Attachment Style and its Role in Perceived Team-Efficacy and Individual Self-Efficacy in Sports

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ABSTRACT

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The purpose of the current study was to examine the relationship between athletes' attachment styles and their team- and self-efficacy after wins or losses in sporting contests. The study followed up on a theory proposed by Sam Carr (2012), which posits that attachment style plays an important role in athletic competition and can act as a buffer to negative outcomes in sport. In order to test this idea, a research study was conducted surveying Union College Varsity athletes during both the fall and winter sporting seasons. Across the course of the participants' athletic seasons, four surveys were distributed. The first of the four surveys analyzed participants' attachment style, sporting self-efficacy and team-efficacy, among other personality traits. Following the distribution of the first survey, participants completed follow-up measures after completing an athletic completion. Results provided some support for the hypothesis that attachment style influences athletes' reactions to wins and losses. Attachment avoidance was found to negatively predict individuals' perceived team-efficacy after a win or loss. Results also indicated that attachment anxiety was related to a positive response after wins and losses. The study bears implications for attachment theory and sport psychology, and may inform interventions aimed at improving athletes' sense of team- and self-efficacy.

Attachment Style and its Role in Perceived Team Efficacy and Individual Self-Esteem in Sports

The current study investigated the relationship between attachment style and self- and team-efficacy in reaction to wins and losses among college athletes. Sporting competition, in theory, should activate the attachment system (an interpersonal system that is involved in emotion regulation). Such competitions are filled with high-pressure situations in which stress is expected to be at high levels. When stress levels are high and individuals feel pressure and anxiety, an athlete's inner models of attachment should be activated, working as a buffer to the stress and anxiety. But individuals would be expected to differ in terms of how effective they are at managing competition-related stress and anxiety. Specifically, individuals' attachment styles may influence their feelings of team- and self-efficacy, after differing game outcomes. This study thus aimed to predict if attachment style would provide additional explanation (beyond dispositional self- and team-efficacy) of state efficacy after game outcomes.

Attachment Theory

Bowlby (1969) proposed the idea of an attachment system, an evolved psychological and behavioral system that serves to protect infants from loneliness, danger, and unfamiliar situations by motivating them to seek and maintain proximity to caregivers. By promoting close proximity to caregivers, the system creates a context in which children have a "secure base" from which to explore their surroundings. Bowlby proposed that the attachment system includes individuals' inner "working models" of self and others, which can influence subsequent psychological development and set the precedent for individuals' reactions to high anxiety or stress provoking situations.

Working models can be described as reflecting either security or insecurity. During infancy, secure attachment is characterized by an infant's ability to confidently attach him or

herself to a primary caregiver and to be comforted by the primary caregiver without fear of being left or abandoned. Insecure attachment in infancy is characterized by fear of being left by the primary caregiver due to the unavailability of the caregiver during times of need.

Ainsworth et al. (1978) identified two different patterns of insecure attachment through work on the "Strange Situation." Ainsworth et al. found that, in contrast to securely attached children, insecurely attached children tend to be fearful and mistrusting of others. They also lack a secure base for exploration, which hampers their ability to explore the world and engage in social situations. Anxious ambivalent children (who follow one of the insecure patterns) tend to exhibit qualities of clinginess and constant fear of rejection due to inconsistent parenting because the child never knows if his or her calls or needs would be answered. Avoidant children (who follow the other insecure pattern) tend to act more distantly in social situations and avoid intimate experiences. These characteristics may stem from negligent parents or parents who were unavailable to the child.

Attachment style, however, is not only a characteristic or psychological trait of infancy, but also a system that operates in adults. Attachment bonds can be found between romantic partners, between a player and coach, among teammates, or with anyone to whom an individual has formed an intimate bond and turns to in times of need or distress. This person becomes the individual's attachment figure. Hazan and Shaver (1987) applied the work of Bowlby and Ainsworth to the attachments formed by adults. According to their research, adults exhibiting secure attachment styles tend to perceive relationships in a positive way, trusting others and feeling comfortable in their relationships. They believe that the person to whom they have formed an attachment will be there for them in times of need. Avoidant individuals, on the other hand, tend to withdraw from intimacy and dependency on others. Finally, those exhibiting the

anxious ambivalent attachment style exhibit the constant desire to form intimate, close bonds with others as well as an overwhelming fear of rejection.

Attachment Buffers

Based on the attachment system's foundation in providing a safe haven to which individuals can turn in times of danger and fear, it should theoretically act as a buffer to negative outcomes and situations. In adulthood, working models or representations of attachment serve as the buffering function, not just relationship partners themselves. In times of stress or anxiety, the attachment system will activate in order to protect individuals from harm and negative effects.

Recent studies have shown that the attachment system is activated in threatening situations. In a study performed by Mikulincer et al. (2000) participants were primed with words that threatened attachment, including failure and separation. These words served to activate the individuals' attachment systems. After, participants were measured on their speed in identifying words versus non-words in a lexical decision task. The words included in this task included both attachment proximity and distance words. Researchers found that the priming of attachment threatening words increased the ability to identify proximity words for all attachment styles.

In another study by Mikulincer, Gillath, and Shaver (2002) a similar procedure was performed. In this study, participants were either primed with a threat or non-threat word prior to being tested. After, participants were asked to complete both a lexical decision task and a Stroop task. The study aimed to measure the effects of priming individuals with a threat on the activation of the attachment system, specifically the activation of attachment figures. The results indicated a heightened accessibility to attachment models for all styles of attachment, secure and insecure, when primed with a threatening word. However, results also indicated a reduced activation of attachment figure representation for avoidant individuals when distance words were

given and a magnified effect for individuals high in anxiety, even when primed with neutral words.

These studies can easily be applied to the mechanics of sport psychology and efficacy measures. Sport activates the attachment system due to the high stressors associated with competition, similar to the activation of the system through threat to attachment. Therefore, based on these studies results indicated that in threatening situations the attachment system is activated. However, the type of attachment may be associated with the effectiveness of the buffering capabilities of the attachment system. This difference in the effectiveness of the attachment system may play a significant role in individual players resiliency to threat after differing game outcomes.

Achievement Oriented Attachment

Based on the mechanics of the attachment system, which helps regulate responses to stress throughout adulthood, sporting competition should activate the system due to the highly stressful and anxiety-inducing nature of competition (Carr, 2012). Differences in attachment style should thus influence the way in which the system responds and its effectiveness at regulating emotions. Specifically, different attachment styles may lead individuals to perceive situations differently; which may lead to differing perceptions of self-esteem or self-efficacy following sporting competitions, similar to the results of threatening worldview. The attachment system can thus be directly linked to understanding achievement and motivation in sport.

Carr (2012) theorized that securely attached individuals tend to trust others to whom they have formed attachment bonds and go to these attachment figures in times of need. These securely attached individuals will look at achievement situations as a positive challenge and embrace the situation rather than fear it. The internalized secure base maintained by securely

attached individuals allows them to perceive achievement situations positively because they know that no matter the outcome, they will have someone to fall back on in times of distress. However, insecurely attached individuals are often hesitant to go to attachment figures in times of need or high stress. These insecurely attached individuals will perceive achievement situations in a highly negative light. Compared to the securely attached individuals who view these situations as motivating, insecurely attached individuals view achievement situations as ones in which there is a high possibility for failure and thus will react to these situations with negativity. Insecurely attached individuals do not have faith that their attachment figure will always be there for them; therefore they will take negative outcomes in a much more negative way, resulting in heavy losses to their efficacy and esteem.

Theorists in sports psychology applied the role of the secure base found in childhood attachment to motivational goals in adulthood. Securely attached adults who possess an internalized representation of a supportive attachment figure from which they can explore are more open to motivational goal situations. These individuals possess the belief that they have a secure base on which they can fall back; thus, they are more likely to look at goal oriented situations without the fear of failure but rather with motivation. These individuals know that no matter the outcome of achievement or goal situation, they will still be accepted by their attachment figure. Insecurely attached individuals, on the other hand, lack the secure base for exploration. This results in a fear of motivational and achievement situations in which the individuals possess strong fears of failure because they do not know whether an attachment figure will be there for them. Therefore, they perceive these achievement situations as threats compared to securely attached individuals who view these situations positively (Carr, 2009).

In sum, the attachment system protects individuals from feelings of fear and anxiety; thus, in achievement situations in which there is a possibility of either success or failure, negative emotions and anxiety will theoretically be at high levels. Therefore, securely attached individuals are expected view achievement-oriented situations in a positive manner because their inner working model of attachment will buffer negative emotions associated with the possibility of failure. However, those individuals possessing inner working models of insecurity will not have the same buffer available to them, to protect them from negative emotions associated with the possibility of failure associated with achievement-oriented situations. Therefore, individuals high in anxiety or avoidance may transfer this negative emotion to their perceptions of themselves and their team.

Group Attachment

The attachment system can also influence the way in which an individual works in group settings or reacts to others in group settings. This is clearly applicable to the world of sports in which much of the athlete's time is spent with a group. Smith, Murphy and Coats (1999) looked into the role of attachment style in relation to group attachment. In order to study this, the researchers surveyed participants on romantic attachment scales, group attachment scales, group conflict scales and their feelings toward social groups. They found that individuals high in anxious ambivalent attachment measures tended to undervalue their worth in group settings, spend less time with their group, and be less open about sharing thoughts and opinions with their group. These participants also tried to avoid conflicts by keeping disagreements with their group to themselves rather than sharing them with the group to avoid causing drama and conflict. Avoidant individuals reported believing that the group was not vital to their identity and expressed little desire to spend time with the group. Unlike the anxious ambivalent individuals,

avoidant individuals were not afraid of group conflict and felt no need to comply with the wishes or needs of the group because the group was not vital to their identity.

To expand on their findings Smith, Murphy and Coats (1999) conducted a second study in which they asked participants to complete group attachment surveys, self-esteem measures, a feeling thermometer and a group conflict scale. Results indicated that those with anxious ambivalent attachment reported lower self-esteem compared to those with avoidant attachment styles. Those with avoidant attachments also tended to rate their views of team as negative compared to other attachment styles.

This study is important in the realm of athletics and sport because it can help to predict an individual athlete's perception of his or her own self in respect to the team as a whole and even his or her own role in the outcome of a sporting competition. Differing attachment styles may affect an athlete's evaluations of themselves and their team. Attachment style may serve to shelter the individual from negative outcomes from team sporting competition (e.g., in the case of secure attachment) or it may enhance the negative emotions felt by the individual (e.g., in the case of insecure attachment).

Efficacy

The theory set forth by Carr may have important implications for efficacy in sport (which is, in turn, an important predictor of sport outcomes). Self-efficacy is the belief that individuals hold about their capabilities to attain or achieve certain goals (Bandura, 2006). Self-efficacy is largely related to the confidence one holds in his or her own abilities and his or her confidence in these abilities to produce a desired outcome, highly correlated with self-esteem. It is the belief individuals hold on what they believe they are capable of doing and achieving, not necessarily if they have done or accomplished a specific task or goal. Bandura expanded on his

theory of self-efficacy to include the efficacy of groups or collective efficacy. Similar to self-efficacy, collective efficacy refers to the shared beliefs held by the group about the ability of the group to perform or achieve certain goals or achievements. Again, this means that it is the group's belief in its ability to achieve a desired outcome or goal; it is not based on their actual accomplishment, but rather the belief that they can accomplish a specific goal or task (Feltz & Lirgg, 2001). Efficacy measures can be valuable to sporting teams, as much research studies the predictors of performance during a season. Efficacy beliefs have been found to be a main predictor.

Feltz and Lirgg (2001) conducted a meta-analytic review of efficacy in relation to performance within sports. This review consisted of fourteen studies indicating a strong relationship between efficacy and performance. Analytic review of this suggested evidence for performance as a major predictor of efficacy within the athletic community. However, researchers concluded that performance is a strong predictor of efficacy but that efficacy is not a strong predictor of performance because factors that often influence performance in a game are out of an athlete's control.

Feltz and Lirgg (2001) continued with their review of efficacy beliefs and athletes by looking into the reason why efficacy beliefs are so strongly related to outcome situations compared to other populations. It is believed that the performance based goals, or the strong competitive nature, possessed by athletes can be a large factor in the efficacy beliefs held by the athlete population. The use of outcome goals by athletes creates realistic appraisals of their ability in sporting competition, leading to positive efficacy beliefs. It was also found that goals associated with winning orientation positively predicated efficacy within athletes. However,

these two types of goals were associated with different efficacy beliefs maintained by the athletes in the studies.

Having goal orientations towards winning and performing well is a large part of sport and athletics. However, do the goals alone predict efficacy within sporting teams or are there other factors? One factor worth looking into is the relationship between winning and losing during a sporting competition and efficacy beliefs held by players. In other words, it is important to look into the role of actual results and how these may transfer to efficacy beliefs of teams, because this may influence the way in which an athlete perceives him or herself. Feltz and Lirgg (1998) studied the role of performance, winning or losing, on efficacy beliefs held by athletes. Feltz and Lirgg surveyed over 180 ice hockey players, excluding goaltenders because of their unique position in the game. All players took two efficacy scales, one measuring the confidence they had in their team's ability to perform during a game, including questions on ability to score, score on power plays and ability to outcheck the opposing team. A second efficacy scale measured the players' beliefs in their team to win against an opposing team. Efficacy scales were completed prior to each game and following each game. Finally, game time statistics were measured for each team during the season, including game performance (win or loss), shots attempted, margin of win, scoring percentage, power play shots attempted, defense against powerplays and powerplay percentage. Findings from this study indicated that players tended to hold similar beliefs regarding team efficacy, meaning that the perceived efficacy measured from each player were consistent with the efficacy measures reported by the whole team. The results also indicated a relationship between game performance and efficacy beliefs. Efficacy measures were higher following wins and lower following losses. However, although efficacy beliefs regarding the team varied depending on a win or loss, individual efficacy measures remained

consistent regardless of a win or loss; the players' individual beliefs in their ability to do well remained independent of their beliefs in their team.

These studies have provided a good basis for the role of efficacy in sport, specifically competition. However, it is important to expand on the research on efficacy within sport in order to find alternative answers for other factors that underlie individual athletes perceptions of self- and team-efficacy within sport. Deeper analysis into this issue can improve athletes' sense of self- and team-efficacy, which may lead to better mental health among athletes and better performance outcomes.

The Current Study

Attachment theory and the principles associated with it have only begun to be applied to sports psychology, a field growing in size and interest. Sam Carr (2012) looked into the role of attachment in sport and athletics. Carr theorized that athletic competition is likely to trigger the attachment system within individuals due to the many stressors associated with sport, including being away from home, high pressure game time decisions, and uncertainty of game outcome. Aside from the attachment system being triggered in sporting situations, Carr also found that different attachment styles might lead to different interpretations of team and game depending on individual attachment. Carr noted that attachment anxiety and avoidance were important predictors of perceived individual efficacy and team efficacy within team or group settings. Those with avoidant attachment demonstrated negative emotions and negative feelings toward group activities while those with attachment anxiety were found to positively assess group efficacy but negatively predict self-efficacy. Past research and literature have thus set a solid foundation for the role of attachment within sporting competition; however, sport psychology has only recently begun to pay attention to attachment theory.

In one relevant line of research, Rom and Mikulincer (2003) conducted multiple studies expanding on the work of Smith et al. in the area of group attachment. In their first study, Rom and Mikulincer studied attachment and its relation to perceived group efficacy, group appraisals, and the individual's emotional states while in group settings. In order to look into this, participants were tested on attachment anxiety and avoidance scales and on their thoughts on close relationships. Following these tests, researchers found those scoring high on attachment anxiety had lower ratings of group efficacy and more negative emotions regarding group oriented tasks. Those high on attachment avoidance exhibited stronger feelings of negative emotions when faced with a group oriented task. The second study conducted by Rom and Mikulincer looked again into the role attachment styles, this time in relation to memories of group activities and the goals held by individuals. Anxiety was correlated with higher levels of negative memories of self and group in group settings and higher ratings for love-security. Avoidance was correlated with a higher recall of negative group memories, higher ratings of distance-self reliance goals and a more negative view toward group members.

Previous studies have informed us that attachment style should theoretically play a role in sport. Studies have found that differing attachment styles can play a role in the effectiveness of the activation of the system in threatening situations, such as sporting competition (Mikulincer et al., 2002). Other studies have looked into the relation between efficacy measures and performance within sport. Based on the findings of past studies and literature, research may be able to link differing attachment styles to an individual's perception of both team and self after differing game outcomes, thus explaining individual differences in resiliency.

Attachment theory may help us understand why people react the way they do to wins and losses. Based on the literature by Carr (2012), the attachment system should be activated in the

realm of sport because of the high-pressure situations many athletes are put in. If so, the attachment system should act as a buffer to unwanted or negative outcomes in sport, at least for securely attached individuals. Past research has also indicated that wins and losses within a season can influence perceived efficacy; perhaps this association is moderated by attachment style.

This study examined that question. That is, I examined the relationship between attachment style and individual self-efficacy and perceived team efficacy in response to wins and losses. Participants were asked to complete four surveys over the course of their individual sporting seasons: one main survey and three follow-up surveys. These surveys analyzed perceived team efficacy, attachment style, state attachment style, and self-esteem. I hypothesized that both anxiety and avoidance would predict relatively negative outcomes on self- and team-efficacy after losses compared to individuals with low anxiety or avoidance (i.e., securely attached individuals).

Method

Participants

Thirty-one Union College Varsity athletes, who ranged in age from 18 to 23, participated. Of the participants, six played football, one played men's soccer, two played women's soccer, seven participated in women's cross country, one participated in men's cross country, three played men's ice hockey, three played women's ice hockey, four played men's basketball, and four played women's basketball. In all there were 15 male participants and 16 female participants. Following the completion of the study, participants were compensated for their time with course credit or $6. Before data analysis one participant was removed from study because

his team- and self-efficacy scores were more than two standard deviations away from the mean of the rest of the sample.[1]

Materials

Sporting Efficacy Scale. Participants were presented with a seven-question efficacy scale, which measured both perceived team efficacy and perceived self-efficacy within a competition in sports. This scale was adapted from Bandura's (2006) scale on self-efficacy and the perceived team efficacy scale used by Feltz and Lirgg (1998) in their study of perceived team efficacy in hockey. The seven items on the scale rated confidence using a twelve-item Likert scale, with 0 corresponding to "highly certain cannot do" and 10 corresponding to "highly certain can do"; the scale also offered a not applicable (N/A) choice. The questions included items such as, "ability to outperform offensive opponent" and "ability to improve during the course of the season." Each participant answered the items for both perceived team efficacy and perceived self-efficacy.

Attachment Scale. Attachment style was measured using the Experiences in Close Relationships Inventory (ECR; Brennan, Clark, & Shaver, 1998). The attachment scale consisted of 36 items measuring attachment anxiety or avoidance, which included statements such as, "I am very comfortable being close to other people" (low avoidance), "It helps to turn to close

[1] It is important to note that at each level, the amount of possible data decreased, due to participant attrition. Therefore, in the first wave, 26 participants were available for study with 10 wins and 16 losses, wave two consisted of 17 participants with 7 wins and 10 losses and finally the third wave consisted of scores from 16 participants with 5 wins and 11 losses. This decrease from wave to wave in the available sample size lead to large deficiencies in the data.

others in times of need" (low avoidance) and "I worry about being alone" (high anxiety). Participants were asked to rate how they felt in close relationships using a seven point Likert scale from 1 (strongly disagree) to 7 (strongly agree).

Self-Esteem Scale. Self-esteem was measured using the Rosenberg Self-Esteem measure (RSE), (Rosenberg, 1965). The measurement was a 10-item scale, which required participants to rate how much they agreed with each item on a seven point Likert scale from one (strongly disagree) to seven (strongly agree). Example items included "I feel that I do not have much to be proud of" and "On the whole, I am satisfied with myself."

Intrinsic Religiosity Scale. Intrinsic religiosity was measured using the Gorsuch Intrinsic Extrinsic Religiosity Scale (Gorsuch & McPherson, 1989).). Used as a filler scale in order to mask the purpose of the study.

Meanings in Life Scale. Participants' perceptions on life were measured using the Meaning in Life questionnaire (Steger, M. F., Frazier, P., Oishi, S., & Kaler, M. , 2006). This was used as a filler scale to mask the true purpose of the study.

Procedure

Participants were told that they were participating in a study looking at the relationship between athletes' personality and perceptions of sporting competition. Each participant after agreeing to participate was then asked to complete a series of four surveys. The first survey was distributed to all participants at least 5 days prior to their sporting competition and took approximately 20 minutes to complete. In this first survey participants were measured on both perceived team and self-efficacy during a sporting competition, attachment, and other personality measures, including meaning in life, self-esteem, and intrinsic religiosity.

Following the completion of the first survey, participants were asked to complete three

follow-up surveys. These surveys were distributed throughout the course of the season within 24 hours of completion of each participant's team sporting competition. Each of the three follow-up surveys measured perceived team efficacy, as well as perceived self-efficacy. The approximate time to complete each survey was ten minutes per follow-up survey and participants were required to complete each follow-up within three days of distribution.

After the completion of all four surveys participants were all debriefed and compensated for their time.

Results

To test the hypothesis that attachment anxiety and avoidance would influence self- and team-efficacy after wins and losses, I conducted two regression analyses, one predicting self-efficacy, and one predicting team-efficacy.[2] First, two regressions were performed for each wave of data to predict state self- and team-efficacy from outcome of the game and dispositional self- and team-efficacy. After this, standardized residuals were computed in order to determine each participant's deviation from the predicted mean of the regression; meaning how much each participant's score deviated from the predicted score, based on game outcome and dispositional self- and team- efficacy. Following this, the mean was computed across each individual's standardized residual scores for both self- and team-efficacy, which resulted in an index of whether the person had more or less efficacy than would be expected from dispositional efficacy and game outcome. Next, two regressions were performed predicting these mean deviation scores from attachment anxiety and avoidance. According to my hypotheses, low anxiety and/or avoidance would predict higher standardized residuals, meaning that those individuals should

[2] In order to do this, ties were taken out from analysis. There were a minimal number of ties in the study, and it was unclear whether ties would reflect a positive or a negative outcome (whereas wins and losses are relatively unambiguous).

demonstrate more resiliency after losses than would be expected from their dispositional efficacy scores.

Self-efficacy after the first outcome was significantly positively related to the outcome of the game (β=.484, p=.027) and dispositional self-efficacy (β=.665, p=.004). Team-efficacy was positively but not significantly (p= .322) related to outcome (β=.457, p= .016) and dispositional team-efficacy (β=.191, p= .291); outcome was a stronger factor in this measure. These patterns stayed similar, albeit not always significant, in the following two waves or follow-up measures (See Tables 1 and 2). For each of the regression equations, a standardized residual score for self- and team- efficacy after wins and losses was computed. This score indicated whether the participant, relative to his or her peers, had a higher or lower self- and team-efficacy score than would be predicted by the outcome of the game and that participant's dispositional self- or team-efficacy.

Analyses on the aggregated (mean) standardized residual scores for self- and team-efficacy revealed the following: For self-efficacy, higher scores of attachment avoidance were related to lower standardized residuals after game outcomes (β= -.313, p=.141) whereas higher anxiety scores were related to nominally higher residuals (β= .150, p= .474). For team-efficacy, attachment anxiety was again found to be a nominally positive predictor (β=.128, p= .533) whereas attachment avoidance was a significant negative predictor (β= -.448, p=.038) (See Table 3). Therefore, attachment avoidance appears to negatively predict individuals' perceived team-efficacy after a win or loss. Albeit non-significant, results also indicated that attachment anxiety was related to a positive response after wins and losses.

Discussion

Higher scores of attachment anxiety and avoidance should predict relatively negative

outcomes for self- and team-efficacy after wins and losses, because inner models of secure attachment should serve to buffer individuals low in anxiety and/or avoidance from negative affect, while those high in attachment and or avoidance lack this secure inner working model to buffer them from negative outcomes. This hypothesis was partially supported; namely, although attachment anxiety did not significantly predict the anticipated negative results after wins and losses, attachment avoidance did: higher scores for avoidance predicted relatively negative outcomes in self- and team-efficacy after wins and losses. Avoidance therefore inhibited the maintenance of self-efficacy and team-efficacy after a loss; and it inhibited the typical positive effect of a win on team-efficacy. In other words, the results indicate that individuals possessing higher attachment avoidance suffer the ability to maintain confidence for both themselves and their team after a loss and they show difficulty in increasing their confidence in their team's ability after a win. Attachment avoidance can therefore be related to experiencing negative resiliency after losses.

Surprisingly, individuals higher in attachment anxiety showed nominally (albeit not significantly) positive outcomes in self- and team-efficacy after wins and losses. If replicated, this finding would suggest that people higher in attachment anxiety show a muted response after losses. A possible explanation for this may be that those higher in anxiety strive to bond with others, therefore, the ability to share either a win or a loss with teammates, gives them a chance to bond with members of their team. Future research should examine this possibility that a loss allows anxious people to bond with their team.

However, while this study was able to find general patterns for the attachment system's relation to game outcome and efficacy, there were problems that may have obscured the results. First, this study lacked a sufficient sample size for the purpose of the study. Due to the small

number of participants overall and the subsequent attrition across each wave, it is hard to draw confident conclusions about the problem under investigation. Small sample sizes often lead to Type II errors due to decreased statistical power. Therefore, results that were, in this study, non-significant trends (e.g., for attachment anxiety) may be significant in the results from a larger sample.

Another potential problem with this study is the use of regression analysis, which is a type of correlation. Correlations cannot be used to infer causation. With this type of analysis there is a possibility of reverse causation, as well as a third variable effect. In order to correct for this, a study in which a third variable that could be responsible for both avoidance and lack of resiliency should be conducted. A possible third variable could be the talent of the athletes; this can both affect attachment, as well as resiliency. It is possible that a player with less talent may exhibit signs of high avoidance and low resiliency in the face of a loss. This method would reduce the uncertainty between the variables and lead to greater statistical power and a lower chance of error.

Future directions and implications from this study should expand on the findings in this study by increasing participant sample size. The small evidence from this study indicating a muted response from those possessing attachment anxiety should be followed up on with a larger sample size. By increasing the sample size, a new study may magnify the results of the current study, strengthening current conclusions. Other follow-up studies may look into whether the type of sport, such as contact versus non-contact, may play a role in efficacy measures. Often contact sports rely on increased interaction between teammates. This type of relation between teammates may yield different results from the current study because the close interaction among teammates in contact sports may serve as a buffer to the negative effects of high anxiety and/or avoidance.

Where as, with non-contact sports, with a limited amount of interaction between teammates, there is a potential for different findings; the theorized buffer presented by teammates may not exist.

In terms of the role of attachment, further research could expand on the role of the attachment figure through manipulation. It is very likely that in team sports, the coach may serve as an attachment figure for many of the players, by providing support and guidance throughout the season. However, by manipulating the role of the coach, further research can expand on the theory of attachment presented in the study. Through direct manipulation of attachment through alternation of coaching styles (i.e. supportive coach versus a coach possessing unsupportive and neglectful techniques) future studies may be able to find a more conclusive answer to the role of attachment with sport, specifically efficacy.

Based on the current study, results indicated that attachment avoidance had negative implications for augmenting efficacy after a win and maintaining efficacy after a loss. Attachment anxiety on the other hand, was found to have positive implication, albeit not significantly, for efficacy after wins and losses. From these findings, emphasis on building secure attachments within sport, such as teambuilding exercises and teammate-coach bonding activities, should be emphasized in order to buffer athletes from the high stress and anxiety situations associated with sport, which should theoretically result in both better performance and enjoyment of the sport.

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Table 1.

Self-Efficacy Measures in Relation to Game Performance and Dispositional Efficacy

Wave	Predictor Value	B	Std. Error	Beta Coefficient	t	p-value
1	Outcome 1	.649	.276	.484	2.356	.027
	Dispositional Self-Efficacy	.595	.184	.665	3.236	.004
2	Outcome 2	-.193	.319	-.145	-.605	.554
	Dispositional Self-Efficacy	.335	.226	.356	1.485	.158
3	Outcome 3	-.082	.494	-.044	-.167	.870
	Dispositional Self-Efficacy	.187	.277	.178	.673	.511

Table 2.

Team-Efficacy Measures in Relation to Game Performance and Dispositional Efficacy

Wave	Predictor Value	B	Std. Error	Beta Coefficient	t	p-value
1	Outcome 1	.754	.291	.457	2.587	.016
	Dispositional Team-Efficacy	.228	.212	.191	1.079	.291
2	Outcome 2	.221	.431	.127	.513	.614
	Dispositional Team-Efficacy	.404	.426	.234	.950	.355
3	Outcome 3	.350	.309	.206	1.134	.271
	Dispositional Team-Efficacy	.599	.194	.560	3.082	.006

Table 3.

Implications of Attachment on Self- and Team-Efficacy

Efficacy Measure	Predictor Value	B	Std. Error	Beta Coefficient	t	p-value
Self-Efficacy	Anxiety	.135	.185	.150	.727	.474
	Avoidance	-.425	.280	-.313	-1.520	.141
Team-Efficacy	Anxiety	.103	.162	.128	.634	.533
	Avoidance	-.528	.238	-.448	-2.216	.038