, and as such has no necessary consequences at all. Like any fact, its effect on action depends on how it is appraised and what decisions are subsequently made with respect to it. Studies of the effects of feedback typically show positive effects (Kopelman, 1986), but this is because people often set improvement goals when given information about their past performance. The only way to isolate the effects of feedback *as such* is to give it in such a form that it cannot be used to set goals (e.g., vary the length of each work period so that the subjects cannot directly compare their performance from one trial to the next). When this is done, feedback has no motivational effect on performance (Locke & Latham, 1990a). Even more intriguingly, a field experiment showed that even when engineers and scientists were urged to do their best, their subsequent performance was not significantly different from that of a control group. This

occurred despite the fact that they received the same amount of feedback as those people who were in the specific goal conditions (Latham, Mitchell, & Dossett, 1978). Feedback that does not lead to the setting of and commitment to specific difficult goals does not increase motivation to increase one's performance. Figure 6 from Locke and Bryan (1969a) illustrates this point. Goal subjects in this study did have feedback about their progress in relation to goals, but feedback subjects did not have goals. Feedback alone did not affect performance. Thus with respect to feedback as a motivator, goal setting is a *mediator* (cause) of its effects on performance.

This relationship is easiest to envision when considering the case where the individual receives multiple types of information. In such cases, the individual cannot act, at a given time, on all of it and thus must select which feedback elements to attend to and act upon. Goals single out for attention one or more elements by providing a standard indicating whether the feedback is good or bad; the elements with "value significance" will be those accompanied by goals which serve as standards of evaluation (e.g., Nemeroff & Cosentino, 1979). In real-life, of course, people are bombarded with information of every sort, but they act only in response to a small segment of it, namely that segment which they decide is relevant to their own life interests and goals.

On the other side of the same coin, goal setting is not very effective without feedback (Erez, 1977). Thus feedback *moderates* the effect of goals on performance.

Integrating the above results leads to the conclusion that goals and

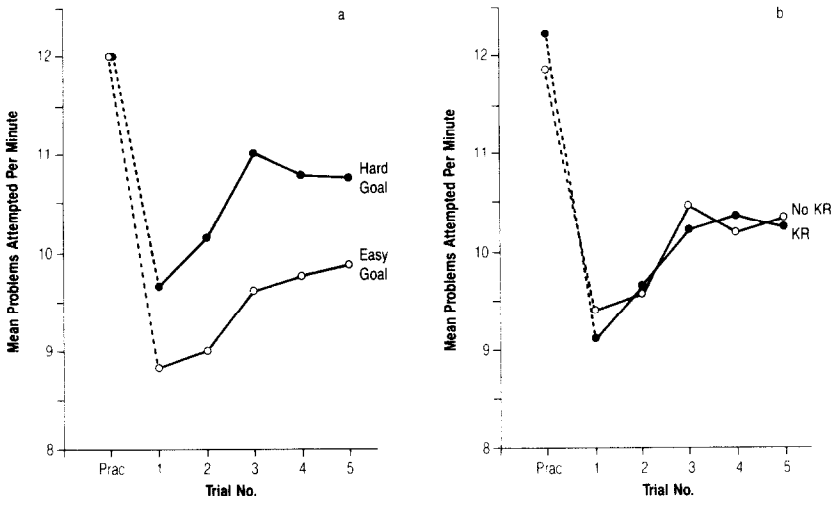

FIG. 6. The effects of goals vs feedback on performance (from Locke & Bryan, 1969a).

feedback together are more effective in motivating high performance or performance improvement than either one separately. Table 1 summarizes the results of 33 studies compiled by Locke and Latham (1990a) which compared the effects of goals plus feedback, versus either one alone. Nearly all of these studies support the hypothesis.

It remains to discuss the actual role played by each component and the mechanisms by which performance improvement occurs. The goal is the object or outcome one is aiming for as well as the standard by which one evaluates one's performance. Feedback provides information to the individual as to the degree to which the standard is being met. If performance meets or exceeds the standard, performance is typically maintained (although eventually the goal may be raised). If performance falls below the standard, subsequent improvement will occur to the degree that: (a) the individual is dissatisfied with that level of performance and, more importantly, expects to be dissatisfied with it in the future; (b) the individual has high self-efficacy, that is, confidence in her ability to improve; and (c) the individual sets a goal to improve over her past performance. The joint effect of these three factors is shown in Fig. 7, based on research by Bandura and Cervone (1986).

Positive feedback normally raises self-efficacy, but it should not be concluded from this that such feedback always enhances performance. Such feedback tells one that one's performance is "ok" and thus yields little incentive to improve (Matsui, Okada, & Inoshita, 1983). Bandura and Jourden (1990) found that providing subjects with normative information showing their performance to be consistently superior to that of their peers led to the setting of lower personal goals than was the case of subjects told at first that their performance was inferior to that of other subjects and later that it was matching and then surpassing the performance of others. The latter, "progressive mastery" group outperformed the "superior" group on the task.

Thus the key to performance improvement, as noted, seems to be that the person be dissatisfied with his or her present performance and (or will

TABLE 1
GOALS PLUS FEEDBACK VS EITHER ONE ALONE[a]

Goals plus feedback:	G & F > G or F only	G & F ≤ G or F only
vs goals only	17	1
vs feedback only	20	2
	37	3

[a] Based on Locke & Latham (1990a, Fig. 8-4). In this table contingent results are classified as failures rather than as "half" successes.

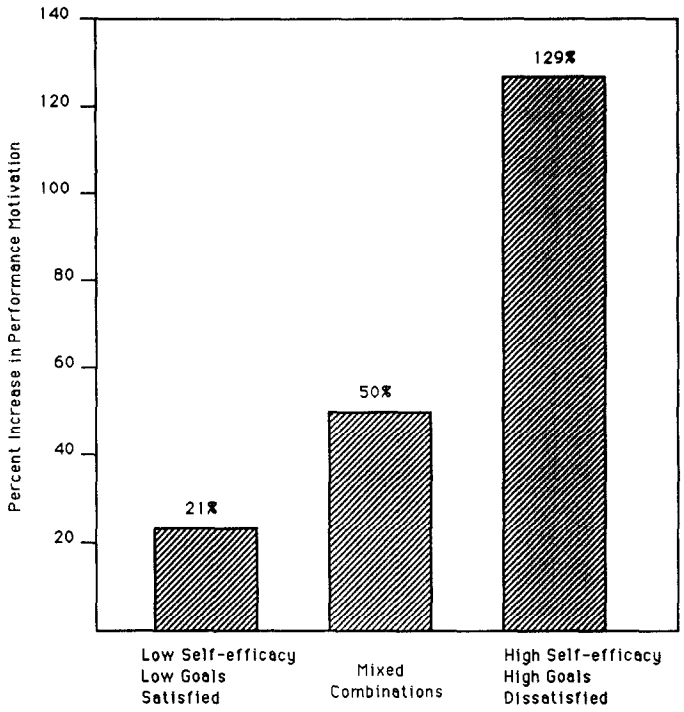

FIG. 7. Joint effects on performance improvement of self-efficacy, goals, and anticipated satisfaction. Reproduced, by permission of the publisher, from Locke and Latham (1990a).

be so in the future) yet confident that performance can be improved, thus leading to the setting of goals above the level of previous performance.

Goal Mechanisms

There are at least three attributes of motivated action, namely direction, intensity, and duration. These are precisely the mediators or causal mechanisms by which goals regulate performance. First, a goal *directs* activity toward actions which are relevant to it at the expense of actions which are not goal-relevant. In prose learning, for example, giving readers learning objectives leads them to pay more attention to content which is relevant to those objectives and less attention to the remainder (Rothkopf & Billington, 1979). The same selective function is revealed in the multiple feedback situations discussed above in which goals single out from an array of information those fed back scores to be acted upon (e.g., Locke & Bryan, 1969b). Further, a specific goal can affect the manner in which information is processed (Cohen & Ebbeson, 1979). Another aspect of the direction of action is the automatic arousal of previously acquired skills which are perceived as relevant to goal accomplishment.

Second, a specific goal regulates *effort* or energy expenditure (i.e., intensity) in that people adjust their effort to the difficulty level of the task or goal. This is the core explanation of the goal difficulty effect. The positive effect of goal difficulty on effort holds when effort is measured in terms of physical exertion (Bandura & Cervone, 1983), rate of work (Bryan & Locke, 1967), subjective ratings (Brickner & Bukatko, 1987—Study 1), effort ratings by third parties (Terborg & Miller, 1978), and physiological indicators (Sales, 1970).

Third, a goal affects *persistence* (i.e., duration) in situations where there are no time limits imposed on people. When time limits are imposed, difficult goals induce people to work faster or harder. Without time limits, such goals induce people to work longer (LaPorte & Nath, 1976). Whether the longer duration of work will be accompanied by a faster rate of work is problematic in these situations because there is a natural but not inevitable trade-off between intensity and duration. In some cases, difficult goals lead to more effort per unit of time and more prolonged effort (Cannon-Bowers & Levine, 1988; Latham & Locke, 1975) whereas in other cases people adjust their effort to the time allowed (Bryan & Locke, 1967).

An aspect of persistence is tenacity—the refusal to quit, despite obstacles, until the goal is reached. Certainly commitment is one goal attribute which would affect tenacity, although this has rarely been studied. Goal difficulty, however, also affects it. Huber and Neale (1987), for example, found that subjects assigned hard goals in a bargaining task bargained "harder," that is, for better deals, than subjects assigned do best or easy goals. Other studies suggest that the better deals are the result of the additional time spent bargaining (e.g., Neale, Northcraft, & Earley, 1987).

The above three mechanisms are relatively direct and automatic consequences of goal-directed activity. However, there are times when these three mechanisms, including the use of previously learned skills, are insufficient to attain a goal. In such circumstances, the individual must develop or discover new strategies if the goal is to be achieved. This is especially the case on complex tasks where effort and attention are of limited usefulness in themselves if the individual is not using an appropriate plan or strategy.

The following summarizes what is known or hypothesized to date regarding the relationship of goals and task strategies:

(1) When given specific, challenging goals, people spontaneously formulate plans and task strategies to help reach the goals (Latham & Baldes, 1975; Latham & Saari 1982). Specific, challenging goals stimulate more planning in general (Earley, Wojnaroski, & Prest, 1987; Weldon, Martzke, & Pradhan, 1990) and often higher quality planning (Shapiro &

Hollenbeck, 1990; Smith, Locke, & Barry, 1990) than is the case with do best goals. Group goal setting may require planning for the explicit purpose of coordinating member activities so that the goal can be achieved. When such planning is needed, goal setting is effective if coordinated planning actually occurs (Larson & Schaumann, 1990).

(2) When a difficult, quantity goal is assigned, people may lower work quality as an implicit strategy to attain it (Bavelas & Lee, 1978). Deemphasizing quality for quantity under quantity goals is most likely when people are not highly confident of their task ability (Erez, 1990). To ensure performance quality, of course, goals must be set for quality.

(3) On complex tasks:

(a) Goals are more strongly related to performance when subjects utilize suitable task strategies than when they do not. This is illustrated in Table 2, based on Chesney and Locke (1991). Challenging goals increase the likelihood that known strategies will be used (Earley, Lee, & Lituchy, 1989).

(b) Strategies tend to be more strongly related to performance than are specific goals (Chesney & Locke, 1991).

(c) There may be a time lag before the goals affect performance; this lag may occur because individuals are learning which task strategies are effective (Smith *et al.*, 1990; Weldon *et al.*, 1989).

(4) Trying for specific, challenging goals may actually hurt performance in certain circumstances. The circumstances appear to include a combination of the following;

(a) In the early stages of learning a new, complex task when no strategy training is given (Kanfer & Ackerman, 1989). Once initial learning has taken place, however, the introduction of specific, challenging goals can facilitate performance (Kanfer & Ackerman, 1989);

TABLE 2
GOAL–PERFORMANCE CORRELATIONS AS A FUNCTION OF DEGREE OF USE OF SUITABLE STRATEGY

Time period[a]	High use of most suitable strategy	Low use of most suitable strategy
1	.47**	.49**
2	.69**	.27*
3	.69**	−.22

Note. From Chesney & Locke (1991).

[a] Computer simulation business game was divided into three time periods: 1 (Weeks 1–3), 2 (Weeks 4–7), and 3 (Weeks 8–10). Students played game once per week; scores were cumulative.

* $p < .05$.

** $p < .01$.

(b) When the task is heuristic and no strategy training is given (Huber, 1985; Earley, Connolly, & Ekegren, 1989);

(c) When there is pressure to perform well immediately and no strategy training is given.

Wood and Locke (1990) have discussed the issue of goal and strategies on complex tasks in some detail from a theoretical perspective (see also Locke & Latham, 1990a, Chap. 13).

Other Moderators

In addition to commitment, feedback, and task complexity, there are at least two additional moderators of the goal–performance relationship. The first is ability. Battle (1966) found that the goal–performance relationship is somewhat stronger among high than among low ability subjects, especially insofar as the goals are moderate to challenging (Battle, 1966). However, Kanfer and Ackerman (1989) found that goal effects can be stronger for low than high ability subjects on complex tasks when implemented after some initial learning has taken place. Motivation in the absence of ability is unlikely to affect performance positively unless people are working below capacity. And obviously, ability limits the goal–performance relationship at very high (i.e., impossible) goal levels because such goals exceed the reach of virtually all people (Locke, 1982).

An intriguing study by Wood and Bandura (1989) showed that *beliefs* regarding one's intellectual ability affect performance. In a management simulation exercise, the people who viewed their ability as an acquirable skill that could be enhanced through practice set challenging goals engaged in effective problem solving strategies, and subsequently attained high performance. Those people who viewed intellectual ability as a more or less fixed capacity viewed their errors as indicative of the fact that they were indeed not intelligent. Consequently, they set low goals, their problem solving strategies deteriorated, and they subsequently performed poorly.

The second additional moderator involves situational constraints. Peters, Chassie, Lindholm, O'Connor, and Kline (1982) found that goal level was significantly associated with performance when situational constraints were low rather than high. If the situation can be managed, of course, high goals could motivate a person to overcome obstacles, especially if the person has high commitment and self-efficacy. Nevertheless there are limits to a person's ability to change situations.

There is little evidence that factors such as race, age, education, gender, or tenure moderate the goal–performance relationship. Nor is the evidence clear with respect to such factors as personality and culture. However, only a limited number of studies have been conducted on these latter variables (Locke & Latham, 1990a).

Goals and Affect

The basic model for understanding the relationship between goals and affect comes from Locke's (1976) satisfaction theory (based on Rand, 1964) which states that emotional responses are the result of automatic, subconscious value appraisals (Locke & Latham, 1990a).

As noted earlier, goals are at the same time the aim of action and a standard by which people evaluate their performance. Goals are valued or desired outcomes. Thus one would expect that the greater or more frequent the degree of success experienced, the greater the degree of satisfaction with performance. This is precisely what is found. Locke and Latham (1990a) found a mean correlation between degree of success and satisfaction of .51 across 16 studies that reported such correlations.

Table 3 shows the results from a study reported in Locke, Cartledge, and Knerr (1970) which involved striving for an end goal across a number of trials. On any given trial, satisfaction with performance was a joint function of (a) the goal–performance discrepancy for that trial and (b) the perceived instrumentality of performance on that trial for attaining the (overall) end goal. Discrepancy and instrumentality are themselves related, in that small, discrepancies are usually more instrumental for long term success than are large ones.

The precise degree of satisfaction experienced in a given case is also affected by other factors including the importance of the goal and causal attributions of success. The more important the goal, the stronger the positive affect experienced after success, and the stronger the negative affect experienced after failure (Locke, 1976).

There is evidence that goals may also increase task interest and reduce boredom, at least on those tasks that are initially boring (Latham & Kinne, 1974; Locke & Bryan, 1967; Mossholder, 1980). Goals may also reduce role conflict and ambiguity.

Field experiments on goal setting have not shown consistent effects on satisfaction, probably because goals can lead to disvalued as well as val-

TABLE 3
RELATIONSHIP OF GOAL-PERFORMANCE DISCREPANCY AND INSTRUMENTALITY TO SATISFACTION

	Instrumentality	Satisfaction
Goal-performance discrepancy	−.57*	−.61*
Instrumentality in reaching end goal		.72**

Note. From Locke, Carledge, & Knerr (1970, Study 2).
* $p < .05$.
** $p < .01$.

ued consequences (e.g., stress, failure, punishment, job insecurity, pressure, conflict). The typical field experiment result is no change in satisfaction (e.g., Latham *et al.*, 1978) possibly because any positive consequences (e.g., role clarity, satisfaction with success) were offset by negative consequences.

Correlational field studies typically show positive associations between various positive attributes or concomitants of goal setting programs (e.g., clarity, participation, supervisory supportiveness, feedback, rewards for goal attainment, communication) and satisfaction with the job or some aspects of it. In contrast, various negative attributes of goals or goal setting programs (e.g., stress, failure, overload, punishment, conflict) are negatively associated with satisfaction (Lee, Bobko, Earley, & Locke, in press). The reason for the clear-cut results of the correlational in contrast to the experimental field studies is that these former studies distinguished valued from disvalued *attributes* of goal programs. The results make it clear that such programs can have very different affective consequences depending on how they are implemented.

Since a major factor causing satisfaction with goal setting is goal success, a certain dilemma is posed for applied goal setting programs. Since goal success is increasingly more frequent as goals become easier, it means that the greatest degree of satisfaction is experienced when goals are easy. On the other hand, it was noted earlier that the highest degree of performance was attained when goals were difficult, that is, hard to achieve. The dilemma, then, is how to balance the two outcomes. Since satisfaction is based on both internal and external rewards which are also typically based on success, an associated dilemma is how to reward performance under a goal setting program. If we maximize productivity, we minimize satisfaction and rewards and vice versa. There are several possible solutions to this dilemma:

(1) Satisfice by setting moderate goals and rewarding success, so that the net total of satisfaction and productivity is maximized.

(2) Give credit for partial goal attainment; that is, give credit and rewards for performance rather than for success as such.

(3) Follow the Japanese principle of *Kaizen* or constant improvement (Imai, 1986). Make goals reachable at any given time, but strive for continual increments above this initial level by constantly raising the goals by small amounts. (This does not necessarily imply working harder; it can also be done by "working smarter".)

(4) Use multilevel goal and reward structures, so that some reward is provided for reaching a minimum goal, more is provided for reaching a more challenging goal, and maximum reward is given for achieving "stretch" goals.

Each of the above procedures has its pro's and con's. There is no

"right" way to decide among them (and among additional, not-yet-conceived structures) without further experimental study.

The High Performance Cycle

The integrated goal setting model has been described elsewhere as the high performance cycle (Locke & Latham, 1990a, 1990b, 1990c). The model starts with high challenge in the form of specific, difficult goals. If there is commitment to these goals, adequate feedback, high self-efficacy (and ability), and suitable task strategies, high performance will result. If high performance leads to desired rewards (including self-rewards in the form of self-satisfaction) high satisfaction will result. Job satisfaction is, in turn, highly associated with commitment to the job (r = .64, based on 11 studies summarized in Locke & Latham, 1990a), although the causal relationship between these two variables is not definitively established. High commitment in turn is associated with an increased propensity to stay on the job (Mobley, 1982; Mowday, Porter, & Steers, 1982). People who are satisfied and stay on the job are then ready and willing to accept new challenges. Thus the cycle repeats itself. Deviations from the requirements of the cycle (e.g., low challenge, dissatisfaction) lead to a low performance cycle.

SELF-REGULATION

Self-regulation is implicit in goal setting theory because, as noted throughout this paper, the setting of goals and their translation into action is a volitional process. However, most goal setting experiments have not emphasized self-regulation explicitly because goals were assigned in order to ensure sufficient variation in goal level and type.

A review of the literature (Locke & Latham, 1990a) revealed that self-set goals are as effective as, but not more effective in increasing performance than, goals that are assigned or are set participatively. This finding is the basis for training people in effective self-regulation skills.

Self-regulation occurs through goal setting because the setting of a goal is first and foremost a discrepancy-inducing process (Locke, in press). To quote Bandura (1988, p. 47):

> Human self-motivation relies on *discrepancy production* as well as *discrepancy reduction*. It requires *feedforward* control as well as *feedback* control. People initially motivate themselves through feedforward control by adopting performance standards that create a state of disequilibrium and then mobilizing their effort on the basis of anticipatory estimation. Feedback control comes into play in subsequent adjustments of effort expenditure to achieve desired results. After people attain the standard they have been pursuing, they generally set a higher standard for themselves. The adoption of further challenges creates new motivating discrepancies to be mastered. Similarly, surpassing a standard is more likely to raise aspiration than to lower subsequent performance to conform to the surpassed

standard. Self-motivation thus involves a dual cyclic process of disequilibrating discrepancy production followed by equilibrating discrepancy reduction.

In short, goal setting facilitates self-regulation in that the goal defines for the person what constitutes an acceptable level of performance. Actions that fall short of a described goal level result in a negative performance evaluation. Such negative appraisals usually lead to problem solving and subsequent action plans for eliminating the source of the dissatisfaction, such as improving subsequent performance. Actions that attain or exceed desired ends lead to a positive performance evaluation. If a positive appraisal is followed by the anticipation that subsequent attainment of the same goal will lead to a neutral or negative appraisal, the person is likely to set a higher goal. Thus the self-regulatory behavior sequence is one that aligns the person to current and future behaviors with some criterion that permits the person to evaluate progress toward a specific goal (F. Kanfer, 1986).

Once the person chooses to strive for a goal, the three direct mechanisms of effort, persistence, and direction, described earlier, are brought into play more or less automatically. Where the task is hard, not because it requires a great deal of effort, but rather because it requires a high level of the person's knowledge and skill, training in self-regulation emphasizes the discovery or learning of appropriate task strategies. Thus the task strategies are the indirect result of the goal or goals that were set.

Teaching people self-regulatory skills is based in large part on the work of F. Kanfer, a clinical psychologist. Self-control situations are defined as situations in which a person is faced with the task of engaging in or stopping behaviors that are initially less motivated, less enjoyable, and may be less skilled than the automatically processed acts that are carried out easily from moment to moment (F. Kanfer, 1986). In this training program, each person sets a goal that is difficult but attainable in order to minimize the probability of failure (Kanfer & Gaelick, 1986). They engage in self-control by making decisions and generating their own personal incentives. Usually they must overcome concurrent social or internal, aversive cues to get the nonpreferred behavior started. Thus training in self-control, frequently labeled self-management, is given only when the person's goal is to alter strong behavioral dispositions. The training is designed to prepare, anticipate, and rehearse coping techniques that the individual can use for future situations. Thus the intent of the training is not only to alleviate the current state, but also to work toward a clearly defined future goal state that is desired by the client. This training has proven to be effective in teaching people self-control with regard to substance abuse (Kanfer, 1974), weight (Mahoney, Moura, & Wade, 1973), smoking (Kanfer & Phillips, 1970), and marital discord (Jacobsen, 1983).

In brief, training in self-management teaches people to assess their

problems, to set specific hard goals in relation to those problems, to self-monitor ways in which the environment facilitates or hinders goal attainment, and to identify and administer rewards for working toward and penalties for failing to work toward goal attainment. Consequently, the people who receive this training learn to observe their own behavior, to compare their behavior with the goals that they set, and to self-administer rewards and punishments to bring about and sustain commitment to their goals.

Organizational Settings

Training people in industrial–organizational settings with skills in self-management has only recently received attention in the human resource literature. For example, Brief and Hollenbeck (1985) surveyed salespeople to determine the extent to which self-regulatory activities occur in the absence of training. In that study, self-regulation was defined in terms of three activities, namely, goal setting, self monitoring, and self-rewarding or self-punishing contingent upon the magnitude of the discrepancy between the person's behavior and the goal. The data showed that most untrained people do not demonstrate skills in self-management.

The benefit of such training was demonstrated in a study by Frayne and Latham (1987) where unionized state government maintenance employees (carpenters, mechanics, electricians) learned ways to increase their job attendance. The training took place in a group setting 1 h a week for 8 weeks. In the first session, the principles of self-management were explained to the trainees. In Session 2, the trainees generated reasons for their low attendance. The third session focused on the value of setting process (behavioral) and outcome (days present) goals for attendance. In the fourth session, the importance of self-monitoring one's behavior was discussed. Specifically, the trainees were taught to use charts and diaries to record (a) their own attendance, (b) the reasons for missing one or more days of the week, and (c) the steps that were followed to subsequently return to work. The trainees identified rewards and punishers in the fifth session that they would self-administer contingent upon their performance. In the sixth session the trainees wrote a behavioral contract with themselves. The contract specified in writing the goal(s) to be attained, the time frame for attaining it, the consequences of attaining or failing to attain the goal(s), and the task strategies necessary for attaining the goal(s). The seventh session emphasized maintenance. Discussion focused on issues that might result in a relapse in absenteeism, planning for such situations should they occur, and developing coping strategies for dealing with such situations. During the final week of training, the trainer reviewed each technique presented in the program, answered questions

from the trainees regarding these skills, and clarified expectations for the self-management of the training program's effectiveness.

Observe that the training took explicit account of goal setting moderators and facilitators. For example, commitment to goals was the focus of Sessions 5 and 6 where rewards and punishers were selected, and a behavioral contract was written. Feedback through self-monitoring was emphasized in Session 4. The complexity of the task and the situational constraints were the focus of Session 2 where the people explained why they could not come to work, Session 6 where they specified in writing the behavior that they believed would enable them to get to work, and Session 7 where they outlined possibilities for a relapse and what could be done to overcome such issues.

Participatory group discussions occurred throughout the 8 weeks of training. The main benefit of participation, as noted earlier, is cognitive; thus the training focused the attention of each person in the group on problem solving effective strategies for overcoming obstacles to attaining the goal. In this way self-efficacy was increased. Self-efficacy correlated significantly in the study with subsequent job attendance.

With the goal setting programs in place, Frayne and Latham (1987) found that 3 months later employee attendance was significantly higher in the training than in the control group. Latham and Frayne (1989) conducted a 6-month and a 9-month follow-up study to determine the long term effects of this training. Employees who had been trained in self-management continued to have higher job attendance than those in the control group. Moreover, when the people in the control group were subsequently given the same training in self-management, but by a different trainer, they too showed the same positive improvement in their self-efficacy with regard to coping with obstacles perceived by them as preventing them from coming to work. Moreover, their job attendance increased to the same level as that which the original training group had achieved 3 months after it had been trained (Latham & Frayne, 1989).

The importance of skills in self-management is by no means restricted to blue-collar employees. Frayne and Geringer (1990) investigated the characteristics of general managers who are effective in international joint ventures. These people differ from their counterparts in established corporate positions in that the latter typically receive training to prepare them for their respective jobs. This training usually includes orientation on appropriate lines of communication, existing company policies, the political–legal environment, and the like. Such training seldom exists for those people in the start-up phase of a joint venture. By definition the venture is usually operating in an uncertain or little-known environment due in part to the two or more parent firms having disparate objectives, resources, and policies.

Frayne and Geringer found that leader skill in self-management, spe-

cifically, in goal setting, self-monitoring, and self-assessment, correlated significantly with the performance of the international joint ventures. The goal setting activities focused on specific ways of overcoming day to day operational problems impeding the attainment of both the short term and long term goals that the leader set.

Gist, Bavetta, and Stevens (1990) investigated whether a thorough orientation to the process of goal setting alone is as effective as teaching people the full package of self-management skills in facilitating the transfer of training principles regarding negotiations to a different negotiating task. The goal setting treatment included a discussion of the value of setting specific difficult goals and advice from the trainer on the need to set outcome goals as well as process goals regarding interim practice activities that would result in the mastery of specific skills. The training in self-management involved: the identification of obstacles to success; problem-solving ways to overcome these obstacles; setting specific challenging goals for performance outcomes and/or interim practice activities; self-monitoring progress in the implementation of plans; and the use of self-reward techniques. The results revealed that people who received self-management training performed significantly better on the transfer of training task than did the people who received only the orientation to goal setting. This was due to the self-management trainees' use of a broader range of strategies than were employed by the goal setting only trainees.

When effort or persistence alone was required for effective performance, goal setting alone was effective. This was evident from the greater repeated use of the same strategies by the goal setting only trainees in the present study. When performance was a function of knowledge of different strategies in addition to motivation, training in self-management was superior. In both instances, however, goal setting was at the core of effective performance.

Proximal vs Distal Goals

In both the studies of job attendance (Frayne & Latham, 1987; Latham & Frayne, 1989) and of the transfer of training principles to a different task (Gist *et al.*, 1990), the trainees were encouraged to set both proximal and distal goals. The setting of both types of goals was identified as an effective behavior pattern of people who lead successful joint ventures (Frayne & Geringer, 1990). In none of these studies, however, were the relative effectiveness of these types of goals on self-regulation investigated. A review of the literature on the extant research through 1989 yielded inconsistent results (Locke & Latham, 1990a). However, a recent study by Stock and Cervone (1990) suggests that proximal goals serve as highly effective self-regulators that affect performance in at least four ways.

First, Stock and Cervone found that the assignment of a proximal goal increased the strength of the person's self-efficacy for completing the task. Those people who were assigned a proximal goal increased the initial strength of their self-efficacy for completing the task. People who had been assigned a proximal goal in addition to the distal goal of task completion had significantly higher initial ratings of self-efficacy than did those people who only had a distal goal. Mentally "breaking down" the task appeared to make it appear to be manageable which in turn enhanced the person's perception that she was capable of performing it effectively.

Second, reaching the proximal goal enhanced self-efficacy. As people attained the subgoal they became more confident of their capability to complete the task. Those people who reached the same level of performance without knowing that they had achieved a proximal goal showed no increase in their self-efficacy.

Third, the attainment of the proximal goal affected self-evaluative reactions positively. Those who achieved the proximal goal were more satisfied with their progress than were those people who either did not attain the subgoal or who had not been assigned one to attain.

Finally, those people with proximal goals persisted on the task significantly longer than did those people who had not been assigned them. Stock and Cervone (1990) concluded that when individuals are uncertain of their ability to perform a complex, challenging endeavor, setting proximal goals can influence positively self-referent thought, motivation, and performance.

There are circumstances, however, where proximal goals may fail to enhance performance. In long term programs of behavior change, where the person has a high degree of interest in the activity, moderately distal goals can allow greater flexibility in the use of tactics than proximal goals (Kanfer & Grimm, 1978). The demanding standards represented by specific, proximal goals on such tasks can impair thinking and problem solving activities by diverting attention to non-task-related activities (Bandura & Wood, 1989).

Using a complex computer simulation game over 10 weeks of business activity, Cervone, Jiwani, and Wood (in press) investigated whether different goal structures affected the strength of relations between self-regulatory processes and performance. To optimize performance, the subjects were required to learn a large number of nonlinear and compound rules which were difficult to master.

Consistent with goal setting theory, the assigned goals, which in this study were distal, affected the subjects' use of analytic strategies. Specifically, the people who were assigned a specific distal goal were more systematic in their testing of analytic strategies for managing the simulated organization than were the people who were not assigned goals.

Again, consistent with goal setting theory, the higher goals led to higher levels of performance than did the moderately difficult goals. In both goal conditions, higher levels of self-efficacy, self-satisfaction with past performance, and personal goals predicted higher levels of performance. In contrast, Cervone *et al.* found no evidence of a positive relation between performance and either self-efficacy or self-evaluative reactions within the no-goal condition. When subjects were trying "to do their best," variations in performance feedback were unrelated to either self-evaluative reactions or self-efficacy judgments. The authors concluded that explicit goals imposed a standard for performance that strongly affected self-reactions and their role in the self-regulation of task performance.

Seidman, Sevelius, and Ewald (1984) found that self-set (within a predetermined range) weight goals significantly affected the weight loss of employees and their dependents in a program–contest conducted at six sites of the Lockheed Co. Employees could enter either as individuals or as members of a team. Team members, however, lost more weight than non-team members suggesting that commitment to goals may have been higher as a result of encouragement from others.

That assigned goals can sometimes be more effective than those that are self-set by workers untrained in self-management techniques is evident from a study conducted in an electronics plant in Germany (Schmidt & Kleinbeck, 1990). The German government mandates a relaxation allowance to permit employees to reduce fatigue or other kinds of physiological and psychological strain. In the case of self-paced work, this time can be taken at the discretion of the individual worker in the form of voluntary rest pauses. Schmidt and Kleinbeck found, however, that the employees carried out their daily amount of work without any breaks so that they could finish 1 h before the end of the official work day. The result was a decrease in performance quality. Consequently, the employees were assigned, by computer, goals for each 30-min period of the work day. Through the assignment of these proximal goals, the daily amount of work was partitioned into clearly defined subgoals. These proximal goals served as checkpoints by which the employee could assess how much work had been accomplished in relation to the distal goal. The result was a significant increase both in the use of rest breaks and in the quality of performance. Performance quantity remained unchanged.

Leadership

With the delayering of middle managers in organizations throughout the 1980s, increasing emphasis is being given in industry to the need for employees to self-manage activities that traditionally were the province of their superiors. These activities include the selection of work techniques,

interaction with customers, work standard variance, and the like (Mills, 1983).

In our view, effective leaders first develop a vision for the organization that galvanizes employees by providing them with a distal goal which gives them a sense of purpose. The vision (Bennis & Nanus, 1985) inspires people by making clear to them that what they are doing is worthwhile. The danger in vision statements is that they can become rhetoric. Thus effective leaders also set specific challenging proximal goals that reflect and implement the vision. Proximal goals make the vision concrete by providing benchmarks for coordinating and guiding action. A third characteristic of effective leadership is modeling behavior for others on problem-solving and decision-making and taking action steps for attaining the proximal goals that are necessary for achieving the distal goal. Fourth, effective leaders are accessible to employees to listen to their ideas and concerns regarding both distal and proximal goals. Through their accessibility they stimulate people to formulate strategies to achieve these goals. Fifth, effective leaders know that what gets measured gets done if goals are set in conjunction with the feedback. The act of measurement signals to employees the goals that are truly valued by the organization. It thus strengthens (regulates) goal commitment among those people who value membership in the organization.

Manz and Sims (1989) argued that leadership from above should evolve, within the constraints of the organizational vision, into what they call "superleadership." This involves upper management teaching employees to lead themselves through such mechanisms as self-set goals, self-monitoring, and self-administering rewards and punishment.

Our conclusions about goal setting and self-direction are these: although people are natural self-regulators in that goal-directedness is inherent in the life process, they are not innately *effective* self-regulators. Skill in self-regulation must be acquired through experience, training, and effort. We can add to this, based on Binswanger (1991), that the benefits of experience and training will depend on the degree to which people engage in volitionally initiated thought processes.

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