

A Theory of Motivation for Some Classroom Experiences

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A theory of motivation based upon attributions of causality for success and failure is offered. The heart of the theory consists of an identification of the dimensions of causality and the relation of these underlying properties of causes to psychological consequences. Three central causal dimensions have been discerned: stability, locus, and control; these dimensions, respectively, are linked with expectancy change, esteem-related emotions, and interpersonal judgments. Within achievement-related contexts, this theory is pertinent to a diverse array of phenomena and topics, including self-esteem maintenance, achievement-change programs, reinforcement schedules, hopelessness, sources of emotion, helping, evaluation, and liking. The range of the theory is further demonstrated by applications to hyperactivity, mastery, parole decisions, loneliness and affiliation, and depression. It appears that a general theory of motivation is under development that has important implications for the understanding of classroom thought and behavior.

The attributional approach to classroom motivation and experience has proven exceedingly rich. In this article I examine the particular attributional path I have followed and document its richness by outlining a few of the empirical and theoretical relations that appear to be conclusive. The extensivity of the theoretical network suggests that a general theory of motivation is under development; I also address the issue of theoretical breadth here.

Some of the thoughts expressed in this article have been voiced in previous reviews (Weiner, 1972, 1974, 1976). With each opportunity to take stock of where we are, some ideas become more firmly fixed, others are discarded and new presumptions take their place, some earlier evidence grows in stature, and other prior data require reinterpretation. There certainly is some advantage to the dictum of publish *and* perish, which allows one to convey his or her ideas in a single, self-contained, and final package. Like most others, however, I communicate my thoughts as they evolve, and prior questionable truths give way to new, equally un-

certain laws, while other notions remain unchanged.

The Search for Causes

A central assumption of attribution theory, which sets it apart from pleasure-pain theories of motivation, is that the search for understanding is the (or *a*) basic "spring of action." This does not imply that humans are not pleasure seekers, or that they never bias information in the pursuit of hedonic goals. Rather, information seeking and veridical processing are believed to be normative, may be manifested in spite of a conflicting pleasure principle, and, at the least, comprehension stands with hedonism among the primary sources of motivation (see W. Meyer, Folkes, & Weiner, 1976).

In a school setting the search for understanding often leads to the attributional question of "Why did I succeed or fail?" or, more specifically, "Why did I flunk math?" or "Why did Mary get a better mark on this exam than me?" But classrooms are environments for the satisfaction of motivations other than achievement. Thus, attributional questions also might pertain to, for example, interpersonal acceptance or rejection, such as "Why doesn't Johnny like me?" However, for the time being attention will be centered upon achievement concerns.

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Among the unknowns of this attributional analysis is a clear statement of when people ask "why" questions. It has been demonstrated that this search is more likely given failure (rejection) than success (acceptance) (Folkes, 1978). Furthermore, it is plausible to speculate that unexpected events are more likely to lead to "why" questions than expected events (Lau & Russell, Note 1) and that subjective importance also will influence the pursuit of knowledge. Finally, it has been demonstrated that during task performance "failure-oriented" or "helpless" students especially tend to supply attributions (Diener & Dweck, 1978). Diener and Dweck also intimate that a subset of students, called "mastery-oriented," do not engage in attribution making. However, I suspect that attributional inferences often are quite retrospective, summarize a number of experiences, take place below a level of immediate awareness, and are intimately tied with self-esteem and self-concept. Thus, I believe that attributions are supplied by the mastery-oriented children as well, although not necessarily during or immediately following all task performances.

Our initial statement regarding the perceived causes of success and failure (Weiner, Frieze, Kukla, Reed, Rest, & Rosenbaum, 1971) was guided by Heider (1958) as well as our own intuitions. We postulated that in achievement-related contexts the causes perceived as most responsible for success and failure are ability, effort, task difficulty, and luck. That is, in attempting to explain the prior success or failure at an achievement-related event, the individual assesses his or her level of ability, the amount of effort that was expended, the difficulty of the task, and the magnitude and direction of experienced luck. We assumed that rather general values are assigned to these factors and that the task outcome is differentially ascribed to the causal sources. In a similar manner, future expectations of success and failure would then be based upon one's perceived level of ability in relation to the perceived difficulty of the task (labeled by Heider as *can*), as well as an estimation of the intended effort and anticipated luck.

In listing the four causes reported above we did not intend to convey that they were

the *only* perceived determinants of success or failure, or even that they were the most salient ones in all achievement situations. In later work (e.g., Weiner, 1974; Weiner, Russell, & Lerman, 1978), we explicitly indicated that factors such as mood, fatigue, illness, and bias could serve as necessary and/or sufficient reasons for achievement performance. Research restricting causality to the four causes given above at times might give rise to false conclusions. For example, assume that one is testing the hedonic bias notion that success primarily is self-ascribed. By not including help from others, for example, among the alternative causes, the hedonic bias hypothesis might be supported because the given external causes (task difficulty and luck) do not adequately capture the phenomenology of the subject.

In the last few years intuition has given way to empirical studies attempting to identify the perceived causes of success and failure. At least four investigations of *academic* attributions (Elig & Frieze, 1975; Frieze, 1976; Bar-Tal & Darom, Note 2; Cooper & Burger, Note 3) have been conducted (there undoubtedly are many more unknown to me), and there have been a number of studies that examine attributions outside of the classroom context (e.g., work experiences and athletics). The methodologies of the classroom inquiries have minor variations, with students or teachers stating the causes of success or failure at real or imagined events, and judging themselves or others. The responses are then categorized and tabulated.

Cooper and Burger (Note 3) provide a concise summary of the data from three of the studies (see Table 1). It is evident that ability, effort (both typical and immediate), and task difficulty are among the main perceived causes of achievement performance. Thus, the prior intuitions of Heider (1958) and my colleagues and me were not incorrect. In addition, Table 1 shows that others (teachers, students, and family), motivation (attention and interest), and what Cooper and Burger label as acquired characteristics (habits and attitudes) and physiological processes (mood, maturity, and health) comprise the central determinants of success and failure. Luck is not included with the

Table 1
 Summary of Previous Coding Systems (Adapted From Cooper & Burger, Note 3)

Frieze (1976)	Bar-Tal & Darom (Note 2)	Cooper & Burger (Note 3)
Ability	Ability	Academic ability
Stable effort	Effort during test	Physical and emotional ability
Immediate effort	Preparation at home	Previous experience
Task	Interest in the subject matter	Habits
Other person	Difficulty of the test	Attitudes
Mood	Difficulty of material	Self-perceptions
Luck	Conditions in the home	Maturity
Other		Typical effort
		Effort in preparation
		Attention
		Directions
		Instruction
		Task
		Mood
		Family
		Other students
		Miscellaneous

dominant causes but could be prominent on specific occasions, particularly in career or athletic accomplishments (see Mann, 1974).

In sum, there are a myriad of perceived causes of achievement events. In a cross-cultural study it was even reported that patience (Greece and Japan) and tact and unity (India) are perceived as causes of success and failure (Triandis, 1972). But there is a rather small list from which the main causes repeatedly are selected. Furthermore, within this list ability and effort appear to be the most salient and general of the causes. That is, outcomes frequently depend upon what we can do and how hard we try to do it. A clear conceptual analysis of only ability and effort would greatly add to our knowledge, given an attributional perspective.

Before moving on to this conceptual formulation, it should be recognized that Table 1 presents only a description of the perceived reasons for success and failure in achievement settings. Although attribution theory often is referred to as a naive conception, using the language of the person on the street, it also has been appreciated that science has to go beyond mere phenomenology. That is, order must be imposed using scientific terminology that may not be part of the logic of the layperson. This is implicit in, for example, the work of Kelley (1967,

1971). Heider also clearly acknowledged the distinction between a naive psychology and a scientific psychology. He stated,

There is no prior reason why the causal description [scientific language] should be the same as the phenomenal description [naive language], though, of course, the former should adequately account for the latter. (Heider, 1958, p. 22).

I now turn from the layperson's perception of causality to the scientific language that is imposed on these causes. In this article I completely neglect the process by which causal beliefs are reached, although this is the most common problem in the attributional field and is what is meant by the *attribution process* (see Kelley, 1967, 1971; Weiner, 1974). This void is left so that full space can be devoted to the psychological consequences of perceived causality, the topic most central to my concerns.

Dimensions of Causality

Inasmuch as the list of conceivable causes of success and failure is infinite, it is essential to create a classification scheme or a taxonomy of causes. In so doing, similarities and differences are delineated and the underlying properties of the causes are identified. This is an indispensable requirement for the

construction of an attributional theory of motivation.

The prior theoretical analyses of Rotter (1966) and Heider (1958) were available to serve as our initial guides in this endeavor. Rotter and his colleagues proposed a one-dimensional classification of causality. Causes either were within (internal) or outside (external to) the person. In a similar manner, Heider (1958) as well as de Charms (1968), Deci (1975), and many others have articulated an internal-external classification of causality. Rotter labeled this dimension *locus of control*, whereas in the present context locus is conceived as a backward-looking belief and therefore is referred to as *locus of causality*. Indeed, I contend that the concepts of *locus* and *control* must be separated.

The causes listed in Table 1 can be readily catalogued as internal or external to the individual. From the perspective of the student, the personal causes include ability, effort, mood, maturity, and health, while teacher, task, and family are among the external sources of causality. But the relative placement of a cause on this dimension is not invariant over time or between people. For example, health might be perceived as an internal ("I am a sickly person") or as an external ("The 'flu bug' got me") cause of failure. Inasmuch as attribution theory deals with phenomenal causality, such personal interpretations must be taken into account. That is, the taxonomic placement of a cause depends upon its subjective meaning. Nonetheless, in spite of possible individual variation, there is general agreement when distinguishing causes as internal or external.

A second dimension of causality, which we have come to perceive as increasingly important, is labeled *stability* (Weiner et al., 1971). The stability dimension defines causes on a stable (invariant) versus unstable (variant) continuum. Again Heider (1958) served as our guide, for he contrasted dispositional and relatively fixed characteristics such as ability with fluctuating factors such as effort and luck. Examining Table 1, ability, typical effort, and family would be considered relatively fixed, while immediate effort, attention, and mood are more unsta-

ble. Effort and attention may be augmented or decreased from one episode to the next, while mood is conceived as a temporary state. However, as indicated previously, the perceived properties of a cause can vary. For example, mood might be thought of as a temporary state or as a permanent trait. In addition, experimenters can alter the perceived properties of a cause. For example, although difficulty level of a task generally is considered a stable characteristic (Weiner et al., 1971), Valle and Frieze (1976) portrayed task difficulty as unstable by anchoring this concept to assigned sales territory, which could be shifted for any salesperson. At times task difficulty is classified as stable, while the experimental manipulation strongly suggests that subjects would perceive this factor as unstable (see Riemer, 1975).

Still a third dimension of causality that was identified by Heider and later incorporated into the achievement domain by Rosenbaum (1972) was labeled *intentionality*. Causes such as effort or the bias of a teacher or supervisor were categorized as intentional, whereas ability, the difficulty of the task, mood, and so on were specified by Rosenbaum to be unintentional.

In prior writings this distinction was accepted (e.g., Weiner, 1974, 1976). But following a suggestion of Litman-Adizes (Note 4), it is now apparent that Rosenbaum (1972) mislabeled this dimension. Rosenbaum argued that the dimension of intentionality is needed to differentiate, for example, mood from effort. Both of these are internal and unstable causes, yet intuitively they are quite distinct. Rosenbaum invoked the intent dimension to describe this difference, with mood classified as unintentional and effort classified as intentional. However, it seems that the dimension Rosenbaum had identified was that of control. Failure attributed to a lack of effort does not signify that there was an intent to fail. Intent connotes a desire, or want. Rather, effort differs from mood in that only effort is perceived as subject to volitional control. Hence, I propose that a third dimension of causality categorizes causes as *controllable* versus *uncontrollable*.

Causes theoretically can be classified

Table 2
Causes of Success and Failure, Classified According to Locus, Stability, and Controllability

Controllability	Internal		External	
	Stable	Unstable	Stable	Unstable
Uncontrollable	Ability	Mood	Task difficulty	Luck
Controllable	Typical effort	Immediate effort	Teacher bias	Unusual help from others

within one of eight cells (2 levels of locus \times 2 levels of stability \times 2 levels of control). Among the internal causes, ability is stable and uncontrollable; typical effort is stable and controllable; mood, fatigue, and illness are unstable and uncontrollable; and temporary exertion is unstable and controllable. Among the external causes, task difficulty is stable and uncontrollable; teacher bias may be perceived as stable and controllable; luck is unstable and uncontrollable; and unusual help from others is unstable and controllable (see Table 2).

Some problems with this classification scheme remain unsolved, particularly among the external causes. For example, can an external cause be perceived as controllable? The answer to this question depends on how far back one goes in a causal inference chain as well as whether controllability assumes only the perspective of the actor, which is not the case in Table 2 (e.g., teacher bias may be controllable from the vantage point of the teacher, but not given the perspective of the pupil). These questions, as well as the proposed independence of the dimensions, are difficult issues for future thought and research.

Although the main dimensions of causality in achievement-related contexts may have been identified, other dimensions are likely to emerge with further analysis and will raise additional problems about the independence of the dimensions. Intention may be one of these dimensions and logically could be separable from control (although causes are certain to correlate highly on these two dimensions). A causal statement regarding a neglected homework assignment illustrating the separation of intent from control is "I wanted to study, but could not control myself from going out." A conceptually similar example disassociating

intent from control concerns a criminal who does not want to commit a crime but cannot control the compulsion. Criminal justice also accepts the possibility of control without intent, as in negligence.

Still another possible dimension of causality, identified by Abramson, Seligman, and Teasdale (1978), has been labeled *globality*. The global versus specific ends of this dimension capture the concept of stimulus generalization (while stability expresses temporal generalization). For example, one's ability may be perceived as task-specific ("I failed because I am poor at math") or as a general trait influencing performance in a wide variety of settings ("I failed because I am dumb").

The dimensions of causality introduced above were derived from a logical examination of perceived causes. More recently, a number of investigators have employed techniques such as factor analysis or multidimensional scaling to discover the dimensions of causality (e.g., J. Meyer, 1978; Passer, 1977; Michela, Peplau, & Weeks, Note 5). In the inceptive study by Passer, male and female subjects rated the similarity of the causes of either success or failure. Eighteen causes were presented in all possible pairs to the subjects. The similarity judgments provided the input for a multidimensional scaling procedure. This method is akin to a cluster analysis and depicts the underlying judgment dimensions.

Passer found two clear dimensions of causality: (a) a locus dimension, anchored at the internal end with causes such as bad mood and no self-confidence and at the external extreme with causes such as bad teacher and hard exam; and (b) an intentional-unintentional dimension (which I will call controllable-uncontrollable), anchored at the controllable end with causes such as

never studies hard and lazy, and at the uncontrollable extreme with nervous and bad mood. The findings reported by Passer (1977) were similar for males and females in both the success and failure scaling solutions.

The proposed third dimension of causality, stability, was not displayed. Nevertheless, Passer's results are encouraging in that two of the three dimensions that had been presumed did emerge, and other unanticipated dimensions which had not been part of the logical analysis did not appear.

The data reported by Michela et al. (Note 5) were equally promising. Although they were concerned with the causes of loneliness, two familiar dimensions emerged in their study—stability and locus. There was some indication that control also appeared in the data, although it did not come through as an independent dimension and was more evident among the internal causes. This suggests that perhaps control cannot be paired with externality.

The investigation by J. Meyer (1978) provides the best evidence for the dimensions portrayed in Table 2. Meyer gave subjects information relevant to the judgment of the causes of success and failure, such as past history and social norms (Kelley, 1967). The subjects then rated nine possible causes of the outcomes, including ability, effort, task difficulty, luck, mood, and teacher. A factor analysis of these ratings yielded the three dimensions suggested in Table 2.

It therefore appears that what dimensions emerge in part depends on the empirical procedure that is used. Given a multidimensional scaling method where subjects rate the similarity of the causes, the dimensions generated by the logical analysis may not be identical to those emerging with the empirical procedure. For example, as shown in the Passer (1977) data, a naive person may not spontaneously recognize that mood, luck, and effort are similar because they are unstable, and thus a stability dimension of causality will not be evident. On the other hand, factor-analytic procedures are not subject to this limitation, and as J. Meyer (1978) has demonstrated, this procedure has

yielded results fully supporting the logical analysis. For the scientist these dimensions are second-order concepts (Schütz, 1967, p. 59); they are concepts used by attribution theorists to organize the causal concepts of the layperson.

Consequences of Causal Properties

I turn now from the dimensions of causality to the consequences or the implications of these dimensions for thought and action. I contend that each of the three dimensions of causality has a primary psychological function or linkage, as well as a number of secondary effects. The primary relation of the *stability* dimension is to the magnitude of expectancy change following success or failure. The *locus* dimension of causality has implications for self-esteem, one of the emotional consequences of achievement performance; affect also is a secondary association for casual stability. The dimensional linkages with expectancy and affect (value) integrate attribution theory with expectancy-value formulations of motivation as outlined by Atkinson (1964), Lewin (1935), and others (see Weiner, 1972, 1974), although this unification is not examined in this article. Finally, perceived *control* by others relates to helping, evaluation, and liking. The theory thus addresses both self- and other-perception and intra- as well as interpersonal behavior. The locus and control dimensions have a number of secondary effects that also will be very briefly considered.

Stability

The primary conceptual linkage of the stability dimension with expectancy of success was first explored by Weiner et al. (1971) and has not greatly changed since that time (see Weiner, 1972, 1974, 1976). I now more fully perceive the implications of this association, other secondary linkages with causal stability have been uncovered, and the empirical data have grown in clarity. But the following discussion is consistent with prior statements and is partially redundant with these earlier writings.

Research in the attributional domain has proven definitively that causal ascriptions for past performance are an important determinant of goal expectancies. For example, failure that is ascribed to low ability or to the difficulty of a task decreases the expectation of future success more than failure that is ascribed to bad luck, mood, or a lack of immediate effort. In a similar manner, success ascribed to good luck or extra exertion results in lesser increments in the subjective expectancy of future success at that task than does success ascribed to high ability or to the ease of the task. More generally, expectancy shifts after success and failure are dependent upon the perceived stability of the cause of the prior outcome; ascription of an outcome to stable factors produces greater typical shifts in expectancy (increments in expectancy after success and decrements after failure) than do ascriptions to unstable causes. Stated somewhat differently, if one attains success (or failure) and if the conditions or causes of that outcome are perceived as remaining unchanged, then success (or failure) will be anticipated with a greater degree of certainty. But if the conditions or causes are subject to change, then there is some doubt that the prior outcome will be repeated.

Empirical Evidence

A large number of research investigations support the above theoretical contentions (e.g., Fontaine, 1974; McMahan, 1973; J. Meyer, 1978; Ostrove, 1978; Rosenbaum, 1972; Valle, 1974; Valle & Frieze, 1976; Weiner, Nierenberg, & Goldstein, 1976; W. Meyer, Note 6; Pancer & Eiser, Note 7). In the Weiner et al. (1976) investigation, it was demonstrated that expectancy changes are related to the dimension of stability and are not associated with the locus of causality. This is an important finding, not only because two attributional dimensions are discriminated, but also because a vast competing literature relates expectancy changes to the dimension of locus (see Weiner et al., 1976, for a review).

Weiner et al. (1976) gave subjects either 0, 1, 2, 3, 4, or 5 consecutive success experiences

at a block-design task, with different subjects in the six experimental conditions. Following the success trial(s), expectancy of success and causal ascriptions were assessed. Expectancy of future success was determined by having subjects indicate "how many of the next ten similar designs you believe that you will successfully complete" (Weiner et al., 1976, p. 61). To assess perceptions of causality, subjects were required to mark four rating scales that were identical with respect to either the stability or locus dimensional anchors but differing along the alternate dimension. Specifically, one attribution question was, "Did you succeed on this task because you are always good at these kinds of tasks, or because you tried especially hard on this particular task?" "Always good" and "tried hard," the anchors on this scale, are identical on the locus of causality dimension (internal), but they differ in perceived stability, with ability a stable attribute and effort an unstable cause. In a similar manner, judgments were made between "lucky" and "tried hard" (unstable causes differing in locus), "these tasks are always easy" and "lucky" (external causes differing in stability), and "always good" and "always easy" (stable causes differing in locus). Thus, the judgments permitted a direct test of the locus versus stability interpretation of expectancy change.

Expectancy estimates were examined separately for each of the causal judgments. The data revealed that within both the internal and the external causes, expectancy increments were positively associated with the stability of the ascription; that is, there were higher expectancies given ability and task ease ascriptions than given effort or luck attributions. Contrasting locus of causality differences within either the stable or the unstable ascriptions disclosed that the disparate causal locus groups did not differ in their expectancies of success.

Locus of Control Controversy

One of my disappointments has been that investigators associated with social learning theory and locus of control have failed to recognize or admit the stability-expectancy

linkage and the existence of other dimensions of perceived causality. Some researchers (e.g., Lefcourt, von Baeyer, Ware, & Cox, Note 8) are incorporating the stability dimension into perceived causality scales. But this is in contrast with the position of other investigators. For example, Phares (1978) states,

At the present time there does not appear to be a convincing body of data supporting the utility of adding the stability dimension . . . Even should the addition of stability find support in laboratory studies of expectancy changes, it is not at all clear that . . . [broader] demonstrations of utility will be forthcoming. (p. 270)

In opposition to this statement, the literature associating stability with expectancy change is unequivocal, and the findings generalize outside of the laboratory as well as beyond the achievement domain (as will be documented later). It may indeed be that the concept of locus of control has great utility; my modest hope is that individuals in this area will acknowledge some of the prior shortcomings in their conceptual analysis of expectancy shifts at skill and chance tasks and in their limited approach to causality (for a fuller discussion of these issues, see Weiner et al., 1976).

Formal Analysis and Self-Concept Maintenance

McMahan (1973) and Valle and Frieze (1976) have developed formal models of expectancy shifts based upon the concept of causal stability. Valle and Frieze postulate that predictions of expectancies (P) are a function of the initial expectancy (E) plus the degree to which outcomes (O) are attributed to stable causes (S):

$$P = f\{E + O [f(S)]\}.$$

In addition, Valle and Frieze (1976) also note that the perceived causes of success and failure are related to the initial expectancy of success. It has been clearly documented that unexpected outcomes lead to unstable attributions, particularly luck (Feather, 1969; Feather & Simon, 1971; Frieze &

Weiner, 1971). Hence, Valle and Frieze (1976) conclude,

There is some value for the difference between the initial expectations and the actual outcome that will maximally change a person's predictions for the future. If the difference is greater than this point, the outcome will be attributed to unstable factors to such a great extent that it will have less influence on the person's future predictions. (p. 581)

These ideas have important implications for the maintenance of one's self-concept and for attributional change programs (see Weiner, 1974, 1976). For example, assume that an individual with a high self-concept of ability believes that he or she has a high probability of success at a task. It is probable that failure then would be ascribed to unstable causes such as luck or mood, which may not reduce the subsequent expectancy of success and sustains a high ability self-concept. On the other hand, success would be ascribed to ability, which increases the subsequent expectancy (certainty) of success and confirms one's high self-regard. The converse analysis holds given a low self-concept of ability and a low expectancy of success: Success would be ascribed to unstable factors, and failure to low ability. These attributions result in the preservation of the initial self-concept (see Ames, 1978; Fitch, 1970; Gilmore & Minton, 1974; Ickes & Layden, 1978). In addition, the above analysis suggests that in change programs involving expectancies or self-concept the perceived causes of performance must be altered, and a modification in self-perception would have to involve a gradual process (Valle & Frieze, 1976).

In one research investigation guided by the above reasoning, Ames, Ames, and Garrison (1977) had children of high or low social status in the classroom attribute causality for positive and negative interpersonal outcomes. For example, the children were given situations such as, "Suppose you meet a new student at school and you become friends quickly"; or "Imagine you ask someone to play with you after school, but they say they cannot play." The children then attributed causality for each situation either to an internal, external, or mutual cause. The data indicated that given nega-

tive interpersonal outcomes, high-social-status children made greater use of external causal ascriptions, and given positive interpersonal outcomes, they made more internal attributions than the low-social-status pupils.

Resistance to Extinction and Achievement Change

The stability concept is generalizable to the body of psychological literature concerning experimental extinction (see Rest, 1976). Experimental extinction often is defined as the cessation of a previously instrumental response following the permanent withholding of the reward. It is reasonable to presume that when a response is perceived as no longer instrumental to goal attainment, the organism will cease making that response. Hence, any attribution that maximizes the expectation that the response will not be followed by the goal should facilitate extinction. On the other hand, attributions that minimize goal expectancy decrements after nonreward should retard extinction.

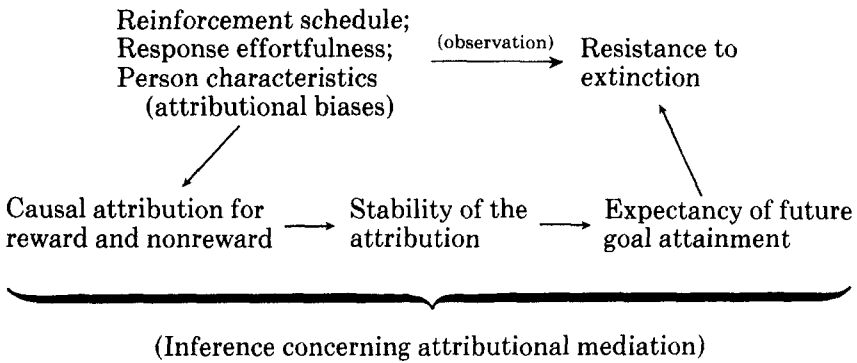
As discussed above, the stability or instability of the perceived causal factors influences the expectancy that the outcome of an action might change in the future. Therefore, I suggest that resistance to extinction is a function of attributions to the causal dimension of stability during the period of nonreinforcement. Ascriptions of nonreinforcement to bad luck, lack of immediate effort, or other unstable causes are hypothesized to minimize expectancy decrements and result in slower extinction than attributions of nonattainment of a goal to perceived stable factors, such as teacher bias, high task difficulty, or lack of ability. Rest (1976) has presented strong evidence confirming these hypotheses. Inasmuch as random reinforcement schedules elicit unstable causal attributions (Weiner et al., 1971), they also should (and do) increase resistance to extinction. In a similar manner, chance rather than skill instructions also increase resistance to extinction (Phares, 1957), presumably because failure is ascribed

to unstable causes only given the chance instructions.

A related notion is that information generating lack of effort ascriptions for failure also should result in response maintenance (see Rest, 1976). There are data in the infrahuman experimental literature that may be interpreted as supporting this hypothesis. Lawrence and Festinger (1962), marshalling evidence to support their cognitive dissonance explanation of extinction, report that resistance to extinction is positively related to the effortfulness of a response. Our analysis suggests that when great exertion is required to attain a reward the salience of effort as the cause of goal attainment is augmented. Thus, the expectancy of reward following nonattainment of the goal should be comparatively unchanged and extinction prolonged. With repeated nonreward, however, the ascription shifts from effort to ability and/or task difficulty, thus decreasing expectancy and producing extinction.

These ideas have more than just a passing relevance to educational practices. Many of the burgeoning achievement-chance programs make direct or indirect use of attributional principles. These programs often attempt to induce students to attribute their failures to a lack of effort, which is both unstable and under volitional control (see Andrews & Debus, 1978; Chapin & Dyck, 1976; Dweck, 1975). This goal is expressly established for "failure-oriented" children who apparently ascribe their failures to a lack of ability, which is a stable and uncontrollable cause (see Diener & Dweck, 1978). Presumably, inasmuch as effort can be increased volitionally, ascriptions of nonattainment of a goal to lack of effort will result in the sustaining of hope and increased persistence toward the goal. On the other hand, since ability is stable and not subject to volitional control, ascription of nonattainment of a goal to low ability results in giving up and the cessation of goal-oriented behavior.

In sum, it is suggested that the relations between diverse independent variables (reward schedules, effortfulness of the response, and certain attributional biases) and the dependent variables of resistance to extinction or persistence in goal-related behavior are mediated by perceptions of causality:



Locus

In contrast with the rather stable beliefs about causal stability, our thoughts concerning locus of causality have fluctuated greatly. A temporary resolution is proposed here which is a synthesis of our previous antithetical positions and better accounts for the complexity of human affective responses.

Initially, Weiner et al. (1971) postulated that locus of causality is related to the affective consequences of success and failure. Emotional reactions were believed to be maximized given internal attributions for success and failure and minimized given external attributions. Thus, for example, pride and shame, the alleged dominant affects in achievement situations (Atkinson, 1964; McClelland, Atkinson, Clark, & Lowell, 1953), would be most experienced given personal responsibility for success and failure, as opposed to instances in which external factors such as luck or others were perceived as the causal agents. This postulated relation seemed intuitively reasonable, was consistent with Atkinson's (1964) formulations concerning the incentive value of success and failure, and found support in a variety of research investigations. Because a detailed account of this position recently was presented in this journal (Weiner, 1977), I will not discuss it in any further detail.

Subsequently, it became evident that it is incorrect to presume an invariant positive relation between internality and the magnitude of emotional reactions in achievement settings. For example, failure ascribed to others, such as the bias of a teacher or hin-

drance from students or family, will presumably generate great anger and hostility. In this event, externality is positively related to emotional intensity. Thus, the position expressed in Weiner et al. (1971) cannot be correct (see Weiner, 1977; Weiner et al., 1978).

We therefore initiated a series of studies to determine the relation between attribution and affect (Weiner et al., 1978; Weiner, Russell, & Lerman, in press). In our first investigation, subjects were given a scenario that depicted a success or failure experience at an exam, along with a causal attribution for that outcome (e.g., Joan failed because she did not have the ability). The subjects then reported the affects that they surmised would be experienced in this situation. About 100 affects for success and 150 for failure were provided, with responses made on rating scales indicating the intensity with which the affects would be experienced.

There were two general findings of interest. First, there was a set of outcome-dependent, attribution-independent affects that represented broad positive or negative reactions to success and failure, regardless of the "why" of the outcome. Given success, feelings of pleasure, happiness, satisfaction, goodness, and so on were reported as equally experienced in the disparate attribution conditions. In a similar manner, given failure, there were a number of outcome-linked emotions, such as feeling uncheerful, displeased, and upset. The outcome-dependent affects for both success and failure were reported as the ones that would be most intensely experienced.

But for both success and failure there were

Table 3: *Percentage of Respondents Stating a Particular Emotion for Success, as a Function of the Attribution for Success*

Emotion	Causal attribution					
	Ability	Unstable effort	Stable effort	Personality	Others	Luck
Competence	30	12	20	19	5	2
Confidence	20	19	18	19	14	4
Contentment	4	4	12	0	7	2
Excitement	3	9	8	11	16	6
Gratefulness	9	1	4	8	43	14
Guilt	1	3	0	3	2	18
Happiness	44	43	43	38	46	48
Pride	39	28	39	43	21	8
Relief	4	28	16	11	13	26
Satisfaction	19	24	16	14	9	0
Surprise	7	16	4	14	4	52
Thankfulness	0	1	0	0	18	4

many emotions discriminably related to specific attributions. Given success, the unique attribution-affect linkages were the following: ability-competence and confidence; typical effort-relaxation; immediate effort-activation; others-gratitude; personality-conceit; and luck-surprise. That is, if one perceived that success was caused by ability, then competence and confidence were reported as intensely experienced; if one succeeded because of help from others, then the dominant reported affect was gratitude; and so on. In a similar manner, for failure, the attribution-affect linkages were the following: ability-incompetence; effort-guilt and shame; personality-resignation; others-aggression; and luck-surprise (see Weiner et al., 1978).

It is of interest to point out that at times causal attributions yield opposite reactions for success and failure, as would be expected given diametric outcomes (respectively, competence versus incompetence given ability attributions; gratitude versus aggression for attributions to others). But at times the same emotion accompanies both positive and negative outcomes (surprise given a luck attribution); and given still other ascriptions, such as typical or immediate effort, the emotions that accompany success (respectively, relaxation and activation) are unrelated to the failure-tied affects (guilt and shame).

These data suggested we should reject the supposition that locus of causality mediates

affective reactions in achievement contexts. Rather, emotions appeared to be either outcome or attributionally generated, without any intervening dimensional placement.

Additional evidence, however, has resulted in a synthesis of our prior antithetical stances. In a recent study (Weiner, Russell, & Lerman, in press) subjects recreated a "critical incident" in their lives in which they succeeded (or failed) at an academic exam because of ability, typical effort, immediate effort, help (or hindrance) from others, personality, or luck. They then listed three affects they experienced in this situation. Table 3 includes only the emotions that were reported for *success* by more than 10% of the respondents for any particular attribution. The table shows the percentage of subjects in all the attribution conditions reporting these relatively shared experiences.

The data in Table 3 are consistent with our previous findings. The most dominant affect, happiness, is expressed regardless of the reason for the success. In addition to this outcome-linked emotion, there are significant attribution-affect linkages. These associations are as follows: ability-competence and pride; other people-gratefulness and thankfulness; stable effort-contentment; personality-pride; and luck-surprise, relief, and guilt (the linkages are based on comparisons within an emotion but across attributions).

The failure data also revealed systematic

patterns. There were significant outcome-linked emotions including disappointment, as well as attribution-affect associations consistent with prior research: ability-incompetence and resignation; effort-guilt; other people-anger; and luck-surprise.

Additional analyses of these data also demonstrated that causal dimensions play an essential role in affective life. Given internal attributions for success (ability, effort, personality), the affects pride, competence, confidence, and satisfaction were reported more frequently than they were given external attributions (others, luck). Internal ascriptions for failure generated the emotions of guilt and resignation. In sum, particular affects clustered with the internal causes. Reanalysis of Weiner et al. (1978) revealed virtually identical results.

It therefore appears that in achievement situations there are (at least) three sources of affect. First, there are emotions tied directly to the outcome. One feels "good" given success and "bad" given failure, regardless of the reason for the outcome. These probably are the initial and strongest reactions. Second, accompanying these general feelings are more distinct emotions, such as gratitude or hostility if success or failure, respectively, is due to others, surprise when the outcome is due to luck, and so on. Third, the affects that are associated with self-esteem, such as competence, pride, and shame, are mediated by self-ascriptions. Many emotional reactions are shared given success due to ability or effort, the two dominant internal attributions. It therefore may be that the central self-esteem emotions that facilitate or impede subsequent achievement performance are dimensionally linked, referred by the actor to him- or herself. Some affects thus seem to be mediated by the locus dimension, but in a manner much more complex than was originally posited. It is likely that these dimension-linked affects have the greatest longevity and most significance for the individual.

Stability and Affect

In addition to the locus-affect linkage, there also is a relation between causal stability and emotions. Weiner et al. (1978)

found that the affects of depression, apathy, and resignation were reported primarily given internal and stable attributions for failure (lack of ability, lack of typical effort, personality deficit). This suggests that only attributions conveying that events will not change in the future beget feelings of helplessness, giving up, and depression. Perhaps the control dimension also plays a role in generating these particular emotions. Hence, the dimensions of causality relate to different sets of emotions.

In another research investigation supporting a stability-emotion union, Arkin and Maruyama (1979) assessed students' attributions for their success or failure at a college class. In addition, anxiety associated with school performance was measured. It was found that among successful students, the stability of their attributions was negatively correlated with anxiety. That is, when success was ascribed to stable causes, students reported relatively little anxiety. On the other hand, among the unsuccessful students, attributional stability and anxiety correlated positively; most fear was reported when failure was perceived as likely to recur in the future.

Cognition-Emotion Sequence in Achievement Contexts

On the basis of the above discussion, I suggest that in achievement-related contexts (and, in particular, school settings), the actor progresses through something like the following cognition-emotion scenarios:

1. "I just received a D in the exam. That is a very low grade." (This generates feelings of being frustrated and upset.) "I received this grade because I did not try hard enough" (followed by feelings of shame and guilt). "There really is something lacking in me, and it is permanent" (followed by low self-esteem or lack of worth and hopelessness).

2. "I just received an A on the exam. That is a very high grade" (generating happiness and satisfaction). "I received this grade because I worked very hard during the entire school year" (producing contentment and relaxation). "I really do have some positive qualities, and will continue to have

them in the future" (followed by high self-esteem and feelings of self-worth, as well as optimism for the future).

Some Thoughts About Feelings

Psychology is completing two movements that have relatively neglected the study of affect. The first is the behavioristic period, which denied verbal report data; the second is the cognitive movement, which focuses on intellectual structures. In contrast to these periods, I believe that psychologists and educators now will turn to the study of affect.

At present many of the investigations of affect in the schools measure some global feeling state such as "satisfaction." But for the study of emotions greater differentiation must be allowed. For example, one might speculate that differential classroom "atmospheres" provide the opportunity for the experiencing of disparate emotions. Perhaps settings that promote internal ascriptions maximize positive or negative self-images and feelings of pride and shame. On the other hand, environments that permit more student interaction enhance feelings such as gratitude and anger, inasmuch as attributions of success and failure to others are promoted. Overall satisfaction ratings mask distinctions between, for example, pride and gratitude. It is time that closer attention was paid to affective life in the classroom.

Secondary Linkages

Because of the vast literature in the locus of control area, it might be anticipated that causal locus is directly linked with many psychological reactions in addition to esteem-related affects. This indeed is likely to be the case. For example, it has been reported that locus of control relates positively to behaviors such as information seeking and to experiences such as feeling like an "origin" (de Charms, 1968). In most of this research, however, the concepts of *locus* and *control* are united. It is not reasonable to expect individuals who attribute failure to a lack of ability, which is internal but uncontrollable, to seek out information or feel like origins.

Rather, it seems that the experiential state of an origin and correlated behaviors are exhibited because of the perceived personal control of the situation, or the belief that causality is both internal *and* controllable. Thus, the discussion of the secondary linkages with locus is postponed until the presentation of the control dimension of causality.

Control

Attribution theory as formulated by Heider (1958), Jones and Davis (1965), and Kelley (1967) primarily concerns person-perception, or inferences about the intentions and dispositions of others. But thus far in this article I have only been concerned with self-perception. I believe that one of the main contributions of our work has been the adaptation of some principles of social perception for the construction of a theory of motivation that has the individual as the unit of analysis.

In the discussion of the implications of causal dimensions, self- and other-perception were not distinguished. Considering changes in the expectancy of success, the same cause-effect logic pertaining to causal stability should hold when considering oneself or others. The discussion of affect also is equally applicable to both the self and others, although of course, the emotional experiences are limited to the self and inferred about others. But if success or failure is perceived as being due to certain causes, then particular affective experiences should follow.

The following examination of the dimension of control centers upon inferences about others and how beliefs about another's responsibility for success and failure influence an actor's reactions toward that person. The reactions examined are helping, evaluation, and sentiments.

Helping

Ickes and Kidd (1976), guided by Weiner et al. (1971) and Rosenbaum (1972), proposed an attributional analysis of helping behavior. A number of investigators prior

to Ickes and Kidd (1976) had established that the tendency to help is influenced by the perceived cause of the need for aid (e.g., Berkowitz, 1969; Ickes, Kidd, & Berkowitz, 1976; Piliavin, Rodin, & Piliavin, 1969; Schopler & Matthews, 1965). The majority of these experiments concluded that help is more likely when the perceived cause of the need is an environmental barrier, as opposed to being internal to the person desirous of aid. For example, Berkowitz (1969) reported that individuals are more inclined to help an experimental subject when the experimenter caused a delay in the subject's response, in contrast with a condition in which the subject is perceived as personally responsible for falling behind in the experiment.

In their review, Ickes and Kidd (1976) argued that this locus of control explanation of helping confounds the causal dimensions of locus and intentionality (which I again will call controllability). They suggest that in the study conducted by Berkowitz (1969), the causal ascription to the experimenter is both external and uncontrollable (from the perspective of the actor), whereas an attribution to the subject's own mismanagement is internal to the actor and is perceived by the potential helper as under volitional control. Hence, two dimensions of causality are confounded, and it is impossible to determine which of the two causal dimensions is responsible for the differential help giving. Ickes and Kidd, in contrast with Berkowitz, suggest that it is the controllable aspect of the perceived cause, and not the locus, that mediated the disparate help giving. The reader should note how similar this analysis is to the one pertaining to expectancy shifts in skill and chance tasks. Both controversies point out that the locus of control literature has been plagued by an inadequate analysis of perceived causality. Furthermore, what is required is research that separates the various causal dimensions.

Other data support the Ickes and Kidd (1976) interpretation of helping behavior. For example, Piliavin et al. (1969) found that there is a bias to aid an ill person in distress as opposed to helping a drunk. According to the above argument, this is because drunkenness is perceived as subject to voli-

tional control, whereas illness is not. When a failure is perceived as controllable, then help is withheld; the persons presumably should help themselves. For this reason, it is much easier to raise charity funds for battered children or blindness than for alcoholism centers.

Guided by the prior research of Barnes, Ickes, and Kidd (Note 9), Simon and Weiner (in press) applied these ideas to one instance of altruism in the classroom—lending class notes to an unknown classmate. In this investigation, two themes were created for a student's failure to take class notes. One theme involved a professor, and the second concerned an employer. In the professor theme, the student always (stable) or sometimes (unstable) did not take notes because of something about himself (internal) or something about the professor (external). Either he was unable to take good notes (uncontrollable) or he did not try (controllable), while the professor either was unable to give a clear lecture or did not try. Thus, for example, an internal, stable, and uncontrollable cause was that the student never was able to take good notes (low ability), while an external, unstable, and uncontrollable cause was that the professor at times could not give a clear lecture. Each story within the eight possible causal combinations (2 levels of stability \times 2 levels of locus \times 2 levels of control) elaborated the basic scenario. The second theme involved a work situation in which the student did not have the notes because he (or the boss) always (sometimes) was responsible for his coming late to school, which could (could not) have been avoided.

Following each causal statement the subjects rated the likelihood of lending their notes to the student. Judgments were made on a 10-point scale anchored at the extremes with "definitely would lend my notes" and "definitely would not lend my notes."

The mean helping judgments for four conditions (2 levels of locus \times 2 levels of control) are shown in Table 4. Stability did not effect the judgments and thus is ignored in the analysis. Table 4 reveals that helping is reported to be relatively equal and reasonably high in all conditions except when the cause is internal and controllable, in

Table 4
Mean Likelihood of Helping as a Function of Perceived Locus of Causality and Controllability

Locus of causality	Controllable	Uncontrollable
Internal	3.13	6.74
External	7.35	6.98

Note. Data are from Simon and Weiner (in press). Higher numbers indicate greater likelihood of note lending.

which case aid is unlikely to be given. That is, if the student did not try to take notes (professor theme) or could have avoided being absent (employer theme), then help is withheld. The findings concerning the influence of intent information on moral judgments and criminal justice support this line of reasoning (see Carroll & Payne, 1976, 1977, discussed later in this article).

Evaluation

Some of the early experimental work conducted by me and my colleagues was undertaken to promote the distinction between various causes of success and failure. In particular, we attempted to provide evidence that ability and effort should be distinguished, although both are internal in locus of causality.

In one reference experiment that was employed, subjects were asked to pretend that they were teachers and were to provide evaluative "feedback" to their pupils (e.g., Eswara, 1972; Kaplan & Swant, 1973; Rest, Nierenberg, Weiner, & Heckhausen, 1973; Weiner & Kukla, 1970; Weiner & Peter, 1973). The pupils were characterized in terms of effort, ability, and performance on an exam. The data from these investigations conclusively demonstrated that effort is of greater importance than ability in determining reward and punishment. High effort was rewarded more than high ability given success, and lack of effort was punished more than lack of ability given failure. To explain these findings, I stated,

There appear to be two reasons for the discrepancy between ability and effort as determinants of reward and punishment. First, effort attributions elicit strong

moral feelings—trying to attain a socially valued goal is something that one "ought" to do. Second, rewarding and punishing effort is instrumental to changing behavior, inasmuch as effort is believed to be subject to volitional control. On the other hand, ability is perceived as nonvolitional and relatively stable and thus should be insensitive to external control attempts. (Weiner, 1977, p. 508)

Thus, both the moral and control aspects of evaluation were considered. But it was not realized that evaluation is conceptually similar to behaviors and feelings such as help giving, altruism, liking, and blame. That is, there is a pervasive influence of perceived controllability or personal responsibility on interpersonal judgments in achievement-related contexts, including how students are graded.

Sentiments

Investigations linking liking to perceptions of controllability primarily have been conducted in the area of loneliness (see Peplau, Russell, & Heim, in press). Michela, Peplau, & Weeks (Note 5) found that persons lonely for reasons thought to be controllable (e.g., does not try to make friends) are liked less than individuals lonely for uncontrollable reasons (e.g., no opportunity to meet people). In addition, when a lonely person puts forth effort to make friends, that person is liked and elicits sympathy (Wimer & Peplau, Note 10). In contrast, if it is believed that the lonely individual is responsible for his or her plight, then sympathy is not forthcoming, and respondents indicate they would avoid such persons. I assume that this pattern of results will also be evident in achievement-related contexts. Surely a teacher will not particularly like a student who does not try, and failure perceived as due to lack of effort does not elicit sympathy.

Self-Perception of Control

While perceived control in others relates to interpersonal judgments, self-perceptions of control have quite a different array of consequences. These intrapersonal effects appear to be vast, ranging from experiential states, such as feeling as an origin (de Charms, 1968) and perceiving freedom of

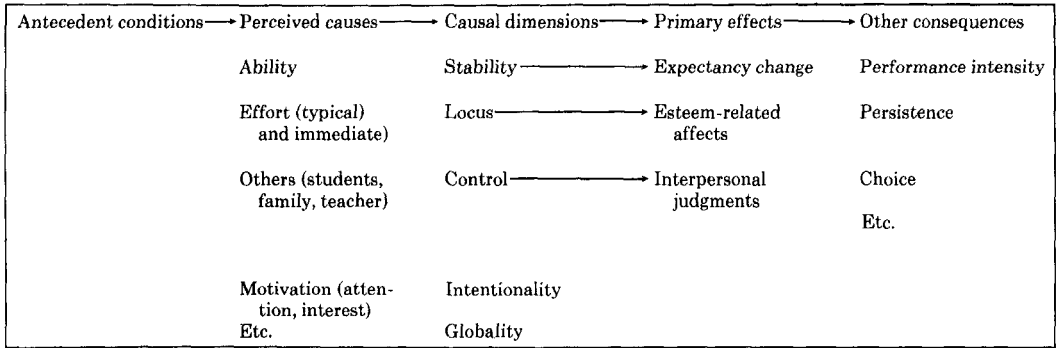


Figure 1. Partial representation of an attributional theory of motivation.

choice (Steiner, 1970), to specific behaviors, such as information search (see Rotter, 1966) and normal functioning rather than learning, cognitive, and motivational deficits that are postulated to accompany the loss of control (Seligman, 1975). This is a complex subject matter in need of systematic examination and synthesis that goes well beyond the scope of our present knowledge.

Summary

A variety of sources of information (not discussed here) are used to reach causal inferences in achievement-related contexts. The perceived causes of success and failure primarily are ability and effort but also include a small number of other salient factors such as home environment and teacher, and a countless host of idiosyncratic factors. These causes can be comprised within three primary dimensions of causality: stability, locus, and control. There also are an undetermined number of subordinate causal dimensions, including perhaps intentionality and globality. The three main dimensions, respectively, are linked to expectancy changes, esteem-related affects, and interpersonal judgments (decisions about helping, evaluation, and sentiments). In addition, there are secondary linkages between the causal dimensions and psychological effects: Stability relates to depression-type affects, and control is associated with particular feeling states and behaviors. The dimension-consequence linkages influence motivated behaviors such as persistence and choice. This theory is depicted in Figure 1.

Theoretical Range

The theory rather sketchily conveyed in Figure 1 has been shown to be relevant to many classroom-related thoughts and actions. The topics already examined in this article include the perceived reasons for success and failure, expectancy change, self-concept maintenance, achievement change programs, reinforcement schedules, hopelessness, sources of emotion, self-esteem, helping, evaluation, and liking. Still other achievement-related topics have been demonstrated to be encompassed within this attributional conception (see Weiner, 1974, 1976). The breadth of the phenomena incorporated within our attributional framework intimates that a general theory of motivation is being constructed. In the remainder of this article I document other areas to which the theory is applicable. Some of the theoretical extensions are germane to the school setting, while other topics are of interest to an audience of educational psychologists primarily because they demonstrate the range of the conception.

Hyperactivity and Psychostimulants

Whalen and Henker (1976) have outlined an attributional analysis of the effects of drug treatment for hyperactive children. They contend that when hyperactivity is combated with a drug, the belief is conveyed to both the child and his or her parents that the cause of hyperactivity is a physiological dysfunction. Hence, the involved individuals are not responsible for or in control of

the maladaptive behavior that is exhibited. Because this physiological deficit is perceived as an uncontrollable cause, neither the child nor the parents need feel guilty or blame themselves for the aberrant behavior. That is, the shift in perceived causality from "lack of effort" minimizes self-blame, low self-esteem, and negative evaluations from others. This appears to be a beneficial and an unanticipated side effect of the treatment technique.

On the other hand, Whalen and Henker (1976) also state that "the reputed physiological dysfunctions used to explain the failures of hyperactive children are frequently viewed as stable and relatively unresponsive to behavior change effects" (p. 1123). Thus, the perception of fixed causation might lead to "demoralization about problem solutions. . . and interferes with effective coping" (Whalen & Henker, 1976, p. 1124).

In sum, again this is an analysis of a psychological phenomenon from the perspective shown in Figure 1. Individuals utilize information (treatment technique) to infer causation about an event (hyperactivity). The perceived cause (a genetic deficit) is perceived as uncontrollable and stable. This minimizes certain negative affects and unfavorable evaluations (beneficial effects) but also weakens the perceived possibility of recovery (a harmful consequence). These two factors, in turn, influence the long-range influence of the treatment (negatively, according to Whalen and Henker, 1976, inasmuch as they perceive expectancy to be the more potent determinant of long-term behavioral change).

Mastery

The labels *mastery* and *competence* are prominent among the writings of many psychologists (e.g., Nissen, 1954; White, 1959). However, in my opinion systematic experimental work elucidating these alleged motivators of behavior has not been conducted. An investigation by Nuttin (1973), described as demonstrating "causality pleasure," could provide an important experimental paradigm for this area. Nuttin

placed 5-year-olds in an experimental room containing two machines. The machines each had colored lights and movable handles. For one machine (A), the onset of the lights was preprogrammed by the experimenter. The lights in the alternate machine (B) went on or off only when the handle was moved beyond a certain point. Thus, although both machines stimulated the viewer perceptually, the children were the producers or the cause of the stimulation only with machine B.

The subjects in this experiment were free to spend their time with either machine. The experimenters recorded various indexes of choice or preference, such as the time spent with each machine and verbal reports of liking. Both observational and self-report data revealed that the children strongly preferred machine B over machine A. These findings have been replicated by Weiner, Kun, and Weiner (in press).

From the theoretical perspective shown in Figure 1, the experiment by Nuttin (1973) illustrates a temporal sequence involving the use of information, inferences concerning locus of causality, positive affect, and some behavioral consequences of emotional states. That is, on the basis of the observed covariation between their own actions and the onset of the lights in machine B, the children infer that they are personally responsible (ability and effort) for the stimulation from that machine. Self-attribution for the outcome increases positive esteem-related affects, and the augmented affect increases the probability of engaging in the action again as well as increasing "liking" about playing with the machine.

This interpretation is applicable to another developmental study that has not been conceptualized as involving mastery-type behavior. Watson (1966, 1967) demonstrated that 8-week-old infants can learn an instrumental response (a head turn) to increase stimulation (the movement of a mobile). He also reported that infants in the instrumental response condition apparently displayed more instances of positive affect (smiling and cooing) than children in a condition in which the mobile movement was controlled by the experimenter. This again suggests the following temporal sequence:

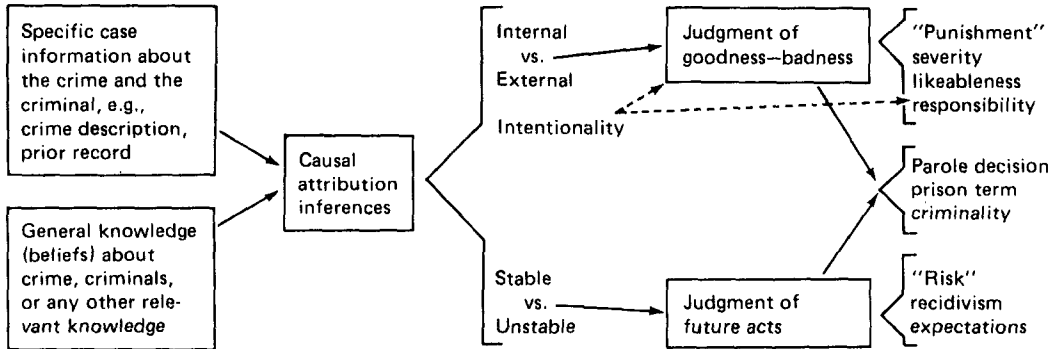


Figure 2. An attributional framework for the parole decision process (in this case, an attributional analysis of perceptions of crime and criminals). (From Carroll and Payne, 1977, p. 200. Copyright 1977 by Plenum Press, Inc. Reprinted by permission.)

response-outcome covariation – perceived internal causation – positive affects of competence and pride – choice. That is, the enhanced positive affect and subsequent performance of the instrumental response are mediated by perceptions of self-responsibility (perhaps the control dimension also plays a role here).

The underlying premise of this interpretation of Watson's (1966, 1967) research is that affect and choice can be used to infer cognitive processes (perceptions of causality). It may seem far-fetched to draw the inference that 8-week-olds have the cognitive capacities to make causal deductions. However, it also may be that a differentiation between the self and the environment has developed by that age, and that primitive inferences about locus and control can be made using proprioceptive feedback information. If this interpretation has any validity, then Watson perhaps has identified the existence of attempts at mastery among very young infants. Note also that one may consider the contribution of the Watson investigations from a light somewhat different from what is usual for psychologists—the observation of the behavior is of interest primarily because it tells us something about the contents of the mind!

Parole Decisions

A parole decision is a complex judgment in which causal attributions play a major role. Figure 2 depicts the parole decision

process as conceptualized by Carroll and Payne (1976, 1977). The figure indicates that the decision maker is provided with a variety of information about the criminal, the crime, and other pertinent facts. This information is combined and synthesized, yielding attributions about the cause of the crime. The causal attributions, in turn, influence judgments about deserved punishment and social risk, which are believed to be the basis for the final parole decision.

Carroll and Payne (1976), after reviewing an extensive literature, contend that the parole decision process is

based on a simple two-part model. In the first part, the primary concern of the decision maker is to make the punishment fit the crime At the second part . . . the primary concern . . . is with parole risk, i.e., the probability that the person being considered for release will again violate the laws of society. (p. 15)

According to Figure 2, crimes that are ascribed to internal and/or intentional (controllable) factors (e.g., personality characteristics, evil intents) should result in harsher evaluation (punishment) than crimes attributed to external and/or unintentional (uncontrollable) causes (e.g., economic conditions, bad friends, etc.). In addition, the risk associated with parole should depend on the stability of the perceived cause of the crime. If, for example, the crime is attributed to some fixed personality trait, then the decision maker will expect that a crime again will be committed if the prisoner is paroled. On the other hand, if

the cause of the crime has been or can be altered (e.g., economic conditions have improved, a job can be found, etc.), then the criminal will be perceived as a good parole risk.

Given the above analysis, a criminal is least likely to be paroled if the cause of the crime is perceived as internal and/or controllable but stable ("He is an evil person"). Conversely, parole will tend to be granted when the crime is perceived as caused by external and/or noncontrollable and unstable factors (e.g., prior economic conditions). The remaining causal combinations should fall between these extremes in terms of parole probability.

Carroll and Payne have furnished support for these hypotheses, examining professional parole decision makers and the judgments of college students when given simulated criminal cases. They find, for example, that perceptions of the locus, stability, and controllability of causes significantly relate to perceived responsibility for the crime, likelihood of recidivism, likability, prison term, and the purpose of the sentence.

In sum, according to Carroll and Payne (1976, 1977) the parole decision procedure is conceptually identical to the perceived sequence of events in the achievement domain: Antecedent information is processed, a causal judgment is reached, and the cause is placed within the locus, stability, and intentionality (control) dimensions. This influences evaluation and expectancy, which are the main determinants of the parole decision.

Affiliation and Loneliness

It has been reasoned that in our culture two sources of motivation are most dominant: achievement and social recognition (or, in Freud's more general terms, *Arbeit* and *Liebe*). Hence, affiliative motivation is a natural area to turn toward in the development of a theory of motivation.

An attributional analysis of affiliative motivation guided by the theory shown in Figure 1 conceives of loneliness as a social failure (Gordon, 1976; Stein & Bailey, 1973). Hanusa (Note 11) and Heim (Note 12) examined the perceived causes of social success

and failure and found them to be similar to the causes of achievement success and failure. As already indicated, Michela et al. (Note 5) used scaling procedures to discover the dimensions of the causes of social failure and found them to be similar to the dimensions uncovered in achievement contexts.

The question that then remains is whether the attributional dimensions in the affiliative domain relate to psychological factors in the same manner as in the achievement domain. Research reveals that is indeed the case (see Peplau et al., in press). Stability relates to the perceived probability of remaining lonely in the future, locus is associated with esteem-related affects, and as previously stated, control is linked with liking and sympathy toward the lonely person (also see Folkes, 1978).

Depression and Learned Helplessness

In accordance with the trend in loneliness research, recent explanations of depression have focused upon the cognitive, rather than the affective, aspects of this disorder (e.g., Beck, 1976). The work of Seligman (1975), captured under the label of *learned helplessness*, has been especially influential. I will not dwell upon Seligman's use of this construct or the supporting empirical evidence in this context. Rather, my goal is to convey the pertinence of the learned helplessness literature to the attributional model depicted in Figure 1 (see Abramson et al., 1978; Weiner & Litman-Adizes, in press).

Learned helplessness communicates the belief that there is no perceived association between responding and environmental outcomes. That is, the actor believes that the likelihood of an event is independent of what he or she does. The belief in helplessness is alleged to produce deficits in motivation and learning, negative affect, and a syndrome that has been labeled "depression."

As this work has progressed from infra-human to human research, it has become evident that it also is essential to consider why actions and outcomes are perceived to be independent. For example, Klein, Fencil-Morse, and Seligman (1976) found that

only individuals making internal attributions for response–outcome independence exhibited aspects of the learned helplessness syndrome. Attributions of response–outcome independence to external factors did not produce any learning deficits. In a similar manner, Tennen and Eller (1977) found learned helplessness only under conditions that promote low ability attributions for prior lack of control.

Partially because of these data, Abramson et al. (1978) adopted an attributional framework for helplessness. I have extracted the following from the Abramson et al. (1978) manuscript and pieced together new paragraphs to illustrate their thinking.

Our reformulated hypothesis makes a major new set of predictions. The helpless individual first finds out that certain outcomes and responses are independent, then he makes an attribution about the causes. This attribution determines the chronicity, generality, and intensity of the deficits. Depressed people seem to make more global, stable, and possibly internal attributions about the cause of their helplessness and as a consequence show more general, chronic, and intense deficits than nondepressed people.

Depression occurs when an individual expects that the probability of a highly preferred outcome is low and he expects that he is helpless to increase it. If the attributions for the present state of affairs are to stable and global factors, the future will look dark to the individual. He expects that he will find himself helpless again and again. This is what is usually meant by "hopelessness." Another implication of the formulation is that individuals will show the greatest loss of self-esteem when they make internal, global, and stable attributions for their failures. (Abramson et al., 1978)

In sum, it is argued that depressed individuals attempt to make sense out of perceived evidence that their responses do not affect outcomes. A cause is determined which often is classified as stable, internal, and global. This leads to a low expectancy of success across a wide array of environments and a heightened negative affect (loss of self-esteem), which are sufficient precursors of depression.

Conclusion

I have selectively reviewed the extensive literature outside of the achievement domain, including hyperactivity, mastery, pa-

role decisions, loneliness and affiliation, and depression. The data strongly suggest that a general conception of motivation, as well as a particular method of psychological analysis, is evolving.

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