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Relationship of Motivational Climate to Performance Among NCAA Division 1 Men's Basketball Players

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By

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Submitted to the graduate degree program in Health, Sport, and Exercise Sciences and the Graduate Faculty of the University of Kansas in partial fulfillment of the requirements for the degree of Master of Science in Education.

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# Relationship of Motivational Climate to Performance Among NCAA Division 1 Men's Basketball Players

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**Abstract**

This study examined the relationships between Division I men's basketball players' perceptions of the motivational climate on their team to various basketball outcomes, perceived support from coaches, teammates, and motivational responses. Participants were 19 Division I men's basketball players' who were predominantly African-American (89.47%, $^{M}$age = 20.74). Three canonical correlations examined the relationships between climate variables (i.e., caring, task, and ego) and motivational climate via (a) performance outcomes; (b) motivational variables; and (c) support variables. Analysis indicated that athletes that perceived a greater caring/task-involving climate were positively associated with (1) performance; (2) motivational variables; and (3) support variables. Additionally, perceptions of an ego climate resulted in lower performance outcomes as well as negative associations with motivational and support variables.

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# Relationship of Motivational Climate to Performance Among NCAA Division 1 Men's Basketball Players

A form of entertainment that annually generates billions of dollars in revenue, college athletics are big business in the United States. In recent years, college athletic programs annually generated about $6.1 billion from ticket sales, radio and television receipts, alumni contributions, guarantees, royalties and NCAA distributions. Another $5.3 billion, considered allocated revenue, came from institutional student fees allocated to athletics, direct and indirect institutional support, and direct government support. In fact, much of the NCAA's revenue derives from a contract, extended recently, where CBS Sports and Turner paid $8.8 billion for an 8-year extension of the total rights to the NCAA Men's Basketball Tournament, furthering their 14 year, $10.8 billion initial agreement (NCAA.org). While professional football remains the dominant sport in the US, with the Super Bowl universally acknowledged as the biggest sporting event of the year, the post-season tournament for college men's basketball, commonly known as March Madness, produces higher overall viewership than even the Super Bowl. The Super Bowl generates around $400 million in advertising revenue; however, the NCAA tournament produces over $1.2 billion in advertising revenue. Premier college basketball programs including the University of Kansas, North Carolina, Louisville, Duke University and others have valuations that range into the hundreds of millions of dollars, with a recent estimate placing Louisville as the most valuable at over $300 million (Beaton, 2016). While players are, at this time, not financially compensated for their efforts (excluding tuition, housing, and meals) coaches of the previously mentioned programs can command several million a year in salary. Mike Krzyzewski, head coach for Duke University, makes over $7 million a year base salary which does not include bonuses and outside sponsorship which often includes millions more a year.

It comes as no surprise then that the pressure placed on men's college basketball players is immense. Often, they are placed under an intense media and social spotlight, expected to produce extraordinary results for their respective universities. The Drake Group, founded to oppose commercialism in college sports, stated that big-time college sport has become deeply embedded in American culture because of its commercial entertainment aspect (Sack, 2009). Players with elite level skill often find their way to the National Basketball Association (NBA), the pinnacle organization of professional basketball, or professional leagues in Europe and Asia to name a few. In these leagues, players can command salaries and endorsement contracts worth tens and hundreds of millions of dollars.

Cleary the stakes are high and the potential rewards are great for Division I athletes, and athletes and coaches at this level are focused on how to maximize performance. There is considerable interest in the field of sports psychology in examining how best to optimize conditions for athletes to reach their full potential. One theoretical framework that has been extensively studied is Nicholls' Achievement Goal Perspective Theory (AGPT). Nicholls suggested that two distinct climates could be created in achievement settings such as sport. In a task-involving climate, athletes perceive that their coach emphasizes effort, improvement, and mastery; fosters cooperation amongst teammates; encourages all athletes to realize that they play an important role in the team; and conveys that mistakes are part of the learning process. In contrast, Nicholls' describes an ego-involving climate where the coach punishes mistakes; encourages rivalry amongst teammates; gives the majority of praise and recognition to a few standout athletes; and overall recognizes normative ability and performance outcomes as a gauge of the team's success. More recently, an additional aspect of the climate has been identified. Newton, Fry, Watson, Gano-Overway, Kim, Magyar, & Guivernaur (2007) suggested that

perceptions of a caring climate should be considered in line with features of a task-involving climate. They defined a caring climate as one where athletes feel the environment is interpersonally inviting, safe, supportive, and can provide the experience of being valued and respected. In line with Nicholls' theory and the caring climate framework, it is suggested that a caring/task-involving climate is most likely to result in positive cognitive, affective and behavioral motivational responses. In contrast, ego-involving climates are predicted to elicit more adverse responses among athletes.

Research has provided considerable support for the tenets of Nicholls' theory and the caring climate framework. Athletes by their very nature are often placed in situations where highly competitive scenarios can produce positive or negative effects. In a study of 106 youth figure skaters competing in a regional competition, those that focused on their task and personal performance goals, rather than normative comparison with their peers, were found to have lower stress prior to competition (Vealey & Campbell, 1988). As a negative effect, stress can be debilitating to an athlete's performance and the minimization of it should be a priority in any athletic environment. Hogue, Fry, M., Fry, A., (2013) found that in a randomized juggling trial, where participants learned to juggle, those who were placed in an ego-involving climate reported feeling significant levels of stress, as well as anxiety, shame, and self-consciousness. In contrast, those placed in a caring/task-involving climate enjoyed the activity more, had more self-confidence in their ability, and most importantly as it relates to performance, put forth better effort. In addition, a caring/task-involving climate has also been associated with athletes being more engaged in their practice and competition and less so when perceiving an ego-involving climate (Iwasaki & Fry, 2016).

While research has supported the benefits of athletes perceiving a caring/task-involving climate, it should follow that performance should be greater in these climates as well. While limited research has examined a direct link from these climates to performance outcomes, there is emerging evidence that fostering a caring/task-involving climate may improve positive performance outcomes while limiting negative performance characteristics. Recently, Reinboth and Duda (2016), using male and female undergraduates from a large British university, found numerous outcomes in support of this using several different simulations during 8-minute cycling trials. Of note, riders that were placed in a task-involving scenario rode over 300 meters further in the span of 8-minutes than those that were placed in an ego-involving climate. Further, riders who were placed in a task-involving condition performed at a high level, regardless of whether they believed they won or lost, while those in an ego-involving condition performed significantly worse than those who believed they won in the same condition. Looking at a period of time longer than 8-minutes, researchers found that over the course of a season, elite youth Dutch soccer players who perceived themselves to be in a task-involving environment showed performance improvement, even whilst being in a highly ego-involving environment with youths who were poised for professional soccer careers (Van-Yperen & Duda, 1999). In terms of overall performance, athletes who drop out of their sport due to burnout or other motivational factors could be said to suffer a great deal of negative performance outcomes. Indeed, perceptions of a less task-involving and more ego-involving climate led to diminished performance in the study of female handballers over the course of 21 months. Handballers who perceived their coach to be less task-involving were more likely to report intentions and following through with the act of dropping out (Sarrazin, Vallerand, Guillet, Pelletier, & Cury, 2002).

With these studies and growing evidence, it is clear that research is emerging to show a link between caring/task-involving climates and performance. An interesting group to study is Division I basketball players where the stakes are high. The purpose of this study was to examine the relationship between NCAA Division I men's basketball player's perceptions of the climate on their team to their basketball performance outcomes. It was hypothesized that athletes who perceived a greater caring/task-involving climate would have greater performance outcomes regarding *assists, steals, points produced, box plus minus* and *win share*, with fewer *personal fouls*.

## Method

### Participants

Male college basketball players (N = 19) between the ages of 17 and 23 ($^{M}$age = 20.74, SD = 1.59) from Division I accredited universities were presented with an optional survey. Players were freshman (21.05%), sophomores (21.05%), juniors (36.84%), and seniors (21.05%). The sample was mostly African-American/Black (89.47%) with the remaining (10.53%) athletes identifying as Caucasian/White. One athlete had redshirted and there were no transfers. Three athletes were excluded, one due to an early season ending injury and two due to insignificant playing time, all playing less than 150 minutes for the season.

### Measures

#### Demographics

Athletes identified their age, race, class (e.g., freshman), years of college basketball played (been eligible to compete), and years with current team. In addition, athletes indicated whether they had redshirted, as well as transferred schools.

**Climate Variables**

***Caring climate***. The Caring Climate Scale (CCS) was used to examine the perceptions of elements contributing to a caring climate (i.e., respect, support, concern) during the basketball season. Athletes responded to the 13-items on a 5-point scale (1 = *strongly disagree* to 5 = *strongly agree).* The scale focuses on how supportive and receptive the players and coaches are within the context of a basketball season and how much players feel valued and accepted by other players and coaches. A sample CSS item is, "The coaches want to get to know all the players." (Newton et al., 2007).

***Perceived motivational climate***. The Perceived Motivational Climate in Sport Questionnaire (PMCSQ-1) was used to examine the player's perceptions of the motivational climate during the basketball season. The 21-item questionnaire contains task-involving (9 items) and ego-involving (12 items) scales. Athletes responded to the 21-items on a 5-point scale (1 = *strongly disagree* to 5 = *strongly agree).* The stem is "On this team…" and sample items include, "the coaches made it apparent who they thought were the most skilled players" (ego) and "the coaches encouraged players to help each other" (task), (Seifriz, J., Duda, J., & Chi, L., 1992). For the purposes of this study, one task item was removed that was not relevant for this sample. (i.e., On this team, most athletes get to play in the games.)

***Additional variables***. For the purposes of this study, seven additional items were created by the researchers to assess the athletes' perceptions of their personal experience with the team. These items were grouped into two categories labeled motivation and support. The motivation variables were: "I am very confident in my basketball ability.", "Playing for this team is stressful.", "I have fun playing on this team.", and "I always give my best effort on this team."

The support variables were: “My coaches believe in me.”, “My teammates believe in me.”, and “I will support my university for life.” Participants responded to these questions with a 5-point response scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) and each item was considered as a single variable.

**Basketball Outcome**

The website, Sports Reference, specifically the college basketball sub-domain, was used for finding the season statistics necessary to for the purposes of this study. (Sports Reference.)

All basketball performance variables for this study were measured per 100 possessions. Per possession statistics are readily available to the public and are the accepted standard for analyzing basketball statistics regarding player and team performance. As recently as the 2014-15 season, the average number of possessions per game was 72. (NCAA.com, B. M., 2015) For comparison purposes, extrapolating each player’s performance statistics to 100 possessions, a more accurate judgment can be made.

***Assists***. In basketball, an assist is attributed to a player who passes the ball to a teammate in a manner that results in a score by completing a field goal. The scorekeeper identifies assists and it is a judgment call.

***Personal Fouls***. In basketball, a personal foul is a violation of the rules that govern personal contact with opposing players. These types of fouls are at the judgment of the referees governing the contest.

***Points Produced***. An advanced analytic, points produced is a measure of offensive points produced by a player during a game (or in our case per 100 possessions). Specifically, it includes items such as field goals made, number of assists, and free throws made.

***Steals***. A steal occurs in basketball when a defensive player causes a turnover, legally, by using his or her abilities to "steal" the ball away from the opposing player. A steal can occur several ways such as an athlete intercepting a pass between teammates, swiping/lunging for the ball while it is in the possession of an opposing player, etc.

***Win Share.*** A statistic that is awarded to individual players, win share reflects each athlete's contribution to his or her team's success. It is calculated by using player, team and league statistics. Things such as a player's turnovers, the number of points produced by each player, offensive possessions a player participated in and other variables comprise the win share formula.

***Box Plus Minus***. Box plus minus is a box score based analytic for evaluating players' skill, ability, and contribution to their team. It relies on player's box score statistics and their team's overall performance to estimate an individual player's performance relative to the league average.

**Procedure**

With permission granted from the institutional review board, coaches were contacted via email, phone, and personal contact in an attempt to recruit athletes to take part in the survey. An online survey was created and the link provided to each coach who then disseminated it to their players. Athletes were able to use either their phone or personal computer to complete the survey. Athletes provided their consent via an information statement that preceded the actual online survey. By providing their name, necessary to link their answers to their performance statistics, they agreed to take part in the study. Athletes were informed that their participation was optional, their coaches would not know who participated in the study, and their answers

would remain anonymous. Athletes completed the survey at the conclusion of their seasons. The survey took around 5 minutes to complete.

## Results

Alpha Cronbach reliability coefficients were calculated for the three climate scales and indicated acceptable reliability (> .75). The means and standard deviations for all the variables are presented in Table 1. Mean scores for the climate scales indicated that athletes perceived a high caring/task-involving climate and moderately ego-involving climate on their teams. In addition, their basketball performance outcomes reflect a high ability level as expected with these elite Division I athletes. Regarding the individual motivation items, athletes reported that they give high effort, enjoy playing on their team, have high confidence in their basketball ability, and have a moderate amount of stress playing for their team. For the individual support items, athletes indicated (a) their coaches and teammates provide them strong support, and (b) they will support their university beyond their collegiate careers.

Pearson correlations were conducted to examine the relationship between the climate scales to the basketball performance outcome, motivation, and support variables, and are presented in Table 1. Because the sample size was low, the decision was made to consider p-values of .1 and below as significant.

Athletes' perceptions of a caring and task-involving climate were positively and significantly associated with assists, and negatively and significantly associated with personal fouls. In contrast, perceptions of an ego-involving climate were significantly and negatively associated with assists. The relationship between athletes' perceptions of a task-involving climate to points produced ($p = .14$), steals ($p = .15$) and win share ($p = .17$) were positive and

approached significance. In a similar vein, athletes' perceptions of an ego-involving climate were negative and approached significance with points produced (p = .19), win share (p = .13) and box plus minus (p = .16).

With regard to the motivational variables, perceptions of a caring and task-involving climate were positively and significantly associated with athlete's reporting greater fun, while fun was negatively correlated with perceptions of an ego-involving climate. The only other significant correlation with the motivational variables was the positive association between athletes' perceptions of a caring climate with their reported effort. The negative relationship between athletes' perceptions of an ego-involving climate and their stress approached significance (p = .11). Finally, perceptions of a task-involving climate were positively and significantly associated with athletes' indicating (a) their coaches and their teammates believe in them, and (b) they will support their university throughout their lives.

Three canonical correlations were run to examine the relationships between the climate variables to (a) the basketball performance outcomes; (b) the motivational variables; and (c) the support variables. Results of the first canonical model revealed one significant function ($L$ = .45, $F_{(6)} = 2.32$, $p$ = .06). The canonical correlation was .70 with .49 overlapping variance. The loadings indicated that when athletes perceived a highly caring/task-involving climate with a deemphasis on the ego-involving features of the climate, they, in turn, had more assists and fewer personal fouls.

The second canonical model also revealed one function that approached significance ($L$ = .27, $F_{(30)} = 1.68$, $p$ = .12). The canonical correlation was .78 with .61 overlapping variance. The loadings revealed that athlete's perceptions of a high caring/task-involving climate with low ego-

involving climate was positively associated with fun and effort and negatively associated with stress related to playing on their team.

The third canonical model was not significant but is being reported because loadings were the theoretically predicted direction ($L$ = .44, $F_{(9)}$ = .143, $p$ = .21). The canonical correlation was .69 with .47 overlapping variance. An examination of the loadings revealed that athlete's high perceptions of a caring and task-involving climate were positively associated with their belief that their coaches and teammates provide them strong support and they will continue to support their university as they become alumni.

## Discussion

This study examined the relationship between Division I men's basketball players' perceptions of the climate on their team to their performance outcomes. A secondary purpose was to examine their climate perceptions to their motivational responses and perceived support. Partial support was obtained for the hypothesized relationships, discussed below.

With respect to the relationship between athletes' perceptions of the climate to their performance variables, significant relationships emerged. As hypothesized, athletes who perceive a greater caring/task-involving climate had significantly more assists as well as significantly fewer personal fouls. Additionally, athletes who perceived an ego-involving climate had fewer assists.

As has been asserted, coaches are largely responsible for the team climate and posed by Moore (1970), "The chief concern of the coach is the establishment of a spirit of willingness to work within the group" (p. 152). Regarding an assist as a performance variable, there is no greater basketball statistic to use as a measure of teamwork, as assists are an act of unselfishness

requiring a unified act between two players in order for its execution (Melnick, 2001). Being that athletes who perceive a caring climate report positive attitudes towards their fellow teammates, one could infer that the boost in assists is due to this attitude. Fisher, Bejar, Larsen, Fynes and Gearity (2017), in their interviews with Division I head coaches, found the coaches believed it necessary to implement caring behaviors towards their athletes in order to maximize their team's success, citing reasons such as good teamwork as the reason for this success. As the athletes in the study had greater assists when in a caring/task-involving climate, it is important to note that when perceiving an ego-involving climate, assists went down. A common benchmark of season success in college basketball is reaching the Final Four in the NCAA men's basketball post-season tournament. It is a difficult task with only 4 of the 68 teams invited to the post-season tournament reaching this stage (5.59% of the teams). It is noteworthy that three of the four teams in the most recent 2017 Final Four were ranked in the top 11 schools of 351 teams nationally in Division I for season assist totals (2016-17 School Stats). The eventual National Champion, the North Carolina Tar Heels, were the second-ranked team in the nation in total assists. The importance of assists established, it follows that in a caring climate where athletes are team players and perceive that they have great support, assists would be a performance variable that is higher in this climate. Additionally, in a task-involving climate athletes want their team to be the best and for everyone to feel like they play an important role. Also, as ego-involving behaviors such as worrying about one's own success are inhibitive of creating an assist, it is evident that an ego climate might reduce the number of assists occurring across a season.

The highest correlation among the climate scales and all variables was the reduced number of personal fouls for those athletes perceiving a task-involving climate. While personal fouls are a judgment of the referees officiating the game, player's attitudes are one of the

significant factors in how many fouls they receive during a contest. This makes fouls a potential climate-related variable in that in line with caring/task-involving climates, those players that share in the team concepts of these climates may be less predisposed to foul an opponent. Fouls may occur less when caring/task-involving features are evident as fouls are seen by coaches and players as mistakes. A feature of task-involving environments is that mistakes are a part of learning and that the emphasis is on effort rather than result. Research by Iwasaki and Fry (2016), lends support to this in that players who perceive themselves to be in a task-involving environment may find it easier to be in the moment, let go of mistakes, and keep trying hard. Additionally, fouls are often committed due to frustration and sometimes occur via poor sportsmanship actions and gestures. Approaching statistical significance, ego-involving climates resulted in increased personal fouls in this study which is in line with the previous mentioned ego-driven behaviors.

With regard to the motivational variables, the results of this study were consistent with previous research and helped support the hypothesis. The most statistically significant variable of the motivational items was the positive perception of having fun playing on the athlete's respective team. Trending positively in caring and task-involving, and negatively in ego-involving climates, fun has been shown to have desirable performance benefits. Researchers conducting a study on the historically successful New Zealand All Blacks rugby team, fresh off a championship season, cited fun as a major factor in their team's success. Coaches emphasized enjoyment, going as far as developing deliberate strategies to manifest moments of enjoyment (Hodge, Henry & Smith, 2014). Specifically regarding college basketball, Becker (2012) reported in a study that comprised of eight Division I men's basketball teams who experienced back-to-back losing seasons, then a coaching change, and then a winning season, that numerous

players cited their new coach allowing them the opportunity to have fun as a reason for their team's newfound success.

Self-effort was also a statistically significant motivational variable when athletes perceived themselves to be in a caring and task-involving climate. As Hogue and colleagues (2013) found, anecdotally, juggling participants that were placed in an ego-involving climate, reported less effort and in turn making less progress in their task. Those that perceived themselves to be in a caring climate reported greater effort and made greater progress learning the skill.

In terms of self-confidence and reported stress, these variables were not significantly related to the climate scales; however, they approached significance with the stress p-value being within .01 range of becoming significant for stress. As this study was conducted with elite level athletes, many of whom will go on to professional careers or aspire to, self-confidence results were skewed heavily toward *Strongly Agree* in relation to their belief of having high confidence in their basketball ability. Additionally, stress levels skewing towards *Neither Agree or Disagree*, may be impacted by a disproportionate number of athletes in this participant pool being from a team that had a successful season by all accounts. As this data collection took place at the end of the season, ending the season on a high note might distort feelings of stress experienced during the season.

When perceiving a caring/task-involving climate, the support variables were shown to be statistically significant. (i.e., Pearson correlations) High values for task-involving climates in relation to coaches and teammates believing in each individual athlete bolsters previous research. Hodge et al. (2013) found that a major theme of the All Blacks success was supportive coaching,

aided in part by the creation of a task-involving climate. Additionally, the rugby team fostered a nurturing environment where teammates believed in each other, going as far as to say they loved one another (pg. 70). As Sarrazin et al. (2002) found, non-supportive coaching, specifically brought on through a less task-involving climate, even lead athletes to discontinue their sport.

Having a caring/task-involving climate was positively and statistically significant when it came to athletes indicating they would support their universities in the future. In addition, this variable was negatively correlated with an ego-involving climate. At elite level schools, such as the ones having taken part in this study, basketball players are often seen as ambassadors or esteemed alumni of their respective university. It is not uncommon for any of these schools to have multiple athletes ascend from the collegiate ranks into the professional one and play in the NBA. Worldwide exposure, as well as fame and celebrity, is often bestowed upon these athletes. With these attributes, as well as often having millions of dollars in career earnings and endorsements, athletes support for their alma maters is an invaluable commodity. With the characteristics of caring/task-involving climates known, it is unsurprising that athletes would support their teammates, coaches and universities in perpetuity, whereas the features of very limited research have looked at performance outcomes with basketball players, collegiate or otherwise. However, this research indicates that creating caring and task-involving climates may be beneficial and whereas an ego-involving climate may have negative performance effects. The sample size was limited and it is possible that had it been larger the performance variables would have revealed great statistical significance. It is interesting to note that even with this small sample size, that the results indicated relationships that are aligned with theory and previous research. With the high stakes that surround Division I men's college basketball, where coaches' salaries reach into the millions of dollars and losing seasons create speculation about whether a

coach's job is on the line, there is much pressure to deliver winning seasons and high-performance outcomes. Additionally, motivational and support variables, such as the ones explored in this study, have benefits not only on the court but off it.

## Limitations

Though this study has strengths, as it was the first to examine relationships between climate and performance in Division I men's basketball, it was not without its limitations. It is very difficult to access Division I athletes for research purposes. Coaches are hesitant to grant researchers access, and athletes have many demands of their time. The sample size was on the smaller end, often leading to variables being close to statistical significance or forcing the researchers to accept a lower statistical significance for the purpose of this study. Second, the surveys were administered at a single point in time, specifically at the completion of each team's basketball season. Multiple data points would allow the prediction of climate to basketball performance outcomes over time. Multiple data collection points would be ideal but even just one additional collection period during the "heart" of the season would provide an important comparison. Athletes' feelings towards their teammates, coaches and their perception of the team environment might vary when being considered mid vs. post season. Lastly, the findings of this study only apply to elite male basketball players (a majority of whom ranked in the top 50 of their respective recruiting classes) and therefore these results may not translate to other competitive levels as well as female athletes.

## Future Directions

Results from this study open the door for continued research examining the relationship between athletes' perceptions of their team climate to their performance outcomes. Identifying

the most appropriate outcome measures across sports is challenging. With regard to collegiate Division I basketball, a host of performance outcomes are accurate and readily retrievable to the public. Even though many performance outcome statistics are kept, with a small sample size that includes players at different positions (e.g., post, guard), statistics may vary across positions. It would be interesting to work with advanced analytics experts and basketball statistic enthusiasts to create new statistical analysis tools to identify composite performance variables. For example, it might be possible to pull together a meaningful statistic to reflect the effectiveness of athletes who play specific positions, to counter the bias that could be contributed by characteristics unique to each position (e.g., shots closer or further away from the basket). It would also be interesting to consider the relationship between climate perceptions to basketball performance outcomes with athletes at different levels (e.g., youth sport, high school, professional). Theoretically, Nicholls would predict that a positive relationship would be consistent for athletes at different ages, as well as varied developmental and ability levels, although future research should test these predictions. In addition, considering the relationship between climate perceptions to performance outcomes will be important to consider in other sports. Some sports may lend themselves to easier identification of key performance outcomes (e.g., swimming, baseball), whereas with some sports it may be more challenging (gymnastics). The evidence supporting many positive outcomes of a caring and task-involving climate has been clearly established with regard to the motivational, physical and psychological well-being outcomes identified across studies (Harwood, Keegan, Smith & Raine, 2015; Fry & Moore, 2017), and it follows that these outcomes would lead to more positive performances, as well, but research has only recently begun to focus in this direction.

Another direction for future research involves examining the relationship from climate to performance using other tactics. Claunch and Fry (2016) recently conducted a season-long intervention with collegiate football coaches to help them create a more caring and task-involving climate that related to greater retention of athletes, and a higher quality coaching experience. Such interventions may be beneficial for specifically considering performance outcomes measures, as well, to determine the specific coaching behaviors that both create the climate and the impact of those behaviors on athletes' performances. With such research, it would be insightful to interview athletes throughout the season and assess their views of their coaches' behavior and how athletes perceive that those behaviors influence performance.

It would also be interesting in future research to conduct experimental studies where the coaches (with the help of confederate team members) are intentional in creating specific climates (caring and task-involving vs. ego-involving) and performance variables are measured. For example, a study could be designed where students signed up to participate in a 3-on 3 tournament and points scored by participants in the study could be measured as a major outcome variable.

## Conclusion

This study provides evidence for the positive relationship between athletes' perceptions of a caring/task-involving climate and basketball performance outcomes, as well as the negative relationship between athletes perceptions of an ego-involving climate to their basketball performance outcomes. Ego-involving climates are readily apparent at all levels of sport, and it may be that research identifying a strong link between athletes' climate perceptions to their performance is what is needed to highlight for high level coaches the benefits of creating a caring

and task-involving climate and the detriments of an ego-involving climate. In a perceived ego dominated environment such as elite college or professional sport, this type of performance research might have more of a "wow" factor to draw interest of coaches, whereas strong evidence as for the positive human development and optimization of motivation has not been compelling enough for many coaches to change their entrenched ego-involving behaviors.

As college coaches at elite level basketball schools are given great publicity and admiration, it is important that they help set an example of creating caring/task-involving climates to affect more positive change among the athletes, coaches, parents and everyone involved in the sporting world.

## References

2016-17 School Stats. (n.d.). Retrieved May 10, 2017, from http://www.sports-reference.com/cbb/seasons/2017-school-stats.html

Beaton, A. (2016, March 31). How Much Is Your College-Basketball Team Worth? Retrieved February 13, 2017, from https://www.wsj.com/articles/how-much-is-your-college-basketball-team-worth-1459459516

Becker, A. J. (2012). Collegiate Basketball Players' Experiences of Being Coached During a Turnaround Season. *Sport Psychologist*, 26(1), 43-61.

Claunch, J. L., & Fry, M. D. (2016). Native American football coaches' experience of a motivational climate collaboration with sport psychology researchers. *International Journal Of Sports Science & Coaching*, 11(4), 482-495.

Fisher, L., Bejar, M., Larsen, L., Fynes, J., & Gearity, B. (2017). Caring in U.S. National Collegiate Athletic Association Division I Sport: The perspectives of 18 female and male head coaches. *International Journal Of Sports Science & Coaching*, 12(1), 75-91.

Harwood, C., Keegan, R., Smith, J., & Raine, A. (2015). A systematic review of the intrapersonal correlates of motivational climate perceptions in sport and physical activity. *Psychology of Sport and Exercise*, *18*, 9–25.

Hodge, K., Henry, G., & Smith, W. (2014). A Case Study of Excellence in Elite Sport: Motivational Climate in a World Champion Team. *Sport Psychologist*, 28(1), 60-74.

Hogue, C., Fry, M., Fry, A., & Pressman, S. (2013). The influence of a motivational climate intervention on participants' salivary cortisol and psychological responses. *Journal of Sport & Exercise Psychology*, 35, 85-97

Iwasaki, S., & Fry, M. (2016). Female adolescent soccer players' perceived motivational climate, goal orientations, and mindful engagement. *Psychology of Sport and Exercise*, 27, 222-231

Melnick, M. J. (2001). Relationship between team assists and win-loss record in the National Basketball Association. *Perpetual and Motor Skills*, 92, 595-602.

Moore, J. W. (1970) *The psychology of athletic coaching*. Minneapolis, MN: Burgess.

NCAA.com, B. M. (2015, November 16). College basketball: Points, pace and efficiency enjoy early spike. Retrieved May 11, 2017, from http://www.ncaa.com/news/basketball-men/article/2015-11-16/college-basketball-points-pace-and-efficiency-enjoy-early

Newton, M., Fry, M., Watson, D., Gano-Overway, L., Kim, M., Magyar, M., & Guivernau, M. (2007). Psychometric properties of the caring climate scale in a physical activity setting. *Revista de Psicologia del Deporte, 16*, 67-84.

Nicholls, J. G. (1978). The Development of the Concepts of Effort and Ability, Perception of Academic Attainment, and the Understanding That Difficult Tasks Require More Ability. *Child Development, 49*, 800-814.

Nicholls, J. G. (1984). Achievement Motivation: Conceptions of Ability, Subjective Experience, Task Choice, and Performance. *Psychological Review, 91*(3), 328-346.

Nicholls, J. G. (1989). *The competitive ethos and democratic education.* Cambridge, MA: Harvard University Press.

Reinboth, M., & Duda, J. L. (2016). Effects of competitive environment and outcome on achievement behaviors and well-being while engaged in a physical task. *Sport, Exercise, and Performance Psychology,* Vol. 5 (4), 324-336.

Revenue. (n.d.). Retrieved November 2016, from http://www.ncaa.org/about/resources/finances/revenue

Sack, A., (2009). Clashing Models of Commercial Sport in Higher Education: Implications for Reform and Scholarly Research. *Journal of Issues in Intercollegiate Athletics* 2009, 2, 76-92

Sarrazin, P., Vallerand, R., Guillet, E., Pelletier, L., and Cury, F. (2002). Motivation and dropout in female handballers: a 21-month prospective study. *European Journal of Social Psychology*, 32: 395–418.

Seifriz, J., Duda, J., & Chi, L. (1992). The relationship of perceived motivational climate to intrinsic motivation and beliefs about success in basketball. *Journal of Sport & Exercise Psychology,* 14(4), 375-391.

Sports Reference. (n.d.). Retrieved May 11, 2017, from http://www.sports-reference.com/cbb/

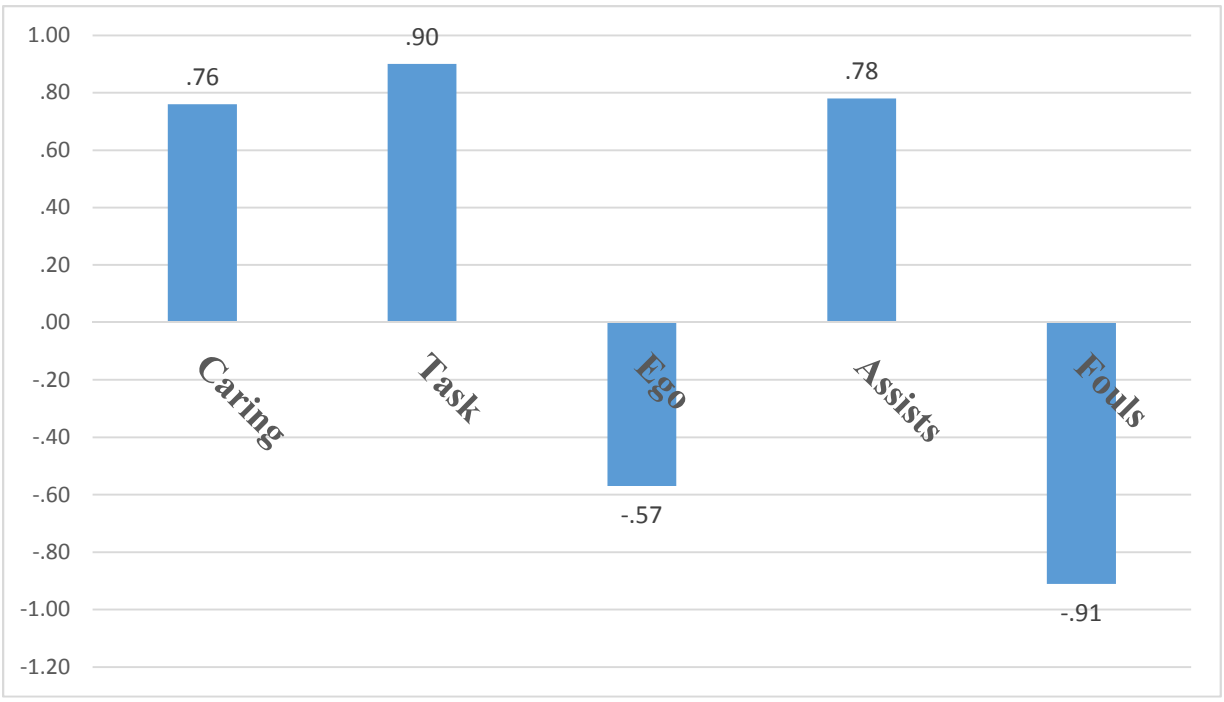
Van-Yperen, N.W., & Duda, J.L. (1999). Goal Orientations, Beliefs About Success And Performance İmprovement Among Young Elite Dutch Soccer Players. *Scandinavian Journal Of Medicine And Science İn Sports*, 9, 358-364

Vealey, R. S., Campbell, J. L. (1988). Achievement goals of adolescent figure skaters: Impact on self-confidence, anxiety, and performance. *Journal of Adolescent Research*, 3, 227–243.

| | | $\bar{x}$ | *SD* | Caring | Task | Ego |
|---|---|---|---|---|---|---|
| | ***Climate variables (1-5 scale)*** | | | | | |
| 1. | Caring Climate | 4.38 | .50 | | .53* | -.46** |
| 2. | Task Climate | 4.24 | .35 | | | |
| 3. | Ego Climate | 3.22 | .50 | | | |
| | ***Game statistics*** | | | | | |
| 4. | Assists | 4.42 | 2.36 | .54** | .40* | -.42* |
| 5. | Personal Fouls | 5.07 | 2.49 | -.41* | -.63*** | |
| 6. | Points Produced | 344.70 | 196.48 | | $.35^{(p = .14)}$ | $-.32^{(p = .19)}$ |
| 7. | Steals | 1.99 | .80 | | $.34^{(p = .15)}$ | |
| 8. | Win Share | 3.24 | 2.05 | | $.33^{(p = .17)}$ | $-.36^{(p = .13)}$ |
| 9. | Box Plus Minus | 7.15 | 3.15 | | | $-.34^{(p = .16)}$ |
| | ***Motivational/support variables (1-5 scale)*** | | | | | |
| 10. | Confidence | 4.84 | .68 | | | |
| 11. | Stress | 2.84 | .68 | | $-.38^{(p = .11)}$ | |
| 12. | Fun | 4.58 | 1.22 | .57** | .47** | -.53** |
| 15. | Effort | 4.68 | .71 | .51** | | |
| 15. | Coaches Believe In Me | 4.53 | .71 | .45* | .61** | |
| 16. | Teammates Believe In Me | 4.68 | .63 | .41* | .63* | |
| 17. | I Will Support My University | 4.63 | .60 | .43* | .54** | |

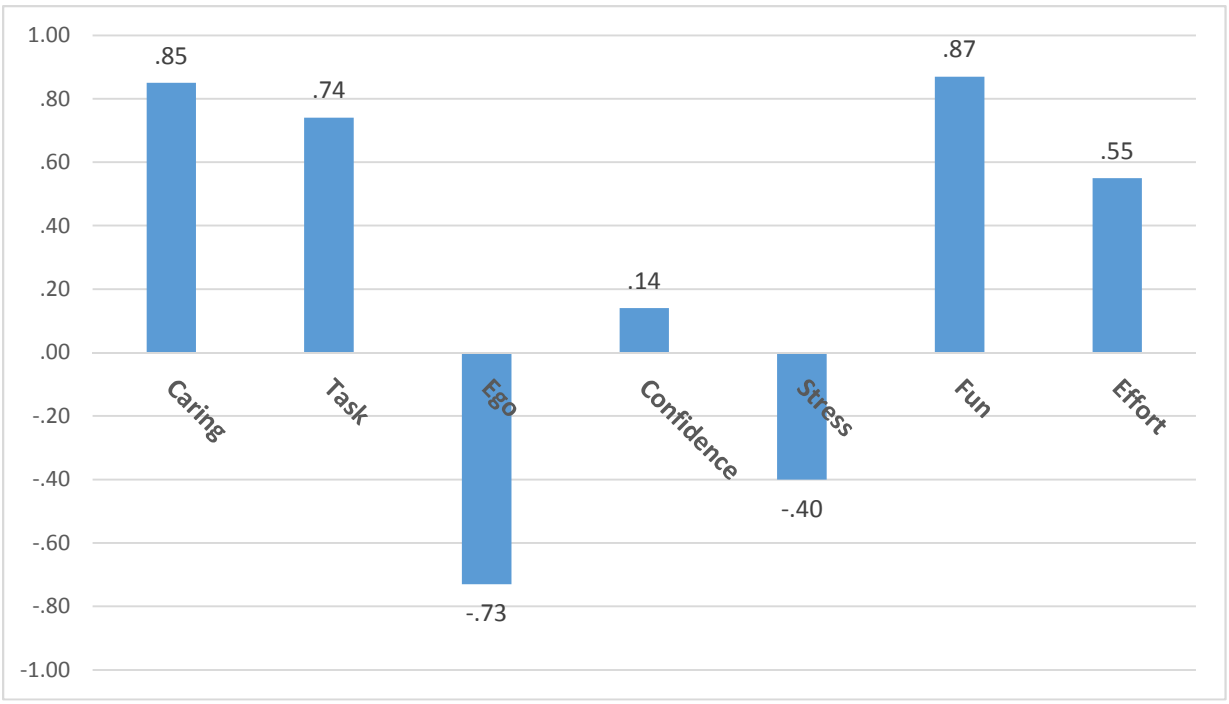
Table 1: Means and Standard Deviations **$p < .10$*; $p < .05$**; $p < .01$*****

Figure 1: Canonical Correlation of Climate Variable with Performance Variables



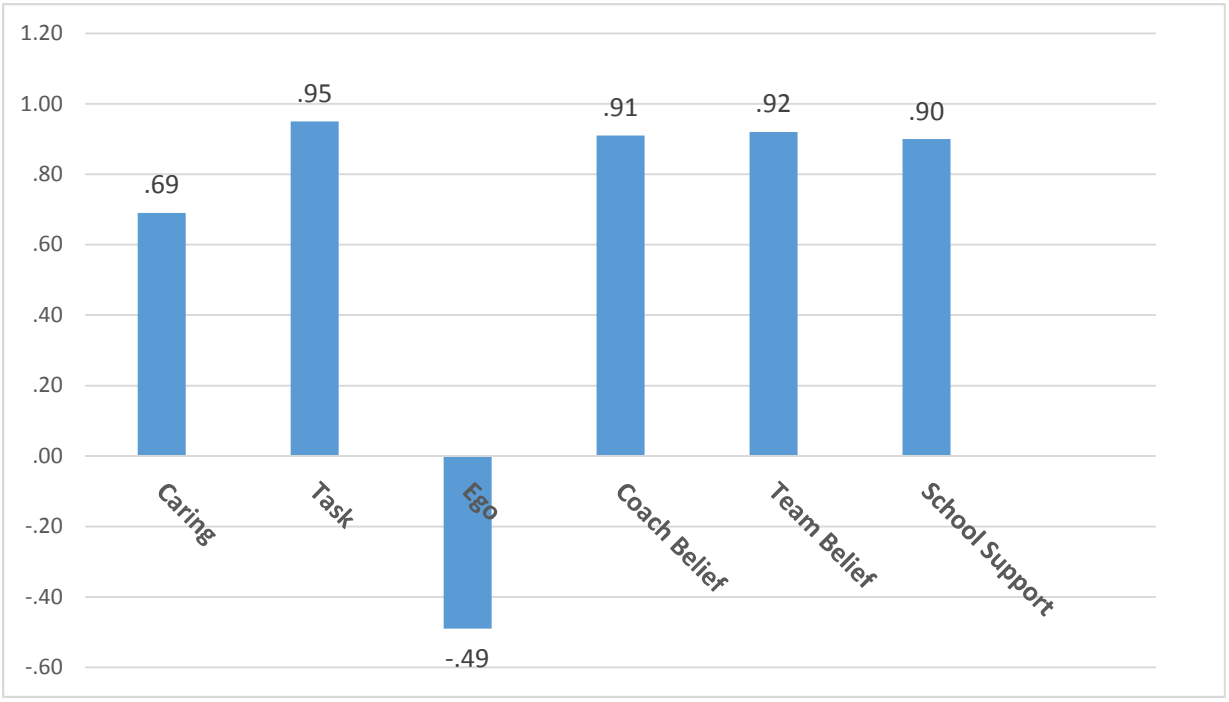

Note. Loadings ≥ .3 are considered significant.

Figure 2: Canonical Correlation of Climate Variable with Motivational Variables




Note. The canonical model approached significance.

Figure 3: Canonical Correlation of Climate Variables with Support Variables




Note. The canonical model approached significance.

THE UNIVERSITY OF KANSAS
Research

**APPROVAL OF PROTOCOL**

March 2, 2017

Christopher Frederick
freddie@ku.edu

Dear Christopher Frederick:

On 3/2/2017, the IRB reviewed the following submission:

| | |
|---|---|
| Type of Review: | Initial Study |
| Title of Study: | Inquiry Into Caring, Task and Ego Involved Climates and Their Affect On Performance |
| Investigator: | Christopher Frederick |
| IRB ID: | STUDY00140600 |
| Funding: | None |
| Grant ID: | None |
| Documents Reviewed: | • Revised Consent Form 2.docx, • IRB Submission Form, • Christopher Frederick, • Recruitment Script |

The IRB approved the study from 3/2/2017 to 3/1/2018.

1. Before 3/1/2018 submit a Continuing Review request and required attachments to request continuing approval or closure.
2. Any significant change to the protocol requires a modification approval prior to altering the project.
3. Notify HSCL about any new investigators not named in original application. Note that new investigators must take the online tutorial at https://rgs.drupal.ku.edu/human_subjects_compliance_training.
4. Any injury to a subject because of the research procedure must be reported immediately.
5. When signed consent documents are required, the primary investigator must retain the signed consent documents for at least three years past completion of the research activity.

If continuing review approval is not granted before the expiration date of 3/1/2018 approval of this protocol expires on that date.

Please note university data security and handling requirements for your project:
https://documents.ku.edu/policies/IT/DataClassificationandHandlingProceduresGuide.htm

You must use the final, watermarked version of the consent form, available under the "Documents" tab in eCompliance.

Sincerely,

Stephanie Dyson Elms, MPA
IRB Administrator, KU Lawrence Campus

Human Research Protection Program
Youngberg Hall | 2385 Irving Hill Rd | Lawrence, KS 66045 | (785) 864-7429 | research.ku.edu/hrpp

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**APPROVAL OF PROTOCOL**

April 14, 2017

Christopher Frederick
freddie@ku.edu

Dear Christopher Frederick:

On 4/14/2017, the IRB reviewed the following submission:

| | |
|---|---|
| Type of Review: | Modification |
| Title of Study: | Inquiry Into Caring, Task and Ego Involved Climates and Their Affect On Performance |
| Investigator: | Christopher Frederick |
| IRB ID: | STUDY00140600 |
| Funding: | None |
| Grant ID: | None |
| Documents Reviewed: | • Online Information Statement, • Online Survey, • Updated IRB Submission Form |

The IRB approved the study from 4/14/2017 to 3/1/2018.

1. Before 3/1/2018 submit a Continuing Review request and required attachments to request continuing approval or closure.
2. Any significant change to the protocol requires a modification approval prior to altering the project.
3. Notify HSCL about any new investigators not named in original application. Note that new investigators must take the online tutorial at https://rgs.drupal.ku.edu/human_subjects_compliance_training.
4. Any injury to a subject because of the research procedure must be reported immediately.
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## Extended Literature Review

College basketball, a sport with ample opportunity for physical conditioning, is a chance for young adult men to attain the well-known benefits of exercise and team sports. Participation in team sport leads to lower rates of mental health problems as well as improved overall health (Steiner, McQuivey, Pavelski, Pitts, & Kraemer, 200) In a 2006 study, Boone and Leadbeater found "that benefits from team sports may partially accrue through the effects of positive experiences (in coaching, skill development, and peer support) in enhancing perceived social acceptance and reducing body dissatisfaction." In particular, highlighting the role of coaching as a way that athletes accrue the positive effects of team sports speaks to the importance of the player-coach dynamic.

### Achievement Goal Perspective Theory

Achievement Goal Perspective Theory (AGPT), developed and refined by John Nicholls and colleagues over the years, is one attempt to define and understand the motivation for athletes in their pursuit of sport (Nicholls 1978; 1984; 1989). What drives athletes to pursue their sports goals is different for each athlete but the motivation behind it may be easier to understand. It is agreed by most theorists that motivation is not an entity, but a process (Roberts, 2012). Understanding this motivational process allows us to understand why athletes are driven to compete. In the ultra-competitive world of elite and professional sport, understanding motivation can potentially help to make an athlete perform at a higher level or a coach reach his players in a more substantial way knowing how each player is pursuing their sport. Through his research, Nicholls wanted to find out what motivated children, in mostly educational settings, to achieve

their goals. AGPT identifies three motivational factors: motivational climate, goal orientation, and cognitive development.

**Motivational Climate**

Nicholls theorized that people in situations where achievement was attained as part of their process of participating (i.e. school, sport, etc.) have two perspectives as it relates to their goals. Those in a task-involving climate define their success by the effort and ultimate mastery of their task. Success for them is achieved when they feel as though they have mastered a skill relating to their task, that they have given their best effort in performing the task and they have seen tangible progress in learning the task (Fry, Duda 1997). An ego-involving climate, on the other hand, uses social comparison as the basis to judge one's competency in an achievement scenario (Breiger, Cumming, Smith & Smoli, 2015). Instead of using mastery of a task and personal improvement to define their success, they judge themselves based on their skill ability as it relates to their peers (Nicholls 1984, 1989).

Looking at task-involving, a study using basketball players found that those players that perceived the team to be more concerned with personal improvement, maximizing their effort while participating and trying their best enjoyed playing basketball more than those that judged their success based on their peer's results (Seifriz, Duda, & Chi, 1992). Staying in the physical activity domain and looking at ego-involving climate, a group attempting to learn the skill of juggling when placed in an ego climate found their experience lacking in fun compared to a task-involving climate, also reporting that negative traits such as anxiety and shame were prevalent throughout the juggling session (Hogue, Fry, M., Fry, A., Pressman, 2013).

Before looking at whether a climate is task- or ego-involved however, one must look at the constructs and motivational setting when achievement motivation is trying to be discerned. Much research has been conducted around students and their learning motivations, what provides for the greatest learning environment and how to most efficiently instruct students. As it pertains to the classroom, attention is most often paid to quantitative changes rather than qualitative, i.e. increasing time spent on a particular module instead of looking at the way they view themselves in relation to the task, engaging in the process of learning and then responding to the learning and situation accordingly (Ames, 1992). Mirroring these same thoughts to the sports domain, organized sports have a host of positive physical and psychological benefits, in their simplest terms potentially improving cardiovascular health and raising desirable mental states such as happiness and positivity. In organized sports, participants often take instruction and coaching from a leadership role, be it a coach or parent. It is important to note that these figures play a central role in determining the motivational climate for the participants. Even despite win-loss records being similar, a study on the difference between coaches trained in a program designed to instill desirable coaching traits and those without training, the trained coaches were liked better and rated as better teachers. Other wide-ranging positive effects were reported such as players on their teams liking one another more and indicating that they had a more enjoyable time playing baseball. Further, children with low self-esteem exhibited a significant increase in their feelings of self-worth (Barnett, Smith, & Smoll, 1992).

## Goal Orientation

Nicholls argued that to assess a person's achievement goals, researchers should inquire as to a person's definition of what makes them successful rather than trying to find out their definition of success (1989). This speaks to task orientation and ego orientation. Nicholls posits

that those who are task oriented find success when they feel they have given their best effort, have made tangible improvement and worked in a cooperative fashion with their peers. Conversely, those who are ego oriented value success based on their ability in comparison to their peers and have a desire to show those peers their superior skill. Highly task oriented individuals self-reference and seek to develop competence by acquiring the skills associated with their task and by mastering that task. Those with high ego orientations desire to demonstrate their accrued skills by surpassing others in the same achievement setting (Breske, 2016).

Individuals may possess qualities from both these goal orientations, that is, one may rank high on ego orientation qualities and low on task orientation qualities or the converse may hold true or any combination of the two. Interestingly, an orientation placing one high in task orientation, as well as high in ego orientation, produced the most motivated school children when it came to sport. Those that were high in task orientation alone were much more motivated than those high in ego orientation alone. Task orientation appears critical to motivation while ego can, in fact, increase sport enjoyment, however, the converse does not hold true and low task orientation may potentially be motivationally detrimental (Fox, Goudas, Biddle, Duda & Armstrong, 1994).

**Caring Climate**

As a coach and athlete naturally develop a relationship, the concept of caring, or lack thereof, is created. The idea of caring is a relation between two parties, an activity that one party may engage in, involving verbal and nonverbal cues as well as recognition of the motivation and intentions of individuals involved (Noddings, 1992). Newton et al. theorized that a caring climate in sport would consist of athletes perceiving the environment to be safe, be supportive, and that

they would be valued and respected (2007). Fry and Gano-Overway also found that athletes' who perceive a caring climate report greater commitment to their sport, greater enjoyment of it and have positive attitudes and caring behaviors towards fellow teammates and their coaches (2010). Mirroring this, in a study of adolescent soccer players and their sporting experiences, researchers Vella, Oades, and Crowe (2013) found that positive developmental experiences were due more to the factors of a caring/task-involving climate than due to the team's success as it relates to wins and losses.

At the Division I level, a study conducted by Fisher et al., (2017) of the perspective of 18 head coaches, both female and male, found coaches believing it necessary to implement caring behaviors towards their athletes in order to maximize team success. Among those behaviors reported, being responsive to athletes' needs; individualizing; communicating; holding athletes accountable; post-graduation success and appreciation; having an open-door policy, were implemented to create a more caring environment. Researchers also suggested the benefits of caring are so important that the governing sports body of the Division I athletes and coaches, the NCAA, should personalize their caring for student athletes (pg. 88). While one would posit that the previous coaches would be "good" coaches, it was found that coaches who are untrained in behaviors, such as the led to youth athletes ceasing participation with their team the next season at a rate five times more likely than another athlete (Barnett et al., 1992).

**Cognitive Development**

Nicholls theorizes that towards the end of the second year of a child's life, they develop some conceptualization of competence as it relates to achievement orientation. Children begin to exhibit characteristics of competence as well as incompetence from this point on. Instances such

as smiling after completing a simple task or having feelings of incompetence as it relates to failure. Progressing to the ages of three and four, children begin to exhibit competition and ego oriented behaviors taking note of beating one another in simple games and events. This trend continues throughout a child's maturation as they begin to understand concepts as it relates to achievement such as luck, skill, ability and effort. At around the age of 12, children begin to have complete competence to determine the aforementioned concepts as it pertains to their athletic and achievement-oriented tasks. Importantly, this age marks when children may start to become "ego involved" (1989).

**Performance Benefits of Caring/Task Climates**

While research at this time has not directly pointed to motivational climate being the direct cause of whether athletes or their team's success in the win/loss column is due to caring, task or ego-involved climates, one could infer that success or failure could be assisted by any number of climate created reasons (i.e., an athlete that suffers from low motivation to compete would fare worse than an athlete with high motivation and in a team setting this would hurt the overall team and thus result in more losses than wins). In a study of 124 female basketball and handball athletes, researchers found that high perceptions of a task-involving environment and low perceptions of an ego-involving climate were associated with higher perceptions of task cohesion and collective efficacy. Additionally, low perceptions of an ego-involving climate were associated with high perceptions of social cohesion (Heuze et al., 2006). Similarly, in a study of 181 female handball players, researchers found that when they perceived a task-involving climate, players reported greater performance improvement and satisfaction with performance as well as held more positive views regarding their coach (Balaguer, Duda, Atienza, & Mayo, 2002). A study of nine world-class Norwegian Olympians following the 1994 Winter Olympic

Games in Lillehammer found that to reduce symptoms of distress, coaches should focus on creating a caring climate, with one athlete specifically stating that this type of climate could be one of the most important factors to explain the team's success in the past (Pensgaard & Roberts, 2002).

A case study around the 2011 World Champion All Blacks rugby team and two of the three coaches from the period of 2004-2011 provided additional support for the performance benefits of fostering a caring/task-involving climate. Researchers Hodge et al. (2014) conducted in-depth interviews with the team in March 2012, following the championship season. Many of the tenets of a caring climate were identified as reasons for the success of the All Blacks rugby team in a period where they had an 85%-win rate over seven years, culminating with a championship season. Regarding team cohesion, concepts like communication and clarity, enjoyment and fun, and even love were cited (pg. 70). The team also focused on player and team strengths, placing an emphasis on improving strengths as opposed to emphasizing improving on weaknesses which goes along with task-involving approaches (pg. 68) Additionally, overlapping with task-involving climate, coaches found that the approach of, "(i) offering choice (e.g., ownership and accountability for decision-making), (ii) encouraging athletes to take initiative (e.g., leadership group, responsibility), and (iii) using empowering performance feedback (e.g., feedback on improving strengths, not just reducing weaknesses)" (pg. 70) led to greater success.

## Summary

Research looking at motivational climate as it relates to sports clearly shows numerous benefits to creating a caring/task-involving climate and the negative effects of fostering an ego-involving climate. However, the common belief is that ego-driven environments are prevalent at

elite levels in sport (Gervis & Dunn, 2004) and thus educating coaches as to the benefits of creating a caring/task-involving climate and less ego-driven environment is important. Interventions designed to help coaches improve their coaching methods need to be designed and better public awareness of this knowledge needs to occur.

## References

Ames, C. (1992). Classrooms: Goals, structures, and student motivation. *Journal of Educational Psychology*, 84(3), 261-27

Balaguer, I., Duda, J. L., Atienza, F. L., & Mayo, C. (2002). Situational and dispositional goals as predictors of perceptions of individual and team improvement, satisfaction and coach ratings among elite female handball teams. *Psychology of Sport and Exercise*, 3(4), 293–308. doi:10.1016/S1469-0292(01)00025-5

Barnett, N. P., Smoll, F. L., & Smith, R. E. (1992). Effects of enhancing coach-athlete relationships on youth sport attrition. *The Sport Psychologist*, 6, 111-127.

Boone, E., Leadbeater, B. (2006). Game On: Diminishing Risks For Depressive Symptoms In Early Adolescence Through Positive Involvement In Team Sports. *Journal of Research on Adolescence*. 2006, 16 (1): 79-90. 10.1111/j.1532-7795.2006.00122.x.

Breiger, J., Cumming, S. P., Smith, R. E., Smoll, F., & Brewer, B. (2015). Winning, Motivational Climate, and Young Athletes' Competitive Experiences: Some Notable Sex Differences. *International Journal Of Sports Science & Coaching*, 10(2/3), 395-411.

Fox, K., M. Goudas, S. Biddle, J. Duda, and N. Armstrong. (1994). Children's task and ego goal profiles in sport. *British Journal of Educational Psychology.* 64, 253-261.

Fry, M. D., & Duda, J. L. (1997). A developmental examination of children's understanding of effort and ability in the physical and academia domains. *Research Quarterly for Exercise and Sport,* 68, 331-344

847 Fry, M. D., & Gano-Overway, L. A. (2010). Exploring the Contribution of the Caring Climate to
848 the Youth Sport Experience. *Journal of Applied Sport Psychology,* 22, 294-304.

849 Gervis, M., & Dunn, N. (2004). The emotional abuse of elite child athletes by their coaches.
850 *Child Abuse Review*, 13, 215-233.

851 Heuzé, J-P., Sarrazin, P., Masiero, M., Raimbault, N., & Thomas, J-P. (2006). The relationships
852 of perceived motivational climate to cohesion and collective efficacy in elite female
853 teams. *Journal of Applied Sport Psychology*, 18(3), 201–218.
854 doi:10.1080/10413200600830273

855 Hodge, K., Henry, G., & Smith, W. (2014). A Case Study of Excellence in Elite Sport:
856 Motivational Climate in a World Champion Team. *Sport Psychologist*, 28(1), 60-74.

857 Hogue, C. M., Fry, M. D., Fry, A. C., & Pressman, S. D. (2013). The influence of a motivational
858 climate intervention on participants' salivary cortisol and psychological responses.
859 *Journal of Sport & Exercise Psychology,* 35, 85-97

860 Nicholls, J. G. (1978). The Development of the Concepts of Effort and Ability, Perception of
861 Academic Attainment, and the Understanding That Difficult Tasks Require More Ability.
862 *Child Development, 49*, 800-814.

863 Nicholls, J. G. (1984). Achievement Motivation: Conceptions of Ability, Subjective Experience,
864 Task Choice, and Performance. *Psychological Review, 91*(3), 328-346.

865 Nicholls, J. G. (1989). *The competitive ethos and democratic education.* Cambridge, MA:
866 Harvard University Press.

Noddings, N. (1992). *The challenge to care in schools: An alternative approach to education.* New York, NY: Teachers College Press.

Pensgaard, A. M. and Roberts, G. C. (2002). Elite athletes' experiences of the motivational climate: The coach matters. *Scandinavian Journal of Medicine & Science in Sports*, 12: 54–59. doi:10.1034/j.1600-0838.2002.120110.x

Steiner, H., McQuivey, R., Pavelski, R., Pitts, T., Kraemer, H. (2000). Adolescents and sports: risk or benefit? *Clinical Pediatrics*. 39: 161-166. doi:10.1177/000992280003900304.

Vella, S. A., Oades, L. G., & Crowe, T. P. (2013). The relationship between coach leadership, the coach-athlete relationship, team success, and the positive developmental experiences of adolescent soccer players. *Physical Education and Sport Pedagogy,* 18(5), 549-561. doi:10.1080/17408989.2012.726976

887 **Perceived Motivational Climate in Sport Questionnaire** (PMCSQ-1: Seifriz, et al., 1992)

| Directions**:** As you read the following statements, think about what your team is like this season. Please circle the number on the 5-point scale listed below that best describes how you truly feel.<br>**On our team…** | **Strongly Disagree** | **Disagree** | **Neither Agree or Disagree** | **Agree** | **Strongly Agree** |
|---|---|---|---|---|---|
| 1. … athletes feel good when they do better than others. | 1 | 2 | 3 | 4 | 5 |
| 2. trying hard is rewarded. | 1 | 2 | 3 | 4 | 5 |
| 3. athletes are punished when they make mistakes. | 1 | 2 | 3 | 4 | 5 |
| 4. coaches focus on skill improvement. | 1 | 2 | 3 | 4 | 5 |
| 5. athletes are taken out of games for mistakes. | 1 | 2 | 3 | 4 | 5 |
| 6. each player's improvement is important | 1 | 2 | 3 | 4 | 5 |
| 7. playing better than teammates is important. | 1 | 2 | 3 | 4 | 5 |
| 8. athletes try to learn new skills. | 1 | 2 | 3 | 4 | 5 |
| 9. the coaches pay the most attention to the "stars". | 1 | 2 | 3 | 4 | 5 |
| 10. athletes are encouraged to work on weaknesses. | 1 | 2 | 3 | 4 | 5 |
| 11. doing better than others is important. | 1 | 2 | 3 | 4 | 5 |
| 12. the coaches want us to try new skills. | 1 | 2 | 3 | 4 | 5 |
| 13. the coaches favor some athletes. | 1 | 2 | 3 | 4 | 5 |
| 14. athletes like playing good teams. | 1 | 2 | 3 | 4 | 5 |
| 15. athletes are encouraged to outplay their teammates. | 1 | 2 | 3 | 4 | 5 |
| 16. everyone wanted to be the best player/MVP. | 1 | 2 | 3 | 4 | 5 |
| 17. each player feels like they have an important role. | 1 | 2 | 3 | 4 | 5 |
| 18. only the best athletes get noticed. | 1 | 2 | 3 | 4 | 5 |
| 19. most athletes get to play in the games. | 1 | 2 | 3 | 4 | 5 |
| 20. athletes are afraid to make mistakes. | 1 | 2 | 3 | 4 | 5 |
| 21. only a few athletes can be the "stars." | 1 | 2 | 3 | 4 | 5 |

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889 **Caring Climate Scale** (Newton, Fry, et al., 2007)

| **Directions**: Read each statement and think about how much you believe that statement describes this basketball season. Then choose the answer that shows how much you agree or disagree with the statement.<br><br>**On our team…** | **Strongly Disagree** | **Disagree** | **Neither Agree or Disagree** | **Agree** | **Strongly Agree** |
|---|---|---|---|---|---|
| 1. … the athletes are treated with respect. | 1 | 2 | 3 | 4 | 5 |
| 2. the coaches respect the athletes. | 1 | 2 | 3 | 4 | 5 |
| 3. the coaches are kind to the athletes. | 1 | 2 | 3 | 4 | 5 |
| 4. the coaches care about the athletes. | 1 | 2 | 3 | 4 | 5 |
| 5. the athletes feel that they are treated fairly. | 1 | 2 | 3 | 4 | 5 |
| 6. the coaches try to help the athletes. | 1 | 2 | 3 | 4 | 5 |
| 7. the coaches want to get to know all of the athletes. | 1 | 2 | 3 | 4 | 5 |
| 8. the coaches listen to team members. | 1 | 2 | 3 | 4 | 5 |
| 9. athletes like one another for who they are. | 1 | 2 | 3 | 4 | 5 |
| 10. the coaches accept athletes for who they are. | 1 | 2 | 3 | 4 | 5 |
| 11. athletes feel comfortable. | 1 | 2 | 3 | 4 | 5 |
| 12. athletes feel safe. | 1 | 2 | 3 | 4 | 5 |
| 13. athletes feel welcome every day. | 1 | 2 | 3 | 4 | 5 |

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892 **Motivation and Support Scale**

| **Directions**: As you read the following statements, indicate how each of the statements correspond to your feelings as they stand today: | **Strongly Disagree** | **Disagree** | **Neither Agree** | **Agree** | **Strongly Agree** |
|---|---|---|---|---|---|
| 1. I am very confident in my basketball ability. | 1 | 2 | 3 | 4 | 5 |
| 2. Playing for this team is stressful. | 1 | 2 | 3 | 4 | 5 |
| 3. I have fun playing on this team. | 1 | 2 | 3 | 4 | 5 |
| 4. I always give my best effort on this team. | 1 | 2 | 3 | 4 | 5 |
| 5. My coaches believe in me. | 1 | 2 | 3 | 4 | 5 |
| 6. My teammates believe in me. | 1 | 2 | 3 | 4 | 5 |
| 7. I will support my university for life. | 1 | 2 | 3 | 4 | 5 |

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