

The Development of an Attribution-Based Theory of Motivation:

A History of Ideas

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ABSTRACT

The history of ideas guiding the development of an attribution-based theory of motivation is presented. These influences include the search for a “grand” theory of motivation (from Drive and Expectancy/Value theory), an attempt to represent how the past may influence the present and the future (as Thorndike accomplished) and the incorporation of causes and their properties (from Heider and Rotter). The goal of this approach is the formulation of a conception in which causes influence action via the mediating mechanisms of affect and expectancy. The applicability of the theory to the prediction of school behavior also is discussed.

Thank you so much for selecting me to receive the E. L. Thorndike Lifetime Research Award. It is a wonderful honor that I cherish.

This is actually my fourth connection or association with Dr. Thorndike. The first occurred prior to my Ph. D., when I was a graduate student. In my era, there was a foreign language obligation for graduate students. To pass this requirement, students were given one hour to translate an article in their area of study. My chosen language was German and my exam article was written by Thorndike. I flunked badly and spent the next three months ignoring my dissertation and studying nothing but German. Eventually, I passed the exam when I was next given a different writer to translate.

I subsequently read Thorndike's publication in English and could not understand a word of it; any translation was doomed to end badly. The doorway into attribution theory was opened because I certainly ascribed my misfortune to him. The language failure elicited frustration, anger, and fear regarding the next exam, emotions automatically aroused whenever I saw Thorndike's name. But now, with this award, all negative associations are masked and the letters E. L. in themselves elicit joy, pride, and gratitude.

My second connection to Thorndike awaited the reception of my Ph. D. I became aware that the two of us share an academic heritage – we are both students of William James. As shown in Figure 1, Thorndike completed his dissertation under the direction of James. I also trace my academic lineage to William James, although there are a number of intermediate figures, starting with G. Stanley Hall and ending with my direct mentor, John Atkinson. I initially feared being disqualified from the award because of my family connection with Thorndike. Thankfully, this association did not

influence the award committee. I will present my remaining connection with Thorndike, which came while I was contributing to attribution theory, quite soon.

The “Grand” Theories of Motivation

My research career owes a great deal to my mentor, John. W. Atkinson. Atkinson took part in the pursuit of a “grand theory” of motivation. This goal characterized the study of motivation for about half a century, roughly from 1930-1975. For the experimental motivation psychologist, the aim was to identify the determinants of action and specify their mathematical and/or sequential (temporal) relations. The most influential of these approaches is associated with Clark Hull and Kenneth Spence (Hull, 1943; Spence, 1956), the prime creators of Drive theory. This conception specifies that behavior is determined by Drive X Habit and an array of other factors, including incentives.

A competing theoretical approach is linked to Edward Tolman (1932), Julian Rotter (1954) and Atkinson (1957), who instead argued that behavior is directed by Expectancy X Value and, for Atkinson, motives as well. Kurt Lewin (1938), who also may be considered an Expectancy/Value theorist, additionally proposed a temporal order between the behavioral determinants. He postulated that an object acquires a valence, and therefore motivational properties, only after there is a need within the organism. This results in a motivation sequence of: need → incentive (valence) → force (behavioral tendency).

These theories were presumed to account for all behavior, regardless of content domain. Hence, they are called “grand,” perhaps a shortened version of grandiose, for their aspirations were formidable and their hopes embraced a unifying theory for all

behavior. It is reasonable to maintain that Einstein was the guiding light, with recognition of some limitations imposed by animate as opposed to inanimate objects of study. Indeed, while I was a graduate student, Atkinson was immersed into Isaac Newton and incorporated Newton's principles of motion into motivation theory (see Atkinson & Birch, 1970).

My particular version of attribution theory is guided by the grand views. I specify the determinants of behavior (as the Drive and Expectancy/Value theorists) and identify their sequential arrangement (as did Lewin), albeit with causal beliefs as the theoretical bedrock. This theory has other historical influences and here I return to Thorndike. Thorndike's (1911) often-cited Law of Effect states that behaviors previously rewarded will be repeated, whereas those that were punished will be avoided or extinguished. That is, Thorndike pointed out a motivational sequence takes place over time and a critical issue is how to represent the past so it may influence the present and the future. As an attribution theorist, I also focus on how the past makes its way into the present and future. But rather than having reinforcement or past hedonism as the bridging mechanism, I contend that the interpretation of the past, that is, the perceived causes of prior events, determines what will be done in the future. Inferences regarding why one was rewarded or punished, or phenomenal causality, and not outcomes per se, direct behavior. Both reward and punishment can have positive or negative motivational consequences, depending on the perceived causes of those outcomes.

Theoretical Beginnings

Atkinson's (1957) conception of motivation embraces three principles not shared by other Expectancy/Value theorists that initially guided my thinking:

1. Motivation is also determined by individual differences (motives), so that his equation for strength of motivation is Motive X Expectancy X Value. The motive Atkinson primarily embraced was the need for achievement.
2. Incentive (value) is conceptualized as an affect, pride in accomplishment (here I consider only approach motivation and positive affect).
3. Incentive (value) is inversely related to expectancy of success so that pride is presumed to be greater given success at a difficult task (low expectancy of success) than at an easy task (high expectancy of success).

A number of perils awaited me as I continued in this research tradition after passing the German exam. First, achievement needs were assessed with a projective instrument, the Thematic Apperception Test (TAT). Then, those designated as high or low in achievement needs were called back for an experimental manipulation, typically success or failure at tasks that varied in subjective difficulty. But scoring and motive classification decisions were time-consuming and by the time the individual difference assessment was completed, some participants had fulfilled their experimental requirements. Others would not take part in the second phase of the research. One consequence of this procedure and the loss of subjects was that it was not possible to complete many experiments, a vulnerable starting point for an assistant professor.

Further, in spite of the “grand” foundation, the theory was very restricted in its predictions (which was also true for Drive theory). The main theoretically-generated hypothesis was that individuals high in achievement needs are especially attracted to intermediate difficulty tasks relative to persons low in achievement needs. Unfortunately, this and other hypotheses related to motive-group differences often were not confirmed in

experimental studies (see review in Weiner, 1992). In short, I had reason to fear the outcome of any later tenure decision.

I therefore began to search for other predictors and predictions and more economical experimental procedures, hoping to increase my research output. About then, Julian Rotter (1966) published a monograph examining a trait labeled “locus of control.” I was previously unaware of this body of work, which grew from studies manipulating skill versus chance tasks and their influence on success expectancies. It seemed logical to pursue the idea that persons with high achievement needs view the world as controllable by them, more so than do persons low in achievement needs, who might perceive luck (external control) as the major determinant of their success and failure.

I devised a correlation study to test these ideas, administering achievement and locus of control measures to a large subject population (Weiner & Potepan, 1970). This yielded what I then regarded as promising findings. I now find it amusing, or frightening, that two measures (the TAT and locus of control scale) and two constructs (need for achievement and locus of control) that I now reject launched my research in attribution theory.

Further examination of the locus of control construct and measure gave rise to a number of concerns. For example, if one fails because of a perceived lack of aptitude, then the causal locus is internal yet the cause is not subject to volitional control. That is, there can be internality without control. In addition, if one succeeds at a task because of perceived high ability, then subsequent failure at that or a similar task would not be ascribed to low ability. But this is not the case given effort as the perceived cause – success or failure at the same task could be regarded as due to the degree of effort

expenditure. Furthermore, the magnitude or likelihood of the perceived determinants of success differ from those of failure – evidence of personal enhancement is pervasive, so that success more than failure elicits beliefs that the self played a role, whereas failure more than success gives rise to external causal beliefs. In sum, distinctions between locus and control, ability and effort, and success and failure must be made when considering causal ascriptions. These conclusions promoted my skepticism that locus of control is a trait and/or a unitary construct (just as I doubted the trait designation of need for achievement inasmuch as one could be highly motivated, for example, when playing tennis but not ping pong).

Theoretical Development

I then belatedly rediscovered attribution theory and Fritz Heider. I had skimmed Heider's (1958) book while a graduate student but did not take his "common sense" approach to motivation seriously. After all, while Atkinson was studying Newton and seeking a mathematical representation for the universal laws of motivated behavior, Heider was citing Shakespeare and Ibsen and relying on the everyday vocabulary of laypersons. But reading Heider once again with the background knowledge of Rotter's research and my thoughts separating locus from control, ability from effort, and success from failure now placed his ideas within a more compatible framework.

In Heider's naïve analysis of action, outcomes are ascribed to Can X Try. Can, in turn, captures the relation of ability to the difficulty of the task. Thus, Heider identified three determinants of motivation: ability, task difficulty, and effort. Two of these (ability and effort) he regarded as internal to the actor, whereas task difficulty is an external cause of an outcome.

Heider and Rotter did not cite one another, although both were concerned with the perceived causes of success and failure and their locus or location. Rotter acknowledged one internal and one external cause, respectively skill (ability) and luck (chance), while Heider intuited three causes (ability, effort, and task difficulty). I combined these two lists and proposed four main perceived causes of achievement outcomes – ability, effort, task difficulty, and luck (see Weiner et al., 1971). Two of these are internal to the person (ability and effort) and two are external (task difficulty and luck).

Causal consequences

Within Rotter's Expectancy/Value framework, locus of control is related to expectancy of success, with greater expectancy shifts (increments after success, decrements following failure) anticipated given internal rather than external control beliefs. For example, greater increments in expectancy of success were expected following a decisive win at a tennis match (a skill task) than at a coin toss (a chance task), and similarly greater decrements in expectancy were anticipated following a clear loss at tennis than at a coin toss.

Yet closer examination of these predicted associations raised further doubts about Rotter's analysis of causal locus. For example, if an exam is failed because the teacher is extremely harsh, expectancies may fall although the cause is external to the student, just as they had been hypothesized to drop when failure is attributed to the internal cause of low ability. Furthermore, if failure is ascribed to lack of studying and the student wants to do better in the future, then expectancy of success may not drop even though effort is an internal cause, just as expectancy had been anticipated to remain relatively unchanged when failure is ascribed to the external cause of bad luck. That is, locus of control is not

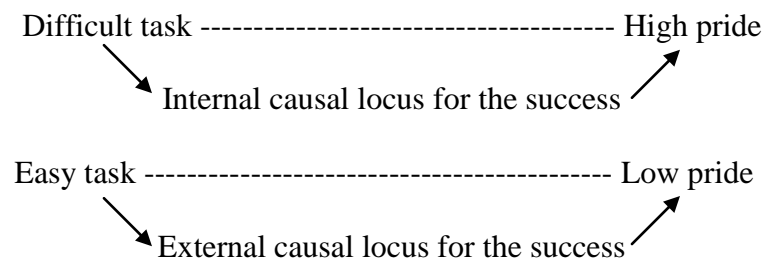
systematically related to expectancy and expectancy shifts because some internal causes of failure lead to large expectancy decreases (e.g., low ability) while others do not (e.g., lack of effort), just as some external ascriptions for failure produce substantial expectancy decrements (e.g., a harsh teacher) while others have little affect on subjective likelihood (e.g., bad luck).

Could there be a property or characteristic of causes other than locus that accounts for expectancy shifts? I argued this property is causal stability (see Weiner et al., 1971). If a cause is subject to future change, such as lack of effort (internal to the person) or bad luck (external causality), then failure would not produce downward shifts in expectancy – hope could be maintained. On the other hand, if the cause of failure is regarded as unchanging or stable, such as aptitude (internal) or a rigid teacher (external), then there would be an expectation of future failure and a state of hopelessness. Causal stability, I concluded, rather than causal locus, is the basis of expectancy shifts. Simply put, if the cause will prevail in the future, then the prior effect will be anticipated to recur, regardless of causal locus (see Weiner, Nierenberg, & Goldstein, 1976). In this manner I tried to bridge the past to the future, as Thorndike had accomplished using reinforcement principles.

But what, then, is the function or the consequence of causal locus? Here I returned to Expectancy/Value theory for a clue. If expectancy is accounted for by causal stability, then only the value (incentive) component of Expectancy/Value theory remained to be linked to causal ascriptions. Guided by Atkinson's belief that the incentive of achievement performance is a desired affective experience of pride, it was reasoned that attributions of success to internal factors give rise to more pride than do

external ascriptions. One therefore feels greater pride after success at a tennis match attributed to high ability or high effort than following success at tennis (or a coin toss) perceived as due to good luck.

A locus-pride relation leads to the suggestion that perception of causal locus is the mediator accounting for Atkinson's assumption and the supporting data that pride is related to task difficulty. The harder the task, the more likely that success is ascribed to the self (rather than to the ease of the task) and thus the greater the pride in accomplishment:



Initial Conceptual Proposal

This line of reasoning resulted in Figure 2 (see Weiner et al., 1971), which is a 2 X 2 representation including four determinants of behavioral outcomes (ability, effort, task difficulty, and luck), their two causal properties or dimensions (locus and stability), and the linkages of value (incentive, affect) to causal locus and expectancy to causal stability. Figure 2 reveals that when Rotter compared expectancy changes following success or failure given ability (internal and stable causality) versus luck (external and unstable causality) beliefs, two dimensions or properties of phenomenal causality (locus and stability) were confounded. Rotter had incorrectly related expectancy to causal locus rather than to causal stability.

The simple structure shown in Figure 2 provided a guide for my thinking and was the foundation for subsequent theory building. In addition, the structure captures the three phases in the evolution of scientific explanation: description (the listing of four causes), followed by classification or taxonomy (the two dimensions of causality), and finally a conceptual representation of the determinants of action.

A more complete theory, I believed, needed to specify the antecedents that influence causal beliefs; all the perceived causes; additional properties or dimensions of causes; the connection between these dimensions and expectancy, affect, and other determinants of motivated behavior; and then more concern about the action itself, operationalized with the usual motivational indicators of choice, intensity, and persistence of behavior, as shown in Figure 3. Thus, I had now developed the scaffold for a structure that transcends content domains, includes inter-related component parts and provides a temporal sequence for a motivational episode. These were the goals of the grand theorists. In addition, the heart of Expectancy/Value theory was retained (see Weiner, 1985, 1986). Later in my career I left this foundation when I explored the determinants of social motivation (Weiner, 2006), but that story is not included in the current talk.

Theoretical Elaboration

I then proceeded to amend the structure in Figure 3 by “filling in the blanks.” Perhaps the most important addition was to include a third causal dimension, causal control, to join locus and stability. Recall it was earlier reasoned that locus and control must be separated because, for example, aptitude is an internal but uncontrollable determinant of achievement outcomes. The control construct created some difficulties

because it did not appear to be orthogonal to locus. An external cause by definition is not controllable by the actor, whereas some internal causes are controllable (the most important being effort), whereas others are not (e.g., height as the cause of success or failure at basketball). To maintain independence among the dimensions, I regarded some external causes as controllable by others. For example, failure due to teacher bias or teacher severity is external to the pupil and uncontrollable by him or her, but are perceived by the student as subject to volitional change by the teacher. Hence, by shifting focus, a cause can be regarded as external to the actor yet controllable (by others). Chance, on the other hand, is an external cause not controllable by anyone.

All causes, then, are locatable within a three dimensional taxonomic space. Considering the four major determinants of achievement outcomes shown in Figure 2, aptitude is internal, stable, and uncontrollable; effort is internal, unstable, and controllable; objective task difficulty is external, stable, and controllable (by the teacher); and luck is external, unstable, and uncontrollable. These dimensions provide the meaning or connotation of a cause – aptitude, for example, is something about a person that will remain the same and cannot be volitionally altered. But this is a phenomenological system; dimensional placement depends on “how it seems to me.” Thus, if success is attributed to being a “lucky person,” then luck has the same genotypic qualities as aptitude and is regarded internal and stable rather than external and unstable. In a similar manner, if effort is expended by an industrious person or withheld by a lazy person, then effort is likely to be considered stable instead of unstable. And task difficulty may or may not be perceived as controllable by anyone, depending on nature of the task.

A second important addition, which took place over an extended time period and is not fundamental to the structure of the theory, was to expand the list of emotions linked with causal beliefs. Again belatedly, I became acquainted with appraisal approaches to emotion and adopted the position that feelings are directed by thoughts (see Weiner, Russell, & Lerman, 1978, 1979). Among the attribution-emotion linkages that became evident over time are the following:

- a. internal causes of success (e.g., high aptitude) -- pride
- b. internal controllable causes of failure (e.g., lack of effort) – guilt and regret
- c. internal uncontrollable causes of failure (e.g., low aptitude) – shame and humiliation
- d. stable causes of failure (e.g., unfair teacher) – hopelessness
- e. unstable causes of failure (e.g., bad luck) – hope

This is just a subset of the attribution-emotion connections; the majority of these affective linkages involve attributions for the behavior of others, which is not discussed in this context. However, it should be noted that emotions including anger, envy, gratitude, jealousy, Schadenfreude, and sympathy are influenced by beliefs about causal controllability regarding the behaviors and outcomes of others (see Hareli & Weiner, 2002; Weiner, 2007).

In addition, some pertinent emotions in achievement contexts, specifically happiness and unhappiness, are not linked to attributions but are tied to task outcomes -- they are outcome-dependent, attribution-independent feelings. Hence, it is contended that one is happy as well as proud when succeeding because of, for example, high ability or high effort. In a similar manner, failure to reach a desired goal attributed to lack of

aptitude is hypothesized to produce unhappiness (outcome-dependent), a lowering of self-regard (locus-related), and shame (a consequence of internal, uncontrollable causality), along with a low expectation of future success and hopelessness and/or helplessness (stability-linked). Thus, two classes of emotion, attribution-independent and attribution-dependent, are differentiated on the basis of their cognitive antecedents (task outcome versus causal attribution for the outcome), and multiple emotions are hypothesized to co-exist.

Other theory-pertinent facts meanwhile were accumulating from many researchers interested in attribution processes. Foremost among the contributors was Harold Kelley (1967), who formulated the well-known “Kelley cube.” His analysis identified social norms and past personal history among the key antecedents of causal beliefs because of their roles in covariation analyses. Kelley (1972) also examined causal schemata, or rules relating causes to effects, and these became recognized among the important determinants of causal conclusions. It also became apparent that causal understanding is not sought in all instances and is most fostered by the unexpected nonattainment of an important goal (see Gendolla & Koller, 2001).

These and other additions were incorporated into the final formulation of an attribution-based theory of personal motivation, shown in Figure 4. The temporal sequence of a motivated episode can be illustrated as follows. Assume a student unexpectedly fails an important exam. The initial experience following failure is unhappiness. Then there is a search for causality. Presume this person failed in the past even though she studies hard, while others succeeded on this exam. This pattern of information gives rise to the belief that the current failure is due to lack of aptitude.

Aptitude is an internal, stable, uncontrollable cause, so there is a lowering of self-esteem, low expectancy of future success, hopelessness and helplessness, and shame and humiliation. Low expectancy (hopelessness) accompanied by these negative affects promotes the decision to, for example, drop out of school.

Now imagine that another student fails the same task. This person also initially experiences unhappiness. But she has been successful in the past and the night before the exam she was partying rather than studying. Hence, her current failure is ascribed to insufficient effort. This internal, unstable, and controllable cause lowers personal regard, but also gives rise to the maintenance of expectancy, hope, guilt, and regret, all of which are positive motivators. Hence, motivation increases and she tries harder in the future. As noted earlier, prior failure or nonreinforcement can therefore have positive or negative future motivational consequences.

This line of reasoning can be applied to affiliative contexts as well, showing the cross-domain applicability of the conception. For example, assume Bill calls Jane for a date and is rejected. This causes unhappiness and elicits attributional search; Bill asks: “Why won’t you go out with me?” Jane may be unlikely to tell some truths because she does not want to lower Bill’s self-regard by providing a cause internal to him, such as: “You are boring” (see Folkes, 1982). But in spite of her replying “I have to study” (an excuse or causal substitute), Bill ruminates that he has been refused many times, whereas others have girlfriends. He concludes: “I am a boring person.” This ascription has the identical genotypic or conceptual properties as failing math because of perceived low ability. That is, esteem is lowered (since the cause is internal), there are feelings of humiliation (the cause is also perceived as uncontrollable), and low expectancy of future

acceptance and the absence of hope (the cause is stable). Hence, he does not seek further dates. The theory is applicable across motivational domains because there is genotypic representation of causal characteristics rather than (in addition to) a phenotypic description of causes. In addition, the theory captures what I believe is the underlying “deep structure” of a motivational episode: thinking gives rise to feelings which guide action. Unlike prior expectancy/value theories, here the feelings are not anticipated, such as future pride, but are experienced and act as goads to action.

Empirical Validation and Evaluative Conclusion

Does this conceptual system receive empirical support? There is little doubt that positive and negative outcomes respectively give rise to general positive and negative emotions; that undesired and/or unexpected events promote causal search; that the cause selected is dependent on a variety of antecedents including social norms, past history, schematic beliefs and hedonic biases; and that locus, stability, and control are key causal properties (although there may be other causal characteristics such as globality, or causal generality across situations). Causal locus relates to pride and self-esteem; causal stability in part determines expectancy shifts and the extent of hope, hopelessness, and helplessness; and causal control is linked with affects including shame (to uncontrollable causality), and guilt and regret (to controllable causality). There are voluminous literatures supporting these assertions (see Weiner, 1985, 1986, 1995).

However, in spite of this array of evidence and generality, I would be remiss, perhaps even intellectually dishonest, if I did not share a misgiving. I am very concerned about the last links in the theory specifying the effects of expectancy and affect on performance. With regard to expectancy, contradictory views have been expressed by

motivation theorists. It may be that low expectancy of success or a difficult task generates most effort (see Locke & Latham, 1990); or, as Atkinson (1957) intuited, intermediate difficulty tasks are most motivating; or, as Lewin (1938) and Rotter (1954) argued, that being close to a goal generates most motivation. In short, the relation between expectancy and intensity of performance or even choice behavior is uncertain. In regards to affect, similar uncertainty exists. It is possible that high guilt impedes rather than facilitates performance; that high shame is a positive motivator in certain settings; and there is even uncertainty regarding the distinction between shame and guilt, which are very highly correlated in research studies.

Few studies have tested the entire theory with appropriate methodologies, which in part may account for my fear that the whole theory may be less than the sum of its parts because of the weak final links to motivated behavior. What is encouraging in this regard is that changes in causal beliefs have been reported to alter school-related performance. For example, Perry and his colleagues (e.g., Perry, Hechter, Menec, & Weinberg, 1993) frequently have documented that interventions changing the attributions of failing students from low ability to lack of effort improves college grades. Other attempts in school settings to alter causal beliefs so the cause of failure is regarded as unstable rather than stable also produce improvement in school-related outcomes (see Wilson, Damiani, & Shelton, 2002). And convincing the elderly that their failure to exercise is not attributable to “old age” (which, just as low aptitude, is an internal, stable, and uncontrollable cause) but rather is due to a lack of effort augments walking behavior (see Sarkisian, Prohaska, Davis, & Weiner, 2007). In sum, attribution intervention or

retribution training has resulted in behavioral change, although the role of expectancy and affect as mediators of this change are unclear.

Causal beliefs are only one among many determinants of school performance and attendance and they are unlikely to strongly relate to molar achievement indices such as grade point average and school drop out. My guess is that other inter-related variables including school identification, feelings of belonging, peer-group norms, parental guidance and goals, socio-economic class, and perceived societal and personal values will be better predictors of performance in school settings than are attributions. But surely self-doubt (attributions of failure to the self and success to external factors) and stable beliefs about the causes of failure can be important impediments to motivation. In addition, attributions help explain aspects of emotional life in the classroom and expectations of success, which are no small feats. Further, among the current conceptions of achievement motivation, attribution theory may be alone in embracing the goals of the “grand” theories in seeking to explain actions in domains other than achievement and in having a structure that includes inter-related parts ordered in a temporal sequence. Finally, it is very satisfying that the theory predicts my main reactions at receiving the Thorndike Award: happiness (outcome-dependent), gratitude (attributions to controllable actions of others), and pride (due to very long-term effort).

Author Notes

This paper was based on the address given for the E. L. Thorndike Lifetime Research Achievement Award, presented to the author at the American Psychological Association Convention in Toronto Canada in August, 2009.

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Figure Captions

- Fig. 1. Academic lineage linking E. L. Thorndike and this author.
- Fig. 2. Representation of the four main causes of behavior, their dimensional properties (locus and stability), and linkages to affect and expectancy.
- Fig. 3. Preliminary attribution-based theory of motivation with questions to be addressed.
- Fig. 4. Final attribution-based theory of intrapersonal motivation.

