

Consequences of prosocial and antisocial behavior for the recipient

Al-yaaribi, Ali Salam Ali; Kavussanu, Maria; Ring, Christopher

DOI:

[10.1016/j.psychsport.2016.06.012](https://doi.org/10.1016/j.psychsport.2016.06.012)

License:

Creative Commons: Attribution-NonCommercial-NoDerivs (CC BY-NC-ND)

Document Version

Peer reviewed version

Citation for published version (Harvard):

Al-yaaribi, ASA, Kavussanu, M & Ring, C 2016, 'Consequences of prosocial and antisocial behavior for the recipient', *Psychology of Sport and Exercise*, vol. 26, pp. 102–112.

<https://doi.org/10.1016/j.psychsport.2016.06.012>

[Link to publication on Research at Birmingham portal](#)

Publisher Rights Statement:

Checked 21/7/2016

General rights

Unless a licence is specified above, all rights (including copyright and moral rights) in this document are retained by the authors and/or the copyright holders. The express permission of the copyright holder must be obtained for any use of this material other than for purposes permitted by law.

- Users may freely distribute the URL that is used to identify this publication.
- Users may download and/or print one copy of the publication from the University of Birmingham research portal for the purpose of private study or non-commercial research.
- User may use extracts from the document in line with the concept of 'fair dealing' under the Copyright, Designs and Patents Act 1988 (?)
- Users may not further distribute the material nor use it for the purposes of commercial gain.

Where a licence is displayed above, please note the terms and conditions of the licence govern your use of this document.

When citing, please reference the published version.

Take down policy

While the University of Birmingham exercises care and attention in making items available there are rare occasions when an item has been uploaded in error or has been deemed to be commercially or otherwise sensitive.

If you believe that this is the case for this document, please contact UBIRA@lists.bham.ac.uk providing details and we will remove access to the work immediately and investigate.

1 Running Head: PROSOCIAL AND ANTISOCIAL BEHAVIORS

2

3 THIRD REVISION

4

5

6

7

8 Consequences of Prosocial and Antisocial Behaviors for the Recipient

9

10

11

12

13

14

15 In Press: Psychology of Sport and Exercise

16

17

18

19

20

21

PROSOCIAL AND ANTISOCIAL BEHAVIORS

1 Abstract

2 *Statement of problem:* Although studies have examined antecedents of prosocial and
3 antisocial behaviors in sport, little is known about the potential consequences of these
4 behaviors for the recipient. In this research, we examined: (a) whether teammate prosocial
5 and antisocial behaviors are related to athletes' effort, performance, enjoyment and anger
6 during a match and the mediating role of enjoyment and anger (Studies 1 and 2); and (b)
7 whether prosocial and antisocial behaviors are related to commitment to play for one's team
8 and whether enjoyment and performance mediate these relationships (Study 2).

9 *Method:* Right after a game, football/soccer ($N = 203$; Study 1) and basketball ($N = 281$;
10 Study 2) players completed a multi-section questionnaire measuring the aforementioned
11 variables.

12 *Results:* Prosocial teammate behavior was positively related to effort, performance, and
13 enjoyment, and enjoyment mediated the relationship between prosocial teammate behavior
14 and effort and performance; prosocial teammate behavior was also positively related to
15 commitment directly and indirectly through enjoyment and performance. Antisocial
16 teammate behavior was positively related to anger and negatively related to effort and
17 performance. Anger and performance mediated the effects of antisocial teammate behavior
18 on effort and commitment, respectively.

19 *Conclusions:* Our findings demonstrate the importance of acting prosocially and not acting
20 antisocially toward one's teammates and may have implications for enjoyment, effort,
21 performance, and commitment in sport.

22

23 *Keywords:* performance, commitment, enjoyment, effort, mediation

24

25

PROSOCIAL AND ANTISOCIAL BEHAVIORS

Consequences of Teammate Prosocial and Antisocial Behaviors for the Recipient

Moral behavior in sport has attracted considerable research attention in recent years (see Kavussanu, 2012). While playing sport, athletes engage in a variety of prosocial behaviors, such as helping other players off the floor, helping injured players, and supporting or encouraging their teammates (Kavussanu & Boardley, 2009); they also engage in antisocial acts, such as trying to injure their opponents and verbally abusing their teammates (e.g., Kavussanu & Boardley, 2009; Kavussanu, Seal, & Phillips, 2006). Although much research has investigated antecedents of prosocial and antisocial behaviors (e.g., Hodge & Lonsdale, 2011; Kavussanu, Stanger, & Ring, 2015; Kavussanu, Ring, & Kavanagh, 2015), we know little about the consequences of these behaviors for the *recipient*. The present research was designed to address this issue.

A theoretical framework that is pertinent to this research is the social cognitive theory of moral thought and action (Bandura, 1991). According to Bandura (1991), individuals develop moral rules or standards from a variety of sources such as modeling, direct tuition, and others' evaluative social reactions. In addition, the social environment influences the individual's behavior, but the individual can also affect the environment. Importantly, Bandura (1991) has called for a focus on moral *behavior* highlighting the consequences of one's actions for the recipient. In contrast to structural developmental theorists, who focus on moral cognition (e.g., Kohlberg, 1984), Bandura (1991) emphasized that behavior – regardless of one's thoughts or motives – has consequences for others. For example, verbally abusing or hitting another person should result in some psychological suffering for the recipient regardless of the reasons that led to the behavior.

Bandura (1999) has also distinguished between proactive morality, which is the power to behave humanely, and inhibitive morality, which is the power to refrain from behaving inhumanely. These two dimensions of morality have been investigated in sport research as

PROSOCIAL AND ANTISOCIAL BEHAVIORS

1 prosocial and (lack of) antisocial behavior, respectively. Prosocial behavior is voluntary
2 behavior intended to help or benefit another individual (Eisenberg & Fabes, 1998), while
3 antisocial behavior has been defined as behavior intended to harm or disadvantage another
4 individual (Kavussanu & Boardley, 2009; Sage, Kavussanu, & Duda, 2006). Prosocial and
5 antisocial behaviors can have positive and negative consequences, respectively, for the
6 recipient. It has been argued that considering both dimensions of morality is important for a
7 more complete understanding of the moral conduct that takes place in sport (Kavussanu,
8 2012; Kavussanu & Boardley, 2009).

9 Investigating prosocial and antisocial behaviors using both observational (e.g.,
10 Kavussanu et al., 2006, 2009) and self-report (e.g., Kavussanu & Boardley, 2009) methods,
11 researchers have found that a number of such acts occur in sport and they are directed toward
12 both opponents and teammates. For example, team sport athletes have reported - or have been
13 observed - to congratulate their teammates for good play, give positive feedback and
14 encourage their teammates after a mistake, thus engaging in prosocial behavior; but also to
15 verbally abuse, swear, argue, criticize, and express frustration at a teammate's poor play, thus
16 displaying antisocial behavior (Kavussanu et al., 2006, 2009; Kavussanu & Boardley, 2009).
17 The aim of the present research was to investigate potential consequences of prosocial and
18 antisocial teammate behaviors for the recipient. We focused only on potential consequences
19 of *teammate* behavior because one's teammates are stable and could have more lasting
20 consequences for the recipient; in addition, their behavior could be influenced by the coach,
21 thus, one can more readily intervene on teammate behavior. Finally, because teammate
22 behaviors are different from opponent behaviors (see Kavussanu & Boardley, 2009), they
23 could also have distinct consequences for the recipient.

24 **Consequences of Teammate Behaviors**

PROSOCIAL AND ANTISOCIAL BEHAVIORS

1 In his social cognitive theory of moral thought and action, Bandura (1991) outlined the
2 morally relevant consequences of behavior (e.g., the suffering experienced by the victim of
3 aggressive behavior). However, besides these apparent consequences, the teammate
4 behaviors identified in sport morality research could also have achievement-related
5 consequences. For example, players who are the recipients of antisocial conduct from their
6 teammates may be de-motivated to try hard during a match. These behaviors could be
7 interpreted as lack of trust of one's teammates in the player's athletic ability and could
8 demoralize the recipient. In contrast, receiving positive or constructive feedback from a
9 teammate or being congratulated by a teammate for good play may increase the recipient's
10 confidence in their ability to perform, which in turn should enhance their motivation and
11 performance. Indeed, positive feedback about performance on a shuttle run led to higher
12 perceived competence, which was associated with greater intentions to perform similar
13 activities in the future (Mouratidis, Vansteenkiste, Lens, & Sideridis, 2008). Social cognitive
14 theory (Bandura, 2001) underlines the important role that the social environment plays in
15 influencing the individual's behavior; one's teammates are part of this environment.

16 The present study is grounded on social cognitive theory (Bandura, 2001) as well as on
17 achievement goal theory (Ames, 1992) and related research. More specifically, a construct
18 derived from achievement goal theory that shares some similarities with prosocial and
19 antisocial teammate behaviors is peer motivational climate (Vazou, Ntoumanis, & Duda,
20 2006). Peer climate refers to the emphasis placed by one's teammates on self-referenced (i.e.,
21 task involving) versus other-referenced (i.e., ego involving) criteria for success (e.g.,
22 Ntoumanis & Vazou, 2005; Vazou et al., 2006). One dimension of the task-involving peer
23 climate – improvement - pertains to teammates providing feedback and encouragement to
24 improve. The teammate behaviors encompassed in this dimension (e.g., help and encourage
25 each other to improve), in addition to focusing on self-referenced achievement, can be

PROSOCIAL AND ANTISOCIAL BEHAVIORS

1 classified as prosocial, because they are voluntary behaviors with potentially positive
2 consequences for the recipient (Eisenberg & Fabes, 1998; Kavussanu, 2012). Similarly, the
3 intra-team conflict dimension of ego-involving peer climate pertains to negative behaviors
4 toward teammates (e.g., criticizing and laughing at teammates when they make mistakes,
5 making negative comments that put teammates down) that could be classified as antisocial
6 behaviors because they can have negative consequences for the recipient (see Kavussanu,
7 2012).

8 Due to the similarities between prosocial and antisocial teammate behaviors and some
9 dimensions of the peer motivational climate, findings of peer climate studies can be used as
10 additional support for our research hypotheses regarding the consequences of teammate
11 prosocial and antisocial behaviors. In previous research, Vazou et al (2006) reported a
12 positive – albeit weak – relationship between task-involving peer climate and coach and PE
13 teacher-rated effort, when confronted with difficult tasks; the reverse relationship was
14 revealed between effort and ego-involving climate. These findings were replicated in a
15 second study, which examined coach-rated effort over the previous three months (Ntoumanis,
16 Taylor, & Thøgersen-Ntoumani, 2012). Based on these findings, it is reasonable to expect
17 that prosocial and antisocial teammate behaviors would be differentially associated with
18 effort during a match. In turn, effort could lead to better performance, thus teammate
19 behavior could also influence the recipients' performance indirectly via effort. Research has
20 established links between effort and performance in sport (Cooke, Kavussanu, McIntyre,
21 Boardley, & Ring, 2011; Cooke, Kavussanu, McIntyre, & Ring, 2013).

22 The recipients of prosocial teammate behavior could also experience different
23 emotions. Prosocial teammate behavior could lead athletes to feel more socially connected
24 with their teammates and due to this social bond they may experience enjoyment, which is a
25 positive emotional response to sport and includes feelings such as fun, pleasure, and liking

PROSOCIAL AND ANTISOCIAL BEHAVIORS

1 (Scanlan, Russell, Beals, & Scanlan, 2003). Previous research in young athletes has shown
2 that a task-involving peer climate was a strong positive predictor of enjoyment (Vazou et al.,
3 2006) as well as vitality (Ntoumanis et al., 2012), which is a positive emotional experience
4 and an index of well being. Thus, prosocial teammate behavior may lead to enjoyment, and
5 this in turn could influence the recipients' effort and performance. Research has established
6 links between enjoyment, effort, and performance (Cooke et al., 2013). When individuals
7 enjoy performing a particular task, they tend to spend more time on it and perform better
8 (Puca & Schmalt, 1999). Consequently, the positive effects of prosocial teammate behavior
9 on the recipients' effort and performance during a match could occur via enjoyment. This is
10 in line with Bandura's (2001) social cognitive theory, where affective states are highlighted
11 as one of the psychological mechanisms through which the environment influences the
12 individual's behavior.

13 Finally, antisocial teammate behavior could lead to anger, which is an emotion that
14 involves high arousal and results from an event perceived to be a "demeaning offence against
15 me and mine" (Lazarus, 2000, p. 234 cited in Jones, Lane, Bray, Uphill, & Catlin, 2005, p.
16 410). Being the recipient of verbal abuse and criticism from one's teammates could elicit
17 anger as the recipients might feel that they are offended or treated disrespectfully by their
18 teammates. Anger was the predominant negative emotional response of disrespectful
19 treatment (Miller, 2001) and offenses to one's self (Lazarus, 1991) in organizations. In turn,
20 anger, could influence effort and performance, although the manner in which this could occur
21 is not clear. Some studies have found a negative link between anger and performance (e.g.,
22 Beedie, Terry, & Lane, 2000; Uphill, Groom, & Jones, 2012), but others have shown that
23 anger facilitated performance through generating greater effort (Robazza & Bortoli, 2007;
24 Woodman et al., 2009). Thus, anger may mediate the effect of antisocial teammate behavior
25 on performance, but it is not clear in which direction.

1 **The Present Research**

2 To date, much of the research on morality in sport has investigated antecedents of
3 prosocial and antisocial behaviors (see Kavussanu, 2012). Little is known about the potential
4 consequences of these behaviors for the recipient. In this research, we examined cognitive
5 (commitment, discussed in Study 2), affective (enjoyment, anger) and behavioral (effort,
6 performance) consequences of moral behavior. We focus on these variables as potential
7 consequences of moral behavior because these are achievement-related variables that are
8 important in the achievement context of sport. Moreover, it has been suggested that prosocial
9 teammate behaviors are beneficial for the entire team because they can enhance individual
10 players' motivation and subsequent performance (Kavussanu & Boardley, 2009).

11 In two studies, we examined: (a) whether prosocial and antisocial teammate behaviors
12 are associated with recipients' effort, performance, enjoyment and anger during a match; and
13 (b) whether enjoyment and anger mediate the relationship between prosocial and antisocial
14 behaviors, respectively, and effort and performance. Although objective performance is an
15 important outcome in sport, quantifying this variable in team sports is challenging. A variable
16 that can be used as a proxy for actual performance is perceived performance, which refers to
17 a self-evaluation of how an individual has performed at a specific task (Dewar & Kavussanu,
18 2012; Graham, Kowalski, & Crocker, 2002) and is informed by objective performance. We
19 refer to perceived performance as "performance" interchangeably with "perceived
20 performance" for conciseness.

21 We hypothesized that prosocial teammate behavior (to which we also refer hereafter as
22 prosocial behavior) would be positively related to effort, enjoyment (e.g., Ntoumanis et al.,
23 2012; Vazou et al., 2006), and perceived performance. We also expected that enjoyment
24 would mediate the relationship between prosocial behavior and effort and perceived
25 performance (e.g., Cooke et al., 2011, 2013; van de Pol & Kavussanu, 2011). Conversely, we

PROSOCIAL AND ANTISOCIAL BEHAVIORS

1 hypothesized that antisocial teammate behavior (to which we also refer hereafter as antisocial
2 behavior) would be negatively related to recipients' effort (e.g., Ntoumanis et al., 2012;
3 Vazou et al., 2006) and performance during a match and positively related to anger. Finally,
4 we expected that anger would mediate the relationship between antisocial behavior and effort
5 and performance, but due to mixed findings in the literature (e.g., Beedie et al., 2000;
6 Woodman et al., 2009), we did not specify the direction of this relationship.

7 We sought to answer these questions in two studies using two independent samples of
8 team sport athletes. We focused on team sports because teammate behavior is more likely to
9 influence the recipient when there is frequent interaction, which typically occurs in team
10 sports. In the second study, we also examined commitment as a further potential consequence
11 of teammate behaviors and investigated whether enjoyment and perceived performance
12 mediated the relationship between teammate behaviors and commitment.

13 Study 1

14 Method

15 Participants and procedure.

16 Participants were male ($n = 103$) and female ($n = 100$) football players recruited from
17 21 football clubs, from two regional leagues, in the UK. At the time of data collection,
18 participants ranged in age from 16 to 36 years old ($M = 23.46$; $SD = 4.27$), had been playing
19 competitive football for 2-25 years ($M = 11.97$, $SD = 4.48$), and had been playing for their
20 current team for 1-16 years ($M = 3.28$; $SD = 2.50$). Their highest level of competition was
21 club ($n = 67$; 37.4%), county ($n = 63$; 31%), regional ($n = 45$; 22.2%), national ($n = 16$;
22 7.9%), and international ($n = 2$; 1%); one participant left this question unanswered (1%).

23 After obtaining ethical approval from the University Ethics Committee, we identified
24 coaches of football teams, via the internet, we contacted these coaches, and we asked them to
25 let players participate in the study. Data were collected within 30 minutes of the end of a

PROSOCIAL AND ANTISOCIAL BEHAVIORS

1 football match¹. Players were informed of the purpose of the study, that their participation
2 was voluntary, their responses would only be used for research purposes and would be kept
3 confidential, no one would be identified by name, and that they could withdraw their
4 participation at any time. Questionnaires were distributed by research assistants, and data
5 collection took place 2-4 months after the season had started. The order of questionnaires was
6 counterbalanced to avoid order effects.

7 **Measures.**

8 ***Perceived teammate behavior.*** Adapted versions of the two teammate behavior
9 subscales of the Prosocial and Antisocial Behavior in Sport Scale (PABSS; Kavussanu &
10 Boardley, 2009) were used to measure perceived teammate behavior. The original subscales
11 comprise four items that measure prosocial behavior and five items that measure antisocial
12 behavior in team sports. Participants were asked to think about how often their teammates
13 engaged in each behavior toward them during the match they had just played. The stem
14 “During today’s match, my teammates” was followed by items measuring prosocial (e.g.,
15 encouraged me) and antisocial (e.g., argued with me) behaviors. An additional item with high
16 face validity (i.e., supported me) was included in order to increase the internal reliability of
17 the prosocial teammate behavior subscale (as per Bolter & Weiss, 2013).

18 Participants indicated their responses on a Likert scale ranging from 1 (*never*) to 5 (*very*
19 *often*). Evidence for the factorial, convergent, and concurrent validity of the PABSS, as well
20 as for the internal consistency of the scores of the subscales measuring prosocial ($\alpha = .74$) and
21 antisocial ($\alpha = .83$) behavior toward teammates has been provided (Kavussanu & Boardley,
22 2009; Kavussanu, Stanger, & Boardley, 2013). In this study, Confirmatory Factor Analysis
23 (CFA) using EQS 6.1 and the robust maximum likelihood method indicated that the two-
24 factor model had a very good fit to the data: Satorra-Bentler scaled χ^2/df : 52.27/34, RCFI:
25 .971, SRMR: .057, RMSEA: .044. Factor loadings ranged from .60 to .85 for prosocial

PROSOCIAL AND ANTISOCIAL BEHAVIORS

1 behavior and .56 to .83 for antisocial behavior. Hu and Bentler (1998) suggest that values
2 close to .95 for the CFI, .08 for SRMR, and .06 for RMSEA indicate a good fit to the data.

3 **Enjoyment.** We assessed enjoyment with the four-item enjoyment subscale of the sport
4 commitment model (Scanlan, Carpenter, Lobel, & Simons, 1993). Participants read each item
5 and indicated their level of enjoyment in the match they had just played. Example items are
6 “Did you enjoy playing today?” and “Did you like playing today?” Responses were made on
7 a Likert scale, with anchors of 1 (*not at all*) and 5 (*very much*). The scale demonstrated
8 factorial and discriminant validity and reliability ($\alpha \geq .90$) in past research (Scanlan et al.,
9 1993). CFA conducted on the present data showed an excellent fit to the data: Satorra-Bentler
10 scaled χ^2/df : 1.01/2, RCFI: 1.000, SRMR: .003, RMSEA: .000; factor loadings range: .92 to
11 .94.

12 **Effort.** We used the five-item effort subscale of the Intrinsic Motivation Inventory
13 (Ryan, 1982) to measure participants’ effort during the match they had just played. Example
14 items are “I put a lot of effort into this match” and “I tried very hard while playing this
15 match”. Participants responded to each item on a Likert scale, ranging from 1 (*not at all true*)
16 to 7 (*very true*). Evidence for the internal consistency of the scores ($\alpha = .84$) as well as the
17 factorial and discriminant validity of this scale has been provided in previous research
18 (McAuley, Duncan, & Tammen, 1989). CFA conducted on the present data showed a good fit
19 to the data: Satorra-Bentler scaled χ^2/df : 8.84/2, RCFI: .986, SRMR: .020, RMSEA: .111;
20 factor loadings ranged from .62 to .94.

21 **Perceived performance.** Participants’ perceptions of their performance in the match
22 they had just played were assessed with a 5-item scale developed based upon a measure of
23 subjective improvement (Balaguer, Duda, & Crespo, 1999) and used in previous research
24 (Dewar & Kavussanu, 2012). Participants were asked to rate their technical (e.g., ball
25 control), tactical (e.g., set play), physical (e.g., endurance), and psychological (e.g.,

PROSOCIAL AND ANTISOCIAL BEHAVIORS

1 regrouping after poor play) aspects of their performance as well as their overall performance
2 during the match they had just played. Responses to these items were made on a Likert scale
3 ranging from 1 (*very poor*) to 10 (*excellent*). In past research, factor analysis revealed one
4 factor that explained 65.10% of the variance, factor loadings ranged from .63 to .86 (Dewar
5 & Kavussanu, 2012), and the scale scores had very good reliability ($\alpha = .86$). In this study,
6 CFA using EQS 6.1 and the robust maximum likelihood method indicated that the model had
7 a good fit to the data: Satorra-Bentler scaled χ^2/df : 19.92/5, RCFI: .969, SRMR: .047,
8 RMSEA: .103, and factor loadings ranged from .53 to .98.

9 **Anger.** We used the four-item anger subscale of the Sport Emotion Questionnaire
10 (Jones et al., 2005) to measure the anger experienced during the match participants had just
11 played. Players were asked to rate the extent to which they felt irritated, furious, annoyed,
12 and angry, on a Likert scale ranging from 1 (*not at all*) to 5 (*extremely*). The anger subscale
13 has shown good concurrent validity and reliability ($\alpha = .82$), when used post-competition
14 (Allen, Jones, & Sheffield, 2009). In this study, CFA showed a good fit to the data: Satorra-
15 Bentler scaled χ^2/df : 9.86/2, RCFI: .973, SRMR: .032, RMSEA: .119; factor loadings range:
16 .64 to .84.

17 **Results**

18 **Preliminary analyses.**

19 Before the main statistical analyses, preliminary data screening was conducted to
20 check for normality, missing values, and outliers for each variable. When missing data is
21 below 5%, any method for replacing missing values is appropriate (Tabachnick & Fidell,
22 2001). Missing data (0.4 %) for each variable were replaced with the mean of the respective
23 variable.

24 **Descriptive statistics, correlation analyses, and scale reliabilities.**

PROSOCIAL AND ANTISOCIAL BEHAVIORS

1 Descriptive statistics, correlations, and reliabilities of scale scores can be seen in Table
2 1. On average, participants reported that during the match they had just played, their
3 teammates behaved toward them “sometimes” to “often” prosocially and “never” to
4 “sometimes” antisocially. They also reported high levels of enjoyment, effort, and
5 performance and “low” to “moderate” levels of anger. Finally, compared to females, males
6 reported significantly more frequent antisocial teammate behavior, lower enjoyment, and
7 more anger during the match. Scores in all measures showed very good internal consistency
8 (alpha range = .80 - .94). Kline (2005) has offered rough guidelines for interpreting reliability
9 coefficients: Values around .70, .80 and .90 considered as adequate, very good, and excellent,
10 respectively.

11 **Main analyses.**

12 The purpose of the study was to examine whether (a) prosocial and antisocial behaviors
13 are associated with effort, performance, enjoyment and anger during a match, and (b) whether
14 enjoyment and anger mediate the relationship between prosocial and antisocial behaviors,
15 respectively, and effort and performance; in these analyses we controlled for gender. To this
16 end, we used the PROCESS (Hayes, 2013) SPSS macro, which simultaneously tests direct,
17 indirect, and total effects in simple and multiple mediation models. Direct effects are the
18 effects of the predictor on the outcome variable, that occur independently of the mediator(s);
19 indirect effects are the effects of the predictor on the outcome variable via the mediator(s);
20 and total effects are the sum of the direct and indirect effects. Bootstrapping was set at 5000
21 samples with bias-corrected 95% confidence intervals estimated for all effects. An effect is
22 significant when the confidence interval does not contain zero. The Completely Standardized
23 Indirect Effect (CSIE) is reported as the effect size (Preacher & Kelley, 2011), and values of
24 .01, .09, and .25 represent small, medium, and large effect sizes, respectively (Cohen, 1992).
25 All direct, indirect, and total effects are presented in Table 2. In the description below, we

PROSOCIAL AND ANTISOCIAL BEHAVIORS

1 have focused on the results that pertain directly to our study purposes.

2 First, we examined whether prosocial behavior was associated with effort, performance,
3 and enjoyment, and whether the effects of prosocial behavior on effort and performance were
4 mediated by enjoyment; in these analyses, antisocial behavior and anger were covariates. As
5 can be seen in Table 2 (top) and Figure 1, prosocial behavior had positive and significant
6 direct effects on all three variables (enjoyment, effort, and performance). Moreover, prosocial
7 behavior had significant indirect effects - via enjoyment - on effort ($b = .082$, 95% CI = .030,
8 .167) and performance ($b = .152$, 95% CI = .085, .281), supporting the mediating role of
9 enjoyment. In addition, as can be seen in Table 2 (top), prosocial behavior had indirect effects
10 on performance through its *serial* positive effects on enjoyment and then effort. Both the total
11 and total indirect effects were significant.

12 We used the same serial mediation analysis to investigate (a) whether antisocial
13 behavior was associated with effort, performance, and anger and (b) whether the effects of
14 antisocial behavior on effort and performance were mediated by anger; prosocial behavior
15 and enjoyment were covariates in this analysis. As shown in Table 2 (bottom) and Figure 1,
16 antisocial behavior had a negative effect on effort, and a positive effect on anger, supporting
17 our hypotheses, but no effect on performance. In addition, anger mediated the relationship
18 between antisocial behavior and effort (positively), as indicated by the significant indirect
19 effect ($b = .037$, 95% CI = .005, .097) of antisocial behavior on effort via anger (Table 2,
20 bottom). The total effect of antisocial behavior on effort was negative and significant, while
21 the total effect on performance was not significant.

22 Finally, we explored whether anger and effort sequentially mediated the effect of
23 antisocial behavior on performance. Although we found a positive significant indirect effect
24 of antisocial behavior on performance via anger and then effort, the total and total indirect

PROSOCIAL AND ANTISOCIAL BEHAVIORS

1 effects were not significant. Thus, antisocial behavior had an overall negative effect on effort
2 but no overall effect on performance.

3 **Study 2**

4 The results of Study 1 broadly supported our research hypotheses: The findings
5 revealed that football players, who perceived more frequent prosocial behavior from their
6 teammates toward them during a match, were more likely to enjoy the football match, exerted
7 more effort, and reported higher levels of performance – as assessed at the end of the match.
8 In contrast, players who perceived that their teammates acted antisocially toward them
9 reported greater anger and lower effort. In Study 2, we aimed to determine whether these
10 findings would be replicated with a different sample and team sport.

11 We also examined an additional potential consequence of prosocial and antisocial
12 teammate behaviors: sport commitment, defined as “a psychological construct representing
13 the desire and resolve to continue sport participation” (Scanlan et al., 1993, p. 6). Players
14 with a high level of commitment for their team tend to remain involved with their team and
15 persist despite failure and challenges (Scanlan et al., 2003). One of the sources of sport
16 commitment is social support, defined as “feeling encouraged and supported by other people
17 for playing” (Scanlan et al, 2003, p. 379). Although social support is distinct from teammate
18 prosocial behavior, the two constructs share some similarities. Indeed, supporting and
19 encouraging a teammate are prosocial behaviors because they are intended to benefit
20 someone else. In past research, teammate social support (e.g., my teammates encourage me to
21 do my sport) enhanced commitment (Santi, Bruton, Pietrantonio, & Mellalieu, 2014). Thus, we
22 expected that prosocial teammate behavior during a match would be positively related to
23 athletes’ commitment to continue playing for their team. Although commitment is a general
24 psychological state that is unlikely to be affected by a single event, players’ experiences with
25 their teammates during a match should be indicative of their typical sport experiences.

PROSOCIAL AND ANTISOCIAL BEHAVIORS

1 We also examined whether the relationship between prosocial teammate behavior and
2 sport commitment was mediated by enjoyment and perceived performance. Enjoyment has
3 been identified as one of the most important sources of sport commitment (Scanlan et al.,
4 1993, 2003), and this is supported by empirical research (e.g., Scanlan et al., 1993, 2003;
5 Ullrich-French & Smith, 2009). One study has found that when athletes have fun and
6 experience positive team interactions, they are more likely to be committed (e.g., Torregrosa
7 et al., 2011). Based on these findings, we expected that prosocial teammate behavior would
8 lead to higher commitment, because such behavior is expected to create an enjoyable
9 experience for the players. We also hypothesized that perceived performance would mediate
10 the relationship between prosocial behavior and sport commitment based on previous links
11 between athletes' perceived competence and performance and team commitment (Tsai Wen
12 & Chang Kong, 2010; Ullrich-French & Smith, 2009; Weiss & Weiss, 2007).

13 With respect to antisocial behavior, we expected that this behavior would be negatively
14 associated with players' commitment. Experiencing negative behavior from one's teammates,
15 such as arguing, swearing and verbal abuse may lead players to not want to continue their
16 participation in the team because such behavior makes the sport experience unpleasant. In
17 support of this argument, two studies showed that interpersonal aggressive behavior between
18 employees was associated with lower organizational commitment (Aubé & Rousseau, 2011;
19 LeBlanc & Kelloway, 2002).

20 In sum, in Study 2, we posited the following hypotheses. First, we hypothesized that
21 Study 1 findings would be replicated in a sample from another team sport (i.e., basketball).
22 Second, we expected that prosocial behavior would be positively related to commitment (e.g.,
23 Torregrosa et al., 2011), and that this relationship would be mediated by enjoyment and
24 perceived performance (e.g., Ullrich-French & Smith, 2009; Weiss & Weiss, 2007). We also
25 examined whether prosocial behavior is related to commitment indirectly through its serial

PROSOCIAL AND ANTISOCIAL BEHAVIORS

1 effects on (a) effort and perceived performance and (b) enjoyment, effort, and perceived
2 performance. Finally, we hypothesized that antisocial behavior would be negatively related to
3 commitment (e.g., Aubé & Rousseau, 2011) directly or indirectly via performance, anger, and
4 effort.

5 **Method**

6 **Participants and procedure.**

7 Participants were male ($n = 154$) and female ($n = 127$) basketball players recruited from
8 teams competing in regional leagues ($n = 21$) and the British universities league ($n = 13$) in
9 the UK. The players ranged in age from 16 to 53 years old ($M = 25.01$, $SD = 6.88$). They had
10 competed in their sport for an average of 10 years ($M = 10.94$, $SD = 6.20$) and had played for
11 their current team on average for three years ($M = 3.41$, $SD = 2.42$). The procedure used in
12 Study 1 was also used in Study 2.

13 **Measures.**

14 ***Teammate behavior, effort, performance, enjoyment, and anger.*** These variables were
15 measured using the same scales as in Study 1.

16 ***Commitment.*** We measured commitment using the respective subscale from the Sport
17 Commitment Model (Scanlan et al., 1993). The stem “After today’s match”, was followed by
18 four items measuring participants’ desire to continue playing for their team, such as “How
19 dedicated are you to continue playing for this team?” Participants responded on a Likert
20 scale, anchored by 1 (*not at all dedicated*) and 5 (*very dedicated*). This scale has acceptable
21 validity and reliability (Scanlan et al., 1993). CFA conducted on the present data showed an
22 excellent fit to the data: Satorra-Bentler scaled χ^2/df : 3.53/2, RCFI: .998, SRMR: .012,
23 RMSEA: .052; factor loadings range: .53 to .98.

24 **Results**

25 **Preliminary analyses.**

PROSOCIAL AND ANTISOCIAL BEHAVIORS

1 Preliminary analyses were performed to assess missing data and outliers. Only 4% of
2 the data points were missing, and these were replaced with the mean of each respective
3 variable. Eleven outliers ($> 3.29 SD$ from the mean) were removed (Tabachnick & Fidell,
4 2001).

5 **Descriptive statistics, correlation analyses, and scale reliabilities.**

6 Descriptive statistics, correlations, and scale reliabilities for all variables are presented
7 in Table 3. On average, participants reported that their teammates behaved prosocially toward
8 them “sometimes” to “often” and acted antisocially “never” to “sometimes” during the match
9 they had just played. Players reported “moderate” to “high” levels of enjoyment, effort,
10 performance, and commitment, and low levels of anger. Correlations were in the expected
11 direction. Males reported more prosocial and antisocial teammate behaviors, more anger, and
12 less effort than females. Scores of all measures had good-to-very-good internal consistency
13 (see Kline, 2005).

14 **Main analyses.**

15 Similar to the analyses conducted in Study 1, we used the PROCESS (Hayes, 2013)
16 SPSS macro in Study 2 to examine our study purposes. First, we examined (a) whether
17 prosocial behavior was associated with effort, performance, and enjoyment, and (b) whether
18 enjoyment mediated the effects of prosocial behavior on effort and performance; in this
19 analysis, we controlled for antisocial behavior, anger, and gender. A summary of all direct,
20 indirect, and total effects can be seen in Table 4 (top). As Table 4 and Figure 2 show,
21 prosocial behavior had significant direct positive effects on enjoyment, effort and
22 performance, and significant indirect effects on effort and performance via enjoyment. These
23 findings supported our hypotheses. We also found that prosocial behavior had an indirect
24 positive effect on: performance via effort; and performance via enjoyment and then effort

PROSOCIAL AND ANTISOCIAL BEHAVIORS

1 (serial mediation). The total effects of prosocial behavior on effort and performance were
2 positive, and the findings replicated those of Study 1.

3 In a second set of analysis, we examined (a) whether antisocial behavior was associated
4 with effort, performance, and anger (controlling for prosocial behavior, enjoyment, and
5 gender) and (b) whether anger mediated the effects of antisocial behavior on effort and
6 performance. Results of these analyses can be seen in Table 4 (bottom) and Figure 2.
7 Antisocial behavior had a direct negative effect on effort and performance and a positive
8 effect on anger; anger positively mediated the effect of antisocial behavior on effort but not
9 performance. We also found that the effect of antisocial behavior on performance was
10 positively mediated by the serial effects of anger and then effort, that is, antisocial behavior
11 was positively associated with anger, which, in turn, was positively associated with
12 performance via effort. However, the total effect of antisocial behavior on performance (i.e.,
13 direct and indirect effects via anger and effort) was negative (see Table 4, bottom) suggesting
14 that when all variables and effects are taken into consideration, antisocial behavior has a
15 negative effect on performance.

16 Finally, we examined whether prosocial behavior was associated with commitment and
17 whether enjoyment and performance mediate this relationship; in these analyses, antisocial
18 behavior and anger were included as covariates. The results are presented in Table 5 (top) and
19 Figure 2. It can be seen that prosocial behavior had a significant direct positive effect on
20 commitment and significant *indirect* effects via: enjoyment; performance; enjoyment and
21 then performance; effort and performance; and enjoyment, effort, and performance.
22 We also examined whether antisocial behavior was associated with commitment, and whether
23 this relationship was mediated by performance, controlling for prosocial behavior and
24 enjoyment. As can be seen in Table 5 (bottom) and Figure 2, although antisocial behavior had
25 no direct effect on commitment, it had indirect negative effects through performance and

PROSOCIAL AND ANTISOCIAL BEHAVIORS

1 through effort and then performance, and a small positive indirect effect through anger,
2 effort, and performance. However, neither the total effect nor the total indirect effects were
3 significant.

4 **Discussion**

5 Although many studies have examined antecedents of prosocial and antisocial
6 behaviors in sport (see Kavussanu, 2012 for a review), the consequences of these behaviors
7 for the recipient have received no research attention. We conducted two studies to investigate
8 whether team-sport athletes' perceptions of their teammates' prosocial and antisocial
9 behaviors during a match were related to their effort, perceived performance, enjoyment, and
10 anger, and whether enjoyment and anger respectively, mediated the relationships between
11 moral behavior and effort and performance. We also examined whether prosocial and
12 antisocial teammate behaviors were differentially related to commitment; and whether
13 enjoyment and perceived performance mediated these relationships.

14 **Consequences of Prosocial Behavior**

15 In both studies, the hypotheses that prosocial behavior would be positively related to
16 effort, perceived performance, and enjoyment were supported. Those players who perceived
17 that, during the match they had just played, their teammates offered encouragement and
18 support, congratulated them for good play, and gave them positive and constructive feedback,
19 were more likely to enjoy the game, exert more effort, and report better performance. These
20 findings support and extend previous research, which has shown that players' perceptions of
21 positive teammate behavior were positively associated with effort and enjoyment (Ntoumanis
22 et al., 2012; Vazou et al., 2006). Research on peer motivational climate has investigated
23 positive social behaviors in relation to emphasizing effort and improvement, whereas we did
24 not link teammate behaviors to these specific variables. Our findings highlight the importance
25 of a positive teammate environment for effort, enjoyment and performance in sport.

PROSOCIAL AND ANTISOCIAL BEHAVIORS

1 As hypothesized, the relationships between prosocial behavior and effort, as well as
2 performance, were mediated by enjoyment. These results are consistent with the findings of
3 previous studies, which have also reported positive relationships between enjoyment, effort,
4 and performance (e.g., Cooke et al., 2013; Puca & Schmalt, 1999). They are also in line with
5 social cognitive theory (Bandura, 1986, 2001), which has identified affective states as one of
6 the psychological mechanisms through which the environment exerts its influence on the
7 individual's behavior. Our findings suggest that the social environment evident in groups
8 such as sport teams has the potential to influence effort and perceived performance via
9 enjoyment.

10 The multiple mediation model showed that the relationship between prosocial behavior
11 and perceived performance was mediated through the *sequential* effects of enjoyment and
12 effort. That is, the results were consistent with the view that the recipients of prosocial
13 teammate behavior were more likely to perceive that they performed better during
14 competition because they enjoyed the game more, which, in turn, led them to try harder.
15 These findings suggest that effort and enjoyment are likely to be key determinants of
16 performance (e.g., Cooke et al., 2013; Puca & Schmalt, 1999). Athletes, who enjoy the sport
17 experience, also try hard, with subsequent positive effects on performance.

18 In Study 2, we also examined the relationship between prosocial behavior and
19 commitment and whether this relationship was mediated by enjoyment and perceived
20 performance. Consistent with our hypotheses, prosocial behavior had a direct effect on
21 commitment as well as indirect effects via enjoyment and perceived performance. Thus, the
22 higher commitment reported by athletes, who perceived that their teammates displayed
23 prosocial behavior toward them, may have been due to their enjoyment and perceived
24 performance. Although peer motivational climate has not been linked to commitment in
25 previous research, studies have shown that teammates' social support and encouragement,

PROSOCIAL AND ANTISOCIAL BEHAVIORS

1 higher perception of acceptance by one's teammates, and friendship quality (e.g., after I make
2 mistakes, my best friend on the team encourages me) were linked to players' sport
3 commitment (e.g., Santi et al., 2014; Scanlan et al., 1993; Ullrich-French & Smith, 2009).
4 Taken together with the results of past work, the current findings suggest that enjoyment and
5 performance may enhance sport commitment (e.g., Carpenter et al., 1993; Tsai Wen & Chang
6 Kong, 2010; Weiss & Weiss, 2007).

7 **Consequences of Antisocial Behaviors**

8 As hypothesized, players who perceived that their teammates acted antisocially toward
9 them, for example verbally abused, criticized and swore at them during the game, exerted less
10 effort and felt more anger. Bandura (1991) has highlighted the negative consequences of
11 transgressive behavior for the recipient. The reports of anger by the recipients of antisocial
12 behavior in this study suggest that the antisocial behaviors displayed by one's teammates
13 were perceived as having negative consequences for them. These results are in line with
14 previous findings that disrespectful treatment led to lower effort and increased anger
15 (Lazarus, 1991; Miller, 2001). Moreover, in both studies, anger mediated the relationship
16 between antisocial behavior and effort; however, the effect size was small. Robazza and
17 Bortoli (2007) have also found that anger positively predicted effort. Although antisocial
18 behavior had a negative direct effect on effort and a positive indirect effect via anger, its *total*
19 negative effect on effort suggests that this type of behavior should be eliminated, if one
20 wishes to maximize players' effort.

21 Antisocial behavior was negatively related to perceived performance in Study 2, which
22 included basketball players, but not in Study 1 which included football players. The positive
23 link between antisocial behavior and perceived performance of basketball players suggests
24 that sport type may moderate the relationship between antisocial teammate behavior and
25 perceived performance. Perhaps in basketball, where a team consists of only five players,

PROSOCIAL AND ANTISOCIAL BEHAVIORS

1 who come in more frequent contact with each other, antisocial teammate behavior has the
2 potential to exert more detrimental effects on the recipient's performance. It would be
3 interesting for future research to determine whether these findings are replicated in other
4 samples.

5 In both studies, anger was *not* a mediator of the antisocial behavior- performance
6 relationship. These findings are inconsistent with past research (Robazza & Bortoli, 2007),
7 which found that anger facilitated rugby performance. This discrepancy could be explained
8 by the level of physical contact, which was higher in the study by Robazza and Bortoli (2007)
9 compared to our study; specifically, the level of contact may moderate the anger-performance
10 relationship (Beedie et al., 2000). Anger positively mediated the effects of antisocial behavior
11 on effort, but the total indirect effect of antisocial behavior on performance (i.e., via anger
12 and anger and effort) was *not* significant. Importantly, the total effect of antisocial behavior
13 on performance in Study 2 was negative.

14 The hypothesis that antisocial behavior would be negatively related to commitment was
15 not supported. It is possible that commitment depends more on prosocial rather than
16 antisocial behavior, and acting prosocially toward one's teammates is more important for
17 commitment in sport. Ego-involving peer climate also did not predict intention to continue
18 with one's club (Ntoumanis et al., 2012), thus it may be that antisocial teammate behavior
19 does not influence one's commitment. Indeed, antisocial or other negative teammate
20 behaviors have not been identified as antecedents of (lack of) commitment in the sport
21 commitment model (Scanlan et al., 1993, 2003). Interestingly, antisocial behavior was
22 negatively related to commitment via effort and performance. It is likely that antisocial
23 teammate behavior led our basketball players to exert less effort and, in turn, perform worse,
24 which might have affected their commitment at the end of the match. This finding is in line
25 with previous studies (e.g., Ullrich-French & Smith, 2009; Weiss & Weiss, 2007) and

PROSOCIAL AND ANTISOCIAL BEHAVIORS

1 supports our hypothesis that perceived performance would mediate the antisocial behavior-
2 commitment relationship.

3 **Limitations of the Study and Directions for Future Research**

4 The present research revealed some interesting findings but also has some limitations.
5 First, although our findings are consistent with the mediation models that we proposed and
6 tested, both studies were cross-sectional; thus, assertions about the direction of causality
7 cannot be drawn from the mediation models. Experimental and longitudinal studies are
8 needed to provide stronger evidence for the causal relationship between teammate behaviors,
9 effort, performance, enjoyment, anger, and commitment. Also, even though we hypothesized
10 and tested our models assuming that perceived teammate behaviors influence motivational
11 outcomes the opposite relationships are also likely. For instance, perceived performance may
12 also have an effect on perceived teammate behavior. Specifically, if a player does not
13 perform well, his or her teammates may become angry, and this anger in turn may lead them
14 to act antisocially toward the player. This suggestion is in line with Bandura's (1991, 2001)
15 view of reciprocal causation, whereby person, behavior and environment influence one
16 another in a reciprocal manner.

17 Second, we recruited only football and basketball players. Future research should
18 replicate the current findings with athletes from other team or individual sports. Researchers
19 could also examine other variables as potential consequences of teammate behaviors, such as
20 cohesion, psychological well-being, and burnout. For example, perceptions of prosocial
21 teammate behavior could be positively related to cohesion, because such behavior could lead
22 to interpersonal attraction, which is an important precursor of cohesion (Eys, Loughhead,
23 Bray, & Carron, 2009). Future research could also investigate potential consequences of
24 opponent behaviors for the recipient. Third, we examined perceived rather than actual (i.e.,
25 objective) performance as there is presently no accurate measure of *individual* objective

PROSOCIAL AND ANTISOCIAL BEHAVIORS

1 performance in football or basketball that could be easily obtained in a recreational match.
2 Perceived performance was positively correlated with the outcome of the game ($r = .28, p <$
3 $.001$) in Study 1 and with score difference ($r = .25, p < .001$) in Study 2; nevertheless, our
4 results pertain to perceived rather than actual performance. Researchers could try to devise
5 accurate measures of objective performance for individual players in team sports such as
6 football and basketball and replicate the present findings using such measures.

7 **Conclusion**

8 In conclusion, our findings shed some light on potential consequences of prosocial and
9 antisocial teammate behavior in team sport, and reveal some potential mechanisms by which
10 these behaviors may affect players' effort, perceived performance, and commitment. The
11 results suggest that coaches should promote and reward prosocial behavior while minimizing
12 antisocial behavior among teammates. They should also encourage their athletes to engage in
13 prosocial behaviors toward their teammates and discourage them from behaving antisocially
14 toward each other. Prosocial teammate behaviors may be more beneficial than antisocial ones
15 and they can contribute to a more positive sport experience for athletes.

16

17

18

19

References

- 1
- 2 Allen, M. S., Jones, M. V., & Sheffield, D. (2009). Attribution, emotion, and collective
3 efficacy in sports teams. *Group Dynamics: Theory, Research, and Practice, 13*, 205-217.
- 4 Ames, C. (1992). Achievement goals, motivational climate, and motivational processes. In G.
5 C. Roberts (Ed.), *Motivation in sport and exercise* (pp. 161-176). Champaign, IL: Human
6 Kinetics.
- 7 Aubé, C., & Rousseau, V. (2011). Interpersonal aggression and team effectiveness: The
8 mediating role of team goal commitment. *Journal of Occupational & Organizational*
9 *Psychology, 84*(3), 565-580.
- 10 Balaguer, I. I., Duda, J. L., & Crespo, M. M. (1999). Motivational climate and goal
11 orientations as predictors of perceptions of improvement, satisfaction and coach ratings
12 among tennis players. *Scandinavian Journal of Medicine & Science in Sports, 9*, 381-
13 388.
- 14 Bandura, A. (1991). Social cognitive theory of moral thought and action. In W.M. Kurtines &
15 J.L. Gewirtz (Eds.), *Handbook of moral behavior and development: Theory, research,*
16 *and applications* (Vol. 1, pp. 71–129). Hillsdale, NJ: Lawrence Erlbaum Associates.
- 17 Bandura, A. (1999). Moral disengagement in the perpetration of inhumanities. *Personality*
18 *and Social Psychology Review, 3*, 193–209.
- 19 Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of*
20 *Psychology, 52*, 1-26.
- 21 Beedie, C. J., Terry, P. C., & Lane, A. M. (2000). The profile of mood states and athletic
22 performance: Two meta-analyses. *Journal of Applied Sport Psychology, 12*, 49-68.
- 23 Bolter, N. D., & Weiss, M. R. (2013). Coaching for character: Development of the
24 sportsmanship coaching behaviors scale (SCBS). *Sport, Exercise, and Performance*
25 *Psychology, 1*, 32-47.

PROSOCIAL AND ANTISOCIAL BEHAVIORS

- 1 Carpenter, P. J., Scanlan, T. K., Simons, J. P., & Lobel, M. (1993). A test of the Sport
2 Commitment Model using structural equation modeling. *Journal of Sport & Exercise*
3 *Psychology, 15*,119-133.
- 4 Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*, 155-159.
- 5 Cooke, A., Kavussanu, M., McIntyre, D., Boardley, I.D., & Ring, C. (2011). Effects of
6 competitive pressure on expert performance: Underlying psychological, physiological
7 and kinematic mechanisms. *Psychophysiology, 48*, 1146-1156.
- 8 Cooke, A., Kavussanu, M. A., McIntyre, D., & Ring, C. (2013). The effects of individual and
9 team competitions on performance, emotions, and effort. *Journal of Sport & Exercise*
10 *Psychology, 35*, 132-143.
- 11 Dewar, A., & Kavussanu, M. (2012). Achievement goals and emotions in team sport athletes.
12 *Sport, Exercise, and Performance Psychology, 1*, 254-267.
- 13 Eisenberg, N., & Fabes, R.A. (1998). Prosocial development. In N. Eisenberg (Ed.)
14 *Handbook of child psychology, Vol 3: Social, emotional, and personality development*
15 (pp. 701-778). NY: Wiley.
- 16 Eys, M. A., Loughead, T. M., Bray, S. R., & Carron, A. V. (2009). Perceptions of cohesion
17 by youth sport participants. *The Sport Psychologist, 23*, 330-345.
- 18 Graham, T. R., Kowalski, K. C., & Crocker, P. R. E. (2002). The contributions of goal
19 characteristics and causal attributions to emotional experience in youth sport participants.
20 *Psychology of Sport and Exercise, 3*, 273-291.
- 21 Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process*
22 *analysis: A regression-based approach*. New York, NY: Guilford Press.
- 23 Hodge, K., & Lonsdale, C. (2011). Prosocial and antisocial behavior in sport: The role of
24 coaching style, autonomous vs. controlled motivation, and moral disengagement. *Journal*
25 *of Sport & Exercise Psychology, 33*, 527-547.

PROSOCIAL AND ANTISOCIAL BEHAVIORS

- 1 Hu, L., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: sensitivity to
2 under parameterized model misspecification. *Psychological Methods*, 3, 424-453.
- 3 Jones, M. V., Lane, A. M., Bray, S. R., Uphill, M., & Catlin, J. (2005). Development and
4 validation of the sport emotion questionnaire. *Journal of Sport & Exercise Psychology*,
5 27, 407-431.
- 6 Kavussanu, M. (2012). Moral behavior in sport. In S. Murphy (Ed.), *The Oxford handbook of*
7 *sport and performance psychology* (pp. 364-383). Oxford: Oxford University Press.
- 8 Kavussanu, M., & Boardley, I. D. (2009). The prosocial and antisocial behavior in sport
9 scale. *Journal of Sport & Exercise Psychology*, 31, 97-117.
- 10 Kavussanu, M., Ring, C., & Kavanagh, J. (2015). Antisocial behavior, moral disengagement,
11 empathy, and negative emotion: A comparison between disabled and able-bodied
12 athletes. *Ethics and Behavior*, 25, 297-306.
- 13 Kavussanu, M., Seal, A.R., & Phillips, D.R. (2006). Observed prosocial and antisocial
14 behaviors in male soccer teams: Age differences across adolescence and the role of
15 motivational variables. *Journal of Applied Sport Psychology*, 18, 326-344.
- 16 Kavussanu, M., Stanger, N., & Boardley, I. D. (2013). The Prosocial and Antisocial Behavior
17 in Sport Scale: Further evidence for construct validity and reliability. *Journal of Sports*
18 *Sciences*, 31, 1208-1221.
- 19 Kavussanu, M., Stamp, R., Slade, G., & Ring, C. (2009). Observed prosocial and antisocial
20 behaviors in male and female soccer players. *Journal of Applied Sport Psychology*, 21
21 (*Supp. 1*), S62-S76.
- 22 Kavussanu, M., Stanger, N., & Ring, C. (2015). The effects of moral identity on moral
23 emotion and antisocial behavior in sport. *Sport, Exercise and Performance Psychology*,
24 4, 268-279.

PROSOCIAL AND ANTISOCIAL BEHAVIORS

- 1 Kline, R.B. (2005). *Principles and practice of structural equation modeling*. New York: The
2 Guildford Press.
- 3 Kohlberg, L. (1984). *Essays on moral development, Vol. 2: The psychology of moral*
4 *development*. San Francisco: Harper & Row.
- 5 Lazarus, R. S. (1991). Progress on a cognitive-motivational-relational theory of emotion.
6 *American Psychologist, 46*, 819–834.
- 7 LeBlanc, M. M., & Kelloway, E. K. (2002). Predictors and outcomes of workplace violence
8 and aggression. *Journal of Applied Psychology, 87*, 444-453.
- 9 McAuley, E., Duncan, T., & Tammen, V. V. (1989). Psychometric properties of the Intrinsic
10 Motivation Inventory in a competitive sport setting: A confirmatory factor analysis.
11 *Research Quarterly for Exercise and Sport, 60*, 48-58.
- 12 Miller, D. T. (2001). Disrespect and the experience of injustice. *Annual Review of*
13 *Psychology, 52*, 527-553.
- 14 Mouratidis, A., Vansteenkiste, M., Lens, W., Sideridis, G. (2008). The motivating role of
15 positive feedback in sport and physical education: Evidence for a motivational model.
16 *Journal of Sport & Exercise Psychology, 30*, 240-268.
- 17 Ntoumanis, N., Taylor, I. M., & Thorghesen-Ntoumani, C. (2012). A longitudinal examination
18 of coach and peer motivational climates in youth sport: Implications for moral attitudes,
19 well-being, and behavioral investment. *Developmental Psychology, 48*, 213-223.
- 20 Ntoumanis, N., & Vazou, S. (2005). Peer motivational climate in youth sport: Measurement
21 development and validation. *Journal of Sport & Exercise Psychology, 27*, 432-455.
- 22 Preacher, K. J., & Kelley, K. (2011). Effect size measures for mediation models: Quantitative
23 strategies for communicating indirect effects. *Psychological Methods, 16*, 93–115.
- 24 Puca, R. M., & Schmalt, H.D. (1999). Task enjoyment: A mediator between achievement
25 motives and performance. *Motivation and Emotion, 23*, 15-29.

PROSOCIAL AND ANTISOCIAL BEHAVIORS

- 1 Robazza, C., & Bortoli, L. (2007). Perceived impact of anger and anxiety on sporting
2 performance in rugby players. *Psychology of Sport and Exercise*, 8, 875-896.
- 3 Ryan, R. M. (1982). Control and information in the intrapersonal sphere: An extension of
4 cognitive evaluation theory. *Journal of Personality and Social Psychology*, 43, 450-461.
- 5 Sage, L., Kavussanu, M., & Duda, J. L. (2006). Goal orientations and moral identity as
6 predictors of prosocial and antisocial functioning in male association football players.
7 *Journal of Sports Sciences*, 24, 455-466.
- 8 Santi, G., Bruton, A., Pietrantonio, L., & Mellalieu, S. (2014). Sport commitment and
9 participation in masters swimmers: The influence of coach and teammates. *European*
10 *Journal of Sport Science*, 14, 852-860.
- 11 Scanlan, T. K., Carpenter, P. J., Lobel, M., & Simons, J. P. (1993). Sources of enjoyment for
12 youth sport athletes. *Pediatric Exercise Science*, 5, 275-285.
- 13 Scanlan, T. K., Russell, D. G., Beals, K. P., & Scanlan, L. A. (2003). Project on Elite Athlete
14 Commitment (PEAK): II. A direct test and expansion of the Sport Commitment Model
15 with elite amateur sportsmen. *Journal of Sport & Exercise Psychology*, 25, 377-401.
- 16 Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics* (4th ed.). Boston:
17 Allyn & Bacon.
- 18 Torregrosa, M., Viladrich, C., Ramis, Y., Azocar, F., Latinjak, A. T., & Cruz, J. (2011).
19 Effects on the perception of the motivational climate created by coaches and teammates
20 on enjoyment and commitment: Gender differences. *Revista de Psicologia del Deporte*,
21 20, 243-255.
- 22 Tsai Wen, C., & Chang Kong, J. (2010). The training satisfaction of table tennis players and
23 the influence it has on team support, team commitment, and the intention to leave: A
24 study of university general group table tennis players. *International Journal of Table*
25 *Tennis Sciences*, 6, 134-145.

PROSOCIAL AND ANTISOCIAL BEHAVIORS

- 1 Ullrich-French, S., & Smith, A. L. (2009). Social and motivational predictors of continued
2 youth sport participation. *Psychology of Sport and Exercise, 10*, 87-95.
- 3 Uphill, M., Groom, R., & Jones, M. (2012). The influence of in-game emotions on basketball
4 performance. *European Journal of Sport Science, 14*, 76-83.
- 5 van de Pol, P. K. C., & Kavussanu, M. (2011). Achievement goals and motivational
6 responses in tennis: Does the context matter? *Psychology of Sport and Exercise, 12*, 176-
7 183.
- 8 Vazou, N., Ntoumanis, N., & Duda, J.L. (2006). Predicting young athletes' motivational
9 indices as a function of their perceptions of the coach- and peer-created climate.
10 *Psychology of Sport and Exercise, 7*, 215–233.
- 11 Weiss, W. M., & Weiss, M. R. (2007). Sport commitment among competitive female
12 gymnasts: A developmental perspective. *Research Quarterly for Exercise and Sport, 78*,
13 90–102.
- 14 Woodman, T., Davis, P. A., Hardy, L., Callow, N., Glasscock, I., & Yuill-Proctor, J. (2009).
15 Emotions and sport performance: an exploration of happiness, hope, and anger. *Journal*
16 *of Sport & Exercise Psychology, 31*, 169-188.

Endnotes

¹Participants completed questionnaires right after a match about their experiences during the match they had just played. Previous research has used a retrospective self-report method by asking players to recall how they felt and performed immediately after competition (e.g., Dewar & Kavussanu, 2012).

²In Study 1, 104 players were in winning teams, 72 in losing teams, and 27 in teams that drew; in Study 2, 174 players were in winning and 107 in losing teams. We examined whether outcome of the game (lost, drew, won) and score difference (own team's score minus opposing team's score) moderated the relationships depicted in Figures 1 and 2. Neither outcome of the game nor score difference moderated these relationships in either study.

⁴MANOVA comparing winning and losing teams showed that in Study 1, players in winning teams perceived more prosocial ($M = 3.85$, $SD = 0.62$) behavior than did players in losing ($M = 3.56$, $SD = 0.80$) teams, $F(1, 174) = 7.46$, $p < .01$, $\eta_p^2 = .04$. They also perceived less antisocial behavior ($M = 1.84$, $SD = 0.80$) than did losing teams ($M = 2.14$, $SD = 0.81$), $F(1, 174) = 5.59$, $p < .05$, $\eta_p^2 = .03$. In Study 2, no significant differences emerged between losing and winning teams (antisocial: losing $M = 1.47$, $SD = 0.52$; winning: $M = 1.40$, $SD = 0.46$; prosocial behavior: winning $M = 3.52$, $SD = 0.82$; losing $M = 3.34$, $SD = 0.88$).

³In Study 1, 12, 20, 24 and 147 football players played for less than half a match (5.9%), half a match (9.9%), more than half a match (11.8%), and a full match (72.4%), respectively. Analyses indicated that greater playing time was associated with more prosocial behavior, enjoyment, and performance. In Study 2, 63, 94, 105 and 19 basketball players played for less than half a match (22.4%), half a match (33.5%), more than half a match (37.4%), and a full match (6.8%), respectively. Analyses indicated that greater playing time was associated with more enjoyment and effort as well as greater performance and commitment. Playing time did not moderate the relationships depicted in Figures 1 and 2.