

Perceptions of Success: Effects on Causal Attributions
and Intrinsic Motivation

by

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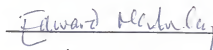
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TO MY FATHER

VIRGIL TAMMEN
(1932-1976)

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Table of Contents

Chapters

1. Introduction.....	1
Hypotheses.....	6
2. Review of Literature.....	7
Intrinsic Motivation.....	7
Effects of External Rewards.....	10
Effects of Feedback.....	16
Effects of Competition.....	20
Causal Attributions.....	23
Attribution Research in Sport.....	25
Measuring Causal Attributions.....	29
Interaction of Cognitive Evaluation Theory and Attribution Theory.....	30
3. Method.....	33
Selection of Subjects.....	33
Task.....	33
Dependent Measures.....	34
Intrinsic Motivation.....	34
Causal Attributions.....	34
Independent Measures.....	35
Perceptions of Performance.....	35
Outcome.....	35
Procedures.....	35
4. Results.....	38
Correlations among outcome, perceptions of success and overall intrinsic motivaiton.....	39

Effects of outcome and subjective success on causal attributions and overall intrinsic motivation.....	40
5. Discussion.....	43
References.....	51
Appendices.....	58
Intrinsic Motivation Inventory.....	59
Causal Dimension Scale.....	62
Informed Consent.....	64
Raw Data.....	65
Abstract Title Page.....	68
Abstract.....	69

List of Tables

Correlations among outcome perceptions of success and intrinsic motivation.....	40
Outcome and perceived success effects on causal attributions and overall intrinsic motivation.....	42

Chapter 1
Introduction

Deci's (1975) cognitive evaluation theory of intrinsic motivation views intrinsically motivated behavior as being motivated by the need to feel competent and self-determining in dealing with the environment. It is behavior that is engaged in with no apparent external reward for participation, but is engaged in for the person's own enjoyment. A person seeks a challenge to test their competence and attempts to conquer it the rewards for which, are the spontaneous thoughts and feelings which accompany the activity. According to Deci and Ryan (1980), the rewards which accompany the event have both a controlling and an informational aspect.

The controlling aspect of Deci's (1975) model refers to one's experience of self-determinism. This relates to a sense of having or not having a choice in the behavior that one engages in. An event having high control will cause individuals to perceive a low sense of self-determinism, since the reason they engage in the activity is due to external forces, such as receiving a tangible reward or pleasing others. A child who is forced to play baseball to please his/her parents will perceive that his/her behavior is being controlled, and thus possess a low sense of self-determinism. Since the child perceives little choice in the activity engaged in, the perceived context of control is high, and intrinsic motivation for the task is reduced.

Conversely, an event with low control will cause one to have a high sense of self-determinism. One perceives that the reason the behavior is engaged in is due to internal factors, such as enjoyment or pleasure. The individual perceives a freedom to choose which activities to engage in, and consequently, the activity is intrinsically interesting to the person. For example, a person who runs for enjoyment will experience a low sense of control, and a high perception of self-determinism during the activity.

The informational aspect of the reward pertains to one's competence, and can be either positive or negative. Positive information implies competence in an activity, while negative information implies incompetence. Competency is variable and can change over time and from one event to another.

The informational and controlling aspects are interrelated. Ryan, Vallerand, and Deci (1984) maintain that positive information with low control will enhance intrinsic motivation. Conversely, positive information with high control will enhance extrinsic motivation. Helplessness emerges when one experiences negative information that implies incompetence, and leaves one unable to achieve their goals.

Intrinsic motivation has been studied from several perspectives, including: the effects of positive/negative feedback (Vallerand, 1983), the use of external rewards as incentives (Deci, 1971; Lepper & Greene, 1975), and the

effects of competition on intrinsic motivation (Deci, Betely, Kahle, Abrams, & Porac, 1981; Weinberg & Ragan, 1979). Deci et. al. (1981) reported that subjects who competed against another person displayed significantly less intrinsic motivation for the task than subjects who did not compete. Weinberg and Ragan (1979) reported that males displayed more intrinsic motivation when involved in competitive situations than non-competitive situations. Subjects were also more intrinsically motivated after success than after failure. If positive information implies competency for a task, then intrinsic motivation should be expected to increase following success. Success in competition would provide positive information, whereas failure would provide negative information to the subject, and thus reduce intrinsic motivation for the task. Deci et. al. (1981) failed to examine the effects of competition on perceived success, and therefore were unable to demonstrate the informational effects on intrinsic motivation.

How one perceives and interprets the informational and controlling aspects of intrinsic motivation is related to the causal explanations given for outcomes. Attribution theory focuses on how people interpret and attempt to understand events and behaviors that occur in everyday encounters (Heider, 1958). Weiner, Frieze, Kukla, Reed, Rest, and Rosenbaum (1971) identified four major causal elements cited in achievement-related outcomes, luck, task difficulty, effort, and ability. These attributions were classified along the dimensions of stability and locus of

control. Luck and effort were unstable, while task difficulty and ability were stable. Luck and task difficulty were external to the person, whereas ability and effort were internal to the person. Roberts and Pascuzzi (1979) reported that these four main attributions accounted for only 45% of the attributions made in the sport setting. Weiner (1979) later classified causality along three dimensions: controllability (manageable by self or others), locus of causality (due to internal or external factors), and stability (expectation that future behavior will be similar). Effort can be either stable or unstable, is controllable by the individual, and is internal in terms of locus of causality. Task difficulty and luck are perceived as uncontrollable and external. While luck is regarded as unstable, task difficulty is considered stable. Ability is considered stable, internal, and uncontrollable. Weiner (1979, 1983) has stated that these are not to be considered the only causal attributions utilized in explaining achievement outcomes.

Research in the sport setting has primarily focused on causal explanations for outcomes in won/loss situations (e.g. Bukowski & Moore, 1980; Iso-Ahola & Roberts, 1977; McAuley & Gross, 1983). McAuley and Gross (1983) found that winners made more internal, stable, and controllable attributions than losers. However, both groups tended to make unstable attributions. In an examination of how perceived success impacted on causal attributions, McAuley

(1985) reported that collegiate gymnasts who perceived their own performance as successful, made more internal, stable, and controllable attributions than those who perceived their performance as less successful.

If success implies competency, then success would be expected to increase intrinsic motivation, while failure would be expected to reduce intrinsic motivation for the task. However, too often in sport, success and failure are equated with winning and losing. Previous research focusing on the effects of competition on intrinsic motivation used the objective outcome of winning and losing to equal the subjective perceptions of success and failure. Weinberg and Ragan (1979) showed that when subjects succeeded (won) they displayed more intrinsic motivation for the task than subjects who failed (lost). A better predictor of intrinsic motivation for a task should be the subjective feelings of success and failure, rather than the objective perception of winning and losing. Higher levels of intrinsic motivation would be expected from those individuals who perceive their performance, regardless of outcome, as successful than from those individuals who perceive their performance as less successful.

In competition the subjective perceptions of success and failure should also have a greater impact on causal attributions than the objective result. McAuley (1985) showed that the subjective perceptions of success have more influence over perceptions of causality for performance than the objective outcome of the performance.

The purpose of this study therefore is twofold; a) to determine whether subjective perceptions (success/failure), or outcome (won/loss) have a greater impact on subjects' level of intrinsic motivation following competition, and b) to assess the impact of perceptions of success/failure and outcome on causal attributions.

Hypotheses

Consistent with the main purpose of this study the following hypotheses are presented:

- 1) A stronger relationship will exist between perceptions of success and intrinsic motivation than between outcome and intrinsic motivation following competition.
- 2) Subjects who perceive their performance as successful will make more internal, stable, and controllable causal attributions than those who perceive their performance as less successful.
- 3) Subjects who experience subjective success will display higher levels of intrinsic motivation than those who experience subjective failure.

Chapter 2

Review of Literature

This chapter reviews the research literature pertaining to intrinsic motivation and causal attributions in the sport setting. The review of intrinsic motivation literature focuses on research concerning the effects of feedback, competition, and external rewards on intrinsic motivation. The causal attribution review addresses success/failure attributions in sport and the measurement of causal attributions.

Intrinsic Motivation

Deci's (1975) cognitive evaluation theory of intrinsic motivation viewed intrinsically motivated behavior as behavior motivated by a person's need to feel competent and self-determining. This concept is founded in the early work of White (1959), who hypothesized that the reason a person engages in a behavior is to demonstrate competency. The person also wishes to have control over what types of behavior they engage in, that is, be self-determined. Intrinsically motivated behavior is engaged in with no apparent external reward for participating in the activity. Since intrinsically motivated behavior is based on a need to feel competent and self-determining, a person seeks a challenge to test their competence, and attempts to conquer it. Furthermore, Deci (1975) contends that rewards for every situation have two functional aspects, a controlling

aspect and an informational aspect.

Which challenge is pursued relates to self-determinism, and the perceptions of controlled behavior. The person can choose when to begin and end the attempted challenge, and thus determine their own behavior for the activity. They can escape or persist in the activity depending on the amount of effort they wish to expend. Behavior low in control and high in self-determinism should increase intrinsic interest in the task, while behavior high in control and low in self-determinism should decrease intrinsic motivation. For example, no one is compelled to jog but many individuals do so for the enjoyment of the activity itself. They can begin and end the jog at any time. The person perceives that they control their own behavior, which is the essence of self-determination. Conversely, an individual who is coerced into jogging, may perceive low self-determinism for the activity, and thus display a lower level of intrinsic motivation for the activity.

When an individual begins a jogging regimen they may also wish to test their competency. They may want to discover if they can jog two miles without stopping, or if they are still in similar physical condition as they were in college. The concept of competency refers to a person being able to conquer the challenges one attempts. Positive competency information suggests the individual was successful at the attempted challenge, and this successful information facilitates intrinsic motivation. Conversely, negative competency information suggests that the individual

was unsuccessful at the attempted challenge, and thus a decrease in intrinsic motivation is observed. To fully examine one's competency an individual should be optimally challenged (Csikszentmihalyi, 1975), thus allowing one to optimally exercise one's skills. The challenge is neither so easy that the person becomes bored, nor is the task so difficult that the person cannot experience any degree of success. The task is of an adequate degree of difficulty to ensure that the person expends the optimal amount of energy to achieve the desired level of success.

For the information to have any relevance to the individual it must interact with self-determinism. Without this interaction the information received will not reflect one's competence. Ryan, Mims, and Koestner (1983) reported that positive information administered controllingly did not significantly increase intrinsic motivation, but positive information in the presence of self-determinism did increase intrinsic motivation. The researchers also reported that rewards in general appeared to have a controlling effect, that can undermine intrinsic motivation. Thus, positive information accompanied with self-determinism has a positive effect on intrinsic motivation, while positive information without self-determinism can have either no effect or a detrimental effect on intrinsic motivation. Any negative information appeared to undermine intrinsic motivation. The negative information implies that the individual is incompetent and unable to achieve success.

Support for cognitive evaluation theory (Deci, 1975) is detailed below. Lepper and Greene (1975) reported that rewards can be perceived as controlling behavior, when administered in the absence of informational determinants. Ryan (1977; 1980) reported that athletic scholarships perceived as controlling behavior can negatively affect intrinsic motivation, while scholarships that are perceived as positive competency information did not show a similar effect. Vallerand (1983) and Vallerand and Reid (1984) showed that positive competency information enhances intrinsic motivation, while no information or negative information can detrimentally affect intrinsic motivation.

In summary, cognitive evaluation theory (Deci, 1975) states that an individual engages in a behavior to test their competency for the task, and to exercise self-determination. When individuals perceive that they no longer control their behavior, intrinsic motivation is reduced. However, when individuals perceive that they engage in the task for internal reasons, self-determinism is high, and intrinsic motivation is facilitated. The concept of competency refers to one being able to conquer the challenges one attempts. Information regarding one's competency can be positive thus enhancing intrinsic motivation, or the information can be negative which decreases intrinsic motivation.

Effects of External Rewards

The research on the effects of external rewards is

perhaps the most robust in the intrinsic motivation literature. Numerous studies have examined the effects of money on intrinsic motivation (e.g., Deci, 1971; Earn, 1982; Fisher, 1978). Others have looked at the effects of expected rewards on intrinsic motivation (Fisher, 1978; Harackiewicz, 1979; Kruglanski, Friedman, & Zeevi, 1971; Lepper & Greene, 1975). A further aspect studied has been the effect of the reward being contingent upon the performance (Fisher, 1978; Harackiewicz, 1979). Task contingent rewards are rewards that reflect the performance of the individual, i.e., a good performance is rewarded highly, while a poor performance receives a low reward. Non-task contingent rewards do not accurately reflect the person's performance, and a good performance may receive a low reward, or a poor performance a high reward. Another possibility would be that the person is rewarded at a predetermined rate regardless of the work they actually accomplished.

Fisher (1978) tested how the contingency of the reward affected a person's intrinsic motivation. Subjects were either paid at a fixed rate, or were paid contingent on their performance, at solving word anagram puzzles. Fisher utilized a free choice measure of activity to assess intrinsic motivation for the task. During a free choice period subjects could do whatever activities they wished, ranging from reading magazines, working on more word anagram puzzles, or homework. Free-time working on the word anagrams, was monitored as the measure of intrinsic

motivation. Results indicated that the payment system had no adverse affect on intrinsic motivation. The important finding however, was that those subjects who were paid contingent upon their performance felt more controlled by the reward. The primary motivator apparently was the reward they received, not the intrinsic interest of the task. The subjects who were paid contingent on their performance also reported less task enjoyment than those subjects who were paid the flat rate. This suggests that if the reward was perceived as controlling the behavior, the task was enjoyed less and intrinsic motivation was, as a result reduced.

Harackiewicz (1979) also examined how contingent rewards affected intrinsic motivation for a word seeking task. Subjects were instructed to look for words hidden in caricatures of famous individuals. Subjects were rewarded based on either attempting the task (task-contingent), or by finding a prescribed number of words (performance-contingent). Results indicated that subjects who were rewarded contingent upon performance, displayed less intrinsic motivation for the task than subjects who were in the task-contingent reward group. In a follow up test one month after initial posttest assessment the reported differences in intrinsic motivation were unchanged, suggesting rewards can have long term controlling effects on behavior. If an individual perceives that they engage in the task in order to receive a reward, which decreases self-determination, the intrinsic motivation for the task can be

reduced. Not only can intrinsic motivation for the task be reduced, but also adverse effects on intrinsic motivation can be observed long after the reward is presented. Thus, how one is rewarded and how much control and self-determination is perceived in the reward has a strong impact on intrinsic motivation.

Lepper and Greene (1975) examined how external rewards affected pre-school children's play with felt tip markers. The children were randomly assigned to one of three conditions: expected reward, nonexpected reward, and no reward. The reward was a "Good Player Award" certificate that was given to the children after they drew with the felt markers. The researchers reexamined the children's play with the markers two weeks after presenting the award to the children. The results indicated that children who had expected the award spent significantly less time playing with the felt tip markers when compared to the amount of time they previously spent playing with the markers. The no reward and unexpected reward groups showed an increase in time spent playing with the markers. This suggested that children can lose interest in a task if given a reward for doing a task they previously engaged in for its own enjoyment. If the children perceived they will no longer continue to receive a reward for doing the task, they may no longer continue to engage in the task. The findings also suggest that how rewards are distributed is important, i.e., when a reward is expected for the activity, intrinsic motivation for the task can be reduced. However, if the

reward is unexpected, intrinsic motivation for the task can be increased. The results also showed the detrimental long term effects that rewards can have on children's play.

Ryan (1977; 1980) examined the effects of awarding scholarships to intercollegiate athletes on intrinsic motivation. The 1977 study reported that athletes on scholarship reported more extrinsic reasons for participation, and enjoyed their sport less. Thus, the scholarship the athletes received appeared to undermine intrinsic motivation for the sport. In a more extensive study, Ryan (1980) examined how the sport and sex of the athlete affected the athlete's reaction to the scholarship. The male athletes consisted of football players and wrestlers, while the female athletes were taken from a number of sports. The football players not on scholarship reported higher levels of intrinsic motivation than football players on scholarship. The scholarship football players felt that they played for pay, and the scholarship was perceived as a reward for continuing to play football. Thus, the scholarship could be interpreted as controlling their behavior. The non-scholarship football players continued to play for fun and their own enjoyment. Conversely, the scholarship for wrestlers did not undermine intrinsic motivation. Ryan suggested that since so few scholarships were awarded for wrestling, the athletes perceived the scholarship as positive feedback concerning their competency at wrestling. More opportunities exist for

athletes to receive a football scholarship than to receive a wrestling scholarship, and thus the scholarship was not seen as controlling the wrestler's behavior, but information concerning their wrestling ability. Female athletes responded similarly to the wrestlers, in that female athletes on scholarship did not feel intrinsic motivation was undermined as a result of the scholarship. At that time, athletic scholarships for females were relatively few, and the scholarship was viewed as information concerning the females' competency for their sport. The scholarship was perceived as positive competency information and intrinsic motivation for their sport was not impaired.

A possible limitation of Ryan's (1977; 1980) studies could be that he was not testing intrinsic motivation, but motivation to practice. The questions Ryan asked to assess intrinsic motivation appeared to be directed towards motivation and enjoyment of practice. Four of the seven questions appraised enjoyment of practice and offseason training. To fully assess intrinsic motivation, a wider range of situations should have been included. Another limitation was the limited sample of male subjects. Ryan only assessed two male sports, and then made his generalizations. A better method would have been to assess an array of sports, both individual and team, and then make conclusions. Another possible limitation was that Ryan seemed to equate enjoyment with intrinsic motivation. Other factors may impact on intrinsic motivation than enjoyment. A more comprehensive analysis of enjoyment, competence,

pressure, and self-determinism may have given more information about the athletes' intrinsic motivation.

Thus, it appears that rewards perceived as controlling a person's behavior tend to undermine self-determination, and decrease intrinsic motivation for a task. These rewards also can have long term negative effects on intrinsic motivation. How the rewards are distributed also has an impact on intrinsic motivation. An unexpected reward appears to facilitate intrinsic motivation, while an expected reward seems to decrease intrinsic motivation.

Effects of Feedback

How a person interprets the reward can also impact on intrinsic motivation. Based on cognitive evaluation theory (Deci, 1975), feedback information that is positive about one's competency for the task should increase intrinsic motivation, while negative competency information should be a decrement to intrinsic motivation. Based on the literature, how a person interprets and reacts to the reward is affected by the feedback involved in the reward (Weinberg & Ragan, 1979; Vallerand, 1983; Vallerand & Reid, 1984). If the feedback is perceived as information about the person's competence, intrinsic motivation can be expected to increase. However, if the feedback is negative and informs the person that they are incompetent, intrinsic motivation for the task can be expected to be lowered.

Weinberg and Ragan (1979) examined the effects of feedback on intrinsic motivation with males and females on a

pursuit rotor task. The subjects either competed against another subject, or competed against a standard of excellence. Positive feedback for the face to face subjects consisted of the subjects being told they had won eight of ten trials. The negative feedback subjects were told they had won two of ten trials. Subjects who competed against a standard of excellence were told that their performance ranked them in the 80th percentile for the positive feedback condition, or that their performance ranked them in the 20th percentile for the negative feedback condition. Intrinsic motivation was determined by the amount of future experimental time subjects volunteered for on the pursuit rotor. Subjects in the positive feedback condition volunteered for significantly more future experimental time than those subjects who experienced negative feedback. Thus, subjects who experienced success had higher levels of intrinsic motivation than those subjects who experienced failure. Positive feedback implied competence which facilitated intrinsic motivation, while negative feedback implied incompetence and decreased intrinsic motivation.

A limitation of the Weinberg and Ragan (1979) study was the researchers assessment of intrinsic motivation. To assess intrinsic motivation the researchers computed the amount of future experimental time the subjects volunteered for. Ryan, Vallerand, and Deci (1984) have questioned whether this is a valid measure of intrinsic motivation. Ryan et. al. (1984) have suggested that Weinberg and Ragan

were not assessing intrinsic motivation, but motivation to continue competing. Other factors may have effected subjects motivation to volunteer for future experimental research, such as extra credit, pleasing the researcher, or continued competition, and thus Weinberg and Ragan's measure of intrinsic motivation may not have been valid.

Vallerand and Reid (1984) examined how verbal feedback during a task would affect intrinsic motivation. They tested males who had expressed moderate levels of intrinsic motivation for balancing on a stabilometer. The subjects in the positive feedback group were told, "It looks like you have a natural ability to balance and it shows in your performance." Subjects in the negative feedback condition were told, "This is an easy task but your improvement is quite slow. Try to perform as well as you can." Intrinsic motivation was assessed by use of the Mayo (1977) Task Reaction Questionnaire. This questionnaire was designed to reflect Deci's (1975) definition of intrinsic motivation. Mayo (1977) had shown the Task Reaction Questionnaire to be a reliable and valid measure of intrinsic motivation. The results indicated that subjects receiving positive feedback experienced higher levels of intrinsic motivation than subjects who received negative feedback. Those who experienced positive feedback also displayed more perceived competence. Through path analysis of the data, Vallerand and Reid determined that it was not the feedback, but the perception of competence that had the greater effect on intrinsic motivation. If the feedback did not affect the

person's perception of competency, then the effect on intrinsic motivation was not shown. Thus, the major factor is not the feedback itself but how the feedback is interpreted in terms of perceived competence.

The effects of the amount of positive feedback on intrinsic motivation has been examined by Vallerand (1983). Male hockey players involved in the task of decision making in simulated hockey conditions received either 0, 6, 12, 18, or 24 positive verbal statements regarding their performance. Vallerand used the Task Reaction Questionnaire (Mayo, 1977) to assess intrinsic motivation. Vallerand reported that those subjects who received no positive statements reported the least amount of intrinsic motivation for the task. No difference was displayed for the other four feedback conditions. The athletes interpreted the positive feedback as an indication of their performance competency, and intrinsic motivation for the task was increased. Additional positive feedback neither increased or decreased intrinsic motivation. If the subjects perceived themselves as competent after moderate levels of positive feedback, the added feedback was not necessary to further facilitate intrinsic motivation. This indicates that once an individual perceives that they are competent at the task, additional rewards or feedback will not heighten their sense of competency. Thus, the athlete who receives more money to compete in sport would not appear to display more intrinsic motivation for the task, but he may show a decrease in

intrinsic motivation if the money is perceived as controlling his behavior.

Feedback appears to have an important impact on intrinsic motivation. If the feedback informs the person that he/she is competent at the task, then the person's intrinsic motivation is likely to be increased. However, if the feedback informs the person that he/she is incompetent then intrinsic motivation is likely to be reduced. Another important implication of the findings is how the person interprets the feedback. If the feedback is interpreted as controlling the person's behavior, intrinsic motivation will consequently be reduced.

Effects of Competition

Competition is the comparison of an individual's performance with some standard in the presence of at least one other person, who is aware of the basis for comparison and can evaluate the comparison process (Martens, 1975). Competition has been shown to have differential effects on intrinsic motivation. Studies by Weinberg and Ragan (1979) and Weinberg and Jackson (1979) have shown that competition has a positive effect on intrinsic motivation. On the other hand, a study by Deci, Betely, Kahle, Abrams, and Porac (1981) showed that competition had a negative effect on intrinsic motivation.

Weinberg and Ragan (1979) reported that males who competed against another individual or against a standard of excellence displayed more intrinsic motivation for the task

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than those males who did not compete. No differences were observed when comparing the competitive groups. Males who competed, regardless of the condition, reported higher levels of intrinsic motivation than the noncompetitive group. Competition did not affect females' intrinsic motivation. Weinberg and Ragan suggested that the reason females reacted in this manner was a result of the socialization process of males and females. Weinberg and Ragan explained that information of competitive success is more salient to males than to females. While males have a more assertive and status-oriented style, females are socialized to be more affiliative and status-neutral. Weinberg and Ragan suggested that competition is more assertive and status-oriented, thus it appealed to males more than females.

Deci, et. al. (1981) had males and females compete on a spatial relations puzzle, with subjects being told to either complete the puzzle faster than the other person, or to do their best. During the free choice period males who were told to do their best spent significantly more time on the task than males who competed. The effect of competition was much greater for females. Females who did not compete spent three times as much time working on the puzzles during the free choice period when compared to females who competed. The researchers concluded that competition forces the person to expend much more cognitive and physical energy, which causes a decrease in intrinsic motivation.

Ryan, Vallerand, and Deci (1984) have suggested that

the apparent incongruity of the results of the two previous studies may have been related to the measurement of intrinsic motivation. The authors contend that the Deci, et. al. (1981) study examined intrinsic motivation to continue the activity, whereas Weinberg and Ragan (1979) were measuring motivation to continue competing. Ryan, et. al. (1984) stated that the Weinberg and Ragan study showed the same results as studies examining willingness to continue an activity with the continued presence of external rewards, and thus was not a valid measure of intrinsic motivation. However, the rewards for competition were not explained. The very nature of sport is competitive, and sport appeals to a wide variety of people. It can be speculated that competition in a sport setting causes different perceptions when compared to competition in a laboratory situation. Success in competition conveys information about a person's competency at a task and could be expected to increase intrinsic motivation for the task, while a failure experience would be expected to lower intrinsic motivation for the task.

Cognitive evaluation theory (Deci, 1975) appears to have empirical support in that rewards that are perceived as controlling behavior undermine self-determinism and decrease intrinsic motivation. However, the rewards must also convey information to the individual about their competency for the task. Positive competency information with high self-determinism facilitates intrinsic motivation, while positive

competency information with low self-determinism decreases intrinsic motivation. Negative competency information also appears to decrease intrinsic motivation whether or not the behavior is self-determined.

Causal Attributions

How one perceives and interprets the informational and controlling aspects of intrinsic motivation relates to the causal attributions made for outcomes. Attribution theory focuses on how a person interprets and attempts to understand events and behaviors that occur in everyday encounters, and has its roots in the seminal work of Heider (1944, 1958) and Rotter (1966). Weiner, Frieze, Kukla, Reed, Rest, and Rosenbaum (1971) proposed that individuals use four common elements to explain outcomes in achievement settings. These four elements are luck, effort, ability, and task difficulty. When attempting to explain an outcome, the individual assesses his/her ability for the task, the effort expended, the difficulty of the task, and any luck that may have influenced the outcome. The individual then attributes causality to the element or elements that most influenced the outcome. Weiner, et. al. (1971) classified causality along the dimensions of stability and locus of control. Locus of control referred to the element being either internal or external to the person. Ability and effort were considered internal, while task difficulty and effort were seen as external. Stability referred to the causal elements as being variable or invariant over time.

Ability and task difficulty were viewed as stable, and effort and luck were unstable. These causal elements interacted with informational cues such as past performance and social norms, thus allowing the individual to attribute the cause of the outcome.

While the work of Weiner and his colleagues (1971) served to guide much of the early attribution research, their early model is somewhat limited. For example, Roberts and Pascuzzi (1979) showed that the four classic causal elements accounted for only 45% of the attributions made in sport settings. In 1979, Weiner revised his attribution theory of achievement motivation to include a third dimension of controllability, which was originally identified as intentionality by Rosenbaum (1972). Weiner (1979) argued that control would be a much more accurate label for this dimension. Weiner stated that intent connotated a desire or want, but failure attributed to lack of effort does not mean the person wanted to fail. However, one's effort can be viewed as being under their volitional control, thus the third dimension is labeled controllable versus uncontrollable. To accommodate the label change from intent to control, locus of control was changed to locus of causality. Rotter (1966) had argued that causality was either within or outside the person, and labeled this dimension locus of control. Weiner (1979) stated that locus of causality was a more accurate term, since it expressed the internal/external relationship of the dimension. Thus, causality can be classified as controllable or uncontrollable,

stable or unstable, and either internal or external to the attributor.

Attribution Research in Sport

Causal attribution research in sport has primarily focused on how sport participants explain outcomes for behavior in win/loss-success/failure situations (e.g. Bukowski & Moore, 1980; Iso-Ahola & Roberts, 1977; McAuley, 1985; McAuley & Gross, 1983; Spink & Roberts; 1980). Iso-Ahola and Roberts (1977) had undergraduate males perform a motor maze task, which required subjects to move a ball bearing through a maze by altering the slope of the maze with up/down-left/right control handles. Subjects were allowed ten trials followed by false feedback about their actual performance. Subjects were informed that their performance was excellent, average, or poor. "Success" subjects received excellent feedback eight of the ten trials, while "failure" subjects received poor performance feedback eight of the ten trials. Results indicated that subjects made reliably more internal and stable attributions regardless of success or failure. Success subjects attributed their performance to the internal attributions of ability and effort more than the failure subjects, but the failure subjects did not make more external attributions than the success subjects. Failure subjects tended to attribute their failure to a lack of ability. Success subjects were also more likely to attribute their performance to the external attribution of task difficulty

than the failure subjects. Success subjects perceived the task as being easier than the failure subjects. It had been hypothesized that failure subjects would make more external attributions, but this result was not shown. Weiner (1974, 1979) had shown in previous research that failure subjects make more external attributions for outcome than success subjects.

Bukowski and Moore (1980) examined the causal attributions of boys who were attending an overnight camp, following the camp's "Olympics". The games consisted of a variety of athletic events, such as swimming, track and field, boating, and tug-of-war. Points were accumulated during the contests to determine the overall camp team winner. Results indicated that effort was the primary cause of success, and the lack of effort was the major reason for failure. This again supported the notion that in sport individuals tend to make internal causal attributions. Ability was viewed as a major element of causality only by success subjects. Luck and task difficulty were not seen as major factors in the outcomes by both groups. However, when examining winning versus losing the results indicated that winners attributed causality to the internal elements of ability and effort, while losers attributed the causes to luck or task difficulty. These results indicate that winning and losing are not always synonymous with success and failure.

Spink and Roberts (1980) demonstrated that winning and

losing are not perceived the same way as success and failure. They examined male and female causal attributions following clear or ambiguous outcomes. Those who experienced subjective success and won the contest were defined as clear winners. Subjects who lost and felt subjective failure were identified as clear losers. Those who won but felt subjective failure were labeled as ambiguous winners, while subjects who lost but felt they performed successfully were ambiguous losers. The results showed that clearly perceived outcomes were attributed to internal factors, but ambiguous outcomes were attributed to external factors. Clear winners attributed the outcome to high effort and ability, while ambiguous winners attributed the outcome to task difficulty. Ambiguous winners perceived that they played an opponent of lesser ability than themselves, thus they felt the task was easy. Subjects in the clear loss category attributed causality to lack of effort and lack of ability. The ambiguous loss subjects attributed the cause to the difficulty of the task. Success and failure are psychological states based on the individuals perceptions (Maehr & Nicholls, 1980). When the outcome reflects the person's abilities (success state) the cause is attributed to internal factors not dependent on whether they won or lost. However, when the outcome is ambiguous and not reflective of the person's abilities the causal attributions are more external. Beating an opponent of equal ability, or playing well leads to feelings of satisfaction, which leads to internal causal attributions.

However beating an opponent of lesser ability causes one to perceive that the reason they won was due to the ease of the task not their own abilities, and thus the causal attributions will be more external. These results clearly support the notion that success is not synonymous with winning, nor losing with failure.

A major flaw in the majority of sport attribution research has been the reliance upon Weiner's 2x2 classification of causality. McAuley (1985) McAuley and Gross (1983), McAuley, Russell and Gross (1983) used all three causal dimensions to assess causality. McAuley (1985) utilized Weiner's 1979 classification to assess the causal attributions of elite gymnasts. The gymnast gave a reason for their performance on the events of the vault, balance beam, floor exercise, and uneven parallel bars. After giving the reason for their performance, the gymnasts then coded their perceptions along the dimensions of locus of causality, controllability, and stability. The gymnasts also gave their perceptions of how successful they felt their performance was for each event. Results indicated that perceived success was a better predictor of causal attributions than the actual performance scores. Gymnasts who received high scores from the judges made more internal, stable, and controllable causal attributions than those gymnasts who had relatively low scores. Gymnasts who experienced low scores and low perceived success made more internal, controllable, and unstable causal attributions,

while high score and high success groups made more internal, controllable, and stable causal attributions. This suggested that "successful" gymnasts possibly perceived their performance as due to stable effort, and less successful gymnasts perceived causality as due to unstable effort. This may be interpreted as, "I did not do well today, but next time I'll try harder and do better." How one perceives their performance appears to be a major factor influenceing causal attributions for outcomes.

Measuring Causal Attributions

Previous attribution research suffered from what Russell (1982) termed the "fundamental attribution researcher error". In traditional attribution research, the researcher translated the subject's causal attributions into the causal dimensions. The problem associated with this technique is that the researcher and the subject may not agree on the meaning of the cause. Russell cited the example, " They played better than we did". Are the individuals attributing causality to themselves or to their opponents? Also, the attributor may perceive causality differently than the researcher. For example, one person may perceive ability as being stable over time, but another may view ability as an unstable factor that can change through practice or illness. Elig and Frieze (1979) reported that although the open-ended responses have less validity and reliability than more structured methods, subjects rate them as being easier to respond to. Russell

(1982) designed the Causal Dimension Scale (CDS) to assess causality along the dimensions of locus of causality , control, and stability. The CDS combines open-ended responses with structured scales to assess causality. The subject makes an open-ended response regarding the reason for their performance. After making their open-ended attribution, the subject then rates their response along the three dimensions. This is a vastly improved method for assessing attribution because the subject places the cause along the dimensions, not the researcher. Thus, the researcher can accurately evaluate the causal attribution of the subjects. Russell, McAuley, and Tarico (1986) have recently shown the Causal Dimension Scale (Russell, 1982) to be methodologically superior to other means of assessing causality along causal dimensions.

Interaction of Cognitive Evaluation Theory and Attribution Theory

Theoretically, cognitive evaluation theory (Deci, 1975) and attribution theory (Weiner, 1979) can be linked. How individuals interpret the rewards and information they receive can have an impact on both intrinsic motivation and causal attributions. An internal attribution to high ability would suggest that the subject feels competent about their performance, and thus increase intrinsic motivation. An internal attribution to high effort would show that the subject persisted more in the activity, and might suggest that the subject was more intrinsically motivated to perform

well. Low ability and low effort attributions would theoretically have a negative effect on intrinsic motivation. External attributions would suggest that causality is outside the person, and thus have a negative effect on self-determinism which decreases intrinsic motivation. Controllable attributions would suggest to the subject that they were self-determining in their behavior, and thus increase intrinsic motivation, while uncontrollable attributions would suggest that the subject was nonself-determining, and decrease intrinsic motivation. Stable causal attributions would suggest that the outcome may be similar the next time, thus a stable attribution for success could be interpreted as positive competency information, which should increase intrinsic motivation. Conversely, a stable attribution for failure would indicate incompetency and possibly decrease intrinsic motivation. Unstable attributions could increase intrinsic motivation, since the individual may perceive the outcome as changeable. The individual may perceive that with more effort, persistence, and practice, the outcome could have been different. Thus an unstable attribution may positively effect intrinsic motivation. These attributions and their interpretations would of course depend on the situation and the nature of the task. A difficult task with low probability of success would have a different effect on intrinsic motivation than a task that an easy task with a high probability of success. Much would depend on how the individual interprets the task and the perceptions they possess concerning their ability to

succeed at the task.

Attribution theory (Weiner, 1979) focuses on how individuals interpret and attempt to understand everyday occurrences, while cognitive evaluation theory (Deci, 1975) is concerned with how situations and rewards affect intrinsic motivation. Attribution research in sport suggests that perceived success has a greater impact on causal attributions than objective outcome. Research has also shown that feedback, rewards, and competition can have an impact on intrinsic motivation. While both theories have been well documented, little research has attempted to link the two. The present review has shown how previous research in attribution and intrinsic motivation has been conducted, and a possible link between the two theories.

Chapter 3

Method

Subjects

The subjects were comprised of 117 undergraduate male and female volunteers from Kansas State University physical education courses. The subjects received three points extra credit for their participation in the experiment, which was applied to their final grade.

Task

The task consisted of a competitive basketball game of "DOG". The object of the game was to make a basketball shot, and have the opponent replicate the shot from the exact position on the basketball court. When one failed to replicate the shot (make the basket), they received a letter. For example, subject B failed to duplicate the first shot made by subject A. Thus, subject B received the first letter of "DOG" (D). The next instance subject B failed to reproduce subject A's made shot, subject B received the next letter of "DOG" (O). If subject A failed to make a shot, subject B was free to attempt a shot of their choice. The first subject to spell "DOG" lost the contest. For this contest, only jump shots ranging from five to fifteen feet from the basket were allowed. A coin toss determined who shot first.

Dependent Measures

Intrinsic motivation. The Intrinsic Motivation Inventory (IMI) (Ryan, 1985) was administered to assess subject's level of intrinsic motivation following competition (see Appendix A). This inventory is a multidimensional measure that assesses subjective experiences related to experimental tasks. The IMI appraises interest-enjoyment, effort, perceived competence, and tension and pressure experienced while performing an activity. The IMI consisted of 18 questions scored on a seven point Likert scale of 1 = strongly disagree to 7 = strongly agree. This inventory has a stable factor structure and is coherent across tasks, setting, and conditions (Ryan, 1982; Ryan, Mims, & Koestner, 1983; Plant & Ryan, 1985).

Causal attributions. The Causal Dimension Scale (CDS) (Russell, 1982) was used to measure subject's causal attributions following competition (see Appendix B). Subjects were asked to make an open ended attribution for the outcome, and then asked to rate their attributions on a nine-item scale. The CDS assesses attributions on the dimensions of stability, controllability, and locus of causality. The CDS has been shown to be a valid and reliable measure of attributions (Russell, 1982; McAuley & Gross, 1983). The internal consistency is 0.76 for the locus of causality, and 0.88 for the stability dimension (McAuley & Gross, 1983). The control dimension is less

reliable, with an alpha coefficient of 0.52 (McAuley & Gross, 1983). The CDS however, is the best measure of causal attributions at this time (Russell, McAuley, & Tarico, 1986).

Independent Measures

Perceptions of Performance. To assess the subjective perceptions of performance subjects were asked to rate how well they perceived they performed the task on a seven point Likert scale.

Outcome. The objective outcome of winning or losing was the other independent measure. The subject either won or lost the contest.

Procedures

The experiment consisted of two phases. The first phase was conducted on an individual subject basis. Subjects were given an appointed time to appear at the gymnasium, where they read and signed the informed consent, followed by the subjects completing the ability task of shooting jump shots. To measure jump shooting ability subjects performed the LSU Long and Short Test (Nelson, 1967). The court was marked with tape in a 15 foot arc from the endline on either side of the basket to the top of the free throw line. This line served as the restraining line for the long shots. The subject began behind the restraining line and waited for the experimenter's "go" signal. At the signal, the subject attempted a long shot. Regardless of whether the subject

made the shot, they rushed to get their rebound and attempted a shot from anywhere inside the restraining arc. The subject continued the long shot-short shot routine until the one minute trial was completed. The subject was allowed two one minute trials. A long shot counted as two points, and a short shot was one point. The ability score was the total number of points made during the two trials. The LSU Long and Short test has been shown to be a valid and reliable measure of jump shooting ability (Nelson, 1967).

Prior to the next testing session, the subjects were matched on jump shooting ability. The subjects were matched by sex on their scores on the LSU (Nelson, 1967) test. Thus, a male subject who scored between 16-20 points on the test was matched with another male subject who scored between 16-20 points on the ability test. Matching on ability was to ensure that a subject with low ability was not paired with a subject of high ability, thus confounding the causal attributions of the subjects. The subject pairs were then given an appointed time to subsequently arrive at the gymnasium. Subject pairs then participated in phase two of the study, which consisted of them playing the game of "DOG". After a brief warm up period subjects were informed that they were matched on ability based on their jump shooting ability scores. The subjects were also informed that only jump shots from five to fifteen feet in length were allowed during the competition. A coin toss determined which subject had the choice of shooting first. The first subject who spelled "DOG" lost the contest. After

completing the game, subjects were instructed to complete the Intrinsic Motivation Inventory (Ryan, 1985) and the Causal Dimension Scale (Russell, 1982).

Chapter 4

Results

The data were analyzed in two phases. Prior to the analyses the perceptions of performance success were divided into high and low subjective success groups based on a median split, with subjects scoring at the median (4) being excluded from analyses. Correlation coefficients were calculated to determine the relationships among subjective perceptions of success, objective outcome, and overall level of intrinsic motivation. The effects of perceptions of success and outcome on overall level of intrinsic motivation and causal attributions were examined by a Multivariate Analysis of Variance (MANOVA). Overall intrinsic motivation was computed by compiling the four subscales of the Intrinsic Motivation Inventory (Ryan, 1985) (interest-enjoyment, effort, perceived competence, and pressure-tension) into one composite figure.

Preliminary analyses were conducted to detect possible gender differences. A 2x2x2 (sex by objective outcome by perceived success) MANOVA with causal dimensions and intrinsic motivation as dependent variables was conducted to determine any gender differences. The main effect for sex was nonsignificant as were the sex by objective outcome and sex by perceived success interactions. Therefore, subsequent analyses will not consider gender differences. All F statistics reported for the MANOVAs are approximations based on Wilke's Lamda criterion.

Correlations among Outcome, Perception of Success and Overall Intrinsic Motivation

To test the hypothesized relationship among perceptions of success, objective outcome and intrinsic motivation, Pearson product-moment correlation coefficients were calculated. As can be seen in Table 1, objective outcome correlated significantly with subjective success ($r=.582$, $p<.0001$) and intrinsic motivation ($r=.308$, $p<.001$). These correlations indicate that winners experienced more perceived success and had a higher level of intrinsic motivation than subjects who lost. However, intrinsic motivation was more strongly related to perceptions of success ($r=.538$, $p<.0001$) than objective outcome ($r=.308$, $p<.001$). Subjects who perceived themselves as more successful reported a higher level of intrinsic motivation than subjects who perceived their performance as less successful. Thus, hypothesis one was supported. Intrinsic motivation appears to be more strongly related to perceptions of success than objective outcome.

Table 1

Correlations among outcome, perceptions of success, and intrinsic motivation

	Outcome	Perceptions of Success	Intrinsic Motivation
Outcome	1.00	.582**	.308*
Perceptions of Success		1.000	.538**
Intrinsic Motivation			1.000

* $p < .001$ ** $p < .0001$

Effects of Outcome and Perceived Success on Causal Attributions and Overall Intrinsic Motivation

To test the effects of both objective outcome and perceived success on causal attributions and intrinsic motivation a 2x2 (outcome by perceptions of success) MANOVA was calculated with causal dimensions and intrinsic motivation as the dependent variables. The main effect for outcome was nonsignificant, $F(4,90)=1.58$, $p < .187$. The mean scores for each dimension by outcome are shown in Table 2. Subjects who won made more internal, stable, and controllable causal attributions than subjects who lost. Both groups, however, tended to be internal, controllable and unstable. Although the overall MANOVA was nonsignificant, a univariate analysis revealed that winners tended to have a significantly higher level of intrinsic motivation after competition than losers, $F(3,93)=15.99$,

$p < .0001$. Univariate analysis also indicated that winners made significantly more stable attributions than losers, $F(3,93)=9.02$, $p < .01$.

A significant main effect was found for the effects of perceived success on causal attributions and intrinsic motivation, $F(4,90)=10.78$, $p < .0001$. Subsequent univariate analyses revealed significant differences between high and low perceptions of success for the causal dimensions of stability and intrinsic motivation. Subjects low in perceived success made significantly less stable attributions than subjects with high perceptions of success, $F(3,93)=4.66$, $p < .05$. Subjects with high perceptions of success made more internal, stable, and controllable causal attributions than subjects who perceived their performance as less successful. However, both groups made internal, controllable, and unstable attributions for their performance. Subjects high in perceived success had higher levels of intrinsic motivation than subjects with low success perceptions, $F(3,93)=34.32$, $p < .0001$.

Thus, hypothesis two was only partially supported in that subjects who perceived themselves as more successful did not make more internal, stable, and controllable causal attributions than subjects who perceived their performance as less successful. The dimension of stability was the only statistically significant effect.

Table 2

Outcome and perception of success effects on causal attribution dimensions and overall intrinsic motivation

	Locus	Stability	Control	Intrinsic Motivation
Outcome				
Win	20.08	10.36**	18.59	82.49***
Lose	18.94	7.50**	18.46	72.76***
Perceived Success				
Hi	19.70	10.63*	18.78	86.34***
Lo	19.27	7.24*	18.28	69.14***

* $p < .05$

** $p < .01$

*** $p < .0001$

Hypothesis three was supported, in that subjects who perceived themselves as more successful displayed higher levels of intrinsic motivation than subjects who perceived their performance as less successful. It is important to note that perceptions of success apparently played a more important role in level of intrinsic motivation than outcome. This supports the hypothesis that the relationship between perceived success and intrinsic motivation is stronger than the relationship between outcome and intrinsic motivation.

Chapter 5

Discussion

Deci's (1975) cognitive evaluation theory of intrinsic motivation views intrinsically motivated behavior as behavior motivated by one's need to feel competent and self-determining in dealing with the environment. The information received when evaluating behavior can be positive, which facilitates intrinsic motivation, or negative, which decreases intrinsic motivation. How the individual interprets this information relevant to locus of causality, stability of the outcome, and control the individual had over the outcome relates to Weiner's (1979) theory of causal attributions. The purpose of this present investigation was to assess how perceptions of objective and subjective success influence intrinsic motivation and causal attributions.

The results suggest that perceptions of success do have an effect on intrinsic motivation. Subjects who perceived their performance as successful displayed a higher level of intrinsic motivation for the task than subjects who perceived their performance as less successful. These results lend support to previous research which showed that successful subjects reported higher levels of intrinsic motivation than less successful subjects (Weinberg & Ragan, 1979; Vallerand & Reid, 1984). Success during competition may be interpreted as competency information which facilitates intrinsic motivation (Deci & Ryan, 1980).

According to Deci and Ryan (1980), subjects who perceived themselves as competent should display a higher level of intrinsic motivation, when compared to subjects who perceived themselves as incompetent. The results from this study do suggest that positive competency information does enhance intrinsic motivation, while negative competency information appears to decrease intrinsic motivation. A possible explanation for this finding may be that subjects who were successful were attributing causality to their ability to perform better than their opponent. An attribution to ability would give the subject positive information about their aptitude for the task when comparing their own ability to their opponent's ability. Since subjects knew they were matched on ability, performing well when compared to a subject of equal ability would inform the subject that they were competent at the task, and competency information is hypothesized to increase intrinsic motivation (Deci & Ryan, 1980). These results give tentative support to Deci and Ryan's (1980) hypothesis.

Although perceptions of success had a greater effect on intrinsic motivation, winning and losing also impacted on intrinsic motivation. Subjects who won displayed a significantly higher level of intrinsic motivation than losers. Thus, beating an opponent of equal ability may also be perceived as competency information, which facilitates intrinsic motivation, or losing to an opponent of equal ability may be perceived as negative competency information,

which decreases intrinsic motivation.

These results can be explained in that winners generally perceived themselves as successful while losers perceived themselves as less successful. Thirty-eight winners perceived high success, while forty-one losers perceived low success. Conversely, only nine winners perceived low success, and nine losers perceived high success. Thus, it would appear that for this study, subjects did perceive their performance as successful if they won, or nonsuccessful if they lost.

The perceptions of success effects on causal attributions results do not fully support previous findings. McAuley (1985) found that high success gymnasts differed significantly from low success gymnasts on the dimensions of locus, stability, and control for the vault and balance beam. McAuley reported that high success subjects were significantly more internal, stable, and controllable than low success subjects. The results of the present study indicate that high success subjects differ from low success subjects only on the dimension of stability. Subjects who perceived themselves as successful made significantly more stable attributions than subjects who perceived their performance as less successful. The differences between the subjects on the dimensions of locus and control were almost negligible, suggesting that high success subjects did not perceive their performance as more internal and more controllable.

A possible explanation for this result may be that the

subjects of this study were not as ego-involved as the gymnasts from McAuley's (1985) study. The gymnasts were elite athletes competing in an important meet, and the outcome of their solo performances not only impacted on the team's overall outcome and position in the standings, but also the gymnasts' individual honors. These factors may have affected the gymnasts' causal perceptions of their performance. The subjects for this study may not have had as much ego-involvement for this competition. As one subject stated, "I don't play basketball, and I didn't care who won." The subjects knew that no adverse effects were going to occur if they performed poorly, and thus their attributions did not reflect self-enhancing or self-protecting biases (Bradley, 1978).

Although the results did not support previous dimensional attribution differences between high success and low success groups, the results do add credence to previous findings that showed high success subjects do not make radically different causal attributions than low success subjects (Russell, 1982; McAuley, 1985). McAuley's results showed that both high success and low success groups tended to make internal, controllable, and unstable causal attributions. The results of this study demonstrate a similar trend, in that both high success and low success groups were internal, controllable, and unstable.

Conceivably, in the context of the game, subjects perceived that they could control the outcome by forcing

their opponents to replicate their made baskets. Making a basket, forced one's opponent to replicate a shot that he/she may have felt uncomfortable with, or by missing a shot, the control of who would attempt the next shot switched to the opponent. As one high success subject stated, "I made him play my game."

Subjects appeared to interpret success based on their ability to control the outcome, and thus the tendency toward internal attributions, such as, "I made him play my game." Or, as one low success subject attributed, "I couldn't get my shots to fall." Both causal explanations seem to suggest that the reason for the outcome was due to their ability or inability to make more baskets than their opponent, and control who attempted the first shot.

Along with internal and controllable attributions, subjects reported unstable causes, which supports previous findings of McAuley and Gross (1983) and McAuley (1985). Perhaps the subjects perceived their performance as unstable due to being matched on ability which required unstable effort to do well. Since subjects knew that they were matched on ability, they may have perceived that with more or less effort, the next contest would have a different result. Through informal questioning of the losers, subjects confided that if given another chance to compete, they felt they could beat their opponent. Although high success subjects made slightly more stable attributions than low success subjects, they did not report highly stable perceptions, suggesting that in sport, when one knows their

opponent is of equal ability, the amount of effort one applies to the task has the greater effect on the outcome.

Another possibility may be that subjects perceived unstable ability as the main reason for their performance as proposed by Rejeski and Lowe (1980) and Roberts (1982). Weiner (1983) stated that ability can be interpreted as unstable if it connotes skill or knowledge rather than aptitude. The perception that ability is stable depends on the nature of the task and the perception that the skill in the early stages of learning can be improved. In sport, one often has a poor day relative to their "normal" performance, which could affect one's interpretation of the outcome. If a subject perceives that their performance does not accurately reflect their true abilities, an unstable ability attribution could be expected, as the subject who stated, "I couldn't get my shots to fall" seemed to attest. The subject appeared to believe he/she had the ability to shoot baskets, but on the day of the contest, he/she could not make his/her shots. If the subject perceived that his/her performance did not reflect his/her true abilities, then this perception could influence his/her attributions. Future research should focus on differences between stable and unstable ability attributions. Researchers should examine what causes the "off day" phenomena, and how the athlete can control this to achieve their best possible performance.

It was speculated that internal, controllable,

unstable, and stable success attributions would have a positive impact on intrinsic motivation, while external, uncontrollable, and stable failure attributions would have a negative effect on intrinsic motivation. However, no significant effect of causal attributions on intrinsic motivation was observed. It may be that since no differences were observed between high perceived success and low perceived success subjects on the causal attribution dimensions, the subjects were basing success or failure on whether they won or lost. This result may have affected the subjects' intrinsic motivation for the competition. If subjects were basing perceived success on winning or losing, this would impact on perceived competence, and thus affect intrinsic motivation. Winning would suggest that the subject was competent, and thus he/she would display a higher level of intrinsic motivation than a subject who lost and perceived himself/herself as incompetent. Future research should focus on how individuals perceive successful performances, and what factors contribute to a successful performance.

Future research could also focus on differences between competitive and noncompetitive groups at a sport related task. Deci and Ryan (1985) have hypothesized that when the emphasis of competition is on playing well and not on winning or losing, the decrease in intrinsic motivation will not be shown. The use of goal setting may lessen the negative effect that competition has on intrinsic motivation. Having goals which emphasize skill development

and playing well may have a positive impact on intrinsic motivation. Another aspect of future interest should focus on how the competency information is perceived. When interpreting competency information do individuals focus on winning and losing, or internal factors such as performing well and the meeting of goals?

The present investigation reported findings suggesting that subjects who perceived their performance as successful displayed a higher level of intrinsic motivation than subjects who perceived their performance as less successful. Perceptions of success also impacted more on intrinsic motivation than the outcome of winning or losing, although success and failure appeared to be based on winning and losing. Future considerations should focus on how individuals perceive success and failure, and how objective outcome interacts with perceptions of success to influence intrinsic motivation and causal attributions.

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APPENDICES

Appendix A

Intrinsic Motivation Inventory

For each of the following statements, please circle the number that best indicates how strongly you agree or disagree with the sentence. Use the following scale as a guide.

1	2	3	4	5	6	7
strong disagree	disagree	somewhat disagree	neutral	somewhat agree	agree	strong agree

1. I enjoyed this basketball game very much.

1 2 3 4 5 6 7

2. I think I am pretty good at basketball.

1 2 3 4 5 6 7

3. I put a lot of effort into this basketball game.

1 2 3 4 5 6 7

4. It was important to me to do well at this game.

1 2 3 4 5 6 7

5. I felt very tense while playing basketball.

1 2 3 4 5 6 7

6. I tried very hard while playing basketball.

1 2 3 4 5 6 7

7. Playing basketball was fun to do.

1 2 3 4 5 6 7

8. I would describe this game as very interesting.

1 2 3 4 5 6 7

9. I am satisfied with my performance for this game.

1 2 3 4 5 6 7

10. I felt pressured while playing basketball.

1 2 3 4 5 6 7

11. I was anxious while playing basketball.

1 2 3 4 5 6 7

12. I didn't try very hard at playing basketball.

1 2 3 4 5 6 7

13. While playing basketball, I was thinking about how
much I enjoyed it.

1 2 3 4 5 6 7

14. After playing basketball for a while, I felt pretty
competent.

1 2 3 4 5 6 7

15. I was very relaxed while playing basketball.

1 2 3 4 5 6 7

16. I am pretty skilled at basketball.

1 2 3 4 5 6 7

17. This game did not hold my attention.

1 2 3 4 5 6 7

18. I couldn't play basketball very well.

1 2 3 4 5 6 7

Note- Questions are designed to assess intrinsic motivation along the four subscales a) interest-enjoyment, items 1, 7, 8, 13, 17; b) competence, items 2, 9, 14, 16, 18; c) effort, items 3, 4, 6, 12; and d) pressure-tension, items 5, 10, 11, 15. High scores indicate the subject experienced more

interest-enjoyment, competency, pressure-tension, and exerted more effort. Overall intrinsic motivation is found by summing the scores of all four subscales. Questions 12, 17, and 18 involve reverse scoring.

Appendix B

Causal Dimension Scale

On a scale of one to seven rate how well you performed today.

1	2	3	4	5	6	7
poorly						very well

Explain in words why you feel you performed the way you did.

Think about the reason or reasons you have written above.

The items below concern your impressions or opinions of this cause or causes of your outcome. Circle one number for each of the following questions.

1. Is the cause(s) something that:

reflects an aspect	9	8	7	6	5	4	3	2	1	reflects
of yourself										an aspect
										of the situation

2. Is the cause(s):

controllable	9	8	7	6	5	4	3	2	1	Uncontrollable
by you or other										by you or other
people										people

3. Is the cause(s) something that:

is permanent	9	8	7	6	5	4	3	2	1	is temporary
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4. Is the cause(s) something:

intended by	9	8	7	6	5	4	3	2	1	unintended by
you or other										you or other
people										people

5. Is the cause(s) something that is:

outside of	9	8	7	6	5	4	3	2	1	inside of
you										you

6. Is the cause(s) something that is:

variable over	9	8	7	6	5	4	3	2	1	stable over
time										time

7. Is the cause(s):

something about	9	8	7	6	5	4	3	2	1	something
you										about others

8. Is the cause(s) something that is:

changeable	9	8	7	6	5	4	3	2	1	unchangeable
------------	---	---	---	---	---	---	---	---	---	--------------

9. Is the cause(s) something for which:

No one is	9	8	7	6	5	4	3	2	1	someone is
responsible										responsible

Note- Questions 1, 5, 7 assess the dimension of locus of causality; questions 2, 4, 9 assess the dimension of control; and questions 3, 6, 8 assess the dimension of stability. High scores indicate that the outcome is perceived as internal, stable, and controllable. Items 5, 6, 8, and 9 involve reverse scoring.

Appendix C

Informed Consent

The purpose of this study is to examine how one's perceptions of their performance influences feelings and reactions following a competitive basketball game of DOG.

The first testing session you will be asked to complete a skill test of jump shooting ability from twenty stations on the basketball court.

The next session will consist of you engaging in a game of DOG with another subject of equal skill as yourself. During the game you may experience some fatigue, but it is unlikely you will experience any undue discomfort. Once the game is completed you will be asked to complete a questionnaire evaluating your performance.

Your questionnaire will be given a code number to insure your anonymity. Results will be processed as per your code number. Information gathered for this study will not be released to anyone not associated with the study. At any time you may remove yourself from the study at no penalty. The results will be made available to you if you so desire. If you have any questions, please do not hesitate to ask.

I have read the above statements and understand the procedures being used in this study. I voluntarily consent to be a participant.

Signature of Participant

Date

Appendix D

Raw Data

DATA MASTERS;

INPUT ID 1-3 SEX 4 AGE 5-6 IM1 9 IM2 10 IM3 11 IM4 12
IM5 13 IM6 14 IM7 15 IM8 16 IM9 17 IM10 18 IM11 19
IM12 20 IM13 21 IM14 22 IM15 23 IM16 24 IM17 25 IM18 26
PERFORM 27 CDS1 28 CDS2 29 CDS3 30 CDS4 31 CDS5 32
CDS6 33 CDS7 34 CDS8 35 CDS9 36 CDS10 37 CDS11 38 CDS12
39 CDS13 40 CDS14 41 CDS15 42 CDS16 43 CDS17 44 CDS18
45 OUTCOME 46;

LOCUS=CDS1+ABS(CDS9-10)+CDS13;
STAB=CDS4+ABS(CDS15-10)+ABS(CDS11-10);
CONT=CDS2+CDS6+ABS(CDS16-10);
ICONT=ABS(CDS3-10)+CDS2+ABS(CDS5-10)+ABS(CDS14-10)
+ABS(CDS18-10);
ECONT=CDS7+ABS(CDS8-10)+CDS10+ABS(CDS12-10)
+ABS(CDS17-10);
ENJOY=IM1+IM7+IM8+IM13+ABS(IM17-8);
COMP=IM2+IM14+IM9+IM16+ABS(IM18-8);
EFFORT=IM3+IM6+IM4+ABS(IM12-8);
PRESSURE=IM5+IM15+IM11+IM10;
IM=ENJOY+COMP+EFFORT+PRESSURE;

CARDS;

001119 62333254524325724539359412625559537441
002119 73461576245645642426956363974787855742
003119 24344356233435434433521254756855288422
004124 57664677741167775158812366327836272431
005121 66464565755346562267822232833788153831
006119 36675677134144564335835331564646464442
007119 75653666426254652256756644445545562332
008219 76542777655166351148911291912899198921
009222 66664665345126261156721182938996193912
010122 65543566334324564322733356356756374432
011118 76753577643244661156758387821298172721
012118 534434654344344335546643355455865365542
013118 64554665244224452247911113913899191911
014123 666426634232 4562348824522822988272721
015120 65662666455125552254443731757879477732
016218 42413711711414417475581981582859191511
017219 3233334343334353453654546455 545455552
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019122 53366665356355333337731275624768597421
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062119 65443575225444452236743554453745473432
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097221 46332343623426665267357522913488242711
098218 41542454433324524718286622891988838882
099129 41332445113342312627812232822787383882
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101218 42541535623526623656832476436857196621
102219 42554644254133323528812131751599195812
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117119 55462464556246553247637375536357364431

Perceptions of Success: Effects on Causal
Attributions and Intrinsic Motivation

by

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ABSTRACT

The purpose of this thesis was to examine the impact of outcome and perceptions of success on causal attributions and intrinsic motivation following a basketball shooting competition. Undergraduate male and female ($N=117$) volunteers were first evaluated on their jump shooting ability. Subjects were next matched by sex on their jump shooting ability scores, and competed in a basketball game of "DOG". Following competition, subjects completed the Causal Dimension Scale (Russell, 1982) and the Intrinsic Motivation Inventory (Ryan, 1985). Results indicated that intrinsic motivation correlated more highly with perceptions of success ($r=.538$) than with the outcome of winning or losing ($r=.308$). Multivariate Analysis of Variance indicated that winning or losing did not significantly impact on causal attributions and intrinsic motivation, while the perceptions of success did. The findings suggest that although high success subjects tend to be more internal, stable, and controllable than low success subjects, both groups tend to be internal, controllable, and unstable, thus supporting findings by McAuley (1985). The findings also suggest that a stronger relationship exists between intrinsic motivation and perceptions of success than with objective outcome. Results are discussed in terms of perceptions of competence.