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# Is There Any Future in Achievement Motivation?[1]

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*The cognitive elaboration of achievement motivation theory by Raynor is reviewed, and the implications of future orientation and psychological distance are examined. It is suggested that psychological distance is determined by at least the following factors: (a) the expectancy of reaching the goal (attainability of the goal), (b) the distance in time between the present state and the future goal, and (c) the individual's future time orientation considered as a personality trait. It is argued that only the first of these factors is included in Raynor's elaboration. The latter two are assumed to determine the Perceived Goal Distance in Time (PgD), and it is postulated that the arousal of motives increases as PgD decreases. It is concluded that each future goal must be weighted by the corresponding perceived goal distance coefficient.*

It is obvious that the definition of achievement motives as capacities to anticipate pleasure or pain in achievement situations (Atkinson, 1958; McClelland, 1955) implies that, to a certain extent, they are directed toward future achievement events or activities: A given performance event at some distance in time might be anticipated as desired (approached) or feared (avoided) depending on the relative dominance of the individual's achievement motive constellation.

It is also obvious that the original test for measuring the achievement motive (the Thematic Apperception Test of *n* Achievement) has a category for long-term consequences (McClelland, Atkinson, Clark, & Lowell, 1953). It is therefore surprising, according to Heckhausen (1980),

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that future has been a forgotten variable in achievement motivation research for a long time. Raynor's (1967, 1969, 1974) elaboration of the initial theory (Atkinson, 1957) was supposed to overcome this deficiency by making a distinction between immediate consequences of an activity and effects attributable to anticipated future goals. This new theory stimulated a number of studies and experiments intended to investigate the effects of future consequences upon present motivation and performance (cf. Atkinson & Raynor, 1974). However, is there any future in these investigations, or is the future still the lost dimension in achievement motivation?

The purposes of the present contribution were to (a) examine implications and research based on Raynor's (1974) elaboration of the theory of achievement motivation, and (b) develop a set of additional assumptions regarding psychological distance and future time perspective in achievement motivation.

In the theory of achievement motivation presented by Atkinson (1957), the strength of an individual's resultant achievement motivation is an algebraic summation of the tendency to approach success ($T_s$) and the tendency to avoid failure ($T_{-f}$). Further, the resultant achievement motivation (i.e., $T_s + T_{-f}$) is determined by the individual's motive to approach success ($M_s$), the motive to avoid failure ($M_f$), and his subjective probability of success ($P_s$) in a particular task or activity, in the following way:

$$(1)\ T_s + T_{-f} = (M_s - M_f)(P_s)(1 - P_s).$$

According to Raynor (1969), however, this theory of achievement motivation (Atkinson, 1957) might be too limited because it does not distinguish between effects attributable to the immediate consequences of an activity and effects attributable to anticipated future goals. The theory focuses attention only on the immediate consequences of an activity. The reason for this might be that the behavior of a subject in a laboratory situation is often not related to the achievement of future goals, and accordingly, there has been no need to account for any immediate implication due to more long-term goals. The performance of an activity was an end goal and not, in addition, a means to some future goal(s). However, life situations often include present performance both as an end in itself and as a means to some distant goal(s). And often the effects attributable to long-term goals are more important as behavior determinants than the immediate consequences of the performance. Thus, a person might engage in an activity because (a) the consequence of the activity is an end goal in itself and (b) the immediate activity is serving as a means to some future steps. In this last case, immediate success must be a distinct possibility since immediate success is necessary to strive for future goals.

Raynor's cognitive extension of the theory of achievement motivation (Raynor, 1967, 1969, 1974) is based on the general principles of

expectancy-value theory (Edwards, 1954) in conjunction with Lewin's (1938) analysis of behavior as a series of steps in a path to a goal. It specifies the functional significance of anticipation future as well as immediate consequences. In Raynor's theory, the present (immediate) activity is defined as instrumental when it has consequences for future goals; an immediate instrumental activity can be considered as the first step in a path leading on to the future goal. A path consists, therefore, of a series of steps. Each step represents an activity and its expected consequences. Each step represents a "subgoal," which contributes, with a separate motivational component, to the resultant achievement motivation; i.e., the resultant achievement motivation induced by a final goal is the sum of the achievement motivation induced by each separate subgoal. This motivation ($T_s + T_{-f}$) is determined by the number ($N$) of the expected incentive values ($I_{s_n}$), the subjective probability of reaching all these values ($P_{1s_n}$), and the resultant motive strength ($M_s - M_f$), in the following way:

$$(2)\ T_s + T_{-f} = (M_s - M_f) \sum_{n=1}^{N} (P_{1s_n} \times I_{s_n}).$$

As in Atkinson's (1957) theory, Raynor (1974, p. 130) also assumes that the incentive value ($I$) of some anticipated success ($s_n$) in a contingent path is an inverse linear function of the total subjective probability that immediate activity will result in success ($P_{1s_n}$), i.e.,

$$(3)\ I_{s_n} = 1 - P_{1s_n}.$$

The elaborated theory (Raynor, 1974) can then be expressed as follows:

$$(4)\ T_s - T_{-f} = (M_s - M_{-f}) \sum_{n=1}^{N} (P_{1s_n})(1 - P_{1s_n}).$$

Raynor's new key assumption is that the total subjective probability of continuing successfully through a series of subgroals toward a final future goal ($p_{1s_n}$) is a multiplicative function of the subjective probability of success in each prior step in the path $P_{1s_n}$, $P_{2s_2} \ldots P_{ns_n}$) toward the future goal (Raynor, 1969, p. 607), i.e.,

$$(5)\ P_{1s_n} = P_{1s_1} \times P_{2s_2} \times P_{3s_3} \times \ldots \times P_{ns_n}.$$

This can be written in terms of sequential multiplication:

$$(6)\ P_{1s_n} = \prod_{n=1}^{N} (P_{ns_n}).$$

That is, the present subjective probability of continuing successfully through a series of subgoals ($P_{1s_n}$) toward the final goal is assumed to be

systematically *reduced* by the subjective probability of reaching each subgoal and the number of subgoals.

Raynor (1969) has shown that, when the length of the path is 1, that is, when the immediate activity is an end goal in itself with no future consequences ($n = N = 1$), the new elaborated theory is identical to the initial theory developed by Atkinson (1957). Raynor's theory implies an intensification of the influence of achievement motives on present achievement-related behavior if success at an immediate task is necessary to continue to future tasks. This is called a contingent path. In what is called a noncontingent path, immediate success or failure has no direct bearing on subsequent activity, and no accentuation of the influence of achievement motives can be expected.

Have studies related to the elaborated theory of achievement motivation provided any evidence for hypotheses involving future orientation and motivation as derived from the theory?

Studies aimed at investigating the effects of potential future consequences upon present motivation and performance can roughly be classified as two types: the experimental type (cf. Entin & Raynor, 1973; Raynor & Rubin, 1971; Raynor & Sorrentino, 1972) and the ex post facto type (cf. Gjesme, 1972; Isaacson & Raynor, 1966; Raynor, 1970; Raynor, Atkinson, & Brown, 1974).

In the first type of study, so-called future orientation was more less directly manipulated by experimental introduction of different kinds of paths. A contingent path was created, for instance, by leading subjects to believe that success on a prior "test" in a series of four similar arithmetic "tests" was necessary in order to guarantee the opportunity to take the next test, while failure on any test ruled out the possibility of taking additional tests. A noncontingent path was created by telling subjects that they would have the opportunity to take each of the four tests, regardless of their performance on any one of them. The results, which partly supported deductions from Raynor's theory, were interpreted as an illustration of the effects on present motivation of future orientation and long-term goal striving (cf. Raynor, 1974, p. 121 f.). While this might well be so, none of these experiments is in fact concerned with future orientation but rather with *immediate, instead of long-term instrumentality of activity;* i.e. the activity has *immediate instrumental value,* but not long-term instrumental consequences or psychological perspective. "Future orientation" is only represented by the (immediate) degree of attainability of the goal. Of course, this degree of immediate instrumentality influences the length of the psychological distance to the goal in the individual's mind, but is identical neither with future orientation nor with long-term goals (cf. also Gjesme, 1974, 1975, 1976). Nevertheless, the experimental studies related to Raynor's theory provide some indirect evidence concerning hypothesized underlying mechanisms.

The ex post facto type of studies (cf. Gjesme, 1972; Isaacson & Raynor, 1966; Raynor, 1970; Raynor et al., 1974) examine the relations between achievement motives and performance for individuals with different future orientation. The elaborated theory implies that contingent future orientation (or perceived instrumentality) should accentuate the relationships between achievement motives and levels of performance. In all these ex post facto-oriented studies, the future orientation perspective is taken care of by the individual's perceived importance or long-term instrumentality of his performance. In sum, the results gave considerable evidence to the effect that the influence of achievement motives increased as the instrumentality (or importance) of the activity for future goals increased. That is, the approach-oriented (those in whom $M_s > M_f$) individuals were more eager and performed at a higher level when they conceived their present activity as instrumental to the achievement of more future goals (e.g., high perceived importance (PI)), whereas the failure-oriented ($M_f > M_s$) were more worried and performed at a lower level when they conceived their present activity to have high PI. However, the question raised in this context is to what extent "importance of present activity for future goals" reflects future orientation?

The assessment of future relatedness in these ex post facto studies was inferred from the response, for example, to questions like "To what extent does your exam performance relate to your own future goals?" (Raynor et al., 1974, p. 160). It is postulated here that this assessment of future orientation probably reflects more the importance and and/or instrumentality of present activity than future orientation per se. Indeed, individuals who considered an exam to have instrumental value must probably also have a certain extended future orientation, although such expected consequences of an activity might not lie in a future orientation continuum but in branch lines with modest future perspective. However, inasmuch as such expected consequences come *after* the activity, there is automatically some "future" in them, and these studies probably demonstrated more the effects of future orientation on present achievement striving than did the first type of studies. Nevertheless, instrumentality of an activity and future orientation are by no means identical concepts. It has been illustrated in a recent study (Gjesme, 1979b) that the relationship between stated instrumentality (indicated by the sum-scores of seven statements like "It is important for me to perform well at school in order to reach my future goals," I believe that my performance now will have a number of implications for my performance in future"), and a Future Time Orientation Scale (FTO) (cf. Gjesme, 1979a) was practically zero ($r = .05$, $df = 506$, $p > .10$).

Thus, it seems to be possible to have a high perceived importance of an activity and at the same time to be low in FTO, and vice versa: to be

high in FTO and simultaneously conceive no future instrumentality of a particular present activity.

## THE FUTURE PERSPECTIVE

Raynor's theory also recaptures and defines with its elaboration concepts like psychological distance and expectancy. In fact, the concept of psychological distance is taken care of in the expectancy factor. According to Raynor (1974, p. 129), previous theoretical formulations have failed to recognize the equivalence of the concepts of expectancy, psychological distance, and potency (relative weight or "importance"), primarily because the experimental situations on which theories were based have confined attention to activities that have no future implications to the individual.

Consideration of behavior as a series of steps in a path that may lead to some future consequence focuses attention on the individual's strength of expectancy that immediate activity will or will not lead him to some future goal. Raynor suggests that the "psychological distance" between an individual and his future goal is *equivalent* to his strength of expectancy that immediate activity will fail to lead to it (i.e., $P_{1f_n}$) (Raynor, 1974, p. 129). The subjective probability that immediate activity will fail to lead to the future goal ($P_{1f_n}$) is the complement of the expectancy of reaching the future goal ($P_{1s_n}$) (i.e., $P_{1s_n} = 1 - P_{1s_n}$). When the expectancy of reaching the future goal ($P_{1s_n}$) is high, the psychological distance to the goal is assumed to be low, and vice versa: when the expectancy is low, the psychological distance is assumed to be high.

Obviously, this is an important aspect of psychological distance. It is also clear that this aspect has a parallel in Heckhausen's consideration of the *degree of attainability of the goal* as a determinant of psychic distance: "the attainability of the goal depends on the degree of difficulty of the task, which in turn is determined by how it is perceived in relation to one's personal ability and capabilities" (Heckhausen, 1967, p. 77). Increasing the attainability of a goal heightens the expectation gradient (p. 78) and reduces the psychological distance between the individual and the goal. However, it should also be made clear that psychological distance is *not* equivalent, as Raynor assumes, to the expectancy factor. This "expectancy of reaching the future goal" factor is only one factor of central importance for psychological distance. Therefore, it seems more correct to modify Raynor's assumption as follows:

*Assumption I: Psychological distance is a negative function of the probability (expectancy) of reaching the future goal.*

A possible weakness in Raynor's elaborated theory is that it does not take care of the goal's perceived physical distance in time per se. Raynor's theory gives equal weight to a goal close in time as compared to a goal far away in time. Other things being equal, is it reasonable that a faraway goal should affect the individual as much as a goal in the very near future? Hence, in addition to the factor of probability of reaching the future goal (or attainability of the goal), which is elegantly taken care of in Raynor's elaborated theory, at least two other factors are essential when analyzing psychological distance and its effects on present behavior. One of these factors belongs to the situation and one is related to the individual: (a) The situational factor is the distance in time between the individual and the future achievement event (goal); (b) the personal factor is the individual's future time orientation considered as a personality trait. Actually, these factors will interplay with each other and determine the individual's *perceived* goal distance in time. For clarity of presentation, however, we will treat them separately before they are considered in combination with each other.

### *The Goal's Distance in Time*

It has been pointed out earlier (Gjesme, 1974, p. 162) that in Raynor's contribution to the understanding of concepts like future time perspective and/or psychological distance and their implications for present arousal of achievement motives, the effects of *distance in time per se* as a dimension of psychological distance seemed to be overlooked. In one study (Gjesme, 1974), it was shown that the imminence of a future achievement task (goal) did affect the arousal of achievement motives, although no immediate success was necessary to continue to the future task (i.e., a noncontingent condition). It is, however, necessary to recapitulate some of the asumptions and conceptual foundations underlying the study by Gjesme (1974). The reasoning was based on Miller's theoretical model (1944, 1951, 1959), which contains, among others, the following basic postulates: (1) The tendency to approach a goal (and to avoid a feared stimulus) is stronger the nearer the subject is to it; (2) the avoidance gradient increases more rapidly with nearness than does the approach gradient. Results confirming these postulates have been shown for conflicts in space (Brown, 1948; Bugelski & Miller, 1938; Dollard & Miller, 1950; Miller & Murray, 1952). These results are based on animals (rats), but it is assumed that all psychological processes found in lower animals are likely also to be present in man. The results above are also limited to spatial conflicts, probably mainly because conflicts in a pure time dimension are difficult to induce in animals (and indeed, it might

often be difficult to differentiate between conflicts in space and time since, for instance, a goal that is remote in space might also be at a distance in time, and as the goal approaches in space its nearness in time increases). Man's ability to use symbols to represent distant goals enables him to bring effects of consequences distant in time into the psychological present.

In order to extend the postulates about spatial distance to behavior in a pure time dimension, it was necessary to make some temporal definitions: (a) The term *nearness,* as used in the postulates, can be indicated by varying the goal's distance in time, and (b) the approach and the avoidance tendencies can be indicated by a combination of the motive to approach success ($M_s$) and the motive to avoid failure ($M_f$). As mentioned, the definition of the motives implies that they, to a certain extent, are directed toward future achievement events or activities (although these future events might be more or less important as personal achievement goals for the individuals). The individuals might establish a connection between a future relatively neutral performance event and themselves. The nature of this connection is dependent on characteristics of the event itself as well as of the individual's motive constellation. Individuals in whom the motive to approach success ($M_s$) is relatively stronger than the motive to avoid failure ($M_f$), namely, approach-oriented individuals ($M_s > M_f$), should anticipate positive affects and, accordingly, have a positive goal gradient for future achievement activities. Those with the opposite motive constellation ($M_f > M_s$), namely, avoidance-oriented individuals, should anticipate negative affects, and they are assumed to have a negative goal gradient for achievement activities distant in time. The foregoing assumptions involved the following hypotheses: (a) The approach-oriented should increase their amount of performance as the goal approaches in time; (b) the avoidance-oriented should decrease their amount of performacne as the goal approaches in time (cf. Miller's postulate no. 1); and (c) the avoidance-oriented should have a steeper slope of goal gradient for performance than the approach-oriented (cf. Miller's postulate no. 2).

Four independent experimental conditions were produced (Gjesme, 1974). Different distances in time were induced by telling the subjects (12-year-old pupils) when they could expect the next achievement activity to occur: in 1 year from now, in 1 month, in 1 week, immediately. It should also be added that the experimental procedure in this investigation was intended to induce a noncontingent condition, since no success at the immediate task was necessary to continue to the future test. The test consisted of anagram and numerical problems. Level of performance was

indicated by number of problems solved correctly and number of problems attempted (indication of effort), (Gjesme, 1974, p. 165). The results supported hypotheses (a) and (b) when the number of problems solved correctly was used as measure of amount of performance, while only hypothesis (a) received support when the number of problems attempted was employed. Hypothesis (c) was rejected. More precisely, the following results were found: The approach-oriented pupils gradually increased the number of problems attempted as well as the number solved correctly as the goal approached in time. The avoidance-oriented pupils decreased the number of problems solved correctly but not the number of problems attempted. The following interpretation was offered for the avoidance-oriented ($M_f > M_s$) pupils: "For avoidance-oriented pupils the results appear to indicate that the effects of goal distance in time do not produce a resistance against achievement activity per se, since the number of problems attempted was not significantly influenced by nearness in time. It seems, however, to result in performance decrement (i.e., number of problems solved correctly) as a consequence of conflict engendered by competing avoidance tendencies" (Gjesme, 1974, p. 169).

In another study, using the same procedure as in the foregoing study, the influence of goal distance in time on the relationship between test anxiety and performance was examined (Gjesme, 1976). It was predicted that (a) highly anxious individuals should decrease (or slow down) their performance as a future achievement goal (task) approaches in time, i.e., they should have a negative goal gradient for future performance; and (b) that the negative goal gradient for future performance should be reduced as the individual's dispositions for anxiety decrease. The following observations, based on 12-year-old Norwegian schoolchildren, were made: (a) Individuals very high in anxiety seemed to decrease their number of problems solved correctly as the goal approached in time, and (b) the slope of this negative goal gradient for very anxious individuals decreased as the individual's measured test-anxiety dispositions decreased (Gjesme, 1976, p. 239 f.). Furthermore, (c) there was a tendency for low-anxious individuals to increase the number of problems attempted as a future performance goal approached in time. The interpretation of the results were that for the high-anxious individuals the vigor and amount of effort exposed in a present achievement practice may appear to be less constructive as the related future task approaches in time. This would be because present activity may be inhibited by increasingly task-irrelevant responses that reduce the quality of performance. Therefore, the future performance goal (task) should, if possible, be kept

at some distance for the very anxious individuals. The low-anxious individuals may tend to increase and transform their present effort into constructive activity, which increasingly enhances performance, as a distant future goal approaches in time. Consequently, a performance goal should not be kept too far ahead in psychological distance for the individuals of low anxiety (Gjesme, 1976, p. 246).

It should be mentioned that the effects of goal distance in time in both of these studies (Gjesme, 1974, 1976) were lost if the individuals' achievement motive characteristics (including test anxiety) were not taken into account, because the approach-oriented and the avoidance-oriented individuals seemed to react in diametrically opposite ways as the goal approached in time.

According to the reasoning and results presented above, two things should be noted: (a) that goal distance in time is an important dimension of psychological distance, this distance increasing as the goal distance in time increases, and (b) the intensity and accentuation of the achievement motive (including test anxiety) characteristics increased as the goal's distance in time decreased. More specifically, the results referred to in the foregoing may lead to the following two assumptions:

*Assumption II: Psychological distance is a positive linear function of the goal's objective distance in time.*

*Assumption III: The arousal of motives increases as the goal distance in time descreases.*

Continuing our analysis of the factors that contribute to the determination of arousal and manifestation of achievement motives we now consider the influence of future time orientation.

### *Future Time Orientation (FTO)*

The individual's future time orientation (FTO) was the other factor that was considered as an important determinant of psychological distance and its effects on present behavior.

In general, an event or a consequence appears to lose effectiveness when it is remote in time. However, there seem to be large individual differences in this temporal function of a future consequence. Some individuals appear to be greatly affected by goals far away in temporal distance. Others seem to be only very slightly oriented toward and affected by events even in the very near future. It is expected that the individual's future time orientation influences and modifies the perception of a given future distance in time. Developmentally, an individual's future time orientation seems to have its roots in the need situation of the organism (Fraisse, 1963; Nuttin, 1953, 1976; Piaget, 1966). The conditioning of activities related to need satisfaction implies a kind of adapta-

tion to the rhythm of the satisfying situations that indicate the first experience of a temporal seriation (Fraisse, 1963). Nuttin (1953, 1964, 1976) has also emphasized the importance of the need situation of the organism as the basis of the future time dimension in behavior. The need experience implies a dynamic relationship toward something absent. This means that the organism is vaguely oriented toward the object he needs. The further structuralization of the future is due to more elaborated cognitive functions. The extension of a deeper time perspective is due to the fact that needs develop in man in many means–ends structures that constitute plans and long-term projects. Thus, the future time perspective in man is related to the cognitive elaboration of needs in plans, intentions, and tasks that have a more or less elaborated temporal structure.

An analysis of how the future time orientation develops and functions, and which factors influence future time orientation, has led to the assumption that an individual's future time orientation (FTO) develops gradually to become a relatively stable personality characteristic in terms of a *general capacity to anticipate and enlighten the future,* including a cognitive elaboration of plans and projects and reflecting the degree of concern, involvement, and engagement in the future (Gjesme, 1979c).

Functionally, it has been assumed that the stronger the future orientation of an individual, the more extended is his temporal horizon and the more influence will potential future events have on his present behavior. In what way the distant events will affect him (i.e., the consequences) depends on the valences he assigns to them. The valences depend on the interplay between characteristics of the objectives and the individual's motive systems, or, as Heckhausen (1967, p. 69) puts it, "in a phenomenological sense valence appears as an independent characteristic of the situation, functionally it does have a close connection to the motivational state."

In an earlier investigation (Gjesme, 1975), a questionnaire (cf. also Gjesme, 1979a) was constructed in an attempt to tap future time orientation (FTO). The questionnaire consists of 14 statements, such as "I have been thinking a lot about what I am going to do in the future," and "I am not so very much concerned about things a little ahead in time" (–). The items followed by (–) were scored in the reverse direction. All items were rated on a 4-point scale, which varied from 4–"is very true of me" to 1–"is not at all true of me." The individuals were divided into high and low FTO groups on the basis of whether their sum-scores on the FTO scale were above or below the total group median. In order to examine the relationship between goal distance in time and different FTO groups, the individuals were asked to judge how near they perceived an event that was to occur 1 year in the future. The results showed that those classified as high in FTO judged the future event as significantly *nearer* than those low in FTO; i.e., the perceived time distance to the event was

longer for the low-FTO than for the high-FTO individuals (Gjesme, 1975, p. 148). Thus, an individual's future time orientation, considered as a personality trait, influences and modifies the perception of a given future distance in time. More specifically, it is assumed that:

*Assumption IV: The perceived distance between individuals and a given future goal (event) decrease as the individuals' future time orientation (FTO) increases.*

Thus, the individual's future time orientation modifies a given objective distance in time—or influences the perceived goal distance in time. An individual who is strongly oriented toward the future (e.g., high FTO) should perceive any given future distance in time as nearer than an individual low in future time orientation (low FTO). In other words, the psychological distance between an individual and a given future goal is longer for the low-FTO individual than for the high-FTO individual. However, the importance of being high or low in FTO should decrease as the objective distance decreases, and at the zero point of temporal distance (i.e., when the goal is reached) it does not matter whether an individual is high or low in FTO.

Based on the basic paradigm of a decreasing intensity of an event as the time distance to it increases, Assumption IV means that, other things being equal, any goal at some distance in time should affect the high-FTO individual more than the low-FTO individual, since the intensity of the event is assumed to be highest for the high FTO individuals.

### *The Combination of Distance and FTO*

The assumption that an event appears to lose effectiveness when it is remote in perceived distance obviously has important implications as to the effects of a future goal or event on present arousal of achievement motives. We now consider the implications of goal distance in time and the individual's future time orientation (as defined and measured by the FTO scale) on the manifestation of achievement motives in performance. This was done in a follow-up study by Gjesme (1975). Let us consider the approach-oriented ($M_s > M_f$) individuals first. Within this group there are individuals with different degrees of FTO. A performance goal at a given distance in time is probably perceived as nearer and clearer by high-FTO individuals than by low-FTO individuals. Thus, because of the assumed positive slope of goal gradient for the approach-oriented individuals (cf. also Gjesme, 1974), the high-FTO individuals should exert more effort and perform at a higher level than the low-FTO individuals at any given goal distance in time, since the future goal is always more remote for the latter. On the other hand, as earlier noted, the importance

of being high in FTO should decrease as the objective temporal distance decreases, and at the zero point of temporal distance (i.e., when the goal is reached) it does not matter whether the individuals are high or low in FTO – their performance levels should be equal at this point. In sum, this implies that the slope of the positive goal gradient for performance should be steeper for those of the approach-oriented individuals who are low in FTO as compared with those who are high in FTO (Gjesme, 1975).

The avoidance-oriented individuals should have a diametrically opposite reaction pattern with regard to future goals. A performance goal at a given temporal distance should be perceived as closer and clearer by the high-FTO individuals than by the low-FTO individuals. And the more remote a performance goal is, the less should the avoidance-oriented individuals fear it. Thus, because of the assumed negative slope of goal gradient for avoidance-oriented individuals (cf. Gjesme, 1974), high-FTO individuals should perform at a lower level than low-FTO individuals at any temporal goal distance, since the goal is assumed to be perceived as closer for the former. However, the influence of the individual's FTO should decrease as the objective distance in time decreases, and at the point where the goal is reached, levels of performance should be equally low for high and low FTO avoidance-oriented individuals. This implies that the slope of the negative goal gradient for performance should be steeper for those of avoidance-oriented individuals who are low in FTO as compared with those who are high in FTO (Gjesme, 1975).

More precisely, it was predicted that (a) approach-oriented ($M_s > M_f$) individuals should increase their amount of performance as the goal approaches in time, and (b) avoidance-oriented ($M_f > M_s$) individuals should decrease their amount of performance as the goal approaches in time. In addition, two hypotheses concerning differences in slope of goal gradients within approach- and avoidance-oriented individuals are offered: (c) The slope of the positive goal gradient for performance is steeper for low as compared with high FTO approach-oriented individuals, and (d) the slope of the negative goal gradient for performance is steeper for low as compared with high FTO avoidance-oriented individuals (Gjesme, 1975, p. 147).

An experiment (Gjesme, 1975) using the same experimental procedure as in the study by Gjesme (1974) was carried out. The pupils' (379 sixth-graders of both sexes) achievement motives ($M_s$ and $M_f$) were assessed by the Achievement Motives Scale (Gjesme & Nygård, 1970; cf. also Nygard & Gjesme, 1973), and their future time orientation (FTO) was indicated by a FTO scale (Gjesme, 1975; cf. also Gjesme, 1979a). The results revealed the following pattern of relationships: (a) Both high and low FTO approach-oriented ($M_f > M_s$) individuals increased the number

of problems attempted as well as the number of problems solved correctly as the goal approach in time; (b) the avoidance-oriented ($M_f > M_s$) individuals who were low in FTO decreased both the number of problems attempted and the number solved correctly as the goal approached in time, while the performance amounts for those who were high in FTO were not affected by nearness in time; (c) there was a weak, but nonsignificant, indication of a steeper positive slope of goal gradient for the approach-oriented individuals who were low in FTO as compared with those were high in FTO, i.e., the regression coefficients of two performance measures and temporal distance (the experimental conditions) for low FTO approach-oriented pupils were .39 and .35, and for approach-oriented pupils high in FTO the coefficients were .26 and .17, respectively; and (d) those of the avoidance-oriented individuals who were low in FTO had a steeper slope of negative goal gradient (i.e., the regression coefficients were $-.22$ and $-.46$) than those who were high in FTO (i.e., the regression coefficients were .14 and $-.07$, respectively) (Gjesme, 1975, p. 156).

Thus, the results supported hypotheses (a) and (d) and also produced some indications that supported hypotheses (b) and (c). The experimental procedure employed in this investigation was supposed to induce a so-called noncontingent condition, since no success at an immediate task was necessary to continue to the future test. This procedure was chosen in order to examine possible effects of a future event (goal), which is near in time, on present arousal of achievement motives, regardless of the importance of immediate practice. Why did the pupils practice for an "unimportant" task remote in time? As pointed out earlier, the achievement motives are, to a certain extent, directed toward future achievement events, although these events might be more or less important as personal achievement goals. If this is correct, the difference between an important and an "unimportant" task is probably also a matter of degree rather than an all-or-none difference.

The effect of distance in time was expected to be, at best, moderate to low. Therefore, in the test situation it was essential to minimize the occurrence of any other achievement-related cue, in order to make possible the effect of distance in time. This is the reason that no standard for a good performance was introduced and why fairly easy tasks were employed. As to the latter, moderately difficult tasks would probably have increased the general level of arousal of motives and thereby overshadowed a weaker effect of distance in time.

Both the foregoing reasoning and the interpretation of the current results have been based on the basic assumption of an increasing intensity of an event as the time of it approaches. More specifically, the positive and negative valences of a future performance event (goal) are assumed to

increase as the temporal distance decreases. Some indications of such effects have also been revealed in earlier, quite different studies. Mischel, Grusec, and Masters (1969) found that as the anticipated delay interval for the attainment of a tangible reward increased, the subjective value of the reward decreased. This result is generally consistent with that of House (1973), who found that the affects associated with success and failure in regard to performance decreased over time.

The paradigm that the more distant an event is the less it affects present behavior was directly supported in the three mentioned studies by Gjesme (1974, 1975, 1976). To repeat, in one of these studies the motives were not related (i.e., were not aroused) to performance when the goal was farthest away (actually a full year away in time) (Gjesme, 1974, p. 169). The other study showed that the motives were not related to performance for low-FTO individuals in the experimental condition where the goal was farthest away (1 year) in time. Furthermore, the low-FTO individuals perceive any temporal distance as farther away than the high-FTO individuals. Thus, a performance goal that is perceived as very far away does not affect the influence of motives on present achievement activity (Gjesme, 1975, p. 156).

## SUGGESTIONS AND IMPLICATIONS

Both theoretical formulations and empirical research have illustrated the influences of psychological distance on present arousal and manifestation of achievement motives.

Psychological distance is determined by at least the following three factors: (a) the expectancy (or probability) of reaching a goal (or attainability of the goal), (b) the distance in time and space between the present state and the future goal, and (c) the individual's future time orientation (FTO).

These factors will determine to a great extent where in the individual's life space a performance event will be and thereby what influences it might have on the individual's present behavior.

The first of the foregoing four assumptions is nicely incorporated in Raynor's elaborated theory of achievement motivation. The three others, however, seem, to be overlooked. As suggested in the foregoing, Assumptions 2 to 4 might be considered in combination and assumed to determine what is tentatively called Perceived Goal Distance in Time (PgD).

Generalizing the information from studies that indicate that the arousal of motives (and test anxiety) increases as the goal distance in time decreases (Gjesme, 1974, 1975, 1976), we might also assume that:

*Assumption V: The arousal of motives increases as the perceived goal distance in time (PgD) decreases.*

According to Assumption V we would predict that an individual perceiving a performance event as nearest would have his motives most strongly aroused. Therefore, in some way or other, a future performance event (goal) should be weighted according to its perceived distance in the individual's life space so that *any goal perceived far away in time receive less weight than a goal in the very near future*—other things being equal.

### *The Goal Distance Coefficient* ($\gamma$)

Up to now the development of assumptions has been based on empirical data. However, in an attempt to push the reasoning a step further and to integrate the assumptions within an achievement motivation frame of reference, we now leave hard data and turn to more speculative proposals. We suggest a new factor, which any future performance event should be weighted against: Goal Distance Coefficient ($\gamma$). This coefficient is proposed to be determined by perceived goal distance in time (PgD). Unfortunately, we have no empirical studies yielding approximation of the relationship between Goal Distance Coefficient ($\gamma$) and Perceived Goal Distance in Time (PgD). However, lacking empirical evidence but employing intuition we propose in general that:

*Assumption VI: The goal distance coefficient* ($\gamma$) *is a hyperbolic type function of perceived goal distance in time (PgD).*

$$(7) \qquad \text{i.e., } \gamma = \text{PgD}^{-2}.$$

To be in accordance with the numerical values assigned to the different factors in achievement motivation theories (cf. Atkinson, 1957; Raynor, 1974), it is assumed that the Goal Distance Coefficient ($\gamma$) can vary between 1 and 0 (zero): When the goal is perceived in the immediate present, the coefficient is 1, and as the perceived goal distance increases to infinite ($\text{PgD} \rightarrow \infty$) the coefficient ($\gamma$) approaches zero (0).

Thus, when effects of some future events on present behavior are to be taken into consideration, we do need to know at what psychological distance in time each event is expected to occur. Further, each future performance event (step) must be weighted by its corresponding perceived Goal Distance Coefficient ($\gamma$).

It should also be emphasized that PgD is a relative factor. For instance, a moderate PgD might represent an objective distance of 2 years for an adult and 1 week for a child, or 3 years for an adult high in future time orientation (FTO) and 1 day for a child low in FTO. But they all get the same value in PgD and are thereby weighted by the same Goal Distance Coefficient ($\gamma$). Hence, the PgD variable is a flexible variable that indirectly takes care of the development aspect of future time.

In addition, PgD is probably also influenced by other characteristics like the size, the structure, and the valences of each future subsequent goal (event), as well as the number of related goals (events) in addition to the "main" goal in that particular future time area. These factors are all supposed, separately or in combination with each other, to influence the PgD so that a future goal that is large in size and/or one that is highly structured is perceived as closer and should thereby receive more weight than one that is small and/or unstructured. Likewise, the higher the valences of a given future goal, the more weight it should receive, and the more it should affect present state. Now, let $k$ be an *inverse* function of such anticipated characteristics of a given future goal, then the Goal Distance Coefficient ($\gamma$) can be made more flexible and universal, and be written as:

$$(8) \qquad \gamma = \mathrm{PgD}^{-2k}$$

that is, increasing goal characteristics (valences, etc.) is assumed to reduce perceived goal distance and thereby increase the influence of the future goal (i.e., the $\gamma$-coefficient increases) on present behavior.

It is suggested that $k$ can vary between 0 and $\infty$. When $k \to 0$ (i.e., when the characteristics of the goal—size, valence etc.—are very high), $\gamma \to 1$ for all future goal distances. That is, the future temporal distance does not *reduce* the goal's effect on the individual's present state. When $k \to \infty$ (i.e., when the characteristics of the goal are very low), $\gamma \to 0$ for all distances. That is, there is no expected future goal to influence the individual's present state. For all other conditions, i.e., when $\infty > k > 0$, $0 < \gamma < 1$, the future goals will influence the individual's present state and their influence will have to be adjusted according to their perceived distance in time and their characteristics.

The transformation of PgD into numerical values is necessary and is illustrated in Figure 1, where the Goal Distance Coefficient ($\gamma$) is shown as a function of perceived goal distance (PgD) for different anticipated goal characteristics (e.g., valence, etc.) ($k$).

Given the assumption $\gamma = \mathrm{PgD}^{-2k}$, we have calculated a corresponding PgD value for a given $\gamma$-value, and for different values of $k$. However, the logical and psychological calculation procedure is first to measure the perceived goal distance variable and then to find the corresponding $\gamma$-value.

The simplest way to measure perceived goal distance is probably to ask the individuals directly at which distance they expect the future achievement event to occur. The individuals could then mark the perceived distance (brief, intermediate, long, etc.) on a continuous scale. In an experimental setup, the resultant achievement motivation or the manifestation of motives could then be tested directly at each given

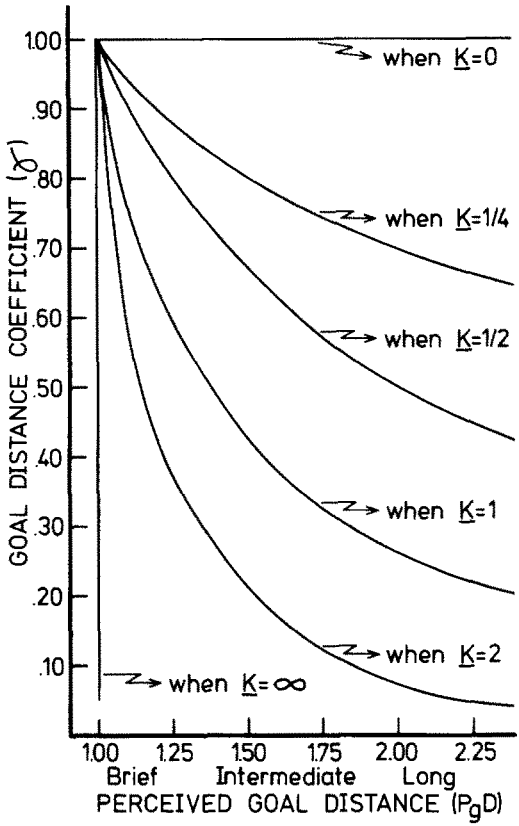


**Fig. 1.** Graphic representation of the Goal Distance Coefficient ($\gamma$) as a function of Perceived Goal Distance (PgD) for different goal characteristics ($k$).

perceived distance. On the basis of the amount of increase or decrease of motivation from one perceived distance to another, the Goal Distance Coefficient ($\gamma$) and its suggested relation to PgD could be tested indirectly.

On the other hand, the resultant perceived goal distance is determined, among other factors, by the physical distance to the future goal, the individual's FTO, and the goal characteristics ($k$). These factors can be measured separately. On this basis the factors, separate or combined, can be related to perceived goal distance, and the relationships among the physical distance, the FTO, and the Goal Distance Coefficient ($\gamma$) for different values of $k$ can be tested.

Regarding the measure of future time orientation (FTO), a number of methods are available (cf. Devolder, 1978; Nuttin, 1976), ranging from

indirect impersonal methods (cf. Goldrich, 1967; Ruiz, Reivich, & Krauss 1967), via direct impersonal methods (cf. Cottle, 1967; Zurcher, Willis, Ikard, & Dohme, 1967) and indirect personal methods (cf. Nuttin, 1964, 1976), to direct personal methods (cf. Braley & Freed, 1971; Cottle, 1968; Eson, 1951).

Further, the physical distance in time could be assessed by asking the individuals at what objective time distance the goal (event) is expected to occur.

Likewise, the valence, etc. ($k$) of the goal could be measured on a valence scale.

Measuring all three variables may give an indication of the relative importance of the factors that influence PgD and provide a more exact testing of its relation to the $\gamma$-coefficient.

### *New Suggestion and Implications*

According to the foregoing considerations, the following integration of the perceived goal distance factor into the elaborated theory of achievement motivation is suggested:

$$(9)\ T_s - T_{-f} = (M_s - M_f) \times \sum_{n=1}^{N} \left[ \left( (P_{1^s n}) (1 - P_{1^s n}) \right) \times \mathrm{PgD}_{1\,n}^{-2k} \right]$$

All the factors in this new suggestion are defined, as in Atkinson's, and later developed in Raynor's theory of achievement motivation, except for the PgD factor. It is assumed that perceived goal distance in time (PgD) determines the vector coefficient gamma ($\gamma$). This coefficient is assumed to be a hyperbolic function of PgD. Further, the form of relationship between $\gamma$ and PgD is also influenced by the characteristics of the future goal ($k$) (see Figure 1); increased goal characteristics are assumed to increase the influence of a future goal on present behavior.

Under the conditions of no perceived temporal distance in a contingent path, the Goal Distance Coefficient ($\gamma$) is 1 for all the contingent activities, and the new suggestion equals Raynor's theory when the contingent activities follow each other immediately and their corresponding consequences are expected to arrive in the immediate present. Actually, Raynor and his co-workers have done most of their experiments under conditions where the activity has *immediate instrumental value,* but not long-term instrumental consequences. Psychological distance is represented only by the (immediate) attainability of the goal. Normally, however, each new step (activity) in a series of steps toward a future final goal is to be taken at an increasing psychological distance in time, from the present stage. And, according to the new suggestions, the consequences of each future step will have a decreasing

effect on present motivation, since the Goal Distance Coefficient ($\gamma$) will decrease from 1 downward, other things being equal. Therefore, when we wish to estimate the consequences of future activities contingent upon present motivation, we always need to know at what distance in time the performance event is perceived to be (i.e., PgD).

For instance, when a contingent task (A) is perceived to appear at intermediate future distance (e.g., PgD = 1.50) under normal goal characteristics (i.e., $k = 1$), the resultant achievement motivation ($T_s + T_{-f}$) $X_1$, as calculated from Raynor's theory, would, according to the new suggestion, have to be weighted by the corresponding $\gamma$-value e.g., $\gamma = .40$. If the same task (A′) is perceived at a fairly long distance (e.g., PgD = 2.25), the resultant achievement motivation $X'_1$, according to Raynor's theory, would have to be reduced with $\gamma = .07$ (see Figure 1). This means that resultant achievement motivation for approach-oriented individuals ($M_s > M_f$) would be higher for task A than for the same task A′ at a longer distance, whereas the avoidance-oriented individuals ($M_f > M_s$) would have lowest anxiety for task A′.

Let us take another example with a noncontingent path. As nicely pointed out by Raynor, his theory equals Atkinson's theory in cases where $n = N = 1$ (a noncontingent path), i.e., when the activity has no instrumental value. However, in light of what has been stated in the foregoing, two comments should be made on this deduction.

First, the difference between a contingent and a noncontingent path is probably a matter of degree rather than an all-or-none difference, since achievement motives, according to their origin and functioning are directed, more or less, toward future instrumentality of present achievement events. Second, and related to the foregoing, a one-step activity ("noninstrumental") does not necessarily need to be performed immediately. It can be carried out once in the future, but it may nevertheless influence one's thinking about and preparation for the activity. In sum, in a noncontingent path Raynor's theory equals Atkinson's theory ($n = N = 1$), which also equals the new conceptualization when activity is to be carried out immediately, i.e., when PgD is 1, and thereby the PgD coefficient ($\gamma$) is 1. However, if the one-step activity is not to be done immediately (i.e., in case of a "noncontingent" condition with a *delayed distance step*), the new suggestions imply that the influences of the distant event (step) will decrease as the perceived goal distance decreases. Actually, it is examples of this reasoning that have been illustrated in one of the studies referred to in the foregoing (Gjesme, 1975).

The new suggestions appear to lead to a better understanding of future time perspective and its influence on present motivation and behavior than Raynor's (1974) elaborated theory does. For instance, it can

be deduced from Raynor's theory that in the case of a series of activities leading to a final or ultimate goal (i.e., a closed contingent path), the influence of achievement motives should decrease as one approaches the final goal. This is so because a resultant component tendency should be subtracted from the total resultant achievement motivation as the pupils proceed toward the final goal. In a noncontingent path, the resultant achievement motivation should be about the same regardless of the distance of the future goal. However, the new suggestions indicate an increasing effect of achievement motives on present activity as the perceived goal distance in time decreases. This effect of goal distance in time should, in the case of a contingent path, work against the decreasing intensification of the achievement motives for individuals who approach final future goals.

Hence, in order to determine the present resultant achievement motivation, it is necessary, at least, to know the relative importance of the instrumentality effect and the perceived goal distance effect.

In general, also, when the characteristics of the future goals are very high ($k \rightarrow 0$), the influence of the future goals on present motivation increases, other things being equal.

This greater emphasis of the present relative to the future indicates its relative dominance in the phenomenological field.

As a conclusion: The cognitive aspects of behavior are intimately related to motivation and learning and are thereby integrated in the dynamic system of the individual. Nevertheless, cognitive functions are able to transform needs into future-oriented plans and tasks. Therefore, the cognitive contents of the dynamic system, represented by expectancy and perception of future time, might develop as relatively independent factors of motivation.

Finally, to return to the two-sided (Janus) question raised at the beginning of this paper: Is there any future in achievement motivation? One part of the question is perhaps answered by the ideas proposed in the foregoing; the other part of the question is for the future itself to judge. Indeed, the seed for a future in and for achievement motivation research is inherent in its flexible way of analyzing human behavior by providing an integrating link between the individuals' cognitive and affective factors and their interaction with situational determinants. However, this future is dependent on the integration of the time dimensions as properties or characteristics of individuals and as dimensions of environmental structures, as well as on the possibility of accounting for and adapting to theoretical extensions and suggestions developed by Heckhausen (1973, 1977), Kuhl (1978), Nygård (1975), and Revelle and Michaels (1976). Nevertheless, the perceived goal distance in time seems to be a key factor for further insight into the dynamics of achievement motivation.

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