# Positional competition and prosocial and antisocial behavior in college athletes

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Competition is embedded in the sport experience and is theorized to facilitate adaptive and maladaptive athlete behaviors. While research efforts have primarily examined outcomes that stem from competitive processes between teams, an emerging area of research has focused on competition that exists within teams. With the recognition that athletes on sport teams regularly compete for playing time with other athletes in the same position (i.e., positional competition), the purpose of the current study was to examine how positional competition related to prosocial and antisocial behavior among NCAA Division III athletes (N = 208). Canonical correlation analysis revealed a moderate multivariate relationship between the variable sets. Effort to improve, pushing teammates in the same position, and self-awareness of ability were positively related to prosocial behaviors. The findings provide initial support for how competition for playing time may relate to moral behavior in high-performing athletic contexts.

KEY WORDS: Competition, intrateam, moral behavior, group dynamics.

Competition is a social dynamic that is pervasive in day-to-day interactions (Johnson & Johnson, 1989). For instance, students in educational settings may compete with classmates for grades or workers in organizations may vie for rank or promotion. Sport groups are valuable entities to study because competition is embedded within the sport experience. Sport psychology literature traditionally has examined how sources of interteam competition (i.e., the competition between teams) can have important consequences for athletes' behaviors (see Kavussanu et al., 2021). Competitive processes also occur within teams whereby athletes compete against their fellow team-

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mates. While intrateam competition has been studied within other domains (e.g., organizational psychology; Tjosvold et al., 2006), its role in sport is less understood.

The study of competition has been grounded in several theories. One of the most prominent is social interdependence theory (Johnson & Johnson, 1989). Social interdependence theory postulates that the way in which group members interact, as well as the outcomes that stem from these interactions, depend on how individuals' goals are structured (Johnson & Johnson, 2005). Positive interdependence is characterized by a positive correlation between individuals' goal attainments and denotes a cooperative goal structure (i.e., non-zero sum, Deutsch, 1949; Johnson, 2003). On the other hand, negative interdependence is characterized by a negative relationship between individuals' goal attainments and is suggested to promote competitive action (i.e., zero-sum, Deutsch, 1949; Johnson, 2003).

The nature of individuals' goal structures are theorized to have subsequent consequences for their engagement in moral behaviors (Johnson & Johnson, 2008). Cooperation is posited to facilitate promotive action wherein group members encourage and facilitate each other's effort to achieve collective group goals. Group members may engage in prosocial behavioral strategies such as the exchange of resources and constructive conflict management. In contrast, competitiveness is postulated to result in oppositional interaction where individuals engage in the obstruction of others' efforts to achieve a goal (Swab & Johnson, 2019). Individuals may use more maladaptive strategies such as threat or misleading communication during competition (Johnson & Johnson, 2008).

Considering competitive sport contexts include both cooperation with team members (i.e., positive interdependence) and competition against opponents (i.e., negative interdependence), research has demonstrated that sport competition can influence athletes' prosocial and antisocial behaviors. In sport, prosocial behaviors are conceptualized as the voluntary engagement in actions intended to help another individual such as giving constructive feedback to teammates or helping an opponent back to their feet (Kavussanu & Boardley, 2009). Athletes' endorsement of task goal orientations (i.e., self-referenced criteria of competence) and task-involved motivational climate have been consistently and positively associated with prosocial behavior (Kavussanu & Al-Yaaribi, 2021). Athletes may also engage in antisocial behaviors by intentionally acting to disadvantage others, such as berating a teammate or injuring an opponent. The adoption of norm-referenced criteria as markers of competence, as well as athletes' moral disengagement, are routinely linked with antisocial behaviors in sport competition (e.g., Boardley & Kavussanu, 2010). In light of these findings, a limitation of the extant literature on sport competition and morality is a lack of focus on how competition between teammates may contribute to athletes' prosocial and antisocial behaviors.

Athletes uniformly engage in competition with teammates where they continuously compete for a finite number of resources, such as playing time. Specifically, positional competition is as a process whereby athletes on the same team vie for playing time in the same position (Harenberg et al., 2016(a) Harenberg et al., 2016(b) Harenberg et al., 2019). When athletes engage in positional competition it is assumed that a) competition occurs only between players in the same position b) players are encouraged to strive for the most amount of playing time, which has the potential to foster individual and collective performance outcomes, c) positional competition is a dynamic process that is omnipresent and occurs overtime, and d) positional competition is structured by the head coach given their reward power regarding the distribution of playing time (see Harenberg et al., 2019).

Compared to competition between groups, a paucity of research has examined the outcomes that stem from competition within groups. Drawing from organizational literature, competition within small groups, such as business groups or classrooms, is often portraved as inhibitive of group performance (Kohn, 1992; Swab & Johnson, 2019). From the lens of social interdependence theory, when working toward competitive goals, individuals may be more likely to engage in self-protective strategies, self-handicapping, and defensive pessimism which detracts from group performance (Johnson & Johnson, 2008). On the other hand, social interdependence theorists have also argued that competition among group members can be constructive (Johnson & Johnson, 2008), such as when competition is perceived as enjoyable, personally worthwhile beyond winning, and when strong relationships are developed among competitors. Empirical support for this perspective has been demonstrated in organizational settings such that intragroup competition among employees within the same business was perceived as constructive when individuals reported an internal motivation to compete, fairness of the rules, and when individuals developed interpersonal relationships with other competitors (Tjosvold et al., 2003, 2006).

Given the varying adaptive and maladaptive consequences that may result from intrateam competition, it is feasible that positional competition may be associated with prosocial and antisocial behaviors on sport teams. On one hand, positional competition may facilitate prosocial behaviors. Qualitative interviews with sport team coaches revealed that a predominant purpose of positional competition is to push other teammates to perform at increasingly higher standards (Harenberg et al., 2016b). Athletes that perceive competition with their teammates as a necessity to improve may also provide encouragement or guidance to other members of their team (Harenberg et al., 2016a). On the other hand, competition between teammates on sport teams has been linked to antisocial behavior. Boroumand et al. (2018) utilized an experimental vignette design and found a conditional effect of position on helping behavior such that athletes were less likely to help a talented new teammate that played the same position (i.e., presence of positional competition) compared to those that played a different position.

The purpose of the current study was to explore the relationship between positional competition and prosocial and antisocial behavior in a high-performing athletic context. Given the exploratory nature of the study, there were not specific hypotheses forwarded for how dimensions of positional competition would predict moral behavior. However, due to previous theoretical and empirical research suggesting adaptive and maladaptive outcomes emanating from intrateam competition (e.g., Johnson & Johnson, 2008; Tjosvold et al., 2006), we speculated that positional competition would predict both prosocial and antisocial behaviors.

# Method

## PARTICIPANTS

Data were collected from 232 NCAA division III athletes. Participants with more than five percent of missing data across subscale items (n = 24) were removed constituting a final sample of 208 college athletes (male n = 117, female n = 88, prefer not to say n = 3) from eight intact sport teams ( $M_{Age} = 19.37$ ,  $SD_{Age} = 1.30$ ). Sport teams included field hockey (n = 10, 4.8%), American football (n = 89, 42.8%), men's and women's basketball (n = 29, 14.0%), men's soccer (n = 18, 8.7%), women's swimming and diving (n = 15, 7.2%), women's lacrosse (n = 19, 9.1%), and women's track and field (n = 28, 13.5%).

#### PROCEDURE

After approval from the Institutional Review Board, coaches were contacted via email to assess interest and request participation in the study. Following permission from coaches, the researchers scheduled meeting times with the sport team to distribute paper surveys before or after training. Researchers were present during data collection for the completion of the survey to explain the purpose of the investigation, obtain consent for athlete participation, and answer questions. Participants were ensured that their participation was voluntary and confidential.

## MEASURES

### Positional Competition

Perceptions of positional competition were assessed using the Positional Competition in Team-Sport Questionnaire (PCTSQ; Harenberg et al., 2019). The PCTSQ consisted of 25 items that spanned seven dimensions. Individuals were first prompted with the stem "Think about the competition for playing time that you have with your teammates who play in the same position during this season. In this competition ... ". Subscales included effort to improve (e.g., "I challenge myself to be a better player"), push by teammates (e.g., "My teammates in my position push me to work hard every day"), push teammates (e.g., "I provide guidance for my teammates in my position"), comparison (e.g., "I strive to show I am better than my teammates in my position"), self-awareness (e.g., "I know how well I perform compared to my teammates in my position"), coach recognition (e.g., "My coach acknowledges when I compete hard as a player"), and coach selection (e.g., "The best performing players get playing time"). Responses were measured on a Likert scale with anchor points ranging from 1 (strongly disagree) to 7 (strongly agree). Most subscales demonstrated acceptable internal consistency ( $\alpha = .69$  to .88) aside from the coach selection subscale ( $\alpha = .59$ ). Given the exploratory nature of the study, we opted to retain the subscale and caution the reader when interpreting the results.

## Prosocial and Antisocial Behavior

The Prosocial and Antisocial Behavior in Sport Scale (PABSS; Kavussanu & Boardley, 2009) was used to assess perceptions of moral behavior related to teammates and opponents. The PABSS consisted of 20 items that spanned four subscales. Participants were prompted with the stem "While playing for my team this season, I....". Subscales included prosocial behavior toward teammates (e.g., "Gave positive feedback to a teammate"), prosocial behavior toward opponents (e.g., "Helped an injured opponent"), antisocial behavior toward teammates (e.g., "Verbally abused a teammate"), and antisocial behavior toward opponents (e.g., "Tried to injure an opponent"). Responses were measured on a Likert scale with anchor points ranging from 1 (*never*) to 5 (*very often*).<sup>1</sup> All subscales demonstrated adequate internal consistency with alpha values ranging from .77 to .86.

## Data Analysis

Preliminary data screening was conducted to identify missing values, multivariate outliers, and assess assumptions for normality. Initial screening revealed missing data were missing at random (Little's MCAR test, p > .05). Missing data were imputed using an expectation maximization algorithm.

<sup>&</sup>lt;sup>1</sup> Two items of antisocial behavior toward opponents were removed because they did not apply across all sport teams in the sample (i.e., swimming and diving, track and field; "deliberately fouled an opponent" and "retaliated after a bad foul").

Five multivariate outliers were identified and removed prior to formal data analysis (Mahalanobis distance, p < .001). Descriptive statistics and bivariate correlations were computed for all study variables (see Table I). To explore how the dimensions of positional competition related to prosocial and antisocial behavior, canonical correlation analysis (CCA) was conducted with the

TABLE I Descriptive Statistics and Bivariate Correlations for Positional Competition and Prosocial and Antisocial Behavior Subscales (N = 208).

Dimension	Mean (SD)	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. PC - Effort to Improve	6.13 (.73)	.77									-	
2. PC - Push by Teammate	5.65 (.99)	.47**	.76									
3. PC - Push Teammate	5.24 (1.05)	.44**	.48**	.77								
4. PC - Comparison	5.60 (1.21)	.32**	.13	.24**	.87							
5. PC - Self-Awareness	5.76 (.91)	.45**	.16**	.38**	.62**	.69						
6. PC - Coach Recognition	5.27 (1.33)	.43**	.42**	.48**	.11	.25**	.86					
7. PC - Coach Selection	5.47 (1.02)	.34**	.31**	.20**	.16**	.24**	.44**	.59				
8. MB - Prosocial Teammate	4.40 (.57)	.31**	.19**	.47**	.08	.26**	.17*	.06	.77			
9. MB - Prosocial Opponent	2.55 (1.21)	.10	.09	.13	.12	.08	.08	12	.20**	.84		
10. MB - Antisocial Teammate	1.79 (.76)	04	08	.17*	.33**	.19**	02	03	.08	.14*	.84	
<ul> <li>A. 10<sup>-1</sup> Comparison</li> <li>Comparison</li> <li>Self-Awareness</li> <li>PC -</li> <li>Coach</li> <li>Recognition</li> <li>PC -</li> <li>Coach</li> <li>Selection</li> <li>8. MB -</li> <li>Prosocial</li> <li>Teammate</li> <li>MB -</li> <li>Prosocial</li> <li>Opponent</li> <li>MB -</li> <li>Antisocial</li> <li>Teammate</li> <li>11. MB -</li> <li>Antisocial</li> <li>Opponent</li> </ul>	1.69 (.78)	.03	03	.14*	.33**	.19**	02	.04	.10	03	.58**	.86
	Skewness	88	-1.06	48	-1.15	79	78	84	96	.41	1.44	1.18
	Kurtosis	.73	1.53	.12	1.34	.73	.22	.93	1.34	95	2.63	.70

*Note.* p < .05, p < .01; PC = Positional Competition, MB = Moral Behavior; Reliability coefficients are bolded on the diagonal.

seven dimensions of positional competition used as the predictor set and the four moral behavior dimensions as the criterion set. CCA is a multivariate technique that is appropriate when examining the relationships between two variable sets (Sherry & Henson, 2005), and accordingly, was consistent with the conceptual nature of the research question. Following recommendations by Sherry & Henson (2005), we estimated the overall multivariate relationship, the squared canonical correlations ( $R^2_{c}$ ) and the overall effect size for the full model. Second, we examined the contribution of canonical functions separately and interpreted those sets which explained greater than 10% of shared variance (Sherry & Henson, 2005). The standardized canonical coefficients and structure coefficients were examined to determine the contribution of each variable to the model. Structure coefficients that explained 45% or more variance were considered meaningful contributions to the model (Sherry & Henson, 2005).

# Results

The full model was statistically significant, Wilks's  $\lambda = .565$ , F(28, 693.69) = 4.249, p < .001, demonstrating that perceptions of positional competition were significantly related to athletes' perceptions of moral behaviors. The effect size (computed by  $1 - \lambda$ ) for the full model was .435, explaining approximately 44% of the shared variance between the two variable sets. Dimension reduction analysis produced four functions with squared canonical correlations ( $R_c^2$ ) of .289, .162, .040, and .012, respectively. In addition to the statistical significance of the full model, function 2 to 4 was statistically significant, F(18, 546.37) = 2.564, p < .001. Function 3 to 4 and function 4 were not statistically significant, F(10, 388.00) = 1.038, p = .41 and F(4, 195.00) = .590, p = .67.

Given the squared canonical correlations for each function, only the first two functions were considered noteworthy (i.e., >10% of shared variance; Sherry & Henson, 2005). Table II presents the standardized canonical function coefficients and structure coefficients for functions 1 and 2. According to the  $R_c^2$  effects, the first and second functions contributed meaningfully to the shared variance between the variable sets explaining 28.9% and 16.2% of the variance, respectively. For function 1, results indicated that perceptions of effort to improve in one's position, pushing other teammates within one's position, and self-awareness about one's ability were positively associated with prosocial behavior toward teammates. Regarding function 2, comparison of one's performance to others in the same position was pos-

	Func	tion 1	Function 2			
Predictor Variables	Canonical Coefficient	Structure Coefficient	Canonical Coefficient	Structure Coefficient		
Effort to Improve	164	485	487	333		
Push by Teammate	.191	349	261	345		
Push Teammate	980	922	.001	107		
Comparison	.020	429	1.104	.716		
Self-Awareness	273	617	256	.134		
Coach Recognition	.261	290	.041	268		
Coach Selection	.005	122	017	170		
Criterion Variables						
Prosocial Teammate	879	925	496	376		
Prosocial Opponent	039	257	.149	.142		
Antisocial Teammate	205	419	.622	.838		
Antisocial Opponent	213	423	.378	.718		

 TABLE II

 Canonical Coefficients and Structure Coefficients for Functions 1 and 2 (n = 203).

Note. Structure coefficients above 1.451 are underlined to emphasize primary contributions in the model.

itively associated with antisocial behavior toward teammates as well as opponents<sup>2</sup>.

# Discussion

Examining positional competition within sport provides a novel avenue to extend group dynamics literature and increase our understanding of socially complex sport environments. The purpose of the current study was to assess the relationships between dimensions of positional competition and prosocial and antisocial behavior. Results illustrated that effort to improve, pushing one's teammates, and self-awareness of ability were positively related to prosocial behavior toward teammates, while comparison of performance was positively related to antisocial behaviors toward teammates and opponents. These findings build from initial qualitative work investigating the role

 $<sup>^{\</sup>rm 2}\,$  The data that support the findings of this study are available from the corresponding author upon reasonable request.

of positional competition in sport (Harenberg et al., 2016a; Harenberg et al., 2016b) and highlight potential adaptive and maladaptive outcomes that may stem from competing for playing time (Harenberg et al., 2019).

The findings that positional competition link with prosocial behavior align with organizational literature investigating the conditions under which intrateam competition can be constructive (e.g., Tjosvold et al., 2006). Effort to improve one's personal ability and pushing other teammates in the same position to elevate their performance were positively associated with prosocial behavior toward teammates. One interpretation is that when competition for playing time within interdependent groups is task-focused and perceived as advantageous for the enhancement of team performance, it may elicit constructive responses toward other group members (Harenberg et al., 2019; Tjosvold et al., 2006). Understanding one's ability in reference to others in one's position was also positively linked with prosocial behavior toward teammates. This may suggest that for positional competition to foster engagement in voluntary helping behaviors toward teammates, self-evaluative information relative to other competitors is necessary (Festinger, 1954; Harenberg et al., 2019).

Positional competition was also related to athlete perceptions of antisocial behaviors. Comparison of personal performance to other competitors in the same position was positively associated with antisocial behavior toward teammates as well as opponents. The nature of comparing performance standards to other team members and emphasizing normative ability has conceptual ties with ego goal orientations, which have been linked with antisocial behavior in sport (Boardley & Kavussanu, 2010). Alternatively, rather than competition itself eliciting antisocial behavioral responses, variation in moral behavior may be shaped by individual characteristics such as competitive orientations (Graupensperger et al., 2018; Swab & Johnson, 2019). Though these conceptual explanations are speculative, they offer researchers potential moderating and mediating mechanisms through which positional competition may link with moral behaviors.

Although our findings further the understanding of positional competition in sport, there are limitations that warrant attention. From a conceptual lens, it is important to note that while positional competition taps perceptions of competition with specific teammates, the prosocial and antisocial behavior scale assesses behavior toward all of one's teammates and opponents. An examination of how positional competition relates to prosocial and antisocial behaviors toward the players in one's own position may offer a more nuanced perspective of these associations. From a methodological perspective, competition for playing time is an on-going and dynamic process (Harenberg et al., 2019) which is likely to fluctuate over the course of a season. A fruitful avenue for future research may be to assess longitudinal perceptions of positional competition and moral behavior, as well as potential between and within group differences.

From a practical perspective, these findings are relevant for sport coaches given their reward power regarding the distribution of playing time (Laois et al., 2003) and their involvement in structuring competitive team environments. Considering coaches play a key role in establishing and developing norms surrounding how athletes engage in positional competition (Harenberg et al., 2016b), they may wish to consider how specific processes of competing for plaving time contribute to athletes' moral behaviors. With respect to our findings, it may be advantageous for coaches to use strategies such emphasizing personal effort to improve in one's position, providing athletes with objective feedback about how they perform in their position, and limiting their emphasis on social comparison between teammates regarding plaving time. In future studies, researchers are encouraged to build from these findings by considering potential influential factors (e.g., goal orientation, motivational climate; Ames, 1992; Nicholls, 1989) in the relationship between positional competition and moral behavior as well as other outcomes (e.g., group dynamics). The integration of theoretical perspectives that link specific dimensions of positional competition to conceptually related group dynamics is important to advance intrateam competition research in sport. These research endeavors will deepen our understanding of how competition within teams may contribute to athletes' sport experiences.

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Manuscript received January 2022. Accepted for publication September 2022.