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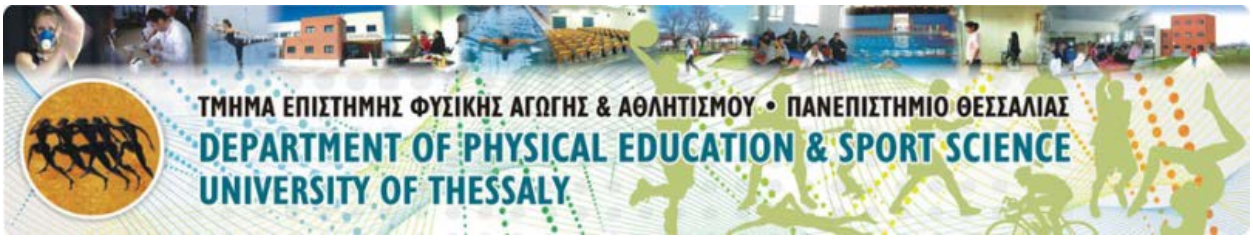
A cross-cultural approach to a cross-cultural issue: Psychosocial factors and doping in young athletes

in collaboration with

University of Copenhagen and University of Thessaly



A cross-cultural approach to a cross-cultural issue: Psychosocial factors and doping in young athletes

Final Report for the World Anti Doping Agency

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Executive Summary

Research investigating psychosocial factors associated with doping intentions is important for the fight against doping. However, most studies have focused mainly on motivational variables. This is surprising, given that in addition to being a motivated behavior, doping is a “moral” behavior: Using Performance Enhancing Drugs (PEDs) to take an unfair advantage over the opponent is cheating. Thus, to fully understand doping behavior, it is important to consider both moral and motivational variables. In this research, we examined motivational and moral predictors of doping intentions in sport, and we had three objectives.

Our first objective was to determine whether performance motivational climate (a motivational variable), moral atmosphere of the team, and moral identity (two moral variables) predict PED intentions in team sport athletes. Performance motivational climate refers to the values that are dominant in the team, as indicated by the coach’s behavior; for example, by rewarding only the best athletes, the coach shows that only high ability matters. Performance motivational climate has been positively associated with more favorable attitudes toward doping. Moral atmosphere concerns team perceptions of what is acceptable behavior in the team, for example taking drugs may be viewed as acceptable behavior in one team but not in another. Finally, moral identity is the importance one places on being a moral person. Although both moral atmosphere and moral identity have been associated with cheating, none has been investigated in relation to doping intentions in sport.

Our second objective is to understand the processes through which these factors may influence doping intentions. We will examine one motivational (ego orientation) and two moral (moral disengagement, anticipated guilt) variables to determine whether the effects of performance climate, moral atmosphere, and moral identity, respectively, on doping intentions occur through ego orientation, moral disengagement, and anticipated guilt.

Our third objective is to examine this conceptual model of doping intentions in three European countries. Cross-cultural research in doping intentions is scarce, but is important as it establishes whether a proposed model is specific to a single culture or can be more universal. This can give us more confidence about the importance of the identified predictors of doping intentions.

To achieve these objectives, we recruited a large sample of male and female football players from three countries: UK, Denmark, and Greece. Participants completed questionnaires before or after a training session. Doping intentions were measured with questions referring to two hypothetical doping scenarios: one pertained to using a banned substance to enhance performance, and another described a situation where the participant could use a banned substance to recover from injury. We also measured moral atmosphere and anticipated guilt with respect to the two scenarios, while the remaining variables were assessed with established measures, which were adapted to doping, and translated into Danish and Greek.

Our results showed that, as hypothesized, performance motivational climate, moral atmosphere and moral identity, were associated with doping intentions in the hypothesized direction. That is, players who had a weak moral identity and perceived a performance motivational climate in their team, and a team environment that condoned doping, were more likely to report the intention to use banned substances to enhance their performance and speed up recovery from injury. As hypothesized, moral disengagement and anticipated guilt mediated the effects of moral atmosphere and moral identity, respectively, on doping intentions. However, contrary to our

hypothesis, ego orientation evidenced a null relationship with doping intentions, and was not confirmed as mediator in our model. We revised our conceptual model of doping eliminating ego orientation. The revised model showed that moral disengagement also mediated the link between performance climate and doping intentions, and anticipated guilt also mediated the link between moral atmosphere and moral intentions. Finally, the modified model was equivalent across the three countries.

Introduction

The use of PEDs by athletes is a pervasive phenomenon in sport. It is well known that the use of PEDs has significant negative health consequences for athletes and contributes to a very negative image of sport in society. Therefore, understanding the psychosocial factors that lead athletes to use PEDs, as well as the processes through which these factors act on PED intentions is important. Below, we discuss research that underpins a conceptual model of doping intentions. We begin by discussing issues associated with the measurement of doping intentions. Then, we review research that underpins our conceptual model. Finally, we highlight why the proposed research is important and present the hypothesized model.

Doping Intentions

Several studies have examined doping intentions, or past doping behavior, as their outcome variable (e.g., Gucciardi et al., 2011; Lazuras et al., 2010; Lucidi et al., 2008; Moran et al., 2008). Researchers have highlighted the difficulty of studying doping due to the sensitive issue of the topic (e.g., Moran et al., 2008). Essentially, researchers ask athletes to be honest about dishonest intentions! Although some studies have taken measures to facilitate honest responding (e.g., Lazuras et al., 2010), the problem of obtaining honest reports of doping intentions and past doping behavior remains. To overcome this problem, the present study developed and presented athletes two hypothetical doping scenarios and asked them to indicate their likelihood of engaging in the behavior, if they were in these hypothetical situations. We refer to this variable as doping intentions.

Predicting Doping Intentions

Although several studies have investigated the relationship between motivational variables and doping intentions or attitudes in athletes (e.g., Donahue et al., 2006; Sas-Nowosielski & Swiatkowska, 2008) less attention has been given to moral variables. In this research, we focused on three predictors of doping intentions in athletes: motivational climate, moral atmosphere, and moral identity.

Motivational climate refers to the situational goal structure, that is, the values conveyed to participants in the achievement context (Ames, 1992). In sport, these values become evident through the behavior of the coach. For example, a coach who recognizes only the best athletes, favors some athletes, gives feedback that focuses on athletic ability, and punishes athletes for mistakes makes clear that high ability is valued in that context. Through his/her behavior, the coach creates a *performance* motivational climate in the team. In our research with football players, performance motivational climate has been positively associated with antisocial behaviors, such as diving to fool the referee, deliberate handball, and pretending to be injured (Kavussanu, 2006). In doping research, it has been positively associated with doping attitudes (Moran et al., 2008).

Two moral variables that have the potential to enhance our understanding of doping intentions are the moral atmosphere of the team and moral identity. *Moral atmosphere* refers to the collective group norms regarding moral action, that is, the type of behavior considered acceptable in a group by its group members. This is developed over time through interaction among group members. In our research (Kavussanu et al., 2002; Kavussanu & Spray, 2006), we have examined two aspects of moral atmosphere: one referring to the coach and one referring to teammates. We presented basketball and football players with scenarios describing cheating behaviors, such as faking an injury, and measured moral atmosphere by asking whether the coach encourages cheating behaviors

and the number of teammates likely to cheat. When participants perceived their coach as encouraging the described behaviors and a large number of teammates as willing to engage in the behaviors, if winning was at stake, they reported engaging in these behaviors. *Moral identity*, is the cognitive schema a person holds about his or her moral character (Aquino et al., 2009). Individuals with a strong sense of moral identity consider being moral as an important aspect of their self (Aquino & Reed, 2002) and are motivated to behave in a moral manner. In our research with adult footballers, moral identity has been inversely associated with antisocial behavior (Sage et al., 2006).

Although performance motivational climate, moral atmosphere, and moral identity have been associated with cheating or antisocial sport behavior in previous research, none of these variables has been examined in relation to doping intentions in athletes. However, all three variables have considerable potential in enhancing our understanding of doping. Performance climate and moral atmosphere can reveal the extent of the group influence (motivational and moral) on doping intentions, while moral identity can uncover the role of personal moral variable on doping intentions. Thus, examining these variables in relation to doping intentions should enhance our understanding of doping in sport.

Mediating Variables

Another drawback of most doping studies is that they rarely examine mediators. A mediator is a variable that "carries" or explains the effect of the predictor on the outcome. By identifying mediators, we are able to better understand the relationship between two variables. In the proposed project, we plan to examine three mediators: ego orientation, moral disengagement, and anticipated guilt.

Ego orientation is one of two achievement goals assumed to operate in sport. Achievement goals reflect the criteria athletes use to define success and evaluate their competence in sport (Nicholls, 1989). Athletes who are high on ego orientation feel successful only when they do better than others and endorse the belief that high ability, deception, and cheating lead to success in sport. Ego orientation has been associated with more favorable attitudes toward doping in elite athletes (Sas-Nowosielski & Swiatkowska, 2008; Moran et al., 2008), and low levels of moral functioning in team sport athletes (Kavussanu & Roberts, 2001; Kavussanu & Ntoumanis, 2003); it has also been positively linked to performance motivational climate (Sage & Kavusanu, 2008). Thus, ego orientation should mediate the relationship between performance climate and doping intentions.

Moral disengagement refers to eight cognitive mechanisms that individuals use to minimize anticipated negative affect (e.g., guilt, shame) when engaging in transgressive behavior (Bandura, 1999). For example, players may use "displacement of responsibility" by blaming the coach for their own behavior, or they may use "diffusion of responsibility" by claiming that everyone in the team cheats or uses PEDs, and therefore they should not be blamed for also doing this. Moral disengagement has been positively associated with doping intentions (e.g., Lucidi et al., 2004, 2008; Zelli et al., 2010), acceptability and likelihood of cheating (d'Arripe-Longueville et al., 2010) and antisocial behavior in sport (Boardley & Kavussanu, 2009, 2010). This construct could mediate the effects of moral atmosphere on doping intentions. Specifically, if the coach encourages the use of PEDs and athletes perceive that their teammates are likely to use PEDs, they may be more likely to morally disengage, with subsequent effects on doping intentions and behavior.

The final mediator we have examined in this research is *anticipated guilt*. Guilt is a self-conscious moral emotion that plays an important role in regulating moral action (Tangney et al.,

2007). People avoid doing bad things because they want to avoid the negative feelings (e.g., guilt, shame) associated with unethical behavior (Bandura, 1991). In our research, anticipated guilt was negatively associated with participants reported likelihood to behave aggressively in a hypothetical sport situation (Stanger et al., 2012). In another study, anticipated guilt for using Human Growth Hormone (HGH) in a hypothetical situation was inversely associated with athletes' decision to use HGH (Strelan & Boeckmann, 2006). Thus, if athletes expect to feel bad after using PEDs, they are less likely to do it. Anticipated guilt could mediate the effect of moral identity on doping intentions. Specifically, athletes who feel that being a moral person is an important part of who they are should be more likely to feel guilt for using PEDs, which constitutes cheating and is illegal.

Importance of Proposed Research and Hypothesized Model

In this research, we aimed to enhance our understanding of the factors associated with doping intentions in sport. First, we developed two doping scenarios and assessed doping intentions in a manner that facilitated honesty in athletes' responses, an important consideration in doping research. Second, we examined whether performance motivational climate, moral atmosphere, and moral identity predict doping intentions in young team sport athletes, and whether ego orientation, moral disengagement, and anticipated guilt, mediate the relationship between these predictors and doping intentions. Most of these variables have never been investigated in previous doping research. Thus, we could identify new variables associated with doping intentions and better understand their relationships with doping intentions. Third, we tested our model in three countries. At present, there is a dearth of cross-cultural research that examines doping intentions in sport. Determining whether the hypothesized relationships hold across three countries increased our confidence in the findings. Finally, we sampled young athletes, a population that is important for doping prevention. The model is depicted in Figure 1 below.

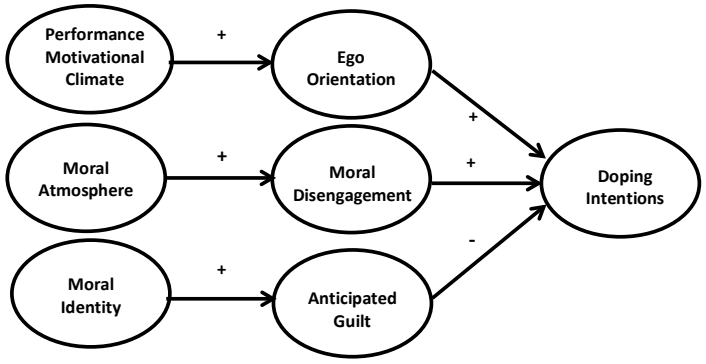

Figure 1. Hypothesized model of doping intentions in sport

We proposed to test the following hypotheses:

1. Performance motivational climate and moral atmosphere of the team will positively predict PED intentions, while moral identity will negatively predict PED intentions.
2. The effects of performance climate, moral atmosphere, and moral identity on PED intentions will be mediated, respectively, by ego orientation, moral disengagement, and anticipated guilt.
3. The proposed conceptual model will be equivalent across the three countries. However, due to the lack of empirical evidence, the hypothesis is tentative.

Method

Research Design

The study was cross-sectional and cross-cultural. Similar numbers of participants were recruited from the three countries, and the variables included in the conceptual framework described in the previous section were measured in each country.

Participants

A total of 1495 (729 females) elite football players (mean age 20.4 ± 4.4) from 93 teams were recruited. The participants were as follows: in Denmark 13 clubs were from premier league; 11 clubs from Division 1; and 6 clubs from young talent teams. In Greece players were from Divisions 1, 2, and 3 (26 clubs), and in the United Kingdom, participants were recruited from Division 1 (37 teams). Below we have described the characteristic of each sample.

In the UK, a total of 506 (251 females) football players (mean age 18.4 ± 1.9) participated in the study. Mean years of playing football were 9.6 ± 3.2 (range: 1-20); mean years playing for the current team were 2.7 ± 2.1 (range: 1-15) and mean years playing with the current coach were 1.8 ± 1.3 (range: 1-10). A total of 49.4% of the players indicated that they "always" were a starting player for their team; 39.5% indicated that they "sometimes" were a starting player; and 11.1% indicated that they were "substitute". The playing position of the players was distributed as follows: forward (21.9%), midfielder (34.4%), defender (33.8%) and goalkeeper (9.9%).

In Denmark, a total of 509 (251 females) elite football players (mean age 21.3 ± 4.5) participated in the study. Mean years of playing football were 8.1 ± 4.6 (range: 1-25); mean years playing for their current team were 3.1 ± 3.1 (range: 1-20); and mean years playing for their current coach were 1.4 ± 1.4 (range: 1-14). A total of 52.1% of the players indicated that they "always" were a starting player for their team; 31.3% indicated that they "sometimes" started for their team; and 16.6% indicated that they were "substitute". The playing position of the players was distributed as follows: forward (22.4%), midfielder (36.1%), defender (31.9%) and goalkeeper (9.7%).

In Greece, a total of 480 football players (mean age 21.7 ± 5.2, 223 females) participated in the study. Mean years of playing football were 8.0 ± 5.0 (range: 1-25); mean years playing for their current team were 3.0 ± 2.8 (range: 1-25); and mean years playing for their current coach were 1.6 ± 1.7 (range: 1-20). 49.4% of the players indicated that they "always" were a starting player for their team; 28.7% indicated that they "sometimes" were a starting player; and 21.7% indicated that they were "substitute". Their playing position was distributed as follows: forward (24.2%), midfielder (30.3%), defender (36.8%) and goalkeeper (8.8%).

Measures

In this section, we briefly describe the instruments that we used to measure the variables of interest. The full instruments can be found in Appendices 2-7. Some instruments were developed specifically for this project as explained below, while others were adapted from previous research.

Doping Intention. We used two scenarios to measure doping intention. We developed these scenarios in consultation with elite football players, who identified situations, in which athletes may be tempted to use banned substances. Scenario 1 described a situation, where footballers had the opportunity to use a banned substance to enhance their performance, while Scenario 2 described a situation, where footballers could take a banned substance to speed up recovery from injury. The two scenarios are presented below:

Scenario 1 – Performance Enhancement

It is the day before the most important game of the season. The winner of this game will win the league. The team against which you will compete is of similar ability level to your team, and they are just one point ahead of your team in the league. Lately, your performance has been below your best. You don't feel you have the necessary fitness for this important game, and you are concerned about how you will perform. You mention this to one of your teammates, who tells you that he/she has been using a new substance, which has enhanced his/her fitness and, as a result, his/her performance. The substance is banned for use in sport, but the chance that you will be caught is extremely small.

Scenario 2 – Injury Recovery

It is two weeks before the most important game of the season. The winner of this game will win the league. The team against which you will compete is of similar ability level to your team and they are just one point ahead of your team in the league. You really want to play in this game. However, two months ago, you sustained a knee injury, and you know you need at least one more month of rehabilitation to fully recover. One of your teammates tells you that he/she has recently used a new substance, which has helped him/her recover faster than usual from a knee injury. The substance is banned for use in sport, but the chance that you will be caught is extremely small.

After participants read the scenarios, they were asked (a) how likely it is that they would use the banned substance in this situation and (b) how tempted they would be to use the substance. Participants indicated this on a 7 point Likert scale anchored by 1 = *not at all likely/ tempted* and 7 = *extremely likely/tempted.* The average of the two ratings represented our variable of doping intention. We used one variable for performance enhancement and one for injury recovery.

Anticipated guilt. We measured anticipated guilt with respect to the two doping scenarios described above using the guilt subscale from the State Shame and Guilt Scale (Marschall, Sanftner, & Tangney, 1994). Participants were asked to imagine that they were in the situation described in the hypothetical doping scenario, but that they had used the banned substance. Then they indicated how they would feel if they had used the banned substance. The stem for each item was "If I had used the banned substance, I would feel. . . ." and sample items are "I would feel remorse, guilt" and "I would feel bad about what I had done". Participants indicated their responses on a Likert scale anchored by 1 = *not at all* and 7 = *very strongly.* Marschall et al. (1994) reported good internal consistency for this measure ($\alpha = .82$).

Moral atmosphere. In line with previous research (e.g., Kavussanu et al., 2002; Kavussanu & Spray, 2006) we measured two aspects of the moral atmosphere of the team: The moral atmosphere created by the coach, and the moral atmosphere created by the teammates. Questions followed each of the two doping scenarios. First, participants were asked to imagine that their teammates also had the opportunity to use the banned substance to enhance their performance in this important game and to help them recover faster from a knee injury and play in this important game. Then they were asked to indicate how many of their teammates would use the banned substance. Responses were made on a 7-point Likert scale with anchors of 1 = *none of the players* and 7 = *all the players.*

Next, participants were asked to imagine that their coach knew the participant could use the banned substance to enhance his or her performance in this important game/to speed up his or her recovery from a knee injury and play in this important game. Then they responded to the question "To what extent would your coach encourage you to use the banned substance?" Responses were

made on a 7-point Likert scale with anchors of *1 = not at all encourage* and *7 = strongly encourage.* These two questions were adapted from Kavussanu and Spray (2006).

Performance motivational climate. We measured performance motivational climate using an abbreviated version of the performance climate scale of the Perceived Motivational Climate in Sport Questionnaire-2 (PMCSQ-2; Newton, Duda, & Yin, 2000). Participants were asked to think about how it felt to play on this team during important league games. A sample item is "the coach favours some players more than others" or "players are punished when they make a mistake". Participants indicated their level of agreement on a Likert scale anchored by 1 = *strongly disagree* and 5 = *strongly agree.* The abbreviated version consisted of 12 items, because these items were the only ones relevant to competition, to which the scenarios refer. The PMCSQ-2 has shown good psychometric properties (Newton et al., 2000).

Ego orientation. We measured ego orientation using the relevant subscale of the Perception of Success Questionnaire (Roberts, Treasure, & Balague, 1998). Participants were asked to think about when they feel most successful while playing important league games. The stem for each question was "When I play important league games, I feel most successful when…" and a sample item is "I show other people I am the best". Participants indicated their level of agreement using a 5 point Likert scale anchored by 1 = *strongly disagree* and 5 = *strongly agree.* This subscale has six items and has shown good internal consistency, in previous research (α = .84; Roberts et al., 1998).

Moral identity. Moral identity was assessed using the 5-item internalization subscale of the moral identity scale (Aquino & Reed, 2002). This subscale taps the degree to which moral traits are central to individuals' self-concept (Aquino & Reed, 2002). Participants were presented with nine traits (e.g., caring, fair, kind, helpful) validated as necessary characteristics of a moral person (Aquino & Reed, 2002), and were asked to respond to statements concerning these traits (e.g., "It would make me feel good to be a person who has these characteristics"). Responses were made on a 7-point scale, anchored by 1 (*strongly disagree*) and 7 (*strongly agree*). The scale has demonstrated good internal consistency, with an alpha coefficient of .85 (Aquino & Reed, 2002). The mean of the 5 items was calculated and used in all analyses.

Moral disengagement. Moral disengagement in doping was measured with an instrument developed for this study, by adapting items from previous moral disengagement scales and developing some new items. The new instrument, termed the Moral Disengagement in Doping Scale (Kavussanu, Hatzigeorgiadis, Elbe, & Ring, in revision) was used to measure moral disengagement in doping. Participants were asked to read twelve statements and indicate their level of agreement using a Likert scale anchored by 1 = *strongly disagree* and 7 = *strongly agree*. Sample items are "Doping does not really hurt anyone" and "Doping before a game is no big deal when others do it all the time". The scale has shown good levels of internal consistency (α range = .82 - .86), and support for its factorial, convergent, concurrent, and discriminant validity has been provided (Kavussanu et al., in revision).

Procedure

Prior to the main data collection in Denmark and Greece, the entire questionnaire was translated into Danish, and parts of the questionnaire were translated into Greek, using the translation-back-translation method (Brislin, 1970). The ego orientation and performance motivational climate scales had already been successfully translated and used in previous Greek studies. Therefore, for the Greek version, only the other scales were translated into Greek. In

Denmark, the translated questionnaire was pilot tested on a sample of 52 elite team handball players. Analysis of the data collected during the pilot test indicated good reliabilities. In Greece, the questionnaire was administered to a pilot sample of 10 football players aged 13-16, to ensure that participants could comprehend the questions asked, and to measure time for completion.

Participants were recruited using a variety of methods. First, the coaches of the teams were contacted via e-mail or letter, which briefly explained the purpose of the study, included sample questions, and invited the team to take part in the research. This first contact was followed up with phone calls, and a time and date for data collection was scheduled. A research assistant administered questionnaires to the players either before or after a training session.

Each questionnaire was distributed in four different versions (A, B, C, D). In each version, there was a different order of the individual scales. This method was used to ensure that the order of scales did not influence participants' responses. The number of completed questionnaires for each version was as follows: version A (22.4%), version B (31.6%), version C (21.8%) and version D (24.2%).

All questionnaires were completed without the coach present. Before data collection, the research assistant briefly informed participants about the general purpose of the study, and all participants signed an informed consent form (see Appendix 1). They were informed that their responses would be kept confidential, and that they would be used only for research purposes. All questionnaires were completed anonymously. The anonymity of responses was emphasized to ensure participants were as honest as possible in their responses. Participants placed each completed questionnaire in an envelope and sealed it before handing it to the research assistant. This further reassured participants that their responses could not be identified and encouraged them to provide honest answers.

Results

Overview of Results Section

In this section, we present the findings of our project. We present the findings separately for each country, as well as for the two scenarios. We start with some preliminary results that are not directly related to our research questions. First, we describe the characteristics of the three samples in terms of gender, starting status, and playing position; second, we present descriptive statistics for doping intentions by sex, starting status, and playing position; and third, we present correlations between doping intentions and age, football experience, years playing for the coach and years playing for the current team.

Following the presentation of these results, we present the findings that pertain to our main study purpose and hypotheses. First, we report descriptive statistics, internal consistencies and zero-order correlations between all the variables that we measured in this research. Zero-order correlations allowed us to determine the relationship between the three distal predictors (performance climate, moral atmosphere, moral identity) and doping intentions, thus testing our first hypothesis. Then, we tested the hypothesized model, which included the three mediators; part of this testing included mediation analysis, thus testing our second hypothesis. Finally, we report the results of a modified model and the findings of multisample analysis, where we examined whether the modified model was equivalent across the three countries; this tested our third hypothesis.

Sample Characteristics

As can be seen in Table 1 below, the sample was similarly distributed across the three countries in terms of sex, starting status, and playing position. Most participants were starting players in their team and most played in midfielder position. Slightly more males than females completed the questionnaire, due to the limited number of active female football players in Greece.

Table 1

Sample characteristics

	Total	UK	Denmark	Greece
Sex				
Males	765	251	258	256
Females	729	255	251	223
Starting status				
Always starting	741	250	258	233
Sometimes starting	490	200	155	135
Substitute	240	56	82	102
Position				
Forward	337	111	111	115
Midfielder	511	174	179	158
Defender	473	171	158	144
Goalkeeper	140	50	48	42

Doping intentions and demographic variables

In this section, we present descriptive statistics for doping intentions by sex, starting status, and playing position for each country. We also present analyses examining differences between these variables as well as zero-order correlations.

First, we conducted three one-way MANOVAs to examine differences in the two doping scenarios for sex, position, and starting status. The analysis for sex, revealed a significant multivariate effect, F (2, 1372) = 3.39, $p < .05$, partial $\eta^2 = .01$. Examination of the univariate statistics showed that the effect was significant for the performance enhancement scenario, F (1, 1375) = 6.78, $p < .01$, $\eta^2 = .01$, where males scored slightly higher than females, but not for the injury recovery scenario, F (1, 1375) = 2.56, $p = .11$. There were no significant multivariate effects for playing position, F (6, 2272) = 1.22, $p = .30$ or starting status, F (4, 2712) = .64, $p = .64$.

Second, three 2-way MANOVAs were conducted to test for interactions of sex, playing position, and starting status with country. The analysis revealed a significant sex by country interaction, F (4, 2738) = 8.23, $p < .01$, partial $\eta^2 = .01$. Univariate analyses showed that the interaction was significant for both scenarios: for Scenario 1, F (2, 1375) = 9.15, $p < .01$, partial $\eta^2 = .01$; and for Scenario 2, F (2, 1375) = 12.03, $p < .01$, partial $\eta^2 = .02$. Pairwise comparisons showed significant differences between males and females in Greece, but not in UK and Denmark. Specifically, Greek male football players reported higher doping intentions than their female counterparts, for both performance enhancement and injury recovery, but no such differences were revealed in the British or the Danish sample.

The analysis also revealed a non-significant country by playing position interaction, F (4, 2706) = .79, $p = .66$, and a significant multivariate interaction effect for playing status, F (8, 2700) = 2.42, $p < .05$, partial $\eta^2 = .01$. The interaction was significant for the performance enhancement scenario, F (4, 1359) = 3.78, $p < .01$, partial $\eta^2 = .01$, but not for the injury recovery scenario, F (4, 1359) = .75, $p = .56$. Pairwise comparisons for Scenario 1 showed that in UK, regular starters

scored higher than occasional starters and substitutes on the intention to dope to enhance their performance, whereas no differences were identified in Denmark and Greece.

Although some significant differences between subgroups on doping intentions were revealed in the analyses described above, it is worth noting, that in all cases, the effect size was small ranging from .01 to .02. Thus, even though we found some differences, these differences were not sufficient large to be considered meaningful.

Table 2

Descriptive statistics for doping intentions by sex, starting status, and position, for each country

	Total				UK				Denmark				Greece			
	S1		S2		S1		S2		S1		S2		S1		S2	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Sex																
Males	2.08	1.40	2.47	1.58	2.21	1.48	2.29	1.46	1.69	1.12	2.30	1.57	2.32	1.47	2.83	1.65
Females	1.90	1.30	2.33	1.53	2.09	1.41	2.51	1.59	1.84	1.25	2.34	1.56	1.70	1.13	2.08	1.38
Starting																
Always	2.01	1.37	2.45	1.61	2.35	1.55	2.52	1.61	1.71	1.13	2.38	1.65	1.92	1.28	2.44	1.56
Sometimes	1.98	1.33	2.41	1.55	1.99	1.34	2.34	1.48	1.77	1.23	2.35	1.58	2.20	1.40	2.58	1.64
Substitute	1.97	1.34	2.28	1.41	1.87	1.20	2.11	1.31	1.93	1.30	2.16	1.34	2.06	1.45	2.48	1.53
Position																
Forward	1.88	1.22	2.32	1.50	1.99	1.23	2.24	1.37	1.61	.98	2.20	1.56	2.05	1.37	2.56	1.54
Midfielder	2.07	1.42	2.46	1.57	2.19	1.55	2.38	1.57	1.85	1.33	2.36	1.57	2.17	1.32	2.63	1.56
Defender	1.95	1.32	2.43	1.62	2.10	1.39	2.47	1.60	1.81	1.16	2.44	1.62	1.90	1.39	2.37	1.67
Goalkeeper	2.11	1.47	2.34	1.45	2.56	1.66	2.60	1.54	1.71	1.13	2.21	1.36	1.90	1.40	2.07	1.38

S1 = Scenario 1 (Performance enhancement); S2 = Scenario 2 (Injury recovery)

Correlations between supplementary variables and doping intentions

During data collection, we measured some variables not directly related to our study purposes: age, years playing football, years playing for this team, and years playing for this coach. We computed zero-order correlations to examine the relationships between doping intentions and these variables. The correlations for the total sample and the three sub-samples are presented in Table 3, below.

Table 3

Relationships of doping intentions with age, years in football, years competing, and years with the coach

	Total		UK		Denmark		Greece	
	S1	S2	S1	S2	S1	S2	S1	S2
1. Age	-.04	.01	.03	.13**	-.15**	-.10*	.08	.06
2. Years football	.05*	.03	.08	.11*	-.03	-.04	.05	.04
3. Years team	.02	.02	.08	.04	.07	.14**	-.10*	-.16**
4. Years coach	.07*	.06*	.19**	.21**	.03	.05	-.14**	-.15**

S1 = Scenario 1 (Performance enhancement); S2 = Scenario 2 (Injury recovery)
*$p < .05$; ** $p < .01$; ***$p < .001$

Some notable findings are: Age was positively related to doping intentions for injury recovery in the UK sample, but negatively related to this variable in the Danish sample for both scenarios. Football experience was positively related to doping intentions in scenario 2 in the UK sample. The variable years playing for the team was positively related to doping intentions in the Danish sample, and negatively related to this variable in the Greek sample. Finally, the variable years playing with this coach was positively related to doping intentions in the UK sample, but inversely associated with this variable in the Greek sample.

Descriptive statistics, internal consistencies and zero-order correlations

Descriptive statistics and reliabilities for all variables for the total sample and the three sub-samples are presented in Table 4. It can be seen that Cronbach's alpha coefficients were above.70 for all variables except for the alphas for the moral atmosphere, which ranged from .48 to .63. This in part is due to the small number of items (i.e., 2) in the moral atmosphere measure. In general, participants reported low intentions to dope and high anticipated guilt, and thought that their coach would not encourage, and that their teammates would not engage, in doping behaviour. Participants reported moderate levels of ego orientation, low moral disengagement, and performance climate, and high moral identity.

We also conducted a one-way MANOVA to examine differences in all variables between participants from the three countries. The analyses revealed a significant multivariate effect, F (10, 1,335) = 13,864.00, $p < .01$, partial $\eta^2 = .12$. Examination of the univariate effects showed significant differences for all variables, except for doping intentions for the injury scenario. The differences between the three countries can be seen in Table 4. Some notable findings are that Danish participants reported lower intention to dope compared to UK and Greek participants, who did not differ from each other. Greeks also anticipated feeling lower guilt than both the British and Danes. UK participants perceived a moral atmosphere that condoned doping more so than the Danes and Greeks, and reported lower ego orientation and lower moral identity, but higher moral

disengagement than both other samples. Finally, compared to the Danes, the British and Greek participants perceived a lower performance motivational climate in their team.

Correlations between all the variables for the total sample and the three sub-samples are presented in Table 5. It can be seen that, for both scenarios, doping intention was negatively associated with anticipated guilt and moral identity, and positively linked to doping moral atmosphere, moral disengagement, and performance motivational climate. The reverse relationships were evidenced between anticipated guilt and these three variables, while anticipated guilt was positively related to moral identity. Moral atmosphere was positively related to performance climate and negatively related to moral identity. Performance climate was positively linked to ego orientation and moral disengagement, while the latter variable was negatively linked to moral identity.

Table 4

Descriptive statistics and alpha coefficients for all variables

Variable	Total Sample			UK[1]			Denmark[2]			Greece[3]			F
	M	SD	α	M	SD	α	M	SD	α	M	SD	α	(2, 1347)
Doping intentions S1	1.99	1.35	.83	2.15[2]	1.45	.86	1.77[1,3]	1.19	.77	2.03[2]	1.34	.84	10.05*
Doping intentions S2	2.40	1.56	.84	2.40	1.53	.85	2.33	1.57	.82	2.50	1.58	.85	1.27*
Anticipated guilt S1	5.08	1.68	.94	5.12[3]	1.63	.95	5.27[3]	1.69	.93	4.83[1,2]	1.71	.95	7.42*
Anticipated guilt S2	4.96	1.73	.94	5.11[3]	1.64	.95	5.02[3]	1.80	.94	4.70[1,2]	1.74	.95	6.53*
Moral atmosphere S1	1.84	.97	.61	2.07[2,3]	1.08	.63	1.56[1,3]	.79	.67	1.85[1,2]	.90	.48	35.68*
Moral atmosphere S2	2.00	1.05	.61	2.16[2,3]	1.07	.59	1.81[1,3]	.99	.71	2.02[1,2]	1.05	.56	14.16*
Ego orientation	3.91	.77	.85	3.58[2,3]	.80	.86	4.24[1,3]	.62	.79	3.96[1,2]	.70	.82	103.44*
Moral disengagement	2.19	1.04	.79	2.40[2,3]	1.16	.86	1.94[1,3]	.83	.63	2.20[1,2]	1.03	.79	23.87*
Performance climate	2.67	.74	.89	2.60[2]	.76	.92	2.84[1,3]	.67	.86	2.58[2]	.76	.90	18.01*
Moral identity	5.72	1.06	.79	5.43[2,3]	1.06	.78	6.00[1,3]	.99	.78	5.81[1,2]	1.03	.79	38.66

Note: Possible range of variables is 1-5 for ego orientation and performance climate and 1-7 for all other variables.
Superscripts indicate differences between countries. For example, a superscript of 2 next to the mean of doping intentions for the UK sample means that doping intentions of the UK participants was higher than doping intentions of Danish participants.
*$p < .01$.

Table 5
Zero-order correlations between all variables

	Variable	1	2	3	4	5	6	7	8	9
		TOTAL SAMPLE								
1.	Doping intentions S1									
2.	Doping intentions S2	.60**								
3.	Anticipated guilt S1	-.42**	-.40**							
4.	Anticipated guilt S2	-.34**	-.49**	.84**						
5.	Moral atmosphere S1	.44**	.38**	-.30**	-.26**					
6.	Moral atmosphere S2	.40**	.49**	-.29**	-.35**	.68**				
7.	Ego orientation	-.03	.02	.00	-.05	-.15**	-.06*			
8.	Moral disengagement	.35**	.28**	-.31**	-.29**	.31**	-.07**	-.07**		
9.	Performance climate	.15**	.17**	-.11**	-.14**	.21**	.24**	.13**	.21**	
10.	Moral identity	-.16**	-.11**	.20**	.16**	-.23**	-.14**	.22**	-.37**	-.12**
		UK								
1.	Doping intentions S1									
2.	Doping intentions S2	.54**								
3.	Anticipated guilt S1	-.46**	-.43**							
4.	Anticipated guilt S2	-.34**	-.51**	.77**						
5.	Moral atmosphere S1	.45**	.36**	-.32**	-.28**					
6.	Moral atmosphere S2	.39**	.40**	-.25**	-.31**	.60**				
7.	Ego orientation	.04	.04	-.03	-.08	-.07	.03			
8.	Moral disengagement	.38**	.30**	-.32**	-.30**	.35**	.35**	.03		
9.	Performance climate	.17**	.17**	-.18**	-.20**	.27**	.32**	.07	.32**	
10.	Moral identity	-.24**	-.18**	.24**	.20	-.34**	-.22**	.19**	-.42**	-.26**
		DENMARK								
1.	Doping intentions S1									
2.	Doping intentions S2	.58**								
3.	Anticipated guilt S1	-.37**	-.36**							
4.	Anticipated guilt S2	-.33**	-.54**	.86**						
5.	Moral atmosphere S1	.50**	.35**	-.27**	-.24**					
6.	Moral atmosphere S2	.46**	.62**	-.30**	-.42**	.72**				
7.	Ego orientation	.00	.01	-.11*	-.12*	-.17**	-.09*			
8.	Moral disengagement	.29**	.21**	-.28**	-.26**	.25**	.25**	-.07		
9.	Performance climate	.29**	.22**	-.15**	-.17**	.22**	.10*	.10*	.12*	
10.	Moral identity	-.02	-.03	.08	.07	-.06	-.06	.07	-.15**	-.03
		GREECE								
1.	Doping intentions S1									
2.	Doping intentions S2	.70**								
3.	Anticipated guilt S1	-.41**	-.40**							
4.	Anticipated guilt S2	-.37**	-.41**	.87**						
5.	Moral atmosphere S1	.34**	.44*	-.31**	-.32**					
6.	Moral atmosphere S2	.32**	.47**	-.34**	-.33**	.72**				
7.	Ego orientation	-.01	.02	.13**	.10	-.03	-.00			
8.	Moral disengagement	.31**	.37**	-.32**	-.30**	.19**	.19**	-.02		
9.	Performance climate	.06	.16**	-.05	-.08	.27**	.24**	.11*	.23**	
10.	Moral identity	-.09	-.09	.29**	.26**	-.08	-.02	.18**	-.41**	-.14**

S1 = Performance enhancement scenario; S2 = Injury recovery scenario. *$p < .01$; **$p < .001$

Structural Equation Modeling

Our main study purpose was to test a conceptual model of doping intentions in sport. Due to the differences in the two scenarios identified in preliminary analysis, we conducted analyses for each scenario, separately. We tested the hypothesized relationships for each scenario using structural equation modeling. First, the originally proposed model was tested in the total sample and in the subsamples, from each country. Next, following the evaluation of the original model, we tested a modified model. Finally, we examined differences in the modified model between the three countries using multi-sample analyses.

In line with Bentler (2007), we assessed model fit using the chi-square (χ^2), the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR). A very good model fit is indicated by values close to or greater than 0.95 for the CFI, and values close to or less than 0.08 and 0.06 for the SRMR and RMSEA, respectively (Hu & Bentler, 1999). We used the robust fit indices.

In the original model presented in Figure 1, we hypothesized that performance climate, moral atmosphere, and moral identity would predict ego orientation, moral disengagement, and anticipated guilt, respectively, which in turn were hypothesized to predict doping intentions. The model had a marginal fit to the data, as indicated by the fit indices, presented in Table 6. The path coefficients for the total sample can be seen in Figure 2, and the path coefficients for the three countries are presented in Table 7. The model predicted 29% of the variance in doping intentions.

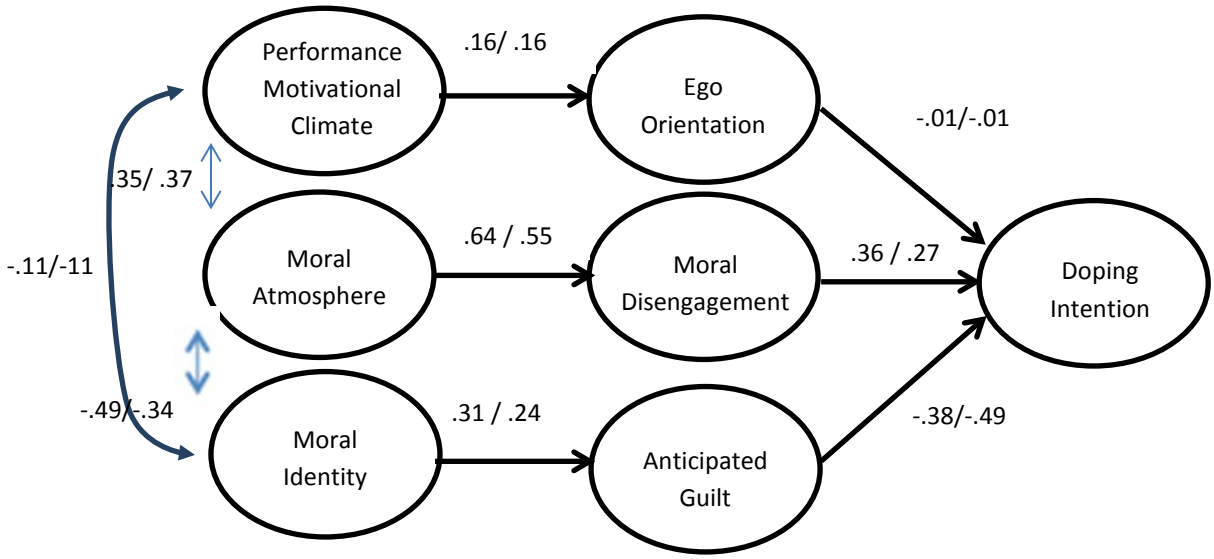

Figure 2. Testing the hypothesized model. The first value refers to the performance enhancement scenario (S1), while the second value pertains to the injury recovery scenario (S2).

Examination of the indirect effects showed that the effect from performance motivational climate to doping intentions was not significant for both scenarios, whereas the effects for moral atmosphere and moral identity were significant. The indirect effects can be seen in Table 6.

Table 6

The indirect effects for the two scenarios

	Scenario 1	Scenario 2
Performance climate → Ego orientation →Doping intentions	-.002	-.002
Moral atmosphere → Moral disengagement → Doping intentions	.230*	.149*
Moral identity → Anticipated guilt → Doping intentions	-.118*	-.118*

Examination of the Lagrange Multiplier test revealed that significant improvements to model fit could be achieved by adding a path from moral atmosphere to anticipated guilt, and from performance climate to moral disengagement. In addition, the path from ego orientation to doping intentions was zero; therefore, we removed ego orientation from the model. The modified model, which can be seen in Figure 3, had a better fit to the data. The fit indices are presented in Table 7. The model predicted 33% of the variance in doping intentions. The path coefficients for the total sample are presented in Figure 3, while the path coefficients for the three subsamples are presented in Table 8.

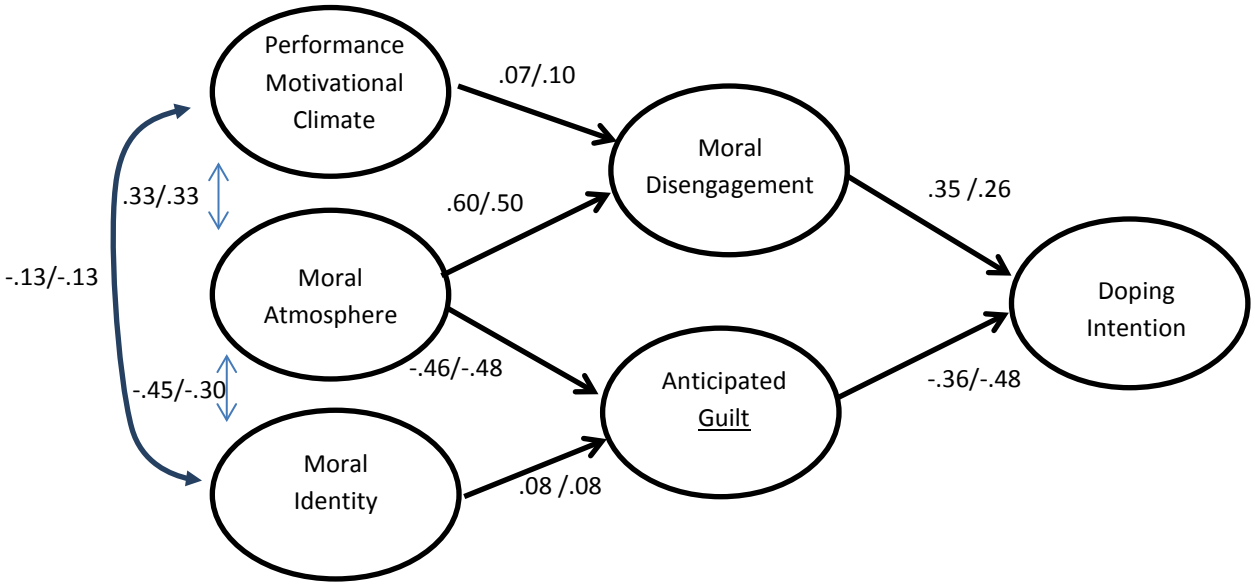

Figure 3. Testing the modified model. The first value refers to the performance enhancement scenario (S1), while the second value pertains to the injury recovery scenario (S2).

Next, we conducted multi-sample analyses, to determine whether the model is equivalent across the three countries. Specifically, we examined the invariance of the model across the three samples, utilizing the method recommended by Byrne, Shavelson and Muthen (1989). First, we tested the models separately in each subsample; second, we estimated a baseline-unconstrained multisample model to test whether the factor pattern (i.e., number of factors, number of indicators, and structural paths) is similar across the two genders; finally, we tested a multisample constrained model, where all path coefficients were constrained to be equal for the three samples. Cheung and

Rensvold (2002) suggested using the ΔCFI criterion to compare the baseline and subsequent restricted models, with differences of .01 or less to support the equivalence of the fixed parameters across the samples. Thus, we used this criterion in multisample analyses.

The non-constrained and constrained path models had acceptable fit to the data. The ΔCFI was .004 and .002 for the two doping scenarios respectively. In addition, the Lagrange Multiplier test showed that no constraints were to be released in any of the doping scenarios. Therefore, the invariance of the model across the three countries was supported. The fit indices are presented in Table 7.

Table 7

The fit indices for all models

Original model	Scenario 1 Performance Enhancement				Scenario 2 Injury Recovery			
	x^2 / *df*	CFI	SRMR	RMSEA	x^2 / *df*	CFI	SRMR	RMSEA
Total (N = 1495)	4571.24/693	.834	.083	.063	4635.41/693	.836	.090	.064
UK (*n* = 506)	2183.47/693	.852	.084	.065	2234.91/693	.846	.087	.066
Denmark (*n* = 509)	1731.63/693	.829	.082	.055	1780.38/693	.837	.088	.057
Greece (*n* = 480)	1886.95/455	.828	.085	.066	1863.38/693	.833	.097	.065
Modified model								
Total (N = 1495)	1475.82/340	.914	.057	.049	1607.76/340	.909	.065	.052
UK (*n* = 506)	799.66/340	.924	.060	.052	779.32/340	.926	.061	.051
Denmark (*n* = 509)	586.75/340	.927	.061	.039	629.54/340	.925	.058	.042
Greece (*n* = 480)	779.82/340	.893	.085	.056	817.34/340	.889	.091	.058
Country invariance - Multisample								
Non-constrained	2167.50/1020	.915	.069	.028	2233.50/1020	.914	.072	.029
Constrained	2232.63/1038	.911	.081	.029	2288.63/1038	.912	.080	.029

Table 8

Standardized path coefficients and covariances for the modified model

Path coefficients	Scenario 1 Performance Enhancement			Scenario 2 Injury Recovery		
	UK	Denmark	Greece	UK	Denmark	Greece
1. Performance climate → Moral disengagement	.16	.10	.10	.05	.11	.16
2. Moral atmosphere → Moral disengagement	.58	.45	.43	.66	.38	.28
3. Moral atmosphere → Anticipated guilt	-.47	-.38	-.49	-.51	-.52	-.48
4. Moral identity → Anticipated guilt	.06	.13	.24	.01	.09	.28
5. Moral disengagement → Doping intentions	32	.35	.26	.19	.21	.34
6. Anticipated guilt → Doping intentions	-.40	-.34	-.41	-.51	-.55	-.37
Covariances						
1. Performance climate / Moral atmosphere	.38	.27	.39	.49	.23	.32
2. Performance climate / Moral Identity	-.23	-.05	-.13	-.23	-.05	-.03
3. Moral atmosphere / Moral identity	-.58	-.14	-.24	-.51	-.13	-.11

Discussion

In the last decade, researchers have made considerable progress in understanding doping intentions and behavior, and a number of social psychosocial factors have been identified as predictors of these variables (for a review see Ntoumanis, Ng, Barkoukis, & Backhouse, 2014). However, most studies have focused on motivational variables, such as motivational climate, goal orientation and intrinsic and extrinsic motivation. This is surprising, given that in addition to being a motivated behavior, doping is a "moral" behavior, as using banned substances to take an unfair advantage over the opponent is cheating. In the present research we examined moral and motivational predictors of doping intentions and investigated the process through which these predictors might influence doping intentions. We examined doping intentions with respect to two hypothetical situations described in two scenarios: the first pertained to using a banned PED to enhance performance, while the second referred to using a banned PED to recover from injury.

There is also a dearth of cross-cultural research examining doping intentions in sport. Replicating the same findings in different countries offers more confidence for their validity and reliability. In this

project, we examined predictors of doping intentions in three countries: UK, Denmark, and Greece. Below we discuss the study findings as they pertain to the hypotheses that we tested. We also discuss our hypothesized and modified models of doping.

Distal predictors of doping intentions

Our first hypothesis was that performance motivational climate, moral atmosphere, and moral identity would predict doping intentions. This hypothesis was supported: Our results showed that players who perceived that a performance climate and a moral atmosphere that condoned doping were prevalent in their team, were more likely to report the intention to use the banned substances both to enhance performance and to recover from injury. However, it is worth noting that the relationship between performance climate and doping intentions was not significant in the Greek sample. Thus, a motivational environment that focuses on high ability and normative success does not appear to be that important for doping intentions in Greek athletes.

The consistent link between moral atmosphere and doping intentions in the three samples, and the strength of the relationship between the two variables, highlights the potential significance of the team environment in reducing doping in sport. The findings suggest that the most crucial variable for influencing doping intentions is moral atmosphere, reflected in the perceptions of the players that the coach would encourage doping and that one's teammates would also dope if they were in the hypothetical situations described in the two scenarios. Thus, if we want to reduce doping in team sport, first and foremost, we need to intervene on the team environment. Perhaps educating athletes and coaches about their role in influencing athletes' doping behavior is a promising way in developing effective anti-doping interventions.

Moral identity had a negative relationship with doping intentions in the UK sample, but not in the Danish and Greek sample. Thus, although placing high importance on being a moral person could influence doping intentions in British athletes, it does not appear to influence doping intentions in Greek or UK athletes. It may be that the influence of the players' immediate social environment is stronger in these two populations. Thus, moral identity is not a consistently strong predictor of doping intentions. Taken together, the above findings broadly support our first hypothesis, and highlight the importance of moral atmosphere in influencing doping intentions in football players.

Mediating Variables

Our second hypothesis was to investigate whether ego orientation, moral disengagement, and anticipated guilt mediate the effects of performance climate, moral atmosphere and moral identity on doping intentions. Contrary to our hypothesis, ego orientation was not related to doping intentions in any of the three samples, and mediation analysis indicated that this variable did not mediate the effect of performance climate on doping intentions. This finding was surprising given the consistent link of ego orientation to moral variables in previous research (e.g., Boardley & Kavussanu, 2010; Kavussanu & Roberts, 2001; Kavussanu et al., 2002). However, the consistency of the null relationship between ego orientation and doping intentions across three large samples clearly suggests that ego orientation is not an important variable when it comes to predicting doping. It may be that doping is a more serious unethical behavior compared to antisocial behavior or aggression, and therefore, moral variables such as moral atmosphere may be more important in predicting this behavior.

In line with our hypothesis, moral disengagement was positively related to doping intentions in the three samples, in response to both scenarios, such that, athletes who used justifications for doping were also more likely to report higher likelihood to use the banned substances. Mediation analysis showed that moral disengagement mediated the effects of moral atmosphere on doping intentions. Thus, one process through which moral atmosphere might influence doping intentions could be by facilitating moral disengagement. Athletes who perceive that their coach would encourage doping and their teammates would also dope, tend to justify doping perhaps by displacing responsibility for their actions on others members of the team, and this in turn might enhance doping intentions. Moral disengagement has been identified as mediator of the effects of other variables in previous research (e.g., Kavussanu & Boardley, 2009); thus, our findings are consistent with previous research.

Finally, as hypothesized, anticipated guilt was strongly and inversely linked to doping intentions in all samples and mediated the effect of moral identity on doping intentions. This is an interesting finding that highlights the importance of moral emotion in doping behavior. Guilt is an adaptive moral emotion, in that people who experience guilt are deterred from behaving unethically toward others. Expecting to feel guilt if one used a banned substance is clearly important in deterring athletes from doping. Athletes, who feel that being a moral person is a central part of their identity, are likely to expect to feel guilt when they cheat, and these anticipated feelings of guilt are likely to deter them from cheating. This finding is in line with previous research, which has also shown that moral identity deters athletes from behaving antisocially by increasing their guilt (Kavussanu, Stanger, & Ring, 2015). The significance of anticipated guilt in inhibiting antisocial behavior in sport has also been revealed in other research (e.g., Stanger et al., 2013).

A conceptual model of doping

In addition to examining whether performance climate, moral atmosphere and moral identity are linked to doping intentions, in the three samples, and investigating whether ego orientation, moral disengagement and anticipated guilt explain the relationship between the three distal predictors, we tested a model of doping intentions, which included all these variables, presented in Figure 1. Our findings showed that the originally hypothesized model did not have a good fit to the data and required modification. This was not surprising given the null relationship between ego orientation and doping intentions; in the revised model, ego orientation was eliminated to improve the fit of the model to the data.

The revised model had a good fit to the data and showed that performance motivational climate exerted its effect on doping intentions through moral disengagement; in line with the original model, the latter variable also mediated the effect of moral atmosphere on doping intentions; and anticipated guilt mediated the effect of moral identity on doping intentions. However, anticipated guilt also mediated the effect of moral atmosphere on doping intentions. The model was equivalent across the three countries, and the path coefficients were similar for the two scenarios.

Overall, these findings show that the most important variables for predicting doping intention are moral atmosphere, moral disengagement, and anticipated guilt. Thus, the team environment appears to be very important in influencing athletes' decision to use a banned substance, and the process through which the team environment influence this decision is by enhancing moral disengagement and reducing

anticipated guilt for using banned substances. Football players who perceive that their teammates would also use banned substances to enhance performance and recover from injury are more likely to justify their behavior and less likely to experience guilt. Both cognitive and affective mechanisms are important for doping intentions. That this model was largely equivalent across the three countries and for both scenarios further supports the importance of these predictors of doping intentions.

Conclusion

In conclusion, the most significant predictor of doping intentions that emerged in our project, was the moral atmosphere of the team, and this variable exerted its influence on doping intention through moral disengagement and anticipated guilt. These findings have important implications for the development of interventions aimed to reduce doping in sport. The findings suggest that we need to intervene primarily at the level of the team, educating coaches and athletes within the same team and making then aware of their influence on fellow teammates. In addition, challenging their justifications for doping (e.g., moral disengagement) and eliciting guilt for potential doping behaviour, are likely to deter athletes from using PEDs to both enhance performance and recover from injury.

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Project Publications and Presentations

Publications

1. Kavussanu, M. (2015). Moral disengagement and doping. In V. Barkoukis, L. Lazuras & H. Tsorbatzoudis (Eds), *The psychology of doping in sport*. Routledge. Book chapter discussing project findings from the British sample, presented at the international congress of sport psychology, in Nice (2014).
2. Kavussanu, M., Hatzigeorgiadis, A., Elbe, A.M., & Ring, C. (in revision). The Moral Disengagement in Doping Scale. *Psychology of Sport and Exercise*. Data from the British sample were used in this multi-study paper to validate the measure of moral disengagement we used in this project.
3. Kavussanu, M. (in press). Doping in football: A moral psychology perspective. Invited article to be published in the *Proceedings of 8th World Congress in Science and Football*, Copenhagen, May 2015. Routledge. Results from the three samples are discussed in this article.

Presentations

1. Kavussanu, M., Hatzigeorgiadis, A., & Elbe, A.M. (2015). *A conceptual model of doping intentions in sport.* Talk presented in invited symposium (understanding why athletes dope), at the 14th European Congress of Sport Psychology, Bern, Switzerland, July 12-15.
2. Kavussanu, M. (2015). *Doping in football: A moral psychology perspective*. Invited talk at the 8th World Congress on Football and Health, University of Copenhagen, Copenhagen, Denmark, May 23-25.
3. Morela, E., Kavussanu, M., Elbe, A.M., & Hatzigeorgiadis, A. (2015). *Young footballers' intention to dope: A cross-cultural comparison between female and male elite players in the UK, Denmark and Greece*. Poster presentation, 8th World Congress on Science and Football, University of Copenhagen, Copenhagen, Denmark, May 23-25.
4. Elbe, A.M., Kavussanu, M., & Hatzigeorgiadis, A. (2015). *Psycho-social factors and doping attitudes in football players: A cross-cultural investigation*. Presentation at the 14th European Congress of Psychology, Milano, July 7-10.
5. Kavussanu, M. (2014). Psychosocial predictors of doping intentions in football: A cross-cultural approach to a cross-cultural issue. UK Anti Doping Research Forum, University of Bedfordshire, Putteridge Bury, March 11.
6. Kavussanu, M. (2014). *Moral behaviour in sport*. Research Seminar, School of Work and Organizational Psychology, Radboud University, Nijmegen, The Netherlands, April 14.
7. Kavussanu, M., Ring, C.M., Saunders, E., Hatzigeorgiadis, A., & Elbe, A.M. (2014). *Socio-moral predictors of doping intentions in football: The mediating role of moral disengagement and anticipated guilt*. Presentation at the 5th International Congress of Sport Psychology, organized by the French Sport Psychology Society, in Nice, Sophia-Antipolis. The presentation was based on data collected in the UK.

Planned publication

We are currently working on a journal article that will present the main study findings. Due to the cross-cultural nature of our project, we are considering the Journal of Cross-Cultural Psychology as one of the outlets of this research. Other potential outlets are Sport Medicine and Medicine and Science in Sport and Exercise.

Appendix 1
Information Sheet

UNIVERSITY OF BIRMINGHAM

School of Sport and
Exercise Sciences
Edgbaston, Birmingham
B15 2TT

Dear footballer,

The following questionnaire is part of a study conducted by the School of Sport and Exercise Sciences at the University of Birmingham. The purpose of the study is to investigate attitudes toward the use of banned substances to enhance performance in sport. We would like to invite you to participate in this study by completing the attached questionnaire, which will take approximately 10 minutes to complete.

For this questionnaire to be useful it **is very important** that you answer all questions **honestly**. All information is **anonymous,** will be kept **strictly confidential,** and will **only** be used for research purposes. No participant will be identified by name at any time neither during the conduct of the study nor in the dissemination of the study findings. Indeed, we are not asking for your name anywhere in this questionnaire, thus, **the information you will give us cannot possibly be linked to your name**.

It is also important to note that participation in this study is **voluntary,** and you are free to withdraw at any time. Withdrawing your data from this study can be done **by the 1st of May 2014**, and will have no consequences for you. To enable us to identify your data in case you decide to withdraw from the study, please write a password below. This will also indicate your consent to take part in the study. If you have any questions, we will be happy to answer them. Thank you very much for your time.

Sincerely

Dr. Maria Kavussanu
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Miss Emma Saunders, BSc
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Password (to be used if participant wants to withdraw data from study) _____

Date: _____

Appendix 2

Scenario 1 – Performance Enhancement

With instructions, followed by items assessing Doping Intentions (1 & 2), Anticipated Guilt (3-8) and Moral Atmosphere (9 & 10)

In this section, there are two scenarios describing two hypothetical situations that football players could encounter in their sporting career. Each scenario is followed by some questions about you and your team. Please read each scenario carefully, and respond to the questions that follow each scenario, as ***honestly*** *as possible.*

SCENARIO ONE

It is the day before the most important game of the season. The winner of this game will win the league. The team against which you will compete is of similar ability level to your team, and they are just one point ahead of your team in the league. Lately, your performance has been below your best. You don't feel you have the necessary fitness for this important game, and you are concerned about how you will perform. You mention this to one of your teammates, who tells you that he/she has been using a new substance, which has enhanced his/her fitness and, as a result, his/her performance. The substance is banned for use in sport, but the chance that you will be caught is extremely small.

About you

For a moment, imagine that you are in the hypothetical situation described above.

1. How likely is it that you would use the banned substance?						
1 not at all likely	2	3	4 somewhat likely	5	6	7 very likely
2. How tempted would you be to use the banned substance?						
1 not at all tempted	2	3	4 somewhat tempted	5	6	7 very tempted

Now please imagine that in the hypothetical situation described above, you DID use the banned substance to improve your performance. Please read the statements below and circle the appropriate number to indicate how you would feel.

	I would feel this way…						
If I had used the banned substance…	**Not at all**			**Some what**			**Very strongly**
3. I would feel remorse, guilt	1	2	3	4	5	6	7
4. I would feel bad about what I had done	1	2	3	4	5	6	7
5. I would not stop thinking about what I had done	1	2	3	4	5	6	7
6. I would feel like apologising	1	2	3	4	5	6	7
7. I would feel like confessing	1	2	3	4	5	6	7
8. I would feel tense about what I had done	1	2	3	4	5	6	7

About your team

*The following two questions are about your team. Think about your experiences on this team, and how your **teammates and coach** would behave in this hypothetical situation.*

Imagine that your **teammates** also have the opportunity to use the banned substance to enhance their performance in this important game.						
9. How many of your teammates would use the banned substance?						
1 none of the players	2	3	4 about half of the players	5	6	7 all the players
Imagine that your **coach** knew that you could use the banned substance to enhance your performance in this important game.						
10. To what extent would your coach encourage you to use the banned substance?						
1 not at all encourage	2	3	4 moderately encourage	5	6	7 strongly encourage

Appendix 3

Scenario 2 – Injury Recovery

Followed by items assessing Doping Intention (1 & 2), Anticipated Guilt (3-8) and Moral Atmosphere (9 & 10)

SCENARIO TWO

It is two weeks before the most important game of the season. The winner of this game will win the league. The team against which you will compete is of similar ability level to your team and they are just one point ahead of your team in the league. You really want to play in this game. However, two months ago, you sustained a knee injury, and you know you need at least one more month of rehabilitation to fully recover. One of your teammates tells you that he/she has recently used a new substance, which has helped him/her recover faster than usual from a knee injury. The substance is banned for use in sport, but the chance that you will be caught is extremely small.

For a moment, imagine that you are in the hypothetical situation described above.

1. How likely is it that you would use the banned substance?						
1 not at all likely	2	3	4 somewhat likely	5	6	7 very likely
2. How tempted would you be to use the banned substance?						
1 not at all tempted	2	3	4 somewhat tempted	5	6	7 very tempted

Now please imagine that in the hypothetical situation described, you DID use the banned substance. Please read the statements below and circle the appropriate number to indicate how you would feel.

If I had used the banned substance…	**I would feel this way…**						
	Not at all			**Some what**			**Very strongly**
3. I would feel remorse, guilt	1	2	3	4	5	6	7
4. I would feel bad about what I had done	1	2	3	4	5	6	7
5. I would not stop thinking about what I had done	1	2	3	4	5	6	7
6. I would feel like apologizing	1	2	3	4	5	6	7
7. I would feel like confessing	1	2	3	4	5	6	7
8. I would feel tense about what I had done	1	2	3	4	5	6	7

About your team

*The following two questions are about your team. Think about your experiences on this team and how your **teammates and coach** would behave in this hypothetical situation.*

Imagine that your **teammates** also have the opportunity to use the banned substance to help them recover faster from a knee injury and play in this important game.						
9. How many of your teammates would use the banned substance?						
1 none of the players	2	3	4 about half of the players	5	6	7 all the players
Imagine that your **coach** knew that you could use the banned substance to speed up your recovery from a knee injury and play in this important game.						
10. To what extent would your coach encourage you to use the banned substance?						
1 not at all encourage	2	3	4 moderately encourage	5	6	7 strongly encourage

Appendix 4

Perception of Success Questionnaire

*Please think about your experiences with your football team when you play **important league games.** When do you feel **most successful**? Please respond to the following statements **honestly** by circling the relevant number.*

When I play **important league games**, I feel **most successful** when…	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1. I beat other people (ego)	1	2	3	4	5
2. I am clearly superior (ego)	1	2	3	4	5
3. I am the best (ego)	1	2	3	4	5
4. I work hard (task)	1	2	3	4	5
5. I show clear personal improvement (task)	1	2	3	4	5
6. I outperform my opponents (ego)	1	2	3	4	5
7. I reach a goal (task)	1	2	3	4	5
8. I win (ego)	1	2	3	4	5
9. I overcome difficulties (task)	1	2	3	4	5
10. I master something I couldn't do before (task)	1	2	3	4	5
11. I show other people I am the best (ego)	1	2	3	4	5
12. I perform to the best of my ability (task)	1	2	3	4	5

Note. Only the items measuring ego orientation were used in this report.

Appendix 5

Doping Moral Disengagement

Footballers have different views about doping (i.e., the use of banned performance enhancing substances) in sport. Listed below are a number of statements describing some. Please read these statements carefully and indicate the extent to which you agree with each one by circling the appropriate number. Please respond ***honestly****.*

	Strongly Disagree	**Disagree**	**Slightly Disagree**	**Neutral**	**Slightly Agree**	**Agree**	**Strongly Agree**
1. *Compared to the illegal things people do in everyday life, doping in sport is not very serious	1	2	3	4	5	6	7
2. It is okay for players to use doping substances to help their team	1	2	3	4	5	6	7
3. *Doping is just a way to "maximize your potential"	1	2	3	4	5	6	7
4. *Players cannot be blamed for doping if their teammates pressure them to do it	1	2	3	4	5	6	7
5. *Doping does not really hurt anyone	1	2	3	4	5	6	7
6. *An individual player should not be blamed for doping if everyone on the team is doing it	1	2	3	4	5	6	7
7. *Doping is alright because it helps your team	1	2	3	4	5	6	7
8. Doping before one game is no big deal when others do it all the time	1	2	3	4	5	6	7
9. It is okay to use doping substances because they don't cause any harm	1	2	3	4	5	6	7
10. A player is not responsible for using doping substances if asked to do so by his/her coach	1	2	3	4	5	6	7
11. Doping helps you become the "best you can be"	1	2	3	4	5	6	7
12. If a team decides collectively to use doping substances, it is unfair to blame any individual player in the team for using them	1	2	3	4	5	6	7

Note. Only the items that are starred were used in the final report.

Appendix 6

Performance Motivational Climate (Abbreviated Version)

*Please think about what your team is like during **important league games**. Then read the statements below, and indicate the extent to which you agree with each one by circling the relevant number**.** If there is more than one coach on your team, the questions are about the coach that you spend most of your time with. Please respond **honestly.***

*On this team, during **important league games...***	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1. The coach gives most of his or her attention to the stars	1	2	3	4	5
2. The coach gets mad when a player makes a mistake	1	2	3	4	5
3. The coach thinks only the starters contribute to the success of the team	1	2	3	4	5
4. Players are taken out of a game for mistakes	1	2	3	4	5
5. The coach has his or her own favourites	1	2	3	4	5
6. The coach yells at players for messing up	1	2	3	4	5
7. Only the players with the best `stats' get praise	1	2	3	4	5
8. Players are punished when they make a mistake	1	2	3	4	5
9. The coach makes it clear who he or she thinks are the best players	1	2	3	4	5
10. If you want to play in a game you must be one of the best players	1	2	3	4	5
11. Only the top players get noticed by the coach	1	2	3	4	5
12. The coach favours some players more than others	1	2	3	4	5

Appendix 7

The Internalization Dimension of the Moral Identity Scale

Listed below are characteristics that may be used to describe a person:

Fair	**Compassionate**	**Caring**	**Friendly**	**Generous**
Hardworking	**Helpful**	**Kind**	**Honest**	

The person with these characteristics could be you or it could be someone else. For a moment, **visualise** in your mind the **kind of person who has these characteristics**. Imagine how that person would think, feel, and act. When you have a clear **image of what this person would be like**, answer the following questions by circling the appropriate number. Please respond **honestly**.

	Strongly Disagree	**Disagree**	**Slightly Disagree**	**Neutral**	**Slightly Agree**	**Agree**	**Strongly Agree**
1. It would make me feel good to be a person who has these characteristics	1	2	3	4	5	6	7
2. Being someone who has these characteristics is an important part of who I am	1	2	3	4	5	6	7
3. I would be ashamed to be a person who has these characteristics	1	2	3	4	5	6	7
4. Having these characteristics is NOT really important to me	1	2	3	4	5	6	7
5. I strongly desire to have these characteristics	1	2	3	4	5	6	7