Predictors of antisocial and prosocial behavior in an adolescent sports context

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Abstract

This study examined antisocial and prosocial behavior of $N = 439$ adolescent athletes between 14 and 17 years of age (67 teams). Multilevel analyses showed that team membership explained 20% and 13% of the variance in antisocial and prosocial behavior in the sports context, respectively. The team effects suggest that aggregating antisocial or prosocial adolescents within teams may partially explain differences in antisocial and prosocial behavior among athletes in the sports context. A trend was found towards a relation between higher levels of moral reasoning within teams and less antisocial behavior in the sports context. Favorable moral atmosphere was positively associated with more prosocial behavior in the sports context. Finally, supportive coach-athlete relationships were associated with both less antisocial and more prosocial behavior in the sports context.

Key words: prosocial and antisocial behavior; supportive coach-athlete relationship; moral atmosphere; moral reasoning; fair play attitude

Predictors of Antisocial and Prosocial Behavior in an Adolescent Sports Context

For many adolescents organized youth sport is an important part of the ecological context in which their development takes place. Of all Dutch adolescents no less than 72% (Breedveld & Tiessen-Raaphorst, 2006) participate in organized youth sport, a percentage that is similar to that for North America (NCYS, 2001). The sporting environment may, however, offer not only leisure and reward, but also social challenges and opportunities for adolescents. The social demands placed on young athletes may partly parallel those of other important life settings, such as the home and school environment. In the sports context, these demands pertain to the adequate regulation of adolescents' behavior in a competitive context that is determined by specific moral norms and values and in which coach-athlete relationships and relationships with fellow athletes further shape adolescents' behavior. The aim of the current study was to examine possible predictors of antisocial and prosocial behavior that may vary within the sports context, and which may be amenable to intervention or choice at the level of individual athletes, the team, and adults who are involved as coaches. These predictors concern fair play attitude, moral reasoning, moral atmosphere and coach-athlete relationship quality. The present study is the first to examine the impact of these factors on adolescent athletes' behavior in the sports context while taking into account individual differences in the tendency to display antisocial and prosocial behavior.

Kavussanu (2008) argues that the social nature of sport provides ample opportunities for both prosocial behavior, designated as any voluntary act performed with the goal of benefiting or helping another person (e.g., helping an injured player), and antisocial behavior, designated as any voluntary act intended to harm or disadvantage another person (e.g., trying to injure another athlete). These prosocial and antisocial behaviors not only concern other peoples' rights and well-being and should therefore be considered as morally relevant, according to Kavussanu, but also refer to the proactive (doing good) and inhibitive (refraining from doing bad) aspects of

morality, respectively (Bandura, 1999). Kavussanu and Boardly (2009) emphasize that both prosocial and antisocial behaviors should be examined in order to understand social behavior in sport, not only because antisocial and prosocial behavior in sports constitute two largely independent dimensions, but also because young athletes show high rates of both prosocial and antisocial behaviors (Shields, Bredemeier, LaVoi, & Power, 2005).

The empirical evidence regarding the potential influences of sports on the behavior of athletes has recently been summarized in a meta-analytic review. Stams et al. (2009) conducted a meta-analysis of 54 studies examining the relation between sport participation and adolescents' deviant behavior, including antisocial (non-prohibited by law) and delinquent (prohibited by law) behavior. In this review, greater extent of sport participation showed a small but significant positive association with antisocial behavior (r = .09), and a small but significant negative association with delinquent behavior (r = -.05). It should be noted, however, that the included prospective longitudinal studies consistently showed negative effects of greater sport participation, whereas the cross-sectional studies did not show any relation between sport participation and deviant behavior. Interestingly, much depends of the context in which sports are performed. Sporting activity in the context of the school was associated with positive outcomes, indicating that the social context in which the activities take place may play an important role. This might not come as a surprise, as sports in schools are ideally designed and monitored to serve an overarching educational goal (Maher, 2005). In many countries, including the Netherlands, school-organized sport activities are limited, and as a result most sport activities are conducted in clubs or volunteer organizations that vary in the amount of explicit policy with respect to prosocial and antisocial behaviour. Consequently, sports may be a relatively benign and protective environment for some adolescents, whereas it may be an unpleasant environment for others, or even an environment that may contribute to developmental risk (Endresen & Olweus, 2005).

Given the important role of rules as well as conflict inherent to competition, sports participation has been studied from the perspective of moral development. According to Kavussanu and Boardly (2009), most studies have focused on inhibitive morality, while less is known about the possible role of proactive morality, despite the efforts that have been taken to promote proactive morality in sports through concepts such as 'fair play'. The fair play concept refers to a set of sport specific behavior codes, rules, and values that are considered to be constitutive of sport, such as respect for one's opponents, mutuality, fairness, and equal opportunities (Arnold, 1994, 2001). Aziz (1998) as well as Stephens and Bredemeier (1996) examined fair play attitude in soccer players, and found team values of fair play to predict prosocial behavior in terms of fair play tactics. Notably, fair play attitude has also been related to less antisocial behavior in at least two studies. A positive team attitude toward fair play was associated with less antisocial behavior among adolescent soccer players in a study conducted by Reference to Author (2008), while Junge et al. (2000) found that a negative attitude toward fair play predicted aggressive tendencies among football players.

Proactive morality may manifest itself not only in attitudes, but also in moral reasoning about actions taken in concrete situations. Bloom and Smith (1996), Coakley (1984), and Van Bottenburg and Schuyt (1996) have emphasized proactive morality by showing that participation in sport may foster the development of cooperation, discipline, social responsibility, and social-cognitive competencies, including role-taking ability, which is an important prerequisite for attaining higher levels of moral reasoning. Reference to Author (2007) found that higher levels of moral reasoning about sport dilemmas were positively associated with more prosocial behavior in adolescent athletes. Shields and Bredemeier (1995), however, showed that in itself, sport is a social context that pulls for lower levels of moral reasoning: "A moral pause or "bracketed morality" (p.113) is characteristic of sport, referring to a temporary suspension of the usual moral obligation to equally consider the needs and desires of others. Shields and Bredemeier (1995) and Bredemeier and Shields (1986a; 1986b) found that

sport specific dilemmas were solved at lower levels of moral reasoning (more egocentric and instrumental, and less empathic and prosocial) than general daily dilemmas, predicting aggressive tendencies among athletes (Bredemeier, 1994). Negative associations between sport participation and moral reasoning in general were also found by Beller and Stoll (1995), showing that organized youth sport might have a negative influence.

An important contextual factor is the teams' sociomoral atmosphere, which refers to the sense of community, and the degree to which norms are created, shared, and justified through dialogue (Higgins-D'Alessandro & Sadh, 1998; Power, Higgins, & Kohlberg, 1989). A positive sociomoral atmosphere has been shown to predict moral behavior both in schools (Høst, Brugman, Tavecchio, & Beem, 1998; Power et al., 1989) and in organized youth sport (e.g., Guivernau & Duda, 2002; Kavussanu, Roberts, & Ntoumanis, 2002; Kavussanu & Spray, 2006; Reference to Author, 2008, Stephens, 2000). Furthermore, Nucci and Kim (2005) conducted a review of the literature on aggression and sportpersonship, and concluded that the competitive sport context can lead to unethical and aggressive behaviors, having a negative impact on the well-being of young athletes, when it is dominated by a win-at-all-costs philosophy.

Nucci and Kim (2005) identified the sports coach as an important person within the sports context, who is in the position to influence antisocial behavior. The coach can serve as a natural mentor by providing relational support, and by acting as an important role model (Beam, Chen, & Greenberger, 2002). Many studies refer to the positive influence of natural mentoring on adolescent behavior (Scholte, Van Lieshout, & Van Aken, 2001; Zimmerman, Bingenheimer, & Notaro, 2002). Furthermore, Duquin and Schroeder-Braun (1996, p. 354) also mention that "coaches can play an important role in developing prosocial behavior by the way they structure the moral climate of the sport context, by modeling empathic relations, and by guiding youth toward prosocial responsibilities". They refer to the model-function that coaches can have for their teams, the discipline they instill, and the values coaches convey.

From an attachment-theoretical perspective, coaches may be considered as secure base figures of convenience, providing some limited attachment-related support without actually being considered attachment figures per se (Waters & Cummings, 2000). Their sensitivity towards adolescents and acceptance of their signals of need and distress may foster positive relational concepts. There is empirical evidence showing that these positive expectations, incorporated in positive working models of relationships with others, predict positive outcomes, especially prosocial behavior (see for example Kobak & Sceery, 1988; Kochanska & Murray, 2000; Weinfeld, Ogawa, & Sroufe, 1997). The support itself may, furthermore, promote adaptive regulation of emotion and behavior in times of stress. Research in the sports context shows that mutual trust, care, open communication, and acceptance of individual differences (e.g., in ability) and emotions (e.g., sadness and joy during the game) are core elements of coach-athlete relationships that are based on relational support (Poczwardowski, Barott, & Henschen, 2002; Vanden Auweele & Rzewnicki, 2000; Wylleman, 2000). These supportive coach-athlete relationships have been shown to be associated with less antisocial and more prosocial behavior in adolescent athletes (Reference to Author, 2007, 2008).

There are only few studies that examine both antisocial and prosocial behavior, and there are even less studies that examine both types of behavior in a specific context. A previous study by Reference to Author (2007) showed that factors in soccer and competitive swimming that are amenable to intervention, such as positive coach-athlete relationships and exposure to high levels of sociomoral reasoning in the immediate context of sporting activities, predicted less antisocial and more prosocial behavior outside the sports context, respectively. Another study by Reference to Author (2008) showed that positive coach-athlete relationships, high levels of sociomoral reasoning about sports dilemma's and also positive attitude toward fair play were associated with antisocial and prosocial behavior in the context of sport, but this study only focused on soccer and did not control for general tendencies to behave in antisocial or prosocial ways. It is important to control for these tendencies, especially at the team level, as aggregation

of individual athletes with similar tendencies to behave antisocial or prosocial could have a substantial impact on the degree to which adolescents show antisocial and prosocial behavior in the context of sport (e.g., Dishion & Dodge, 2005; Dishion, McCord, & Poulin, 1999). The current study is the first to examine antisocial and prosocial behavior in the sports context controlling for individual differences in adolescents' tendency to show antisocial behavior (aggression and delinquency) and prosocial behavior.

In the current study, multilevel analyses were used to simultaneously examine the degree to which individual characteristics of athletes (individual level) and team characteristics (contextual level) contributed to the athletes' behavior in the sports context, including four types of sport. We expected that favorable moral atmosphere, higher levels of moral reasoning about sport dilemmas, more positive fair play attitude, and supportive coach-athlete relationships would contribute to less antisocial and more prosocial behavior in the sports context. Because self-selection in sports and teams may (partly) account for team-level effects, we controlled for the athletes' age, cultural background, socioeconomic status, level of education, extent of sport participation, and most importantly externalizing behavior in general in the case of antisocial behavior in the context of sport, and prosocial behavior in general when examining prosocial behavior in the context of sports. Moreover, we controlled for type of sport and, because the measures were based on self-report, the tendency to give socially desirable answers.

Athletes were included from two individual sports (athletics and taekwondo) and two team sports (soccer and basketball) that have high participation rates in the Netherlands. These sports may attract different youth populations, trigger different behaviors, show different frequencies and diversity in antisocial and prosocial behaviors (Kavussanu, Seal, & Phillips, 2006), and may be organized in teams differently. Therefore, the moderating effects of type of sport on the associations between the potential predictors (moral reasoning, moral atmosphere, fair play attitude, and supportive coach-athlete relationships) and antisocial en prosocial behavior in the context of sport were also tested. Finally, we explored whether levels of antisocial behavior

differ between the four types of sport, as factors that might directly influence antisocial behavior in sport – such the degree of physical contact, the competitive nature of the sport, and the degree to which one's efforts to achieve goals are blocked – may vary between sports, but have not been examined extensively in empirical research.

Method

Participants

The sample consisted of $N = 439$ male competition level athletes, active in team or individual sports, who were recruited from $N = 67$ teams of $N = 33$ sports clubs: $n = 8$ soccer clubs ($n = 17$ teams, $n = 161$ adolescents), 8 basketball clubs ($n = 16$ teams, $n = 93$ adolescents), 9 athletics clubs ($n = 18$ teams, $n = 100$ adolescents), and $n = 8$ taekwondo clubs ($n = 16$ teams, $n = 73$ adolescents). Teams were represented by 3 to 12 athletes ($M = 6.55$, $SD = 2.49$), and sports clubs by 8 to 32 athletes ($M = 13.72$, $SD = 5.38$). The clubs were randomly drawn from the population of these types of sports clubs in urbanized areas of the Netherlands. All clubs that were asked to participate agreed. The participants of the study were 14 to 17 years of age ($M = 15.3$, $SD = 1.4$) and they all provided informed consent. The response percentage was high, that is, more than 90%. Among the participants of each team a 12 euro CD-token was raffled.

Socioeconomic status of the athletes was determined by combining the educational and occupational background of both parents (Van Westerlaak, Kropman, & Collaris, 1990) and was computed on the basis of sample-specific factor loadings and standard deviations. Mean scores correspond to socioeconomic strata in the following way: 3 to 9, lower class; 9 to 12, middle class; and 12 to 16, upper class (Bernstein & Brandis, 1970). The internal consistency reliability of the scale for socioeconomic status was good, $\alpha = .83$ (4 items). The mean score was 8.9 ($SD = 2.9$), which indicated that the sample could be considered as lower class. The adolescents' level of formal education was low, and correlated significantly with the socioeconomic status of their parents, $r = .30$, $p < .001$.

The mean family size was 2.7 children. The percentage of single parent families was 16.1%

and the percentage of divorced parents was 19.9%. The percentage of Caucasian white adolescents was 65.0%. The remaining 35.0% were adolescents with an ethnic minority background, that is, at least one of their parents had been born in a country that is or was part of the ethnic minority or integration policy of the Dutch government. At the time of the data collection the adolescents had been active in competitive sports for 8.0 years (SD = 2.9) on average.

Measures

The athletes completed questionnaires assessing the outcome variables antisocial and prosocial behavior in the sports context, and the explanatory variables moral atmosphere of the sporting environment, moral reasoning about sport dilemmas, fair play attitude, and coach-athlete relationship quality in terms of both relational support and attachment-related support from the coach in the sense of psychological availability of and reliance on the coach. The participants also had to complete questionnaires assessing the control variables externalizing and prosocial behavior in general and social desirability. For the purpose of interpretation, all scores were keyed to the names of the scales. For instance, a high score on the scale for prosocial behavior is indicative of a high level of self-reported prosocial behavior. Scales that were significantly skewed, such as externalizing problems, were transformed to normal with a quadratic or logarithmic transformation (Tabachnick & Fidell, 1996).

Outcome variables

Antisocial and prosocial behavior in the sports context. Antisocial behavior and prosocial behavior in the context of sport were measured with the Sports Behavior Inventory (SBI), which is an adaptation of the Antisocial Behavior Inventory for the Context of Sport (ASBI-Sport) and the Prosocial Behavior Inventory for the Context of Sport (PSBI-Sport) (Reference to Author, 2008). These instruments were based upon the Anti Social Behavior Inventory (ASBI) by Wouters and Spiering (1990; Reference to Author, 2007; Tavecchio, Stams, Brugman, & Thomeer-Bouwens, 1999) and the Prosocial Behavior Questionnaire (PBQ) from Weir and

Duveen (1981; Reference to Author, 2007), respectively. Reference to Author (2008) constructed the SBI in order to measure behavior in the sports context, assessing on- and off-field behavior. They found internal consistency reliabilities of $\alpha = .85$ for antisocial behavior and $\alpha = .71$ for prosocial behavior, respectively. On 4-point Likert-type scales the athletes indicated for 18 items the degree to which they behave in a certain way (varying from 1 "never" to 4 "often"). Examples of items for antisocial behavior are "I shout abuse to others during matches" and "I get disqualified for fouling opponents". Examples for prosocial behavior are "I help others when they are not that good at something yet" and "I like to compliment another player when he or she is very good at something". Internal consistency reliabilities were $\alpha = .92$ and $\alpha = .89$ for antisocial and prosocial behavior, respectively.

Explanatory variables

Moral atmosphere of the sporting environment. The moral atmosphere of the sporting environment was measured with an adaptation of the Dutch translation (Veugelers & De Kat, 1998) of the School Culture Scale (SCS; Higgins, 1995, 1997). The translated SCS showed internal consistency reliability and factorial validity (Veugelers & De Kat, 1998). The adapted version was created for use in the sports context by Reference to Author (2007, 2008), who demonstrated internal consistency (α =.86 and .84, respectively) and divergent validity. In the 2007 study they found no correlation with social desirability, and in the 2008 study the association with social desirability was weak, with r=.26, p<.001. There was no significant association with verbal intelligence (2008). The instrument is a 19-item self report measure that purports to assess the moral climate of the sporting environment in terms of normative expectations, social conduct, quality of communication, and opportunities for youth participation. Athletes indicate on 5-point Likert-type scales the degree to which statements regarding the moral climate of their sporting environment apply to them by using answer categories varying from 1 "false" to 5 "totally true". An example of a statement is: "At this club

the athletes trust each other". We found an internal consistency reliability of $\alpha = .85$.

Moral reasoning about sport dilemmas. The Practical Sociomoral Reflection Objective Measure - Sport (PSROM-Sport) (Reference to Author, 2007, 2008) was developed to assess practical moral reasoning in the context of organized youth sport, and was derived from the Sociomoral Reflection Objective Measure-Short Form, the SROM-SF (Basinger & Gibbs, 1987; Høst, Brugman, Tavecchio, & Beem, 1998), which is a multiple choice questionnaire containing two moral dilemmas and twelve question arrays focusing on moral norms. Each question includes a response option representative of Kohlberg's moral stages 1 through 4. The first two stages, indicative of unilateral (concrete consequences) and instrumental (pragmatic deals or exchanges) reasoning, respectively, constitute the immature level. The third and fourth stage, mutual-prosocial and systemic reasoning respectively, constitute the mature level (Gibbs, Basinger, & Fuller, 1992).

The PSROM-Sport assesses the level of moral reasoning in a similar way. In the studies of Reference to Author (2007, 2008), internal consistency reliabilities ranged from $\alpha = .68$ to $\alpha = .63$, respectively. We used the original twelve question arrays about situations in the context of organized youth sport and only made some small textual changes to increase the comprehensibility of some items [(e.g., "You decide to help the best player in the team to get fit after an injury, so that he might be ready in time for the most important match of the year"), tapping the type of moral norms the person uses (e.g., "Without this player you might lose the important match" (stage 1), "Because this player might help you too" (stage 2), "If you don't, you're not acting as a real friend" (stage 3), and "It shows that you feel responsible for your team" (stage 4)]. The internal consistency reliability of the PSROM-Sport was sufficient, that is, $\alpha = .62$.

Reference to Author (2007) found evidence for convergent validity by comparing moral scores on the PSROM-Sport with scores on semi-structured interviews assessing moral reasoning competence (Gibbs, Basinger, & Fuller, 1992) and fair play attitude (Junge et al.,

2000; Loland & McNamee, 2000; Tamboer & Steenbergen, 2000). The PSROM-Sport moral reasoning scores were positively and moderately associated with both moral reasoning competence and fair play attitude. In the current study an open moral interview, based upon the Sociomoral Reflection Measure-Short Form (SRM-SF) (Basinger & Gibbs, 1987; Basinger, Gibbs, & Fuller, 1995; Gibbs, Basinger, & Fuller, 1992) was conducted in a sub sample of n = 100 athletes in order to assess convergent validity. The interview was designed to provoke the athletes' highest levels of moral reasoning competence (four items) and practical moral reasoning about sport dilemmas (nine items). The correlations between the PSROM-Sport questionnaire on the one hand and moral reasoning competence and practical moral reasoning as measured with the interview on the other hand, were significant and in the expected directions, with $r = .23$, $p < .01$ and $r = .36$, $p < .001$, respectively.

Discriminant validity of the PSROM-Sport was established in a study by Reference to Author (2008), who used nine of the original twelve questions. They found no significant relations with social desirability or verbal intelligence. Also in the current study the association with social desirability was non-significant.

Fair play attitude. Fair play attitude of the athletes was assessed with a self developed theoretically derived instrument, measuring the extent to which the athlete has respect for the opponent and the formal and informal rules of the game (Junge et al., 2000; Loland & McNamee, 2000; Tamboer & Steenbergen, 2000). Reference to Author (2008) found evidence for internal consistency (α =.76) and divergent validity of the instrument, that is, no significant correlations were found with social desirability and verbal intelligence. A 5-point Likert-type scale, ranging from 1 "not important" to 5 "very important", was devised to assess the attitude toward fair-play (twelve items). Two examples of items are: "Respect for one's opponent", and "Equal opportunities to perform well". The fair play scale demonstrated a satisfactory internal consistency reliability of α = .80. Fair play was weakly associated with social desirability, r = .19, $p < .001$.

Relational support from the coach. The Athlete-Coach scale of the Sport Interpersonal Relationships Questionnaire, the SIRQ-AC (Wylleman, 1995, 2000), was used to measure the degree to which athletes experience the interpersonal relationship with their coach as supportive. The scale proved to have good psychometric properties concerning construct, content, and concurrent validity, and both internal and external reliability (Wylleman, 1995). Four out of six SIRQ-AC scales were completed: closed attitude from the athlete toward the coach (e.g. "I avoid having contact with my coach"); acceptance of the coach by the athlete (e.g. "I'm very attentive when my coach explains something to me"); caring behavior of the coach (e.g. "The coach is willing to give extra help"); and criticizing by the coach (e.g. "My coach only runs down on me"). The answers to the 44 questions were given on 5-point Likert-type scales, varying from 1 "never agree" to 5 "always agree". The following internal consistency reliabilities were found: closed attitude, $\alpha = .86$; acceptance, $\alpha = .83$; caring behavior, $\alpha = .91$; and criticizing, $\alpha = .79$. As these scales intercorrelated highly, they were combined into one scale designated as relational support from the coach. The internal consistency reliability of this scale was $\alpha = .78$.

Attachment-related support from the coach in terms of psychological availability of and reliance on the coach. The PARA questionnaire (Psychological Availability and Reliance on Adult) (Zegers & Schuengel, 2006) was developed to tap the adolescents' perception of psychological availability (sample item from the version for athletes: "My coach is warm and understanding") and reliance ("Whenever I am distressed I will ask my coach for support or advice"). The questions had to be completed on 4-point Likert-type scales, varying from 1 "disagree" to 4 "agree". In research on institutionalized adolescents, the working models of the relationship with the individual mentors of these adolescents, as assessed with the PARA, were predicted over time by the generalized attachment representations of the adolescents as well as the mentors (Zegers, Schuengel, Van IJzendoorn, & Janssens, 2006), indicating that the questionnaire taps into the perception that a particular non-parental adult may be relied upon as

a "secure-base figure of convenience" (Waters & Cummings, 2000, p. 168) in times of need. The PARA scale was also associated with observed support seeking and support providing between these adolescents and their mentors (Zegers & Schuengel, 2006). The items tapping psychological availability of and reliance on the adult were highly interrelated, and were combined in an overall availability and reliance score representing perceived attachment-related support from the coach. The internal consistency reliability for this scale was $\alpha = .89$.

Control variables

Externalizing behavior in general. The scale for externalizing behavior of the Youth Self Report, the YSR (Achenbach, 1991; Verhulst, Van der Ende, & Koot, 1997) was used in order to measure externalizing behavior, or more specifically aggressive (19 items) and delinquent (11 items) behavior. The scale proved to be valid for measuring this type of behavior (Verhulst, Van der Ende, & Koot, 1997). The adolescents indicated whether statements such as: "I fight a lot", applied to them during the last six months, using a three-point Likert-type scale: 1 "not at all", 2 "a little or sometimes", and 3 "obviously or often". The internal consistency reliability was $\alpha =$ .87. The scale was found to be weakly associated with social desirability, $r = -.21$, $p < .001$. In the present sample, 20% of the athletes rated in the clinical range for externalizing behavior, a percentage that differs significantly ($z = 6.98$, $p < .001$) from the normative YSR percentage, which is 10% for adolescent males (Achenbach, 1991; Verhulst, Van der Ende, & Koot, 1997). Apparently, the sampling of urban adolescent males from lower socioeconomic backgrounds with lower educational levels resulted in an overrepresentation of boys with externalizing behavior problems.

Prosocial behavior in general. In order to assess prosocial behavior in general, the Prosocial Behavior Questionnaire (PBQ; Weir & Duveen, 1981) was adapted (see also Reference to Author, 2007). Validity and internal consistency of the adapted PBQ has been established by Stams et al. (2008), who used it for research among $n = 75$ juvenile delinquents and adolescents from low socioeconomic backgrounds and cultural minority groups. The

instrument proved to be internally consistent ($\alpha = .71$). Evidence for concurrent validity of the PBQ was found in positive associations with empathy and victim-based moral orientation, and negative associations with norm-trespassing, delinquent, and aggressive behavior. Divergent validity was demonstrated by low to moderate correlations with verbal intelligence, $r = .10$, $p < .05$, and social desirability, $r = .32$, $p < .001$. The adapted 20-item PBQ was based on a 4-point Likert-type scale, ranging from 1 "never" to 4 "always". The items represent positive social behaviors, such as helping, sharing and supporting others. An example is: "I take the opportunity to praise the work of those who are less able". We found an internal consistency reliability of $\alpha = .88$. The scale proved to be moderately associated with social desirability, $r = .35$, $p = .001$.

Social desirability. The social desirability scale (Reference to Author, 2007, 2008) purports to measure the tendency to give socially desirable answers. The scale showed satisfying internal consistency reliabilities, with $\alpha = .83$ and $\alpha = .82$, respectively. The scale consists of dichotomous items describing socially desirable attributes that are based upon the 11-item Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960). Nederhof (1981) validated this scale for the Netherlands. To increase the reliability, 4 items have been added by Reference to Author (2001). Examples from the 15-items scale are: "I am always honest", and "I never boast". Adolescents indicate whether statements apply to them by using the answer categories "true" and "false". In the current study, the internal consistency reliability was $\alpha = .79$.

Statistical analysis

The separate contribution of the individual athletes' characteristics and features of the sports team to antisocial and prosocial behavioral in the sports context were determined by using the MLwiN program (Goldstein et al., 1998) for multilevel modeling (Goldstein, 1995), a technique for analyzing linear models in samples with a hierarchical or clustered structure. Multilevel analysis enables variation to be explained across teams separate from individual

behavior, adjusting for the non-independence of observations within groups. This is of importance because "contextual effects are consequences of emergent properties of groups or social settings, and thus they cannot be accounted for at the individual-level" (Osgood & Anderson, 2004, p. 522). Traditional analyses, such as ordinary regression analysis, would only account for the individual athlete as the unit of analysis, thereby ignoring the fact that athletes are grouped into teams.

Using multilevel analysis, control and explanatory variables were considered as both characteristics of individual athletes (the perceptions, experiences or behaviors of the individual athlete) and as team characteristics (the perception, experiences or behaviors of the team). Group-mean centering was used to split explanatory variables into one variable at the individual level and one at the team level (Snijders & Bosker, 1999). We calculated the mean score of the team and subsequently subtracted these mean scores from the individual athletes' scores, which resulted in uncorrelated explanatory variables representing the team level and the individual level, respectively. By including both variables into the model, adjustments are made for individual and team level effects.

A stepwise procedure was followed in analyzing the data. Firstly, it was examined whether in a model without explanatory factors (the so-called null-model) team effects would be significant, indicating team differences in antisocial and prosocial behavior in the sports context. Then, in three consecutive steps, the control and explanatory factors were entered block wise in order to test whether the more elaborate models would make a significant improvement over the simpler models without control or explanatory factors and cross-level interactions. Improvement of model fit was tested by the difference in deviance, which has a chi-square distribution and can be used to test whether the more elaborate model fits significantly better than the simpler model. Whenever an inserted block did not result in a significant improvement of the model, it was removed. The resulting models were used as a reference for further comparison. The best fitting multilevel regression models are presented, meaning that only the variables with

statistically significant effects are shown in the final models for antisocial and prosocial behavior in the sports context.

Results

Descriptive analyses

Table 1 presents the correlations between age, cultural background (Caucasian white or ethnic minority), socioeconomic status, level of education, extent of sport participation (standardized summation of the number of hours and days per week spent in sporting activity), type of sport (team or individual), social desirability, externalizing behavior and prosocial behavior in general, coach-athlete relationship quality in terms of attachment-related support and relational support, moral atmosphere, moral reasoning, fair play attitude, and antisocial and prosocial behavior in the sports context. Only effects at $p < .001$ were considered significant in order to adjust for multiple statistical tests.

We found a number of significant correlations between control variables and explanatory and outcome variables (see Table 1). Age correlated negatively with type of sport ($r = -.20$), indicating that athletes performing individual sports were somewhat younger than athletes performing team sports. Cultural background was negatively associated with both type of sport ($r = -.24$) and relational support from the coach ($r = -.19$), which indicates that athletes from cultural minority groups were slightly underrepresented in individual sports relative to team sports. They also experienced less relational support from their coach than athletes with a Caucasian white background. As expected, higher socioeconomic background was positively associated with more advanced education ($r = .30$). A higher level of formal education was associated with a weaker tendency to provide socially desirable answers ($r = -.18$). The extent of sport participation proved to be higher in team sports than in individual sports ($r = -.31$), and was positively related to antisocial behavior in the sports context ($r = .22$). Coach-athlete relationship quality, moral atmosphere, and fair play attitude were more positive in individual sports than in team sports ($.22 < r < .44$), while athletes performing individual sports rated

themselves favorably on antisocial (r = -.38) and prosocial behavior (r = .28) in the context of sport. Finally, a stronger tendency to give socially desirable responses was associated with stronger fair play attitude (r = .19), and more positive self-reports of externalizing and prosocial behavior in general (r = -.21 and r = .35, respectively).

Correlations among the independent control and explanatory variables varied between r = -.17 (externalizing and prosocial behavior in general) and r = .65 (relational support from the coach and moral atmosphere). Finally, associations between explanatory and outcome variables ranged from r = .17 (moral reasoning and prosocial behavior in the sport context) to r = -.55 (relational support from the coach and antisocial behavior in the sports context).

Antisocial behavior in the sports context

Table 2 depicts the results of the multilevel analysis of antisocial behavior in the sports context, including unstandardized regression coefficients, standard deviations, t-values, percentages of (explained) variance, the deviance, and χ^2. The null-model indicates that 80% of the variance in antisocial behavior in the sports context could be attributed to differences among individual athletes within teams (individual level), and that the remaining 20% could be attributed to differences between teams (team level). The best fitting multilevel regression model [X^2 (10, N = 439) = 239.95, p < .001] accounted for 46% of the variance in antisocial behavior in the sports context. Most of the variance accounted for was distributed at the individual level, namely, 28%. The explained variance at the team level was 18%.

Greater attachment-related support and relational support from the coach were associated with lower levels of antisocial behavior in the sports context both at the individual and team level. More externalizing behavior problems were associated with higher levels of antisocial behavior in the sports context at both levels, which indicates that antisocial behavior in the context of organized youth sport is not only related to the tendency of the individual athlete himself to show externalizing behavior, but also related to the average tendency towards externalizing behavior problems of his team members. At the team level, the relation between

moral reasoning and antisocial behavior just failed to reach significance (p = .06), showing that there was a trend towards the reduction of antisocial behavior through high levels of moral reasoning within teams. A significant interaction effect was found for type of sport and moral reasoning, indicating that the relation between moral reasoning and antisocial behavior in the sports context was different for athletes involved in team sports compared with athletes practicing individual sports. Only in individual sports, in particular athletics, a higher level of moral reasoning was related to less antisocial behavior in the sports context (b = -.73, p < .001). The regression coefficient for soccer was b = -.05, for basketball b = -.15, and for taekwondo b = .15 (all non-significant).

A main effect for type of sport indicated that athletes who were involved in individual sports reported less antisocial behavior than athletes involved in team sports. A series of post-hoc t-tests (p < .05) revealed that soccer players (M = 1.94, SD = .68) reported more antisocial behavior in the sports context than basketball players (M = 1.63, SD = .43) and adolescents involved in athletics (M = 1.37, SD = .45) or taekwondo (M = 1.35, SD = .47). Basketball players reported less antisocial behavior in the sports context than soccer players, but more than other athletes. No differences were found between the two individual sports.

Prosocial behavior in the sports context

Table 3 presents the results of the multilevel analysis of prosocial behavior in the sports context. The null-model indicates that 87% of the variance in prosocial behavior could be attributed to differences among individual athletes within teams, and that 13% of the variance in prosocial behavior could be attributed to differences between teams. The best fitting multilevel regression model [χ^2 (8, N = 439) = 199.54, p < .001] accounted for 39% of the variance in prosocial behavior among athletes. Most of this variance was distributed at the individual level, namely, 27%; the remaining 12% was distributed at the team level.

Both at the individual and team level, greater relational support from the coach, a favorable moral atmosphere, and more prosocial behavior in general were related to more prosocial

behavior in the sports context. More advanced moral reasoning was associated with more prosocial behavior in the sports context, but only at the individual level.

Discussion

This study focused on factors amenable to intervention in organized youth sport that may contribute to adolescent athletes' antisocial and prosocial behavior in the sports context. These factors were examined both at the level of individual athletes and at the sports team level. The individual effects proved to be substantially greater than the team or contextual effects. Team effects are independent of the contribution the athlete makes to the team. As a consequence, these effects may be used to estimate the impact of participating in organized youth sport on social behavior in the context of sport. A total of 20% of the variance in antisocial behavior and 13% of the variance in prosocial behavior were distributed at the team level. These contextual effects are substantial. As a comparison, multilevel research in the school context showed that 19% of the variance in academic performance among students could be attributed to characteristics of the school environment (Scheerens & Bosker, 1997). The effect of organized youth sport on social behavior in the sports context, in the sense of belonging to a 'good' team with a 'good' coach, seems to be comparable to the effect that attending a 'good' school has on academic achievement.

Relationship with the coach

Supportive coach-athlete relationships proved to be associated with less antisocial and more prosocial behavior in the sports context. Not only relational support was found to be important, but also attachment-related support, indicating that coaches may have a positive impact by being psychologically available and trustworthy. The effects were significant not only for supportive coach-athlete relationships as perceived by the individual athlete, but also for the supportiveness of the coach as perceived by the team, suggesting that coaches themselves might contribute to these effects.

Findings from the present study are in line with studies emphasizing the mentoring role of the coach (Bloom, Durand-Bush, Schinke, & Salmela, 1998; Miller, Salmela, & Kerr, 2002). Coach-athlete relationship quality may not only be important for improving performance (Philippe & Seiler, 2006), it may also play a role in the development of antisocial and prosocial behavior in young athletes. The findings suggest that the positive or negative impact that coaches may have on prosocial and antisocial behavior may partly depend on the extent to which they are modeling positive relationship characteristics such as sociability, positive regard, and constructive criticism. Perceived relationship quality showed a strong bivariate association with moral atmosphere, as well as small but significant associations with moral reasoning and fair play attitude. When coaches are perceived as secure base figures of convenience (Waters & Cummings, 2000), they may engender a sense of emotional security among their pupils. Emotional security supports more adaptive regulation of emotions and behaviors during times of stress (e.g., Willemen, Schuengel, & Koot, 2009), reducing the likelihood of antisocial behavior and increasing the likelihood of prosocial behavior.

Moral atmosphere

Moral atmosphere proved to be positively related to prosocial behavior in the sports context. Comparable results for the school context were obtained by Power et al. (1989), who found a relation between moral atmosphere and prosocial behavior. Notably, collective responsibility, care, trust, and active participation make up a moral atmosphere that is conducive to prosocial behavior both in the context of organized youth sport and at school. The moral atmosphere in which human activity is embedded may be more important than the activity itself, regardless of whether it concerns sporting activities or the acquisition of skills and knowledge at school. In this sense, the findings provide support for the explanation Endresen and Olweus (2005) offered for the effects of power sports participation on antisocial behavior, namely that 'macho' culture prevails in these sports, which might negatively affect behavior (see Nixon, 1997; Rees, Howell, & Miracle, 1990). When moral atmosphere is conceptualized in terms of

the dichotomy between mastery and performance**,** moral atmosphere instead of the sporting activity tends to be related to moral judgment and respect for opponents, as well as moral behavior (see Gano-Overway, Guivernau, Magyar, Waldron, & Ewing, 2005; Miller, Roberts, & Ommundsen, 2005; Ommundsen, Roberts, Lemyre, & Treasure, 2003).

Several studies have found a relation between moral atmosphere and antisocial behavior, both in the context of organized youth sport (e.g. Guivernau & Duda, 2002; Stephens, 2000), and in the context of the school (e.g., Brugman et al., 2003; Høst et al., 1998; Mancini, Fruggeri, & Panari, 2006). The current study showed no significant multivariate association between moral atmosphere and antisocial behavior, but only a bivariate association. It is possible that the effect of moral atmosphere is accounted for by the other predictors, given that moral atmosphere was strongly associated with relational support, attachment-related support, as well as externalizing behavior problems of team members.

Moral reasoning

Athletes displaying higher levels of moral reasoning reported more prosocial behavior in the sports context, but there was no significant effect of the average level of moral reasoning within teams. A trend, however, was found towards a relation between higher levels of moral reasoning within teams and less antisocial behavior in the sports context, which suggests that more mature moral judgments that are shared by team members protect athletes from engaging in antisocial behavior in the context of sport. Also higher levels of moral reasoning in individual athletes were associated with less antisocial behavior in the sports context, but only among adolescents participating in athletics, which is the most individual sport in the present study. For that reason, differences in moral reasoning among individual athletes may translate more easily into antisocial behavior than differences in moral reasoning among athletes performing taekwondo or a team sport. Moreover, antisocial behavior tends to be highly regulated in martial arts such as taekwondo (see Theeboom, 2001), which are characterized by a strict and specific "moral code of behaviour" (p. 346). This might create a homogenizing effect on differences in

both moral reasoning and antisocial behavior among athletes within teams, which hampers to possibility of finding effects at the individual level.

Fair play attitude

Although there was a moderate bivariate association between fair play attitude and prosocial behavior, fair play attitude of the athletes was not associated with antisocial and prosocial behavior in the context of sport in the multivariate analyses. This was unexpected, as a previous study by Reference to Author (2008) showed a team effect of fair play on antisocial behavior in the context of sport. Possibly, those prosocial behaviors in the sports context that are most closely connected with the concept of fair play do not show much variation, because such prosocial behaviors are constitutive of sport itself. We suggest that the very practice of organized youth sport is made possible by prosocial behaviors that reflect values, such as respect for the opponent and fair competition.

Antisocial and prosocial behavior in the sports context

Soccer players reported the highest level of antisocial behavior in the sports context, followed by basketball players. Athletes performing individual sports (athletics and taekwondo) displayed the lowest levels of antisocial behavior, even after controlling for background variables, such as socioeconomic status and educational level, social desirability and externalizing and prosocial behavior in general. Notably, teams showing relatively high rates of externalizing behaviors in general did also report high levels of antisocial behavior in the sports context, which suggests that aggregation of antisocial youth might partly explain increases of antisocial behavior in the context of organized youth sport. Such negative effects of aggregation have also been found in peer-group interventions targeting behavior change in at-risk youth, and was explained by deviancy training that involves positive reinforcement from antisocial peers for aggressive talk and deviant behavior (Dishion et al., 1999). As we also found a team effect of prosocial behavior in general on prosocial behavior in the context of sport, it is possible that an aggregation of prosocial athletes might have a positive effect, which might result from

reinforcement of prosocial behaviors. As there is also evidence showing that peer contagion can occur in natural environments (Dishion & Dodge, 2005), sports clubs that risk attracting youth with antisocial behavior may attempt to avoid composing teams with a majority of adolescents with such tendencies. These findings also suggest that attempts to reduce antisocial behavior among youth at risk by organizing sports activities run the risk of only displacing antisocial behavior and perhaps even stimulating the rate of this behavior (cf. Dodge, Dishion, & Lansford, 2006).

A possible explanation for the differences in antisocial behavior between the four types of sports could be that the perceived legitimacy of aggressive behavior is greater in contact sports than in non-contact sports (Conroy, Silva, Newcomer, Walker, & Johnson, 2001). Another explanation is that team athletes may show a lower level of concern for the opponent compared to individual athletes (Vallerand, Deshaies, & Cuerrier (1997). The relatively low level of antisocial behavior in youth performing taekwondo might be somewhat surprising in light of Endresen and Olweus' (2005) longitudinal study of power sports, showing highly negative effects of power sports, which they attributed to repeated contacts with 'macho' attitudes, norms, and ideals in the sports context. The positive results for taekwondo, however, might be explained by the particular philosophy regarding discipline and emotional self-regulation that is inherent to most martial arts (Theeboom, 2001), and which may prevent antisocial behaviors in the context of sport. The relations between type of sport and degree of antisocial behavior suggest an effect of either sporting activities itself, or environmental factors that may be related to distinctions between contact and non-contact sports, team and individual sports (see Kavussanu et al., 2006), and/or the degree to which "frustration occurs due to the blocking of one's efforts to achieve goals", which explanation is consonant with the frustration-aggression hypothesis (Nucci & Kim, 2005, p.124). Compared to taekwondo in which the goal is to beat the opponent physically, opponents in soccer are more an obstacle for reaching the goal of the game (scoring a goal). The role of the opponent is therefore substantially different in soccer compared

to taekwondo. As a consequence, the role of opponents in soccer is likely to cause more frustration and may therefore evoke more antisocial behavior. Moreover, since in basketball the rules are more stringent with regard to physical contact, soccer is thought to inflict most antisocial behavior.

Limitations

There are some limitations to the current study. First of all, there is a limitation to the causal interpretation of the findings, as the study design was non-experimental, cross-sectional and not longitudinal. Because only youth self-reports were used and no data from the coaches, it is impossible to tell to what extent personal perceptions of the athletes colored their reports of antisocial and prosocial behavior. Self-report instruments assessing antisocial and prosocial behavior, though, have been shown to produce valid and reliable data on antisocial (Junger-Tas & Haen Marshall, 1999; Thornberry & Krohn, 2000) and prosocial behavior (Carlo & Randall, 2002). Kavussanu et al. (2006) found that self-report of antisocial and prosocial behavior by adolescent soccer players was significantly related to the independent observation of their antisocial and prosocial behaviors in the context of sport. Moreover, we controlled for social desirability because self-reports may be sensitive to socially desirable answering. Although the role of team membership was examined statistically by means of multilevel modelling, no instruments were used to assess team dynamics. It was therefore not possible to examine the role of team mate relationships, the impact of explicit team norms regarding behavior on and off the field, or the role attachment to peers might have. The team level effects that were found in the present study, however, suggest that it is worthwhile to examine team functioning in a more dynamic way, using instruments designed to tap team norms and values of on- and off-field antisocial and prosocial behaviors and relationships between team mates. Finally, the assessment of coach-athlete relationship quality might benefit from focusing on autonomy support from coaches, in which also relational support expected to fulfil the need for social relatedness is dealt with.

Conclusions

The current study uncovered factors explaining why the sporting context may contribute to antisocial and prosocial behavior in adolescent athletes. Apart from the behaviours that adolescents bring to the sporting context, behavior appeared to depend on the moral atmosphere of the sporting environment, the levels of moral reasoning about dilemmas that are salient to competitive sport participation and foremost, the relationship between coaches and their athletes. Because these factors are in principle amenable to intervention or rational decision making, future research may attempt to manipulate these factors as to test their causal role as well as to increase the promotive value of sports for social development and functioning in adolescence.

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Table 1.

Individual Athlete Level Means, Standard Deviations, and Correlations between Control Variables, Explanatory Variables, and Outcome Variables

Variables	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Control variables																		
1. Age (years)	15.3	1.4	1.00															
2. Cultural background [a]	0.34	.47	.08	1.00														
3. SES	8.9	2.9	.04	-.03	1.00													
4. Level of education	2.2	.78	-.01	-.08	.30*	1.00												
5. Extent of sport participation	10.0	6.3	.01	.10	-.06	.02	1.00											
6. Type of sport [b]	0.42	.49	-.20*	-.24*	.04	.00	-.31*	1.00										
7. Social desirability	1.41	.24	-.07	.10	-.08	-.18*	.00	.07	1.00									
8. Externalizing behavior in general	12.76	8.50	.06	.10	-.02	.02	.03	-.08	-.21*	1.00								
9. Prosocial behavior in general	2.65	.47	.04	-.02	.04	-.02	.12	.17*	.35*	-.17*	1.00							
Explanatory variables																		
10. Relational support	.80	.60	.02	-.19*	.12	.15	-.13	.39*	.01	-.31*	.22*	1 00						
11. Attachment-related support	2.46	.66	-.04	-.01	-.04	-.08	.05	.24*	.12	-.17*	.46*	.39*	1.00					
12. Moral atmosphere	3.61	.59	-.09	-.15	.08	.06	-.05	.44*	.12	-.25*	.42*	.65*	.44*	1.00				
13. Moral reasoning	2.89	.42	.09	-.06	.07	.07	-.03	.08	-.14	-.08	.04	.20*	-.04	.11	1.00			
14. Fair play attitude	3.92	.62	.00	-.02	.08	-.06	-.02	.22*	.19*	-.15	.45*	.23*	.29*	.32*	.08	1.00		
Outcome variables																		
15. Antisocial behavior in the sports context	1.63	.60	.04	.13	-.06	-.12	.22*	-.38*	-.08	.41*	-.06	-.55*	-.04	-.39*	-.22*	-.16	1.00	
16. Prosocial behavior in the sports context	2.92	.57	.07	-.15	.01	.02	.03	.28*	.06	-.12	.47*	.46*	.36*	.52*	.17*	.27*	-.07	1.00

Note. $N = 439$ athletes.

[a] Caucasian white = 0; Ethnic minority = 1.

[b] Team sport = 0; Individual sport = 1.

* $p < .001$.

Table 2.

Multilevel Analysis of Antisocial Behavior in the Sports Context

	Null-model	Explanatory model		
		b	*s.e.*	*t*
Intercept	1.57 (0.04)			
Individual level				
Relational support		-.47	.05	9.40***
Attachment-related support		-.21	.04	5.25***
Moral reasoning		.02	.07	0.29
Externalizing problems		.59	.08	7.38***
Team level				
Relational support		-.40	.10	4.00***
Attachment-related support		-.21	.08	2.63**
Moral reasoning		-.30	.16	1.88
Externalizing problems		.67	.20	3.35***
Type of sport (team vs. individual)		-.29	.06	4.83***
Interactions				
Type of sport*moral reasoning		-.32	.12	2.67**
Variance components				
Individual level	.281 (80%)	.182		
Team level	.071 (20%)	.007		
Explained variance				
Individual level		28%		
Team level		18%		
X^2		239.95***		

Note. Team level: $N = 67$ teams; Individual level: $N = 439$ athletes.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3.

Multilevel Analysis of Prosocial Behavior in the Sports Context

	Null-model	Explanatory model		
		b	*s.e.*	*t*
Intercept	2.95 (0.04)			
Individual level				
Relational support		.19	.06	3.17**
Moral atmosphere		.19	.06	3.17**
Moral reasoning		.14	.06	2.33*
Prosocial behavior		.42	.06	7.00***
Team level				
Relational support		.28	.11	2.55*
Moral atmosphere		.26	.12	2.17*
Moral reasoning		.01	.15	0.17
Prosocial behavior		.33	.13	2.54*
Variance components				
Individual level	.285 (87%)	.197 (60%)		
Team level	.042 (13%)	.003 (1%)		
Explained variance				
Individual level		27%		
Team level		12%		
X^2		199.54***		

Note. Team level: $N = 67$ teams; Individual level: $N = 439$ athletes.

* $p < .05$. ** $p < .01$. *** $p < .001$.