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INTRODUCTION

Research in the area of sport psychology has grown tremendously over the past twenty years. One area, in particular, that has been researched a great deal is the idea of the typical athletic personality. (Fletcher and Dowell, 1971; Foster, 1977; Morgan and Johnson, 1978; and Morris, Vaccaro and Clarke, 1979 are examples.) Does the personality of the athlete differ from that of the non-athlete? Of particular concern are the areas of personality dealing with locus of control and self-esteem. Locus of control is distributed along the internal/external dimension. Internal control was defined by Rotter, Livenant and Seeman (1962) as the perception that positive or negative events are a consequence of one's own actions, while external control points to consequences of actions other than one's own. Self-esteem refers to

one's views of self and is generally said to range from favorable (good self-concept) to unfavorable (bad self-concept). The particular question concerning these personality measures asks whether or not an athlete's locus of control and self-esteem measures differ significantly from a non-athlete.

A second area in sport psychology research is concerned with the relationship that exists between a coach and his player(s). In particular, is this relationship that exists between coach and player(s) a compatible one? Compatibility may be viewed as the degree of congruence which is present between both the situational demands and actual behavior (of the coach and athlete) and the degree to which the coach and athlete reciprocally meet their respective interpersonal needs (Carron and Chelladurai, 1978). Also of interest in this area are the determinants of compatibility between coach and player(s) and the effects of this type of relationship (versus a non-compatible relationship between coach and player(s)) in terms of the athlete's level of performance.

Finally, a third area of sports that is attracting a great deal of attention is the area of attribution analysis. An attribution is the inference that an observer makes about the causes of behavior - either his own or another person's (Bar-Tal, 1978). Applied to sports, this deals with an explanation of success or failure in a competitive situation.

These three areas: 1. the athlete's personality, especially his measures of locus of control and self-esteem; 2. the coach/player relationship; and 3. the attribution of success or failure in a

competitive situation, make up the subject matter for this paper. These three topics will be dealt with separately and in conjunction in order to discern whether there are any relationships between them. For example, if there is a discernable athletic personality, is this related to the compatibility of the coach/player relationship? And again, is the athlete's personality related to his attribution of success or failure in a competitive situation? And, finally, is there a relationship between the compatibility of the coach/player relationship and the subsequent attribution of success or failure in a competitive situation by the athlete? In other words, to what extent is the coach/player relationship responsible for the athlete's attribution or are his attributions based more directly on his own personality traits (especially locus of control and self-esteem)? This is the basic question with which this paper will deal. In essence, this question will be approached through a review of the literature in the three areas.

PERSONALITY RESEARCH

Studies in this area fall basically into one of two categories. The first deals with research designed to discriminate between personality profiles of athletes versus non-athletes. The second group of studies in this area look only at the personalities of athletes and compare these between different sports in which the athletes participated or between various skill levels within the same sport. In this way, researchers hope to be able to discuss the type

of personality that is most suited to a particular sport and the personality type that will most likely succeed in that sport.

Schendel (1965) looked at the psychological differences between athletes and nonparticipants in athletics at three separate educational levels; i.e., junior high school (ninth grade), senior high school (twelfth grade), and college (junior and senior). Taking into account possible differences that might arise within the athlete group, Schendel also analyzed differences between the psychological characteristics of (a) outstanding, (b) regular, and (c) substitute players in team sports. These classifications were based on playing skill and competitive spirit as rated by the coaches of the athlete subjects.

The subjects in the study (334 team sport athletes and nonparticipants in athletics) were given the California Psychological Inventory (CPI), the scales of which deal with social living and social interaction.

The eighteen scales of the CPI, as divided into four broad categories, are as follows:

Class I. Measures of poise, ascendency and self assurance

1. Dominance
2. Capacity for status
3. Sociability
4. Social presence
5. Self-acceptance
6. Sense of well-being

Class II. Measures of socialization, maturity and responsibility

7. Responsibility
8. Socialization
9. Self-control
10. Tolerance
11. Good impression
12. Communality

Class III. Measures of achievement potential and intellectual effiency

13. Achievement via conformance
14. Achievement via independence
15. Intellectual effiency

Class IV. Measures of intellectual and interest modes
16. Psychological mindedness
17. Flexibility
18. Femininity

(Schendel, 1965, pp.53-54)

The results of his study demonstrated clearly that there are specific differences between the psychological characteristics of athletes and nonparticipants in athletes at all three levels.

Ninth grade athletes generally possess desirable personal-social psychological characteristics to a greater extent than nonparticipants in athletics. The ninth grade athletes (a) possess more of the qualities of leadership and social initiative, (b) possess more of the qualities that lead to status, (c) are more sociable, (d) possess a greater sense of self worth (self-esteem), (e) have less self doubt and make fewer complaints, (f) have more social maturity, (g) are more conventional in their responses to social situations, and (h) possess greater intellectual efficiency.

Twelfth grade athletes generally possess more desirable personal-social psychological characteristics than twelfth grade nonparticipants in athletics as well. These athletes (a) are more sociable, (b) possess a greater sense of personal worth, (c) are more conventional in their responses to social situations, and (d) are more capable of achievement in a situation where conformity is necessary.

College men in their senior year who are nonparticipants in athletics generally possess desirable personal-social psychological characteristics to a greater extent than college athletes in the junior or senior years. The nonparticipants (a) possess more of the

qualities that lead to status, (b) are more conscientious and responsible, (c) possess greater tolerance, (d) are more capable of independent achievement, (e) have greater intellectual efficiency, (f) are more interested in the psychological needs of others, (g) are more adaptable in their thinking and social behavior and (h) have more feminine interests, than college athletes. The college athletes, however, are more conventional in responding to social situations than college nonparticipants in athletics.

Few differences were indicated as existing between athletes rated as substitutes, regular players, or outstanding athletes.

Overall the differences in the CPI profiles of athletes and nonparticipants in athletics do indicate a definite athletic personality. Athletes in the ninth and twelfth grades showed greater overall elevation of scores, particularly in the Class I group of scales. With college men there was little difference in this group but nonparticipants in athletics scored significantly higher in the Class III and Class IV groups of scales.

Schendel's research points to several interesting factors in the area of athletes' personalities. First, it does suggest strongly the existence of an athletic personality distinct from a nonathletic personality. Secondly, it points to the athletic personality as being affected by the team concept in as much as athletes are more conventional in their responses to social situations and more capable of achievement in situations that demand conformity. (Whereas nonparticipant college males were more capable of independent achievement). Thirdly, it points to the athletic personality as

being self confident and self assured (athletes have a good self concept generally). Lastly it raises the question - Why do ninth and twelfth grade athletes exceed nonparticipants in athletics while college nonparticipants exceed athletes in desirable personal-social psychological profiles? Do college athletics hinder the athlete in terms of achievement potential, intellectual efficiency, and intellectual and interest modes? (Classes III and IV) It might be suggested that the differences found by Schendel lie in the fact that many high school athletes do not pursue college athletics, and therefore the populations that are dealt with are not the same. But, the question still arises, why are high school athletes apparently superior to high school nonathletes while in college the situation is reversed? Schendel does not address this issue and, based on his research alone, it probably would not be possible to examine, fully, the possible causes and implications of this issue. To conclude, it should be pointed out that this question, that Schendel's research raises, is an important one with possible widespread consequences, and it is one toward which future research should be directed.

Another study which dealt with the personality of the athlete was conducted by Slusher (1964). His purpose was to identify and compare selected high school athletes and nonathletes relative to personality profiles, as indicated by the Minnesota Multiphasic Personality Inventory (MMPI), and intelligence, as measured by the Lorge-Thorndike Intelligence Test.

Using 100 nonathletes randomly selected from high schools throughout Maryland, and a total of 400 athletes (100 baseball players, 100 basketball players, 100 football players, 50 swimmers, and 50 wrestlers) also randomly selected from the same area, the researcher administered the MMPI to all the participants of the study. Results of the Lorge-Thorndike Intelligence Test were obtained from existing school records.

The MMPI test results were used to develop personality profiles. Slusher dealt with each group of athletes separately and compared each group with the group of nonathletes and with the other groups of athletes.

The baseball group was characterized by a relatively low neurotic profile. When compared with the nonathletic group, it was significantly higher on the hypochondriases and depression scales. It was significantly lower than the nonathletic group on the femininity scale and in intelligence.

The basketball group was the most distinguished from both the nonathletic group and from all other athletic groups. Like the baseball group, the basketball group differed significantly from the nonathletic group on the high side of the hypochondriases and depression scales. Also, like baseball, it was lower than the nonathletes in intelligence and on the femininity scale, but, unlike baseball, it was significantly lower on the psychopathic deviation and hypomania scales.

The football group displayed a significantly heightened profile relative to hypochondriases and hysteria, but a lower profile on

femininity when compared with nonathletes. It was also significantly lower than the nonathletic group in intelligence, though it measured a higher level of intelligence than any other athletic group.

The swimming group had the lowest profile of all athletic groups. It was also identical to the nonathletic group except it was significantly lower on the psychopathic deviation and femininity scales, and was significantly lower in intelligence.

Finally, the wrestling group was characterized by significant elevations in the hypochondriasis and psychasthenia scales, while it was significantly lower than the nonathletic group in femininity and intelligence.

Overall, there were three major areas that distinguished atheletes from nonathletes in this study. Athletes were found to be lower in intelligence and femininity than their nonathletic counterparts, while all but the swimmers displayed higher levels of hypochonriases. These results raise some serious questions about the "student-athlete" who is characterized in this study to be more the "dumb jock". Further research is needed in this area to determine to what extent the findings in Slusher's study can be generalized to all student-athletes. The fact that most athletes scored higher on the hypochondriasis scale seems quite natural as the athlete depends on his body to perform the tasks of athletics and therefore should be more aware of its functions, processes and possible symptoms of injury.

A third study dealing with the question of an athletic versus a nonathletic personality was conducted by Fletcher and Dowell. (1971)

Using the Edwards Personal Preference Schedule, the researchers obtained data from 950 male college freshman students. The schedule used was designed to describe the personality by ascertaining the needs for Achievement, Deference, Order, Exhibition, Autonomy, Affiliation, Intraception, Succorance, Dominance, Abusement, Nurturance, Change, Endurance, Heterosexuality, and Aggression. A checklist containing 37 activities was designed by the investigator to determine high school athletic participation and nonparticipation. Results indicated that (a) high school athletes tend to be more aggressive and dominant than nonathletes, while (b) nonathletes tend to be more orderly and organized than athletes. All other personality traits were similar (not significantly different).

A final study in this area that discriminates between athletes and nonathletes was done by Morris, Vaccaro and Clarke (1979). Their purpose was to discern whether there was a difference in the locus of control and self-esteem scores of 20, young, (7-12 years; M = 12.5), male, well trained (average 4.8 years of competition experience), swimmers. The locus of control scale used was developed for use with school-age children. For self-esteem measurement a scale was composed of 10 Likert-type items.

The athletes in the sample scored significantly lower on the locus of control scale than other published norms. The values on the scale are expressed in the external direction; thus a lower score represents a more internal orientation. Again, on the self-esteem scale the mean value was significantly lower ($p < .01$) than other published norms, indicating a higher self-esteem among the athletes.

This study points strongly to a higher self-esteem and a more internal orientation of young athletes.

The second set of research dealing with the athlete's personality is directed specifically at the possible relationship between an athlete's personality and the degree of success or level of achievement that the athlete reaches.

One study that was directed along these lines was conducted by Foster (1977) whose goal was to discriminate between successful and unsuccessful male high school athletes. Foster looked at the group of athletes in general and at baseball, basketball, football and track athletes separately. The athletes were placed, by their coaches, in one of three categories: 1. outstanding athlete; 2. successful athlete; and 3. unsuccessful athlete. Catell's 16 Personality Factor Questionnaire (16 PF Test) was administered by the investigator to all 483 athletes involved. When discriminant function analysis was computed for each athletic group using the 16 personality variables simultaneously a significant discriminant function was identified for the successful and unsuccessful track group. Analysis failed to achieve significance for an aggregation of successful and unsuccessful 1. athletes; 2. football players; 3. basketball players; 4. baseball players and 5. outstanding and other (successful and unsuccessful) athletes.

Using the point-biserial analyses of the mean scores did reveal two discriminatory variables between successful and unsuccessful football athletes and one discriminatory variable between successful

and unsuccessful track athletes. In the football group, successful athletes scored significantly higher than unsuccessful football athletes on Factor F, surgency and Factor H, adventurousness. With track, successful athletes scored significantly higher for Factor G, conscientiousness than unsuccessful track athletes.

Looking at this study critically one can conclude that, although it seems to be on a limited scale involving only particulars, some relationship between certain personality variables and success of athletes in particular sports does exist.

In a series of studies over several years Morgan and Johnson (1978) sought to determine if a relationship existed between the personality characteristics and the success of oarsmen. To determine this, the researchers designed three separate, but related studies. In the first study, or phase one, the MMPI was administered to 50 oarsmen at the University of Wisconsin during the first week of their freshmen year. These men's athletic records were then examined four years later and successful oarsmen (N = 13) were defined as those athletes who earned two or three varsity letters while unsuccessful athletes (N = 37) were defined as those rowers who did not earn a varsity letter.

Results indicated that whereas substantial differences did not exist between the two groups from the outset of their athletic careers, those oarsmen who went on to become successful possessed more favorable scores on each of the eight clinical scales of the MMPI (hypochondriasis, depression, hysteria, psychopathic deviate, paranoia, psychosthenia, schitzophrenia, and hypomania). This led to the prediction that positive mental health would be an asset in

crew. This prediction was evaluated in the second phase of the research.

In the second phase the State-Trait Anxiety Inventory (STAI) measuring state and trait anxiety; the Somatic Perception Questionnaire (SPQ) which measures somatic perception during stressful situations; the Profile of Mood States (POMS) which measures tension, depression, anger, vigor, fatigue, and confusion; and the Eysenck Personality Inventory (EPI) which measures extroversion-introversion and neuroticism-stability were all administered to 57 candidates for the 1974 U.S. Heavyweight Rowing Team.

Based upon the first study it was predicted that those oarsmen who would ultimately earn births on the 1974 crew would be less anxious, depressed, angry, fatigues, confused, and neurotic, and more vigorous and extroverted (though the first study actually indicated that more successful oarsmen were less extroverted). The reason for this seeming discrepency is noted by the researchers as being that their prediction was based on past research and that the results of their first study were surprising to them. Using both a clinical and a statistical model for prediction the researchers were able to predict whether the athlete would fall into either the failure or the success category at rates ranging from 62% to 76%. A better way to look at this though would be to compare the base versus the clinical and statistical predictions. This is summarized in tables I and II below.

Insert Figure I

Insert Figure II

A subsidiary analysis was done to compare the oarsmen's (all of whom were college students, or recent college graduates) psychological profiles with the profiles of published norms for college students. It was noted that the oarsmen differened appreciably from the published norms for college students. They were found to be lower on trait anxiety, tension, depression, anger, fatigue, confusion and neuroticism and higher on vigor; all of which are of a positive nature from the standpoint of mental health.

In the final phase of this research, the experimenters tested the clinical prediction method, of the second phase, on the sixteen finalists for 1974 U.S. Lightweight Team to try to predict the eight oarsmen who would make the team and the eight who would not. It was predicted that four of the sixteen would make the final eight and five would not. The remaining seven oarsmen possessed profiles that were not viewed as being remarkable and predictions were not offered. Of the nine predictions made, all were correct. The researchers concluded from their work that whereas psychological states and traits are useful in predicting ability in oarsmen of national calibre, the precision associated with this prediction is not acceptable for selection purposes.

One final study that deals with this area of personality in athletes was conducted by Williams and Parkin. (1980) Their stated purpose was, through the multiple discriminant function technique, to study the personality profiles of field hockey players in order to see whether groups at different performance levels could be differentiated on the basis of personality.

Eighty-five male field hockey players were formed into three groups representing demonstrated differences in their level of achievement: 1. the average group consisting of thirty-three players; 2. the advanced group consisting of thirty-four players; and 3. the international level group consisting of eighteen players. Catell's Sixteen Personality Factor Questionnaire (16 PF Test) was administered to all subjects.

Multiple discriminant analysis revealed that the international group which included the 1976 Olympic gold medallists had significantly different profiles from the average group, which consisted mainly of club players. The third group which was comprised of players who had represented their Province and who were considered to be of advanced ability were not significantly different from either of the other two groups, although they appeared to be more similar to the players at the highest level. The profile components that contributed most to the significant discriminant function were (in discending order of effect) factors: O, insecurity; B, intelligence; L, suspicion; C, emotional stability; H, adventurousness; F, surgency; and I, tendermindedness. Using these, the more advanced players of the international team could be characterized as more confident, intelligent, trusting and tenderminded; and less stable emotionally, adventurous, and enthuasistic than the average players. (The latter four of these characteristics are not as discriminant as differences between the groups diminish further down the list presented above.)

Lastly, there was an attempt, by the researchers, to assign individuals to groups according to the significant discriminant function.

Overall there was a correct classification for 63.5% of all subjects while the international group exhibited the highest percentage of correct classifications (72%). These were reported to be quite favorable when compared with other reported studies that attempted the same type of classification.

The conclusion that must come from this section is that there are, indeed, certain psychological or personality characteristics that are related to participation in athletics. To what extent these characteristics bring about, or are brought about by, athletic participation cannot be determined through the research presented. Of course, not all research argues for this position. (Rushall, 1972; and Werner and Gottheil, 1966) But, by far, the majority of research over the past twenty years that has looked at this question, has pointed to some type of discrimination in personality profiles between athletes and nonathletes. It can also be concluded that, overall, this discriminant personality of the athlete is a positive one. There are, again, some researchers who argue against this (Slusher, 1964) but the majority point out that the athletic personality is viewed in a positive light. In this same view, studies point to increasingly more positive personality characteristics as one compares unsuccessful with successful and average with advanced athletes (Williams and Parkin, 1980; Foster, 1977; and Morgan and Johnson, 1978)

Finally, in this area of athlete personality there are the characteristics that are of particular concern in this review, locus of control and self-concept. From the studies presented (Morris

et. al., 1979; Morgan and Johnson, 1978; Williams and Parkin, 1980; and Schendel, 1965), it can be stated with fair assurance that athletes tend to be more self confident and more internalized in their orientation than nonathletes. These characteristics seem, also, to strengthen as an athlete becomes more advanced in his level of playing ability.

THE COACH/PLAYER RELATIONSHIP

The relationship between a coach and an athlete is a second area of interest to sport psychologists. As stated before, the compatibility of that relationship and the resultant behavior of the athlete in a competitive situation, i.e., the level of achievement or performance are of central concerns. Questions that arise include: What are the factors that contribute to the compatibility in this relationship? Is this relationship between coach and player a real determinant of the athlete's subsequent performance in a competitive situation? And, if so, what are some of the particular aspects of this relationship that are paramount to the athlete's achievement of success?

One way to address the first question of the determinants of compatability is discussed by Carron and Chelladurai (1978). They base their arguments on the statement: "behavior is a product of the person and the environment." (Carron and Chelladurai, 1978, p. 44.) Therefore in the case of the interaction between player and coach, it is a product of the environmental factors, and various personal factors of both the coach and the player himself. This is represented in the schematic illustration in figure III below.

Insert Figure III

Implicit in the interrelationships suggested by this model is the proposition that the interpersonal behavior between coach and player is a product of three sets of forces: situational or environmental forces; the athlete's personality, preferences, need dispositions, etc.; and the coach's personality, preferences, need dispositions, etc.

In this discussion of this model Carron and Chelladurai look at the person dimension as separate from the environmental dimension and point out important aspects of each.

Along the person dimension, the researchers point out that the personality trait is an underlying cause of dispositional tendency for behavior. Thus, if a coach possessed specific personality traits, these would, presumably, lead to a particular pattern of coaching. In turn, whether effective interaction would result from the coaching situation would also depend on the nature of the coach's personality traits.

Another model that these reserachers look into is based on the axiom that people need people; people have social (interpersonal) needs which are satisfied through relationships with others. These interpersonal needs exist within three broad categories of behavior: inclusion, control and affection. Each of these consist of two aspects: the behavior that the individual expresses toward others and the behavior that individuals want from others.

In order to achieve compatibility in a relationship, then, it is necessary to establish equilibrium between the behavior expressed toward others and the behavior that is wanted from others.

Applied to the coach/player interpersonal behavior, it is necessary to discern whether the behavior expressed by the coach is compatible with the behavior wanted by the player (and vice versa). For example, an authoritarian coach should be compatible with an athlete who needs control and structure, yet incompatible with an athlete who wishes to exert control himself.

One study which dealt, in part, with this question was conducted by Bird (1977). She hypothesized that winning volleyball teams would be coached by task-oriented individuals. The teams used in the experiment were from Division I and II of the collegiate league of women volleyball. The players in Division I were more highly skilled than those in Division II. The teams (four from each Division) were then classified as winners or losers based on their standing in their leagues (four winners and four losers). The leadership style was determined by means of the Least Preferred Co-Worker Scale (LPC), which was designed to measure the degree of agreement between the coach's perceptions of her own leadership style as compared to that same assessment by team members.

Results of the study confirmed the prediction only for the teams in the less skilled division. In the more skilled division the winning coaches were viewed as more socioemotional, while losing teams saw leadership to be task-oriented. It was concluded that the most

effective coaching style requires modification according to the level of skill or competition. And, as pointed out earlier in this paper, there is a strong indication that as level of skill increases, there are accompanying changes in personality profiles of athletes. Therefore, the effective coaching style is one which is suited to the personality of the athlete or team which is being coached.

The second category within the model presented by Carron and Chellandurai is concerned with the environmental dimension of the coach/player relationship. A subdivision of this dimension deals with the organizational set, i.e., the larger social system of which the coach/player relationship is but a part, and the goals and expectations within that system or organization.

Factors included under the organization set include: unit size, as dealing with a team of twenty-five baseball players presents or different situation from a rowing team of four members; and the technology required and the resultant formal structure, as in football where several specialized coaches might deal with particular areas of the game but generally in basketball, one coach is concerned directly with all areas.

Another set of environmental influences that Carron and Chellandurai point to may be termed the normative forces. These are the social norms and role expectations that arise in any social situation, including athletics. Thus, the interpersonal behavior between a coach and a player is dictated by form and content with regard to these norms within the social situation.

A final environmental factor that influences coach/player interaction is the task factor. It is pointed out that the tasks of athletes from different teams differ along many dimensions and these differences impose demands and constraints upon the behavior of the coach and the athlete.

From the discussion it is clear that there are many factors that are important in whether or not a coach/player relationship is compatible. These, as based on the models proposed in Carron and Chelladurai, are focused in both the person (of the coach or athlete) and the environment in which the relationship occurs. Other questions arise from these models outlined by Carron and Chellandurai: What is the significance of the coach/player relationship in terms of determining the athlete's performance?; and, What are the aspects of this relationship which make it significant? This area of sport psychology has been addressed by several researchers (Cratty, 1980; and Liddell and Slocum, 1976).

Liddell and Slocum (1976) addressed the compatibility-as-determinant-of-success issue through a study that incorporated the three dimensions discussed by Carron and Chelladurai (pointed out earlier in this paper).

The task/apparatus was a communication network structured as a wheel with a control/leadership position occupying the hub and subordinate/secondary positions occupying the spoke positions (see Figure IV).

Insert Figure IV

Communication was permitted only through the hub. Thus as Liddell and Slocum (1976, p. 417) pointed out "... (1) the wheel network requires high interchange and differentiation of control, (2) the central position in the wheel network requires high expressed control and low received control, and (3) the peripheral positions in the wheel network require low expressed control and high received control..."

The subjects were selected on the basis of their extremes along the control dimension as measured by Schutz's FIRO-B. They were then assigned to one of three conditions: 1. Compatible - an individual with a high expressed-low wanted control need was in the hub position while the spoke positions were occupied by individuals with a high wanted-low expressed control need. Thus, the leader and members were compatible with each other and the task. 2. Incompatible - an individual with a low expressed-high wanted control need occupied the hub while spokes were occupied by high expressed-low wanted control individuals. Again, the leader and members were compatible with each other but their behavioral needs were incompatible with the task. 3. Random assignment.

The hypothesis was made that compatible groups would solve problems faster and make fewer errors than either the incompatible groups or the randomly assigned groups. This was supported significantly by the results of tests of the mean times that it took for each of the groups to solve certain problems, and the mean number of errors committed by each of the groups. It should also be noted that the random groups were more effective (though not significantly) than the incompatible groups.

This study demonstrates clearly the importance of compatibility of personalities and the resultant level of performance of groups in a compatible situation. It also points strongly toward the significance of the personality dimension of individuals involved in a task demanding relationship as it was through personality measures that compatible and incompatible groups were arranged. Based on this research, then, it can be concluded with some assurance that the meshing of personalities in a coach/player relationship, along with environmental factors pointed out previously, bring about either a compatible or an incompatible relationship that will significantly influence the resulting performance by the athlete in a competitive situation.

Turning attention toward the ideas presented by Cratty (1970), it is evident that he places a great deal of emphasis on the coach/player relationship as being instrumental in determining the eventual success of the athlete. He points out that the most important situation to which this relationship applies is the practice session. In formulating more productive practice sessions it is paramount that the coach really understand his players' needs and personalities. If there is this understanding (compatibility), the coach will then be able to effectively use the practice sessions to teach some and to motivate other athletes depending on their needs and maturity levels. For example, the coach must be careful with some athletes not to over-teach, thus not permitting a skill to be assimilated while with others, a great deal of teaching may be needed. And again, in motivating some athletes the coach may have to structure all activities

of the practice session, while other more mature athletes may be further motivated by allowing them a degree of freedom, even to the point that they plan their own workouts. Lastly, it is important that communication between coach and player in the practice session be open and exact in explaining what is to be accomplished and how it is to be accomplished.

Cratty points out the importance of coach/player compatibility in a situation which is universal to all sports: practice sessions. He points out practical applications of theories surrounding coach/player compatibility in terms of motivating individual athletes who possess individual personality profiles. And finally, he points to the importance of a particular variable in the compatibility scheme: communication. In doing so, Cratty has pointed to more of the important particulars that surround this issue of coach/player compatibility. But, as pointed out by Carron and Chellandurai (1978) and by Cratty himself, further research seems warranted. Both in theory-based and field situations, research in this area of sport psychology is still lacking depth and breadth. But, whatever the approach, it is clear that the research in this area must be undertaken within a framework which takes into account the coach, the athlete (particularly, their personalities), and the situation (particularly, the nature of the task).

ATTRIBUTION ANALYSES

In recent years this area of psychology has been one of the most active. Implications from attribution theory are widespread throughout

all of the areas of social psychology, educational psychology, industrial psychology and sport psychology. This section will review the attributional model of achievement related behavior and suggest possible implications for the area of sport psychology, as it relates to the compatibility of the coach/player relationship and therefore to the personality of the individuals involved in that relationship: the coach and the athlete. First, the attributional model of achievement behavior will be presented.

The attribution model was proposed by Weiner, Frieze, Kukla, Reed, Rest and Rosenbaum (1971). It is assumed by Weiner et. al. that individuals allocate the causes of success and failure to four elements: ability, effort, task difficulty, and luck. These four elements are centered in two casual dimensions: locus of control (internal versus external) and stability (fixed versus variable). Locus of control refers to the responsibility of cause for an event or outcome while stability is concerned with the perceived fluctuation over time. Within the internal dimension are ability and effort attributions while luck and task difficulty are externally oriented. Ability and task difficulty are termed as relatively stable over time while effort and luck are variable or unstable over time.

Weiner (1972) found that the dimension of locus of control is important in understanding affective reactions to success or failure.

In his research, Weiner (1972) used 63 male children in the fifth and sixth grades.

> They first were administered the Intellectual Achievement Responsibility (IAR). An individual's total score on the IAR scale may be partitioned into four subscales representing the tendency to ascribe success to effort, failure to a lack of effort, success to ability, and failure to a lack of ability.
>
> Individual experiementation followed the group IAR test administration. Subjects were given a set of achievement-related puzzles to solve (10 solvable and 10 insolvable). The task was "timed," and failure was signaled by interruption of the experimenter following approximately a 30-second time interval. More time was permitted when needed to complete a solvable puzzle.
>
> On the subject's desk was a bowl of poker chips, along with two panels of seven buttons. Following each successful task completion, the subjects were told to press the win-take button corresponding to the "number of chips you feel you deserve," and to take that amount from the bowl. In a similar manner, following each failure, they were to press the lose-give-back button corresponding to the number of chips "you think you should return," and to replace these chips in the bowl.
>
> (Weiner, 1972, pp. 241-242)

Results indicated that there was a significant relationship between resultant effort ascriptions and resultant self reinforcement. Thus, the greater the tendency to attribute success, rather than failure, to effort, the greater the self-reward for success relative to self punishment for failure. The ability responses on the IAR scale were unrelated to any of the dependent variables.

In a second experiment Weiner (1972) found that the dimension of

stability is important in understanding the changes in perceived probability of success for future outcomes.

Subjects were 39 high school males.

> They were given a digit-symbol substitution task to complete, with the digits 1-6 and the highly similar symbols of ㄴ , ㄱ , ㅜ , ㄱ , ㅗ , and ㅓ . After a 1-minute familiarization period and approximately 250 practice substitutions, the subjects were presented five cards, each containing four rows of 16 randomly selected digits from 1 to 6, with underlying space for the symbol substitution. The task was to complete all the substitutions on a card within the allotted time period, which was said to be 1 minute. Continual failure was then induced by interrupting the subjects after they completed a varying amount of more than three rows of the substitutions. One of the independent variables, speed of performance, was the time required to complete the initial three rows (75%) of the task.
>
> (Weiner, 1972, p. 243.)

The experimenter also informed the subjects that the completion of the task was but part of the whole experiment, their feelings about what caused their outcome was also of interest. Before and after each trial the subjects attributed a certain percentage of cause to either ability, effort, task difficulty or luck (a total of 100% was required).

Results indicated that expectancy of success following failure is greater when one attributes a great deal to effort and luck than when one does not attribute a great deal to these factors. Basically, then, individuals who perceive their failures as due to lack of effort or bad luck do not decrease their expectation

of future success as greatly as those who do not attribute their failures to these two factors. Attribution to ability and task, however, reverse this relationship. Low, instead of high attributions to ability and task difficulty are associated with greater future expectations. Basically in this case, then, persons who perceive that their failure is due to their own low ability or the difficulty of the task decrease their probability of future success more than those who, relatively, do not believe that their own low ability or the difficulty of the task causes their failure. It was also shown that high attribution to the stable factors produces greater decrements in the probability of future success following failure than does low ascription to stable factors. Overall performance (time taken to complete 75% of task) was found to be faster as a function of practice. However, when one tends to ascribe failure to lack of ability or a hard task (stable factors), rather than to bad luck or lack of effort (unstable factors), then performance speed is relatively retarded.

Bar-Tal (1978), basing his position on Weiner's work, points out the relationships between locus of control and stability and resultant affective and cognitive reactions. Figure V dipects this process.

Insert Figure V

Bar-Tal points out that locus of control influences the affective reaction of pride and shame. In a success situation, people feel

the most pride when they attribute the result to either ability or effort (internal factors). Attributions of success to luck or ease of task bring about much less pride. Failures attributed to lack of ability or effort result in shame, but failures attributed to bad luck or a difficult task result in little shame because no personal responsibility is taken for the result.

The stability dimension of the model affects cognitive changes in expectancy following success or failure.

> Thus, when one perceives one's successes as caused by good luck, the resulting expectancy is that failures might occur in the future since luck is believed to be an unstable external factor. Corresponding expectations are found for attributions to bad luck in situations of failure. Attributions to lack of effort (an internal unstable cause) in failure situations result in a higher expectancy for future success than attributions to stable causes. This is because the implication is that performance would have been better if more effort had been exerted. Failures attributed to lack of ability result in low expectancy for future success since one assumes that one's ability will not increase greatly, and, therefore, that future performance will show little improvement. Also, because ability is a stable cause, successes attributed to ability result in high expectancy for future success. According to the same reasoning, attributions of success to ease of task, a stable cause, result in high expectancy for success, and attributions of failure to difficulty of task result in low expectancy for success.
>
> (Bar-Tal, 1978, pp. 260 and 262.)

It is from this model of attribution that the remaining part of this section is based. Several important questions arise from this model.

What are some of the individual differences in personality or outlook that are related to subsequent attributions? What is the relationship, if any, between an individual's causal attributions and his subsequent performance in a competitive situation? Is the coach/player relationship related to attribution? And if so, how is it related? These questions resemble the questions asked at the beginning of this paper, and indeed, the remaining part of this section will be concerned with the ties between the three major areas presented. This task will be accomplished by attempting to answer the questions above.

Addressing the first question, initially, the importance of locus of control has been pointed out by Weiner (1972) and Bar-Tal (1978). Another researcher who asserts the same is Krovetz (1974). In his research, Krovetz attempted to determine if internal and external persons attribute different causes to success or failure on an experiemental task.

He surveyed 120 undergraduate students and found one-half were able to be classified as internal and the other one-half as externals based on their responses to the Rotter I-E Scale. The subjects were asked to judge which of three African words had the same meaning as a given English word. Each subject was presented with 70 such judgements. Reinforcements were controlled by the experimenter. Subjects were told whether or not their answers were correct based on one of five reinforcement schedules.

Results were clearly in support of the hypothesis that internal subjects would attribute their outcomes to skill-components to a

greater degree than external subjects. External subjects generally indicated chance as an explanation of their outcomes.

In four of the five reinforcements the hypotheses were supported. In the extreme success condition, however, external subjects attributed their outcomes to internal causes to a greater extent than internal subjects. An explanation was offered for this reversal. Krovetz asserted that in this case of extreme success, internal subjects may have felt that they had not mastered the necessary concepts needed to be very successful on the task; therefore, they could not attribute their apparent success to themselves. Externals, on the other hand may have felt that their success was too great to be explained by chance or they thought that they had made very skillful guesses; therefore, they attributed success to themselves. This conclusion was drawn as externals responded that they felt successful in mastering the task to a greater extent (in the extreme success condition) than internals.

In general, then, this experiement offers support for the idea that locus of control is significant in determining causal attributions in both success and failure conditions.

A second individual different that has received support as being influential in determining direction of achievement attributions is one's self concept. Fitch (1970) has shown that in a failure situation, low-esteem individuals made more internal attributions than did high-esteem individuals. However, in a success situation, no differences were seen between the attributions of high and low self-esteem individuals. In his experiment, 135 undergraduate students

were tested to see where they attributed causality for performance in a dot-estimation task. Overall, subjects attributed significantly more causality to internal sources in successful outcomes than they did in failure situations. In success situations there were no significant differences between high and low self-esteem individuals. But, in failure situations low self-esteem persons attributed their outcome to internal causes (ability and effort) significantly more than high self-esteem persons. In the failure condition high self-esteem persons attributed their failures to external causes (chance and their own physical or mental condition) to a greater extent than low self-esteem persons.

Through this research one can clearly see that self-esteem or self-concept is another important factor, unique to the individual, in the process of causal attribution.

A final factor in this area is the achievement needs of an individual. Kukla (1972) researched this point and concluded that individuals high in achievement needs relative to those low in achievement motivation attribute their successes to their ability and effort, and their failures to lack of effort or external factors. Individuals low in achievement needs, however, tend to perceive themselves as low in ability and, therefore, to ascribe their failures in terms of a lack of ability and their successes more to external factors than do individuals high in achievement needs.

These studies point strongly to the theory that a person's personality characteristics determine, to some degree, the direction of

one's causal attributions in situations of success and failure. All of these studies look at attribution as being directed by a single personality trait or characteristic. But, it is quite obvious that human beings possess a great deal of varying characteristics, all of which probably affect, to some degree, the direction of the causal attribution. The final direction that the causal attributions take, then, must depend on factors other than the personality characteristics of the individual. Motivating factors in the environment of the individual must have some influence on this process. In particular, the interpersonal relationships that an individual experiences in his environment have some influence on his causal attributions.

This brings up a question that was asked earlier: What is the significance of the coach/player interaction on this process of attribution by the athlete? Before addressing this final question, however, another question needs to be considered: What is the relationship between attribution and performance in a competitive situation?

Weiner et. al. (1972), a study already mentioned and described previously in this paper as dealing with another aspect of attribution theory, looks at this question as well. In essence Weiner et al. concluded that an individual's causal attributions are related to the intensity of their performance. In their experiment the researchers included consecutive failures on a task and asked subjects to ascribe attributions in terms of four causal factors. The results indicated

that individuals who tended to ascribe failure to bad luck or lack of effort performed with greater intensity than individuals who tended to attribute their perceived failure in terms of ability or task difficulty.

In another study that examines this relationship, Dweck and Reppucci (1973) created a situation in which children were subjected to continued, noncontingent failure. Forty fifth grade children (twenty boys and twenty girls) were

> given successes (soluble block designs) by one adult (success experimenter) and failures (insoluble block designs) by another (failure experimenter) with trials from each being randomly interspersed. A number of children failed to complete problems administered by the failure experimenter when her problems became soluble, even though they had shortly before solved almost identical problems from the success experimenter and continued to perform well on the success experimenter's problems. The subjects who showed the largest performance decrements were those who took less personal responsibility for the outcomes of their actions [as measured by the Intellectual Achievement Responsibility Scale] and who, when they did accept responsibility, attributed success and failure to presence or absence of ability rather than to expenditure of effort. Those subjects who persisted in the face of prolonged failure placed more emphasis on the role of effort in determining the outcome of their behavior.
>
> (Dweck and Reppucci, 1973, p. 109)

Persistance in spite of behavior, and intensity of performance are related to the causal attributions that a person makes. This has some real implications to the world of sports and sport psychology, because the nature of sports makes it literally impossible

to totally avoid failure. No team will ever go undefeated forever. No individual on a team will ever be able to succeed forever without failure of some type. No individual, in an individual sport, will ever be able to totally avoid failure of some kind. Therefore, as an old sports adage contends: The test of a true champion is to see how he responds to defeat.

One final study in this area was done by Kukla (1972). This study, also, has been described previously as it related to other aspects. Therefore, a brief summary is presented here.

In this study one group of subjects was told that successful performance on an achievement task depended only on ability, and another group (who received the same task) was told that successful performance depended on both ability and effort. The results indicated that the different instructions differentially affected the performance of individuals with a high and low need of achievement. Although there was no difference in performance between individuals with a high and low need for achievement in the situation that only emphasized ability; individuals with a high need for achievement performed significantly better than individuals with a low need for achievement in the situation where both ability and effort were emphasized. Therefore, Kukla concluded, different types of instructions may differentially affect the performance of individuals with high and low need for achievement who, as pointed out previously, differ in their attributional patterns.

This brings back to the front the final questions dealing with the coach/player relationship as it is related to attributions.

In particular Kukla's research points out a very important aspect of any interpersonal relationship, and one that has direct impact on the coach/player relationship: the element of expectation. In reference to the coach/player relationship, the expectations for behavior and/or attribution that the coach has for the athlete.

Braun (1976) addresses the issue of expectation in a relationship similar to the coach/player relationship. Braun focuses in on the teacher/student relationship in his discussion of teacher expectation. What teacher expectation, or expectation in any similar relationship, implies is that the teacher (coach) for a variety of reasons perceives competencies and potentialities of students (athletes) differently and these perceptions are reflected in his interaction with the student to produce differential performance on tasks. This process has been termed a "self-fulfilling prophecy". Furthermore, the student (athlete), while creating his own reality, also follows the reality created by the teacher (coach).

Brophy and Good (1970), suggest a possible sequence of behavior that offers an explanation of how expectancies are transmitted from teacher to learner. It is necessary to keep in mind that as this refers to the coach/player relationship, the position of the coach is like that of the teacher while the athlete's position in the relationship is like the position of the learner. Their model is as follows:

1. The teacher forms differential expectations for student performance;
2. He then begins to treat children differently in accordance with his differential expectations;

3. The children respond differentially to the teacher because they are being treated differently by him;
4. In responding to the teacher, each child tends to exhibit behavior which complements and reinforces the teacher's particular expectations for him;
5. As a result, the general academic performance of some children will be enhanced while that of others will be depressed, with changes being in the direction of teacher expectations;
6. These effects will show up in the achievement tests given at the end of the year, providing support for the 'self-fulfilling prophecy' notion.

(Brophy and Good, 1970 pp. 365-366)

There are various factors involved in this process of expectations influencing behavior. First, Braun (1976) points out, the credibility of the source of expectancy in the eyes of the person who is the focus of the expectations is very important. If the source of expectation is highly credible, the effect of the expectation is strengthened considerably. Secondly, the degree of discrepency between the expectation of the teacher and the personal expectation of the student influences the magnitude of the resulting effect on the behavior of the student. The greater the discrepency the greater the effect on the student. Thirdly, Braun points out that the number of confirmations that the student receives regarding teacher expectancies and consistency of these confirmations influence the acceptance of the expectancy. The greater the number and the more consistent the cues for expectations the greater the chance that the student's expectations of self will change to fit the teacher's expectations of the student. Finally the self-image of the learner has influence on the accpetance of teachers' expectancies. A positive self-image is difficult to change, and it is probable that

many consistent cues of expectations from a credible source are necessary to significantly affect the individual who has a strong positive self-image. This is true, too, for an individual with a confirmed negative self-image, which, Braun points out, is quite resistent to the effects of expectations that differ from the individual possessing this negative self-image.

From this description of the expectation model and its factors, it is quite apparent the implications that it has for a discussion of the relationship between the coach/player relationship and attribution of success or failure by the athlete. The coach (as seen through expectation theory) can have a great deal of influence on the behaviors and attitudes of his players when certain conditions are met. If, for example, the coach is a credible source for information in the mind of the athlete, which might be a part of a compatible relationship; and if there is discrepancy between the athlete's and coach's attributions of success or failure; and if the coach asserts his attributions a great many times and in a consistent manner (which he could have the chance to do in the many pep-talks and meetings that are held by athletic teams); and finally, if the athlete did not possess certain personality characteristics such as a very positive or negative self-image that might cause him to be resistent to changes in his own attributions, it is very probable that the athlete's causal attributions will, after a period of time, change direction to match the causal attributions of his coach.

Furthermore, it is probable that these stated conditions do not

all have to be met for the coach, through his relationship with the athlete, to be able to, at least, influence the athlete's attributions of success or failure to some degree. It might be, for example, that only one of these conditions needs to be met, if that one is strong enough. Whatever the case, it is apparent that through this model of expectation presented, the coach does have a good chance of affecting, to some degree, the causal attribution of his players.

In an effort to see if it is the case that coaches can influence their players' causal attributions, Lefebvre (1979) did a study involving the head coaches (N = 12) and players (N = 84) of male basketball teams. There were five basic hypotheses based on Weiner's (1972) attribution model:

> Hypothesis Ia: Basketball players will attribute their successful outcomes more to internal than to external causes.
>
> Hypothesis Ib: Basketball players will attribute their failing outcomes more to unstable than to stable causes.
>
> Hypothesis IIa: Basketball coaches will attribute their players' success more to internal than to external causes.
>
> Hypothesis IIb: Basketball coaches will attribute their players failure more to unstable than to stable causes.
>
> Hypothesis III: Basketball players, who received after a success relatively more effort and ability attributions from their coach than other players and less task and luck attributions, will increase their internal attributions for success over the season more than the other players do.
>
> (Lefebvre, 1979 pp. 110-111)

At both the beginning and at the end of the season players completed a questionnaire dealing with possible causes of their good and bad achievements. Near the end of the season, the coaches described the degree to which they considered their players' achievements were caused by either ability, effort, task difficulty or luck. Results significantly confirmed hypothese Ia and IIa and III. Hypotheses Ib and IIb were confirmed, but not to a significant degree.

From this research it can be concluded that the coach does, indeed, influence the causal attributions of his players to be more like his own causal attributions.

SUMMARY AND CONCLUSION

This review of the literature has attempted to look at three basic areas that are related to the psychology of sports. First, the area of personality research was addressed. In particular, in this area, literature was reviewed which indicated that there is a discernable athletic personality. The personality of the athlete is distinguishable from the personality of the nonathlete through various characteristics. Of particular significance to this review, it was pointed out that athletes are generally more internally oriented and have a more positive self-concept than nonathletes. Another part of this first section dealt with differences in the personalities of successful versus unsuccessful athletes and advanced ability versus average ability athletes. It was concluded that more advanced and more successful athletes generally possessed more

favorable personality profiles than did the less successful and less advanced or average athletes.

A second section of this review dealt with the realtionship between a coach and player. It was pointed out that this relationship could be described as either being incompatible or compatible. The compatibility of this relationship was shown to be related to certain determinants. These determinants were described as being either along the person dimension or the environmental dimension. The person dimension was further broken down into determinants of either the coach or the athlete who were involved in the relationship. Basically, it was brought out that compatibility is related to the way in which the personalities, preferences, need dispositions, etc. of the coach relate to personalities, preferences, need dispositions, etc. of the athlete. Along the environmental dimension, certain factors were discussed that either contributed to, or subtracted from, the compatibility of the coach/player relationship. Also in this area of coach/player relationship, the significance of such a relationship in determining the athlete's level of performance in a competitive situation was addressed. It was concluded that compatibility in this relationship does, indeed, influence the subsequent level of performance of the athlete. Lastly, in this area, certain practical applications of the compatible coach/player relationship were discussed.

In the third, and final, section of this review there was a discussion of causal attributions of success or failure. First, an

attribution model was presented by which it could be understood how and why attributions were made to certain factors in certain situations. The attribution model was centered on two causal dimensions: locus of control and stability, which were found to be related to affective reactions to success or failure and cognitive reflections of expectancies for future success, respectively. Next, some of the individual differences in personality and outlook that influence the direction of a person's causal attributions were discussed. The relationship between a person's attributions and his resultant performance on various tasks was then addressed. It was shown that persistence in spite of failure and intensity of performance were positively related to the extent that one internalizes his causal attributions. Finally, the area of interaction between the compatibility of the coach/player relationship and the athlete's causal attributions was discussed. It was shown that a teacher's (coach's) expectations of performance have an influence on the actual level of performance of the student (athlete). A model of expectation theory was presented and several factors were brought out that influence the magnitude of the effect of expectations in relationships. Lastly, implications of this model of expectation in the areas of the coach/player relationship and the determination of an athlete's causal attributions, were discussed. It was determined that, if certain personality and environmental influences are matched in a particular order, a coach, through his relationship with his players, can have a determining effect on the athlete's causal attributions.

Therefore, the personalities of the athlete and his coach, as found in a relationship of compatibility, do influence the athlete's causal attributions for success and failure.

TABLE I

Evaluation of the clinical (a priori) prediction model's accuracy.

		Predicted Category		
		Success	Fail	Totals
Actual Category	Success	10	6	16
	Fail	10	31	41
	Totals	20	37	57

TABLE II

Evaluation of the statistical (post hoc) prediction model's accuracy.

		Predicted Category		
		Success	Fail	Totals
Actual Category	Success	13	3	16
	Fail	14	27	41
	Totals	27	30	57

Source: Morgan and Johnson, 1978, p. 125.

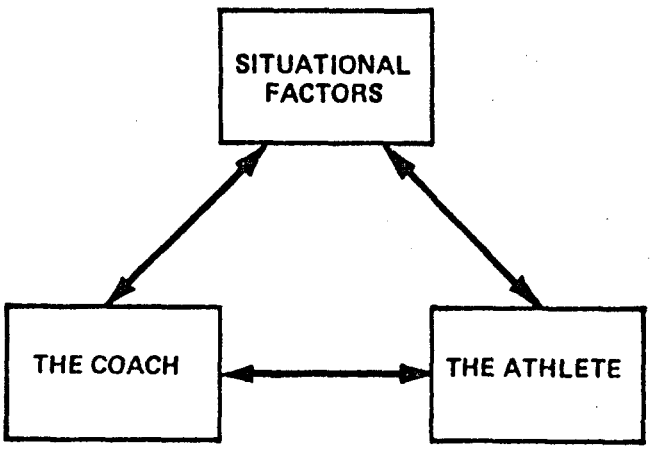

Figure III. Coach-athlete interpersonal behavior as a product of the interaction of person and situation.

Source: Carron and Chelladurai, 1978, p. 45.

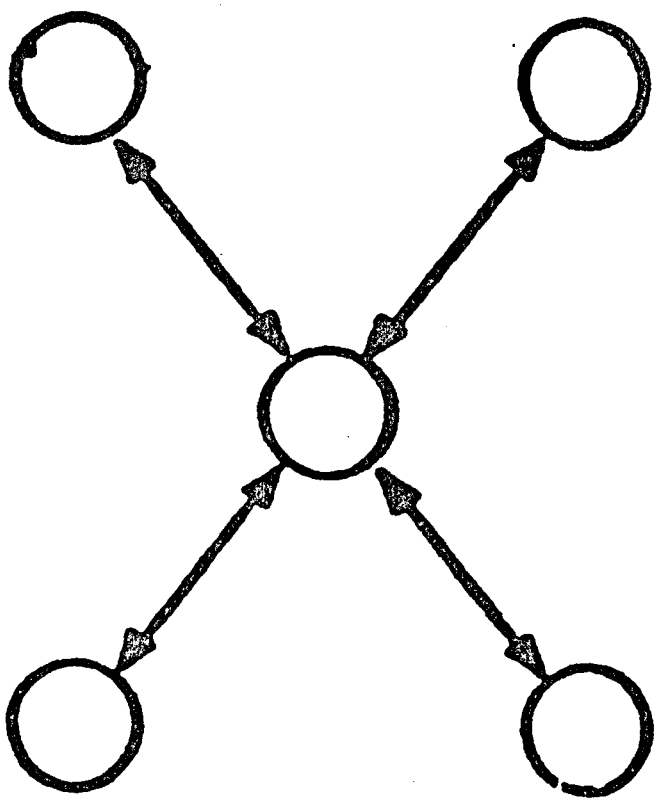

Figure IV. A wheel-communication network.

Source: Carron and Chelladurai, 1978, p. 48.

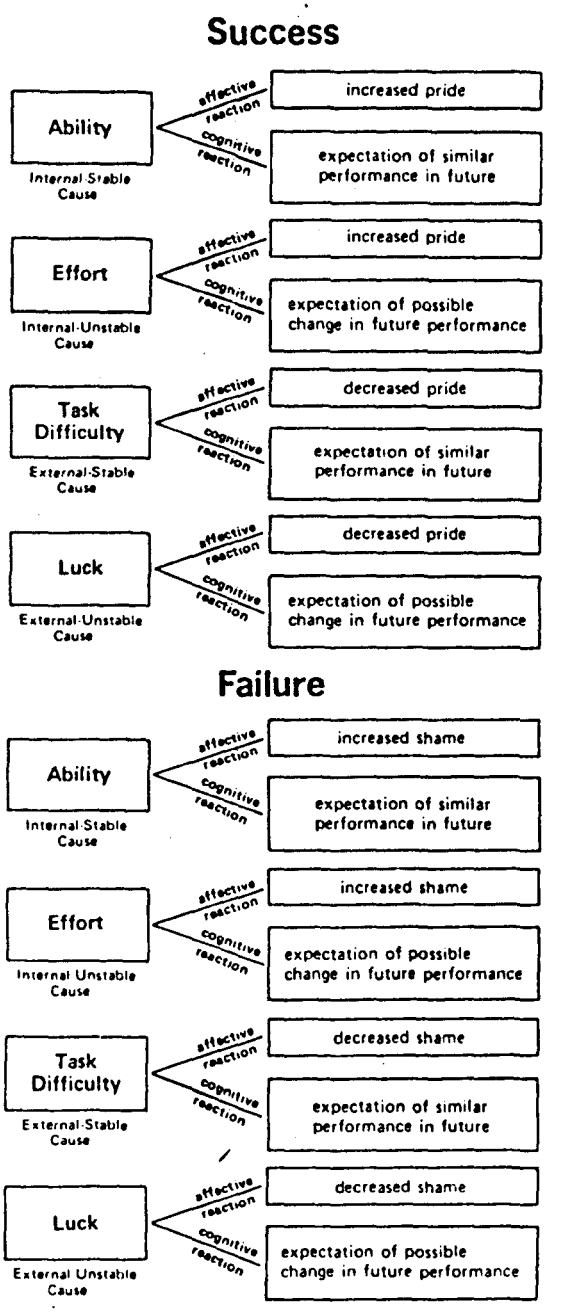

Figure V. Affective and cognitive reactions in situations of success and failure as a function of attributions.

Source: Bar-Tal, 1978, p. 261.

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