

The interactive effects of moral identity and moral disengagement on doping: An experimental investigation

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Glossary of Key Terms

Moral disengagement: Justifications people provide to commit immoral acts without experiencing the usual negative emotional consequences.

Moral identity: The importance one places on being a moral person, such as being honest, kind and fair.

Moral judgment: Perceptions of the extent a behaviour is morally wrong or acceptable.

Doping: Doping is defined as the occurrence of one or more of the anti-doping rule violations set forth in Article 2.1 through Article 2.10 of the Code (WADA, 2015).

Moderator: A variable that can influence the direction, or strength of, an effect or relationship between an independent variable and an outcome variable.

Mediator: A variable that can explain an effect or a relationship between an independent variable and an outcome variable.

Dispositional: A characteristic of an individual that can influence behaviour.

Inclination: An individuals' natural tendency or urge to act, think or feel in a particular way.

Self-censure: Feelings of self-condemnation such as a guilt, for behaving in a way that violates our moral standards.

Executive Summary

Context

Doping can be considered a moral issue, particularly if undertaken intentionally with the purpose to gain an unfair advantage over others. This project aimed to investigate the joint influences of moral disengagement (justifications people provide to commit immoral acts without experiencing the usual negative emotional consequences) and moral identity (the importance one places on being a moral person, such as being honest, kind and fair) on athletes' likelihood to dope.

Though cross-sectional and qualitative studies have previously highlighted that moral disengagement is linked with higher susceptibility to dope, these studies do not enable us to determine the temporal direction of this relationship. Therefore, this research adopted an experimental approach to investigate whether moral disengagement increased athletes' likelihood to dope and negated the usual self-regulatory role of emotion and moral judgment. In addition, this research tested whether athletes with high moral identity are less likely to dope across situations that differ in opportunities for morally disengagement, and then tested whether manipulating moral identity provided further protective effects against doping.

Research aims

This multi-phase investigation had three main research aims:

- (1) To examine whether moral disengagement was associated with doping by blunting emotions and perceiving such behaviour as less morally wrong.
- (2) To investigate whether manipulating moral disengagement influenced athletes' likelihood to dope.
- (3) To examine whether any effects of moral disengagement on doping were moderated by moral identity.

Research Design

We developed and employed a three-phase experimental design.

Phase One:

Team sport players (n = 144) completed measures of doping moral disengagement (MD), doping intention, and reported doping. Then, at least 3 days later completed an adapted picture viewing task whereby they viewed images that depicted doping and rated their emotional involvement and moral judgements towards doping represented in each picture.

Phase Two:

Comprised a sub-sample from Phase 1 (n = 72) who also completed measures of dispositional moral identity. After completing the picture viewing task, participants read two blocks of scenarios manipulating low MD and high MD. Then, participants were asked to report their anticipated guilt for taking banned drugs, moral judgments, and likelihood of doping in relation to each of these situations.

Phase Three:

From a separate sub-sample from Phase 1 (n = 72), after completing the picture viewing task, participants were then randomly allocated to a high moral identity or low moral identity priming group. Following a moral identity prime, participants then read two block of scenarios manipulating low MD or high MD, and rated their anticipated guilt, moral judgment and likelihood to dope in relation to each situation (as per Phase 2).

Key findings

- Dispositional doping moral disengagement was associated with less negative emotional reactions, and perceptions that doping more acceptable and less wrong (Phases 1 – 3).
- In situations where opportunities for moral disengagement were amplified, this increased the likelihood of athletes to dope via reducing anticipated guilt (Phases 2 and 3).
- Dispositional moral identity moderated the effect of moral disengagement on doping likelihood. Specifically, the results suggest that moral identity may protect athletes from being likely to dope even if athletes have a high inclination to morally disengage. However, this protective effect was only found in situations where opportunities for moral disengagement was low. In other words, moral identity did not have a significant protective effect on athletes' likelihood of doping under conditions when there were greater opportunities for moral disengagement (Phase 2).
- Priming moral identity did not appear to have a main effect on reducing athletes' likelihood to dope (Phase 3). However, dispositional moral identity was associated with lower likelihood to dope when moral identity was also activated (via the moral identity priming), even in situations when opportunities to morally disengage was amplified. Thus, suggesting a partial benefit of priming moral identity for athletes higher in moral identity.

Conclusions and future actions

Taken together, our findings highlight that anti-doping efforts would benefit from interventions (Table 1) that target enhancing athletes' moral identity particularly at a dispositional level, and reducing athletes' inclination to morally disengage (e.g., enhancing personal responsibility). Moreover, these strategies should be used in conjunction with interventions targeted towards athlete support personnel to help reduce potential situations where athletes may be more susceptible to morally disengage. Future research now needs to be undertaken to develop and test the effectiveness of anti-doping intervention programmes that target increasing moral identity and reducing moral disengagement in athletes.

Table 1. Summary of possible practical implications based on findings.

Interventions that target enhancing athletes' moral identity and reducing athletes' inclination to morally disengage		
Target population	Intervention function	Examples of suggested approaches or activities
Athlete	Increase dispositional moral identity	<ul style="list-style-type: none"> Develop individual codes of conduct. Develop team ethos, "mottos" and/ or codes of conduct that may include prompting about moral attributes (e.g., sportspersonship, respect), and awareness of positive ways to deal with success and failure.
	Reduce dispositional doping moral disengagement	<ul style="list-style-type: none"> Increase personal responsibility in athletes. Promote autonomy over conduct and involvement in sport.
	Reduce situational moral disengagement	<ul style="list-style-type: none"> Promote teamwork, and social support to facilitate conducive moral conflict resolutions. Promote collective responsibility and autonomy in teams. Working through problem solving activities, and scenarios where players may be more vulnerable to morally disengage, and dope. Role-playing exercises to work through moral-conflict situations that may increase risk of moral disengagement and doping.
	Increase priming of moral identity	<ul style="list-style-type: none"> Reminders of team ethos and code of conduct. Prompts of team ethos and "mottos" in changing rooms.
Coaches/ athlete support personnel	Increase team moral identity	<ul style="list-style-type: none"> Promote a team ethos that acknowledges moral attributes, and promotes a positive approach to reach success, and accept failure. Prompting of team ethos/ codes of conduct developed with involvement of players (that involve aspects of sportspersonship).
	Reduce players dispositional moral disengagement	<ul style="list-style-type: none"> Promoting an autonomy and mastery supportive climate (and reducing or at least regulating a controlling or ego-involving climate as well as avoiding the promotion of "win-at-all costs" attitude in players). Promoting a team atmosphere where doping is not acceptable.
	Reduce situations/ opportunities for moral disengagement	<ul style="list-style-type: none"> Raise awareness of potential context where athletes may be vulnerable to morally disengage (and engage in doping). Develop a supportive and caring environment where athletes feel comfortable to confide in support personnel without fear of repercussions (e.g., being dropped). Use of role-playing to appreciate athletes' perspective under situations where they may be more vulnerable to dope and facilitate positive resolution strategies as well as consideration of their role in supporting athletes with such strategies.
Performance Directors	Reduce moral disengagement (both dispositional & situational)	<ul style="list-style-type: none"> Managing pressure on coaches and athletes to reach unrealistic goals. Develop a mission statement and ethos that facilitates welfare-driven approaches to success and managing failure.
National Governing Bodies	Increase awareness of potential implications	<ul style="list-style-type: none"> Assistance in disseminating knowledge of the risks of doping and research informed anti-doping approaches.
	Promote the development of research informed anti-doping efforts	<ul style="list-style-type: none"> Continued support for vigorous research informed anti-doping strategies (and associated research) to be developed and evaluated.
	Reduce unrealistic pressure on sports team/ sports/ coaches/ athletes	<ul style="list-style-type: none"> Careful consideration of unrealistic goals on coaches and athletes that increase potential risks of reaching goals through illegitimate means (e.g., via doping).

Introduction

Doping has been highlighted as an antisocial act as it can provide an unfair and illegitimate advantage over others (Kaye & Boardley, 2012). Under the World Anti-Doping Code (WADA, 2015) it is each athlete's personal duty to ensure that no prohibited substance enters his or her body. Failure to do so violates the spirit of sport, presents potential harm to the athlete and can also harm the rights of others. Committing an anti-doping rule violation (e.g., using a prohibited substance with the intention to enhance performance) is a form of cheating that casts a shadow over sport and fundamentally challenges the integrity of those involved (e.g., Koller, 2008). Therefore, research investigating the factors underpinning such behaviors, from a moral standpoint, is essential to develop and strengthen anti-doping intervention models. Currently, an experimentally driven evidence base does not exist and present-day interventions and psychological deterrence measures applicable for entourage are largely modelled on assumptions from cross-sectional research. To this end, this project aims to address this gap to help enhance the evidence-base for research informed anti-doping efforts.

The social cognitive theory of moral thought and action (Bandura, 1991) provides a framework that can contribute to our understanding of prohibited substance use in sport. Central to this theory is that self-censure in the form of emotions and moral judgements are essential in the regulation of immoral behaviors that go against one's moral standards. For instance, athletes may refrain from taking prohibited substances because of the unpleasant emotional consequences they have towards such behaviors, or what they anticipate experiencing if they were to take such substances (e.g., guilt for taking a prohibited substance). Accordingly, some qualitative evidence has revealed that guilt and shame are predominant deterrents of doping (Kirby, Moran, & Guerin, 2011), and anticipated guilt has been negatively associated with doping likelihood (Ring & Kavussanu, 2017). In addition, people are less likely to commit an antisocial act if they have strong perception that the action is morally wrong (e.g., Kavussanu, Stanger, & Ring, 2015). In fact, self-censure is a stronger deterrent of committing such actions than fear of social sanctions (e.g., punishments, bans) because many acts can go undetected by others (Bandura, 1991). Therefore, research investigating

the regulatory roles of emotion and moral judgment, and the factors that influence these mechanisms in prohibited substance use is essential in strengthening the quality and effectiveness of anti-doping programmes.

Bandura (1991) suggests people can commit antisocial actions without experiencing the usual unpleasant emotional consequences via the use of moral disengagement. Specifically, moral disengagement refers to a set of eight psychosocial mechanisms that people use to justify committing antisocial behaviors by cognitively distorting the act or its consequences, reduce personal responsibility for the behavior, or by blaming or dehumanising the victim. Therefore, moral disengagement can allow athletes to commit an anti-doping rule violation by rationalising the act as more acceptable (or less wrong) and not experiencing the typical unpleasant emotional consequences that would usually regulate doping.

A range of cross-sectional studies have found that moral disengagement is positively associated with intentions to dope and reported doping (Lucidi et al., 2008), susceptibility to doping (Hodge, Hargreaves, Gerrard, & Lonsdale, 2013), and doping likelihood (Ring & Kavussanu, 2017). Recently, cross-sectional studies have supported that the positive relationships between moral disengagement and doping likelihood (Ring & Kavussanu, 2017), and reported doping (Boardley et al., 2017), are mediated via reduced anticipated guilt.

Qualitative research has also found that bodybuilders justify use of image and performance enhancing drugs (IPEDs) via six of the eight mechanisms of moral disengagement (Boardley & Grix, 2013; Boardley, Grix, & Dewar, 2014; see Boardley & Kavussanu, 2011). Namely, (1) displacement responsibility (e.g., coach putting pressure on athletes may deflect athletes taking personal responsibility to take IPED's to improve performance), (2) diffusion of responsibility (e.g., athletes perceiving that everyone else is taking IPED's), (3) distortion of consequences (e.g., minimizing the harm caused by taking a banned substance), (4) advantageous comparison (making IPED use appear less harmful by comparing it to more harmful acts), (5) euphemistic labelling (e.g., using terms such as juice to make IPED use sound less immoral) and (6) moral justification (e.g., taking a IPED for the purpose of helping other athletes). However, research

has yet to determine the temporal direction of this relationship. It is not clear in cross-sectional and qualitative research whether moral disengagement leads to doping or whether doping leads to athletes justifying their behavior via moral disengagement. Thus, experimental evidence is now needed to determine whether moral disengagement is amenable and can affect the regulatory role of emotions, moral judgments, and in turn, athletes' likelihood to dope. In other words, if we reduce moral disengagement will this lead to reduction in doping. In previous World Anti-Doping Agency reviews (Backhouse, Atkin, McKenna, & Robinson, 2007; Backhouse, Whitaker, Patterson, Erickson & McKenna, 2015) and a meta-analysis (Ntoumanis, Ng, Barkoukis, & Backhouse, 2013), it has been emphasised that there is a profound lack of experimental evidence into the antecedents of doping. Thus, highlighting the strengths of experimental based research and the need to move beyond cross-sectional designs to inform the evidence base for anti-doping programmes.

Moral identity, which refers to the importance one places on being a moral person, such as being compassionate, kind and fair (Aquino & Reed, 2002), is another key factor in the regulation of moral conduct (Narvaez & Lapsley, 2009). Previous research has revealed that moral identity is positively associated with negative emotional reactions to unethical behavior (Stets & Carter, 2011), and negatively linked with moral disengagement (e.g., Detert, Trevino & Sweitzer, 2008) and antisocial sport behavior (Kavussanu et al., 2015; Sage, Kavussanu, & Duda, 2006). However, it has yet to be determined whether moral identity contributes to doping. That said, qualitative research has revealed that athletes' who possessed a strong moral stance against cheating and valued moral traits such as honesty and fairness, appeared to act as a protective factor from doping (Erickson, McKenna, & Backhouse, 2015). These findings provide preliminary support that moral identity could be an important protective factor in prohibited substance use.

Moral identity may also potentially play a moderating role on the relationship between moral disengagement and doping. For instance, Aquino et al. (2007) examined students' perceptions of prisoner of war abuse and found that students who reported higher advantageous comparison (a mechanism of moral disengagement) were associated with lower negative emotional reactions.

However, this effect was only found when moral identity is low, but not when moral identity was high. That is, as moral identity appears to activate the regulatory role of negative emotional reactions that can help refrain us from committing transgressive conduct, even if people had higher inclinations to use advantageous comparison (i.e. moral disengagement). Though this study was in the context of emotional reactions towards a different moral behavior, it is possible that moral identity may moderate the effects of moral disengagement on doping. Specifically, when moral identity is high, this may protect athletes from doping, even if they are inclined to morally disengage. However, research has yet to address this possibility.

Researchers have highlighted that moral identity can be considered a dispositional characteristic as well as a construct that can also be manipulated via priming moral traits, such as honesty, kindness and fairness, and thereby making the moral aspect of peoples' identity more accessible in memory (e.g., Aquino et al., 2007; Aquino, McFerran, & Laven, 2011). Research investigating the influence of dispositional moral identity, and the effect of manipulating the salience of moral identity on moral disengagement and doping, could provide evidence for the tailoring of anti-doping interventions and prevention strategies which target moral identity with a view to enhancing moral standards to reduce doping likelihood.

To summarise, a key limitation of anti-doping research to date is the lack of experimental evidence to provide a stronger evidence base to inform interventions that aim to prevent doping in sport (Backhouse et al., 2007, 2015; Ntoumanis et al., 2013). Based on the literature reviewed above, this project will test the conceptual framework highlighted in Figure 1. Specifically, this study will be the first to experimentally investigate the effects of manipulating frequently used mechanisms of moral disengagement on the regulatory role of emotions and athletes' likelihood to dope. Moreover, moral identity may undermine the effectiveness of moral disengagement to rationalise prohibited substance use. This study will determine whether dispositional moral identity, and by making moral identity more salient, may protect athletes' susceptibility to morally disengage and in turn, their likelihood to dope. To this end, this project will provide cutting-edge evidence to inform intervention models to target the development of moral traits and for entourage to consider the social environments

that are promoted to reduce athletes' susceptibility to morally disengage, and in turn, deter athletes' likelihood of doping.

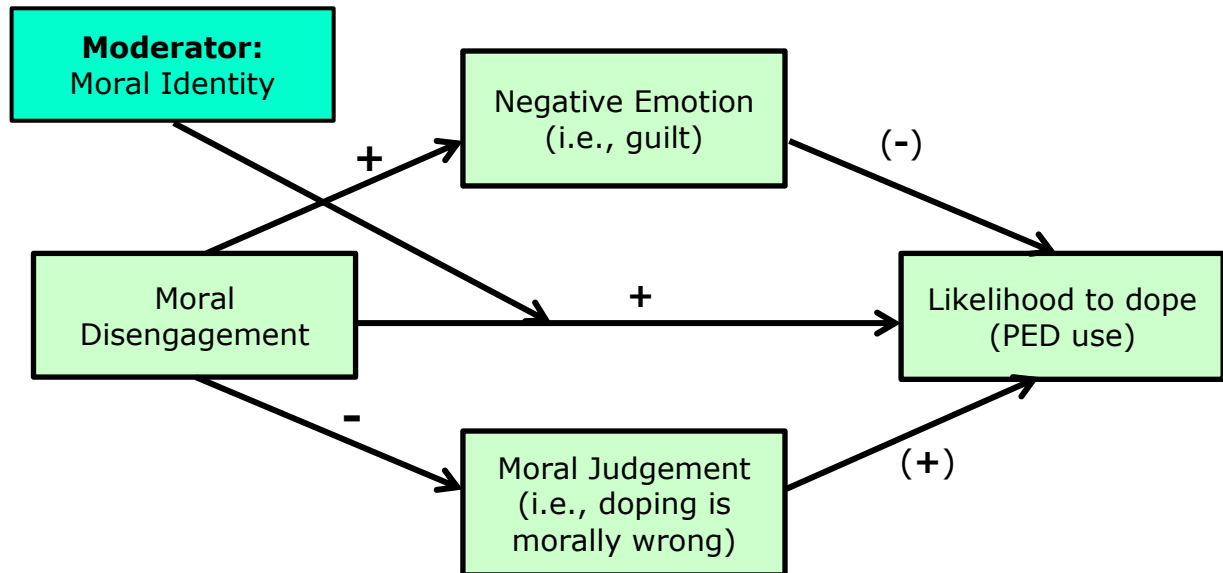


Figure 1. Conceptual framework for the project

Research objectives and hypotheses

This project aimed to address three main research objectives in three phases:

In Phase 1, we aimed to test whether moral disengagement was associated with emotional reactions, and moral judgements towards pictures of prohibited substance use. It was expected that doping moral disengagement will be associated with less intense negative emotional reactions towards pictures of doping, and perceptions that doping is perceived more acceptable, and less morally wrong.

In Phase 2, using a subsample from Phase 1, we aimed to test whether experimentally manipulating situational moral disengagement facilitated athletes' likelihood to use prohibited substances, reduced anticipated guilt and perceiving such behaviors as less morally wrong and more acceptable. It was also expected that inducing situational moral disengagement will increase athletes' likelihood to dope which will be mediated by reducing anticipated guilt. We also tested whether dispositional moral identity moderated the relationship between dispositional doping moral disengagement and athletes' likelihood to dope in situations where they have low (low moral disengagement condition) or high (high moral disengagement condition) potential for morally disengagement. It was expected that moral identity will moderate the relationship between dispositional moral disengagement and athletes' likelihood to dope. Specifically, moral disengagement will be more strongly and positively related with doping likelihood for athletes with low moral identity than those with high moral identity.

In Phase 3, using a separate subsample from Phase 1, we provide an extension to Phase 2 by experimentally manipulating moral identity to see if this can reduce athletes' anticipated guilt, moral judgments, and likelihood to dope across situations where athletes have low or high opportunities to morally disengage. We also aimed to test whether dispositional moral identity and doping moral disengagement had a role on these effects. It was expected that the findings will replicate those from Phase 2, but the suppressing effect of dispositional moral identity would be strengthened for athletes whose moral identity was primed (or activated).

Primary Project Phase 1

Method

Participants

Participants were 144 team sport players (99 men and 45 women), with an average age of 19.61 ($SD = 2.84$) years. They competed in soccer ($n = 48$), rugby ($n = 27$), field hockey ($n = 12$), netball ($n = 12$), tchoukball ($n = 9$), cricket ($n = 8$), basketball ($n = 6$), handball ($n = 6$), volleyball ($n = 5$), lacrosse ($n = 3$), American football ($n = 1$), and Gaelic football ($n = 1$). Participants competed in their respective sports at international/ national (14%), regional/ county (47%) and club level (39%) levels for an average of 8.41 ($SD = 4.76$) years.

To ensure we recruited a suitable sample, we conducted a Power calculation of with power at .80 and alpha at .05. We based the estimated effect size on some previous research looking at correlations between moral disengagement with emotional reactions and moral judgments to pictures of transgressive acts (e.g., Stanger et al., 2012), and doping susceptibility (e.g., Hodge et al., 2013), we used a correlation coefficient of $r = .25$ which yielded an estimated sample of 123 participants.

Dispositional Measures

Doping moral disengagement: Doping moral disengagement in sport was measured using the 6-item doping moral disengagement scale (Lucidi et al., 2008). Participants were asked to rate their level of agreement to statements on a 7-point Likert type scale, anchored by 1 (*strongly disagree*) to 7 (*strongly agree*). An example item is "It is not right to condemn those who use banned substances to improve their performance because many do the same". Each item assesses one of the six mechanisms of moral disengagement demonstrated in previous research to justify doping. Psychometric support for the scale has been provided with an alpha coefficient of .84 (Lucidi et al., 2008). The mean of all items was calculated and used in the analyses.

Intention to dope: A single-item was used to assess athlete intention to dope, participants were asked to what extent they intended to use a banned substance to improve their sport performance or physical appearance at least

once during the next 3 months on a 6-point Likert scale with anchors of 1 (*definitely no*) to 6 (*definitely yes*).

Reported doping: Participants were asked how often they used a range of banned substances during the last 3 months with the aim of improving their sport performance or physical appearance. Specifically, participants were asked their frequency of using "anabolic steroids", "human growth hormone", "EPO (e.g., blood doping)", "stimulants (e.g., ephedrine", amphetamine)", "diuretics", and "testosterone", on a 5-point scale with descriptors of 1 (*never*), 2 (*rarely*), 3 (*sometimes*), 4 (*often*), and 5 (*very often*). A mean score was calculated for these items and used for analysis.

Social desirability: Social desirability was measured using the 13-item short form Marlowe-Crown social desirability scale (Reynolds, 1982). Participants were asked a series of questions (e.g., "I'm always willing to admit it when I make a mistake") and asked to answer true or false to each item. For analysis, a sum score was calculated whereby true was coded 1, and no was coded 0.

Picture Viewing Measures

Emotional reactions to doping pictures: Each picture was rated on valence and arousal using the Self-Assessment Manikin (Bradley & Lang, 1994). Valence was rated on a 9-point scale with anchors of 1 (*very unpleasant*) to 9 (*very pleasant*), and arousal was rated on a 9-point scale with anchors of 1 (*very calming/ low arousal*) to 9 (*very activating/ high arousal*). This approach is similar to previous research investigating emotional reactions to sport stimuli (e.g., Stanger et al., 2012s, 2012b, 2013).

Moral judgement to doping pictures: Moral judgments to the pictures were assessed using two items. Specifically, participants were asked the extent to which they perceived the behavior in the picture (or represented by the picture) to be morally wrong on a 9-point scale with anchors of 1 (*not at all*) to 9 (*extremely*), and acceptable on a 9-point scale 1 (*not at all*) to 9 (*very acceptable*). Similar approaches have been adopted to assess moral judgment in previous research (e.g., Kavussanu et al., 2015).

Picture Viewing Task

The picture viewing task comprised of participants observing 24 pictures of which eight depicted doping. The doping pictures displayed athletes either taking pills, injecting a substance via syringe, or comprised concise newspaper headlines reporting incidences of athletes doping. Prior to testing, the pictures were piloted on a sample of 15 active researchers in sport and exercise psychology or a related discipline, who rated a larger set of pictures in terms of picture clarity, whether the pictures could depict doping, as well as their emotional involvement to each picture. This was conducted to test for the content and face validity of the pictures. The eight pictures that scored highest for content validity (i.e., could depict doping) and were rated as more unpleasant were included in the study. The other 16 pictures that participants observed (i.e., not doping) were included as fillers to reduce the potential for familiarisation, habituations or reporting bias. Specifically, these other pictures depicted unpleasant pictures (e.g., athletes engaging in aggressive acts), neutral pictures (e.g., players dribbling with the ball), and pleasant pictures (e.g., players celebrating), similar to those applied in previous research (Stanger et al., 2012a, 2012b, 2013).

The pictures were presented in a randomised order that was fixed for participants. To help control for some order effects in terms of the presentation of the pictures, the order presentation of pictures was reversed for half the participants. Thus, there was two picture orders, half the participants observed the pictures in the original fixed order whereas the other half of participants observed the pictures in the fixed reverse order. Each picture was presented for 6 seconds with an inter-picture interval of 30 seconds. During the inter-picture interval participants were asked to rate their emotional involvement to the pictures (for valence and arousal) and moral judgements (in terms of the extent the behavior was morally wrong or acceptable). This inter-picture interval was found appropriate for participants to make their responses to each of the four questions following each question, and then fixate on a cross on the screen ready for the presentation of the next picture.

Procedure

After reading the participant information sheet and completing a consent form to confirm their agreement to take part, participants provided demographic

information and completed the measures for doping moral disengagement, doping intention, use of banned substances, and social desirability. Then, at least 3 days (but no more than 30 days) later, participants then attended a computer-based session. At the start of this session, participants were provided the information sheet and a second consent form to confirm that they still agreed to participate and understood what participation would involve. Participants then completed a second demographics sheet so responses could be matched with the previous measures to also help maintain anonymity.

Then, participants were instructed that they will complete a picture viewing task which included pictures comprising of different behaviors in sport, including pictures of athletes intentionally taking a banned substance or headlines that represented athletes taking banned substances. Participants were asked to sit back in their chair whilst viewing each picture and to view the picture for the full duration that it was presented before making their responses to each picture. Participants were also given a one-minute break half-way through the presentation of pictures (i.e., after 12 pictures) to help reduce potential fatigue. After participants responded to each of the pictures, they were then asked to wait for further instructions for a scenario task (details about this aspect of the project are presented in Phases 2 and 3 below).

Results

Preliminary analysis

Following initial checking of scores for valence, arousal, and moral judgment to the doping picture. Two of the eight pictures had significantly higher valence (i.e., perceived less unpleasant), lower arousal, and judgments that they were less wrong and more acceptable than all of the other six pictures. Accordingly, so that our pictures depicted the content that was most closely reflected reactions towards doping, we removed these pictures from subsequent analysis, and mean score was taken for the remaining six pictures.

We then checked the normality of data. Univariate skewness and kurtosis values were then between -1.96 and 1.96 for all variables suggesting no significant deviation from normality apart from intentions to dope and reported use of banned

substances which had multiple outliers. As this is potentially due to the nature of the variables whereby only some athletes may be open to admit taking or intending to take banned substances during the past 3 months, we therefore ran Spearman's rank correlations when looking at relationships for these variables.

Correlational analysis

Descriptive statistics for each variable and correlations are presented in Table 2.

Correlational analyses revealed that moral disengagement was positively associated with intention to dope, reported doping, valence ratings (i.e., associated with less unpleasant reactions to the doping pictures), and associated with judgments that doping was more acceptable and less morally wrong. Intention to dope and reported doping were positively correlated, and both were linked with less unpleasant emotional reactions, judgements that doping was more acceptable and less wrong.

Taken together, as expected moral disengagement was linked with higher intention to dope and use of banned substances as well as associated with less unpleasant emotional reactions to doping, and judgments that doping was less morally wrong, and more acceptable. Therefore, we then conducted mediation analysis to see whether the relationship between moral disengagement and reported doping was mediated via moral judgment (focusing on the extent doping was judged as morally wrong) and valence ratings towards doping.

Table 2. Relationships between moral disengagement, doping, emotion and moral judgment.

	1	2	3	4	5	6	7	8
1. Moral disengagement	-							
2. Intention to dope	.46***	-						
3. Reported doping	.20*	.52***	-					
4. Valence ratings	.17*	.22*	.17*	-				
5. Arousal Ratings	-.03	.01	-.01	-.26**	-			
6. Doping wrong	-.44***	-.34***	-.27**	-.43***	-.01	-		
7. Doping acceptable	.35**	.41***	.26**	.42***	-.01	-.70***	-	
8. Social Desirability	.13	.12	.10	.11	.14	-.03	.07	-
<i>Mean</i>	2.06	1.19	1.02	3.28	5.12	7.65	2.24	7.06
<i>Standard Deviation</i>	1.01	0.62	0.09	0.98	2.05	1.07	1.10	1.91

Note: * $p < .05$, ** $p < .01$; *** $p < .001$.

The indirect effect of moral judgment and valence ratings

To determine whether the relationship between moral disengagement and reported doping was mediated via moral judgments and affective reactions, towards doping, we used mediation analyses via bootstrapping. Bootstrapping is considered one of the most powerful methods when testing for indirect effects (Hayes, 2009; Preacher, Rucker, & Hayes, 2007) using the PROCESS macro v3 for regression analyses conducted via the Statistical Package for the Social Sciences (SPSS; Hayes, 2013). The model was run with 5,000 bootstrap samples to estimate the indirect effect and 95% confidence intervals (CIs). When the confidence interval of an indirect effect does not contain zero, there is evidence of mediation. We report the completely standardised indirect effects (ab_{cs}) as an indicator of effect size. To control for any potential gender effects, we included gender as a covariate in these analyses

As shown in Figure 2, bootstrapping analyses revealed that moral disengagement was a marginal positive predictor of valence ratings, and a significant negative predictor of moral judgement (extent that doping was perceived as morally wrong). In addition, moral judgement was a negative predictor, but valence ratings was not a significant predictor, of reported doping when controlling for moral disengagement. Moral disengagement was a significant positive predictor of reported doping, and the strength of this relationship was reduced when controlling for moral judgment and valence ratings.

Mediation analyses revealed that the indirect effect on the relationship between moral disengagement and reported doping through moral judgment was significant (point estimate = 0.011, 95% CI = 0.003 to 0.024; $ab_{cs} = 0.123$, 95% CI = 0.037 to 0.227), but was not significant through valence ratings (point estimate = 0.001, 95% CI of -0.001 to 0.004; $ab_{cs} = 0.010$, 95% CI = -0.015 to 0.034). These results indicate that moral disengagement positively predicts reported doping via reducing athlete’s judgments that taking banned substances was less morally wrong.

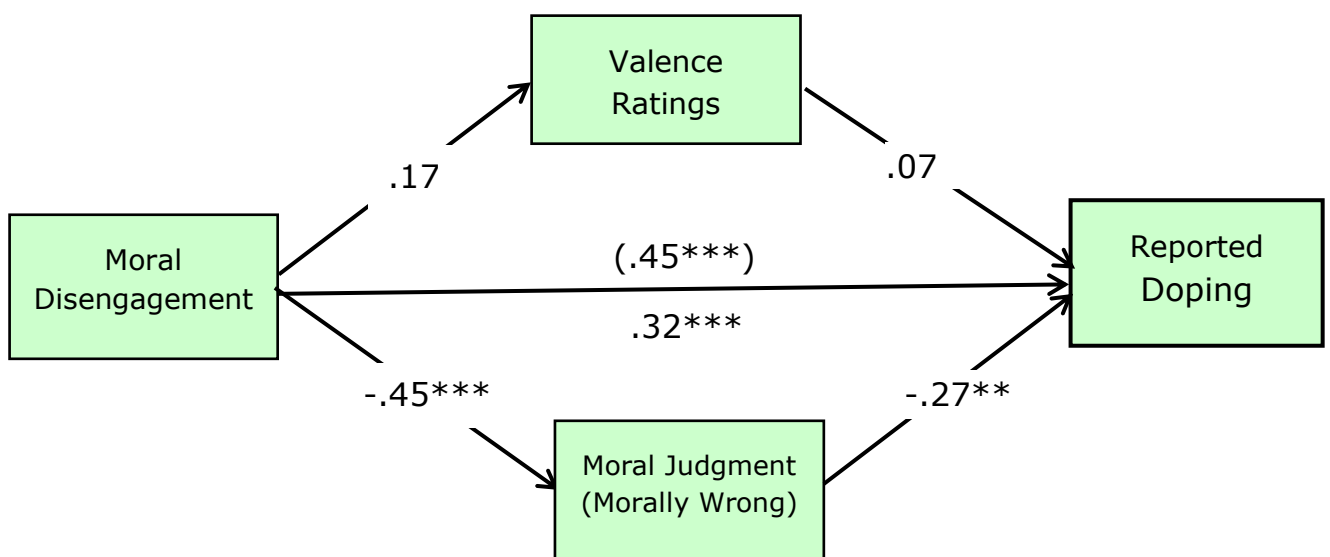


Figure 2. Model for the indirect effect of valence rating and moral judgment on the relationship between moral disengagement and doping willingness in Phase 1. Standardized regression coefficients are presented. The uncorrected coefficient for the effect of moral disengagement on doping likelihood is in parentheses. Gender was included as a covariate. Note: # $p < .055$, ** $p < .01$; *** $p < .001$.

Discussion

The findings from Phase 1 provide initial insight into the relationships between moral disengagement and emotional reactions as well as moral judgements towards doping. Our findings highlight that moral disengagement was associated with higher frequency of reported doping. In addition, we found that moral disengagement was linked with lower unpleasant emotional reactions to doping, and moral judgments that doping was more acceptable and less wrong. Moreover, we provided support for the prediction of Bandura's (1991) social cognitive theory of moral thought and action whereby the process by which moral disengagement may be associated with higher reported doping was via moral judgment. Specifically, moral disengagement was associated with higher reported doping partially by judging doping as less morally wrong. However, the indirect effect of emotional reactions on the relationship between moral disengagement and reported doping was not supported. A limitation of the present study is that emotional reactions were only assessed in terms of valence (and arousal) in relation to pictures of other athletes taking banned substances. Therefore, this does not assess the anticipated emotional reactions, such as guilt, if one was to engage in such behaviour, which would provide a more direct test of Bandura's (1991) theory. Moreover, we only examined the relationship between moral disengagement and doping, which cannot enable us to test the temporal direction of this relationship.

To extend the findings from Phase 1, in a sub-sample of participants from Phase 1 we manipulated moral disengagement to see whether this had an effect on athletes' likelihood to dope, moral judgments and anticipated guilt. We were then able to test whether moral disengagement increased athletes' likelihood to dope and if this was mediated via anticipated guilt. Moreover, we aimed to test whether moral identity was associated with athletes' likelihood to dope across situations where athletes had differing levels of opportunity to morally disengage and tested for any interactive effects of doping moral disengagement and moral identity on athletes' likelihood to dope.

Primary Project Phase 2

Method

Participants

Participants were a sub-sample from Study 2 that comprised 72 team sport players (46 men and 26 women), with an average age of 19.21 ($SD = 1.90$) years. They competed in soccer ($n = 134$), rugby ($n = 45$), field hockey ($n = 32$), netball ($n = 54$), basketball ($n = 8$) and American football ($n = 2$). Participants competed in their respective sports at international/ national (11%), regional/ county (58%) and club level (31%) levels for an average of 5.39 ($SD = 3.17$) years.

Moral Disengagement Manipulation

To manipulate moral disengagement, we developed three scenarios to manipulate mechanisms of moral disengagement that have been indicated as being most frequently used to justify the use of performance enhancing drugs in previous research (e.g., Boardley & Grix, 2014; Boardley, Dewar, & Grix, 2013). Specifically, we developed scenarios to manipulate displacement of responsibility, diffusion of responsibility and advantageous comparison. We developed scenarios and adapted them to manipulate low morally disengagement, and high morally disengagement. For instance, to manipulate displacement of responsibility, in the low moral disengagement condition participants were asked to read the following the situation.

*Imagine that recently your sport performances have not been as good as last season. **Your coach has been very supportive and loyal, instilling you with confidence and encouragement that you will soon re-discover your form.** You have noticed that one of your teammates' performances' have really improved recently. After practice one day your teammate tells you that he/she has been using a banned performance enhancing substance and there are no tests to detect it.*

In the high moral disengagement condition, participants read the same situation but the part in bold was changed to "*Your coach is putting intense pressure on*

you to perform better and threatens that he/ she may drop you from the squad if you do not find a way to improve your performances soon.". The full manipulations for diffusion of responsibility and advantageous comparison are presented in the Appendix A. Participants read all three scenarios for low moral disengagement, and the three scenarios for high moral disengagement in the same block.

The ordering of whether participants read the low moral disengagement or high moral disengagement scenarios was fully counterbalanced across participants. Participants were provided with a 3-minute break between the low and high moral disengagement conditions. Moreover, to reduce the potential of order effects for the presentation of each of the three mechanisms of moral disengagement that were manipulated, the ordering of the scenarios within conditions were also counterbalanced across participants. Thus, there were six combinations of the scenarios for the low moral disengagement scenarios multiplied by the six combinations for the high moral disengagement scenarios, resulted in 36 different possible combinations. Accordingly, we ended with a total sample size of 72 (multiple of 36).

Measures

Moral identity: Moral identity was measured using the 5-item internationalization subscale from the moral identity scale (Aquino & Reed, 2002). This scale assesses the extent to which a range of moral traits are central to the individuals' self-concept (Aquino & Reed, 2002). Specifically, participants were presented with nine moral traits (e.g., caring, compassionate, fair, honest and kind) and asked to think about a person who possesses these traits. Then, participants were asked to answer each of 5 statements in relation to these traits (e.g., I strongly desire to have these features) on a 7-point Likert type scale anchored from 1 (*strongly disagree*) to 7 (*strongly agree*). Reed and Aquino (2003) have provided psychometric support for the scale ($\alpha = .83$). The mean of all items was calculated and used in the analyses.

Dispositional doping moral disengagement: Doping moral disengagement was measured as per Phase 1.

Both dispositional moral disengagement and moral identity were measured at least 3 days prior to this experimental session. Participants were asked to

complete each of the following scales after reading each scenario to assess their moral judgment, likelihood to dope and anticipated guilt.

Anticipated Guilt: Participants were asked to rate their anticipated feelings of guilt if they were take the banned substance in each scenario on a 7-point scale anchored by 1 (*not at all likely*) to 7 (*extremely*) using the 5-item guilt scale from the State Shame and Guilt Scale (Marschall, Saftner, & Tangney, 1994). An example item is "remorse, regret". Marschall et al. (1994) have provided psychometric support for the guilt scale (e.g., $\alpha = .82$), and this approach has been adopted to assess anticipated guilt in previous research (e.g., Stanger et al., 2013; Kavussanu et al., 2015). As the mean score for anticipated guilt was highly correlated within the low moral disengagement ($r_s = .76$ to $.84$) and high moral disengagement ($r_s = .79$ to $.80$) conditions, and we were interested in comparing the effects of high vs. low moral disengagement in the present study, we calculated a mean score across the 3 scenarios within each condition.

Moral judgment: Participants were asked to rate their judgments in relation to each scenario using 2 questions. Specifically, participants were asked to indicate the extent they perceived the behavior in each scenario as acceptable on a 7-point scale anchored from 1 (*not at all acceptable*) to 7 (*very acceptable*) as well as the extent they perceived the behavior in the scenario to be morally wrong on a 7-point scale from 1 (*not at all wrong*) to 7 (*very wrong*). As we were interested in the effect of the moral disengagement conditions on moral judgement and the correlations for whether behavior was acceptable and wrong were highly correlated across the scenarios in the low moral disengagement (acceptable: $r_s = .73$ to $.79$; morally wrong: $r_s .48$ to $.68$) and high moral disengagement (acceptable; $r_s .71$ to $.82$: wrong; $r_s .63$ to $.72$), we calculated an overall mean score for acceptable and wrong for both low and high moral disengagement.

Likelihood to dope: To assess the likelihood of doping in each situation, participants were asked to indicate the likelihood they were to take the banned substance in each situation on a 7-point scale anchored from 1 (*not at all likely*) to 7 (*very likely*). This approach has been adopted to measure likely behavior in a range of previous studies (e.g., Stanger et al., 2012, 2013; Kavussanu et al., 2015; Ring & Kavussanu, 2017). As the mean score for likelihood to dope was highly correlated within the low moral disengagement ($r_s = .60$ to $.63$) and high moral disengagement ($r_s = .71$ to $.81$) conditions, we calculated a mean score for

likelihood to dope across the 3 scenarios within each condition.

Manipulation check: To enable us to check for the effectiveness of the moral disengagement manipulation, we included three questions adapted from the moral disengagement in sport scale (Boardley & Kavussanu, 2007), which included an item for displacement of responsibility, diffusion of responsibility, and advantageous comparison. A mean score was calculated for these three items for both the low and high moral disengagement condition.

Procedure

After completing the picture viewing task (as presented in Phase 1), participants took a 5-minute break. Following this break, participants were informed that they will read two blocks of three scenarios (see Figure 3) and would be asked to answer a range of questions after reading each scenario. Participants were asked to read each scenario carefully until the situation was clear in their mind. They were also informed that the scenarios may be quite similar, but they are different so were asked to kindly make sure they read each one carefully before proceeding to answering the questions. After reading each scenario, participants completed the measures described above to assess their moral judgement, anticipated guilt and likelihood to dope. Participants read and completed measures for all three scenarios in the low moral disengagement, and the three scenarios in high moral disengagement conditions in the same block. At the end of each block participants completed the manipulation check items. After reading and completing the items for each of the six scenarios, participants were then debriefed, thanked for their participation, and offered a £5 store voucher as a token of appreciation for their participation.

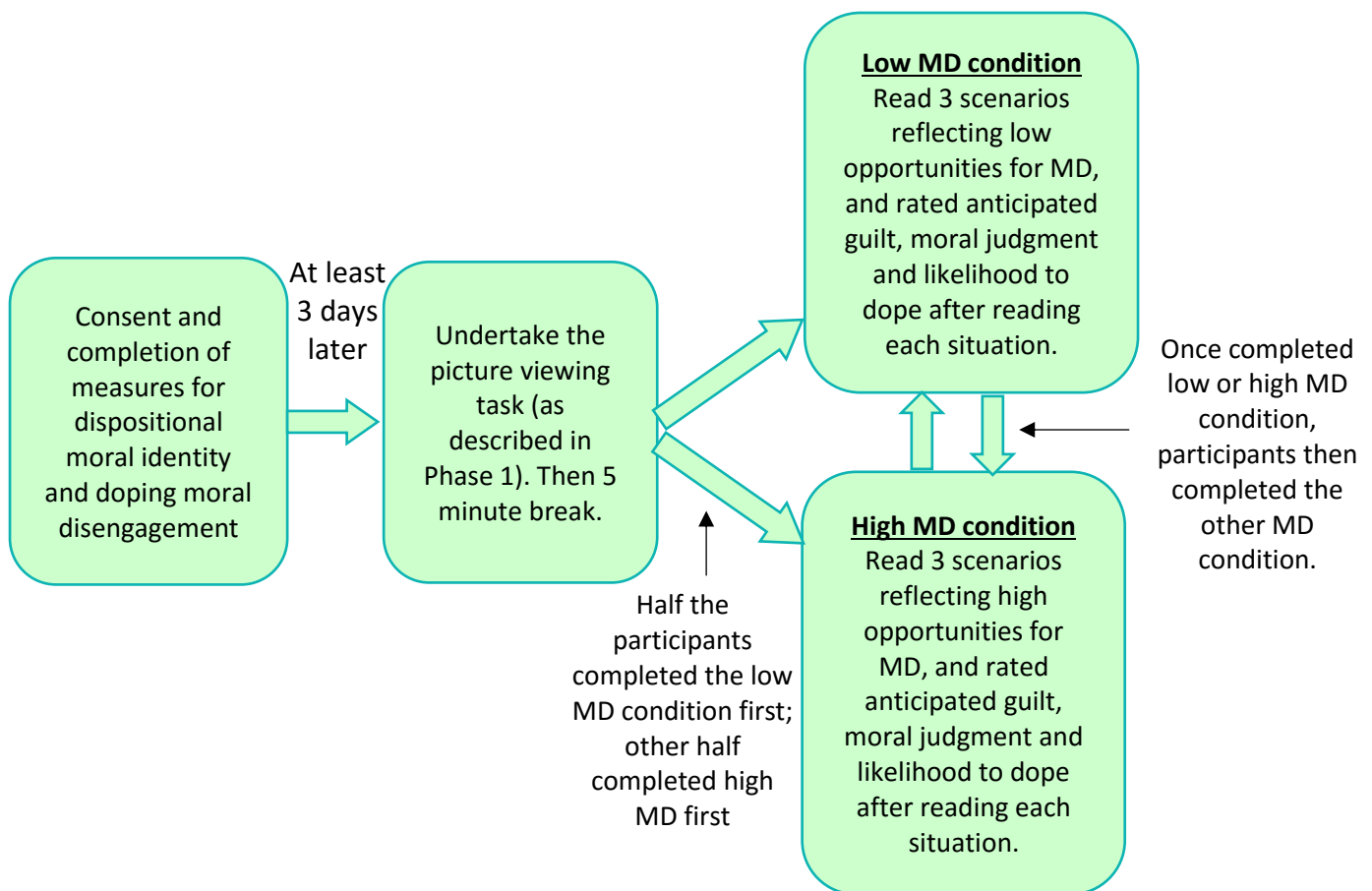


Figure 3: Procedure for Phase 2.

Results

Manipulation check

Prior to the main analyses, we first checked whether the manipulation was effective by conducting a repeated measures Analysis of Covariance (ANCOVA) on the manipulation check scores for the low and high moral disengagement condition, controlling for gender. The results yielded significant differences between the two conditions on the manipulation check, $F(1,70) = 10.28, p = .002, \rho\eta^2 = .13, \text{Observed power} = .89$. Specifically, participants reported higher moral disengagement scores on the manipulation check in the high moral disengagement condition ($M = 2.35, SD = 1.39$) compared to the low moral disengagement condition ($M = 1.96, SD = 1.25$). Thus, supporting that our manipulation of moral disengagement was effective.

The effect of situation moral disengagement on judgment, anticipated guilt and likelihood to dope

To check for the effect of moral disengagement on moral judgement, anticipated guilt and doping likelihood, we conducted a repeated measures Multivariate Analysis of Covariance (MANCOVA) controlling for gender. A significant multivariate effect for moral disengagement was found, $F(4,67) = 6.61, p < .001, \eta^2 = .28, Observed\ power = .99$. As shown in Table 3, follow-up repeated ANCOVAs revealed significant differences for each of variables. Specifically, participants perceived taking the banned substance as more acceptable and less morally wrong, anticipated feeling less guilt if they were to take a banned substance as well as reported greater likelihood to dope in the high moral disengagement condition compared to the low moral disengagement condition. Therefore, in situations where players had higher opportunities to morally disengage this led players to perceive taking banned substances as more acceptable, less wrong, would experience less anticipated guilt, and be more likely to dope.

Table 3. Effects of moral disengagement on likelihood to dope, anticipated guilt and moral judgment in Phase .

	Low MD		High MD		F (1, 50)	η^2
	M	SD	M	SD		
Morally Wrong	6.39	0.98	6.02	1.20	7.15**	.09
Acceptable	1.59	0.94	2.13	1.32	13.65***	.16
Anticipated guilt	3.95	0.95	3.66	1.08	14.77***	.17
Likelihood to dope	1.59	0.84	2.26	1.46	22.44***	.24

Note: MD = Moral disengagement. * $p < .05$, ** $p < .01$, *** $p < .001$.

To test whether the effect of moral disengagement on likelihood to dope was mediated through anticipated guilt, we conducted within-subject mediation analysis using bootstrapping via the MEMORE macro for regression analyses in SPSS (Montoya & Hayes, 2017). The model was run with 5,000 bootstrap samples to estimate of the indirect effect; when the confidence intervals of the indirect

effect does not cross zero then there is evidence of mediation. As depicted in Figure 4, moral disengagement positively predicted anticipated guilt and doping likelihood, and anticipated guilt negatively predicted doping likelihood. When, controlling for anticipated guilt the effect of moral disengagement on doping likelihood was attenuated. Mediation analyses revealed that the indirect effect of moral disengagement on likelihood to dope through anticipated guilt was significant (indirect effect = 0.162, 95% CI of 0.03 to 0.33). Therefore, suggesting the moral disengagement increases players likelihood to dope by reducing the regulatory role of anticipated guilt for taking the banned substance.

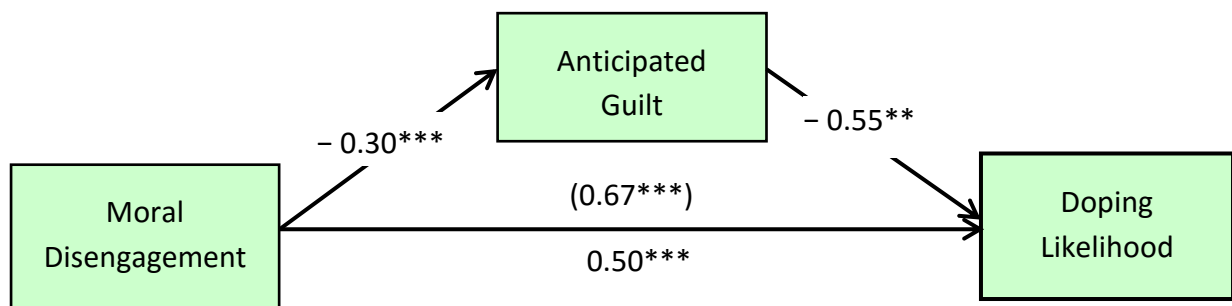


Figure 4. Model for the mediating role of anticipated guilt in Phase 2. Unstandardized regression coefficients are presented. The uncorrected coefficient for the effect of moral disengagement on doping likelihood is in parentheses. Note: $** p < .01$; $*** p < .001$.

The moderating effect of dispositional moral identity

Next, we addressed our final study purpose regarding whether dispositional moral identity moderated the relationship between doping moral disengagement and likelihood to dope under situations where players having differing levels of opportunity to morally disengage. We conducted moderated hierarchical regression analyses (i.e., Aiken & West, 1991) on likelihood to dope in the low moral disengagement and high moral disengagement conditions. The variables were entered into regression models in a three-step process. We entered the gender as the control variable in Step 1, moral identity and doping moral disengagement in Step 2, and the product terms (interaction) of mean centred moral identity and mean centred doping moral disengagement in Step 3 (Aiken & West, 1991). The results are presented in Table 4.

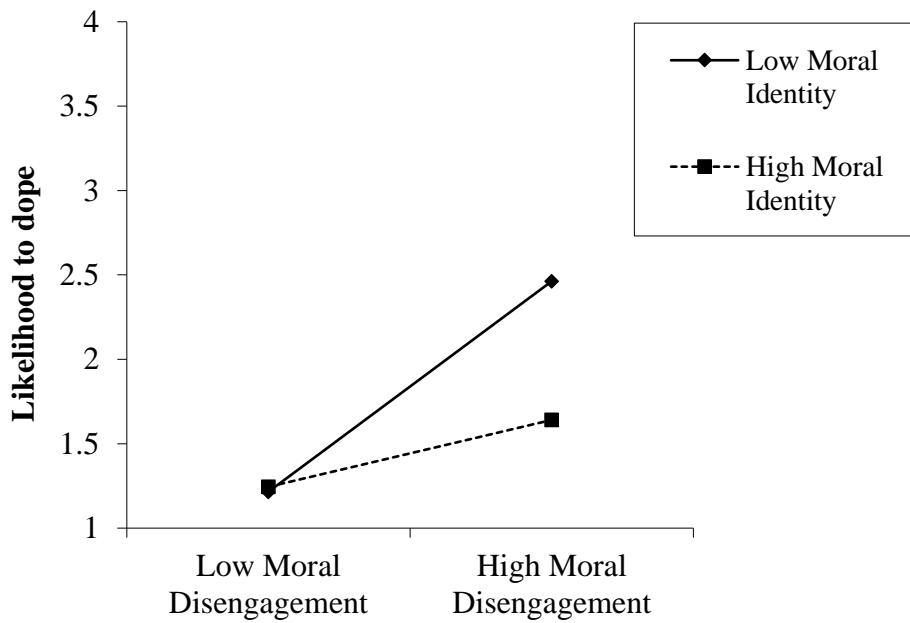
Table 4. Hierarchical regression analysis for moral identity and dispositional doping moral disengagement on likelihood to dope in Phase 2 (N = 72).

Step	Predictor variable	B	SE B	β	ΔR^2	ΔF
<i>Likelihood to dope under conditions of low moral disengagement</i>						
1	Gender	-0.37	0.20	-.21	.04	3.22
2	Moral identity (MI)	-0.23	0.10	-.23*	.31	16.59***
	Moral disengagement (MD)	0.43	0.09	.48***		
3	MI \times MD	-0.32	0.13	-.23*	.05	5.91*
<i>Likelihood to dope under conditions of high moral disengagement</i>						
1	Gender	-0.37	(0.36)	-.12	.02	1.05
2	Moral identity	-.10	0.18	-.06	.31	15.51***
	Moral disengagement	0.84	0.16	.55***		
3	MI \times MD	-0.24	0.25	-.10	.01	0.94

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. The products were formed by multiplying mean-centered moral identity and mean centered moral disengagement.

For doping likelihood under conditions of low moral disengagement, dispositional moral identity was a negative predictor, and doping moral disengagement a positive predictor, of likelihood to dope. Interestingly, a significant moral identity \times moral disengagement interaction was revealed. As depicted in Figure 5, dispositional doping moral disengagement was a salient positive predictor of doping likelihood for players low in moral identity, but not for those high moral identity. For doping likelihood under conditions of high moral disengagement, dispositional moral disengagement remained a significant positive predictor while moral identity was no longer a negative predictor of doping likelihood. Moreover, no moral identity \times doping moral disengagement interaction was revealed.

(A)



(B)

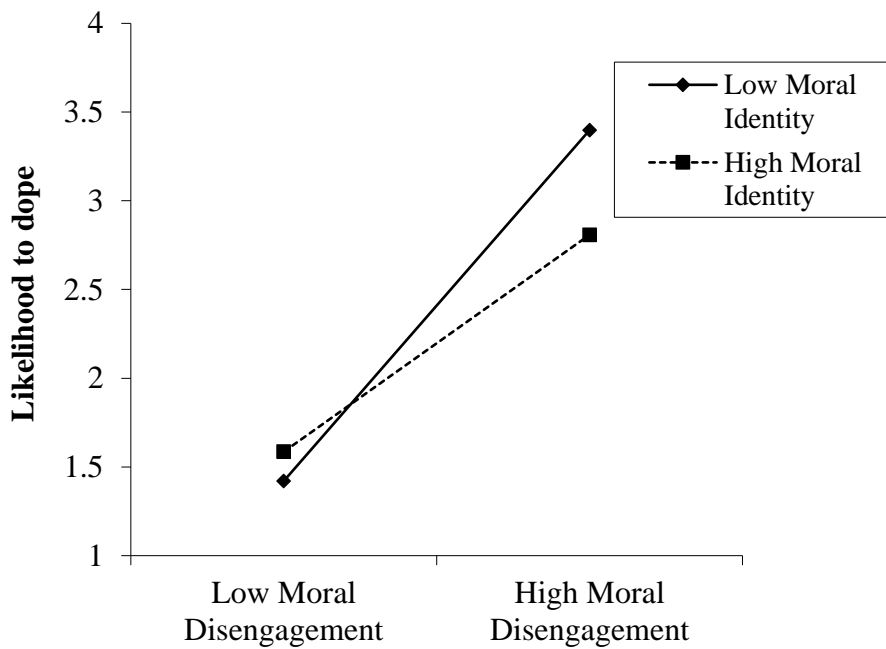


Figure 5. The moderating effect of moral identity on the relationship between dispositional doping moral disengagement and likelihood to dope under the low moral disengagement (Panel A) and high moral disengagement (Panel B) condition. The moderating effect of moral identity is only significant for the low moral disengagement condition.

Discussion

This is the first experimental investigation into the effects of moral disengagement on doping likelihood, moral judgements and anticipated guilt in relation to doping. Our findings support theory (e.g., Bandura, 1991) by highlighting that under conditions where athletes are more likely to morally disengage, players judge doping as more acceptable and less wrong, and their anticipated guilt reduces and the likelihood to dope increases. Moreover, our findings indicate that moral disengagement may increase athletes' likelihood to dope by reducing the regulatory role of anticipated guilt. Our findings thereby support theoretical predictions (e.g., Bandura, 1991), and are aligned to previous research highlighting that moral disengagement is a positive predictor of athletes' likelihood to dope (e.g., Hodge et al., 2013; Lucidi et al., 2008; Ring & Kavussanu, 2017), and that moral disengagement can increase transgressive conduct via reducing anticipated guilt (e.g., Ring & Kavussanu, 2017; Stanger et al., 2013).

This study also provides some novel findings highlighting the moderating effect of moral identity on the relationship between dispositional doping moral disengagement and doping likelihood. Specifically, moral identity moderated the moral disengagement – doping likelihood relationship under conditions where players were less likely to morally disengage (low moral disengagement condition). Specifically, moral identity was a negative predictor of doping likelihood, and the positive relationship between moral disengagement and doping likelihood was attenuated. However, under conditions where opportunities to morally disengage were amplified (i.e., high moral disengagement condition), moral identity was not a significant negative predictor of doping likelihood and did not moderate the positive relationship between moral disengagement and doping likelihood.

Taken together, these findings suggest that moral identity can have a protective effect on athletes being likely to dope even if athletes are more inclined to morally disengage. However, this effect is only found under conditions of low moral disengagement (e.g., athletes with a supportive coach). When under conditions of high moral disengagement (e.g., under coach pressure) the protective effect of moral identity on doping likelihood is weakened. To extend on the present

findings, we then aimed to test whether manipulating moral identity influences doping likelihood and protect athletes from doping under conditions of low and high moral disengagement.

Key take home message:

These findings highlight the need for anti-doping interventions to target athletes' moral identity (and standards) as well as reducing their inclination to morally disengage and need to be targeted with the consideration of the social environment (e.g., support personnel and entourage) to reduce potential situations where athletes may be more susceptible to morally disengage.

Primary Project Phase 3

Methods

Participants

Participants were a sub-sample from Phase 1 that comprised 72 team sport players (53 men and 19 women), with an average age of 20.01 ($SD = 3.80$) years. They competed in soccer ($n = 26$), rugby ($n = 14$), field hockey ($n = 6$), tschoukball ($n = 6$), netball ($n = 4$), cricket ($n = 4$), basketball ($n = 3$), lacrosse ($n = 3$), handball ($n = 1$), volleyball ($n = 1$), and American football ($n = 1$). Participants competed in their respective sports at international/ national (11%), regional/ county (21%) and club level (68%) levels for an average of 8.30 ($SD = 5.08$) years.

Procedure

Dispositional moral identity and doping moral disengagement were measured as per Study 1. After completing the picture viewing task, participants had a 5-minute break before starting this part of the experiment (as per Phase 2). Participants were randomly allocated to a moral identity ($n = 36$; 28 men and 8 women) or a control ($n = 36$; 25 men and 11 women) group and were administered the manipulation depending on their assigned group (described below).

Moral identity and moral disengagement manipulation

To manipulate moral identity, we employed a method devised by Aquino and colleagues (Aquino et al., 2007, 2009), which has also been applied to recent

research in sport (i.e., Kavussanu et al., 2012, 2015). Participants were presented with nine words and were asked to think about each word and what it means to them. They then copied each word by hand four times on a sheet of paper. Then, participants were asked to write a short story about themselves which includes each of the nine words at least once. Next, they were asked to read over their story and circle each of the nine words.

Participants in the moral identity group were asked to refer to moral traits which were *caring, compassionate, fair, friendly, generous, helpful, hardworking, honest, and kind*. Reflecting and thinking about themselves with reference to these traits was expected to make the participants moral identity more salient in their working self-concept thereby inducing their moral identity (Aquino et al., 2009; Kavussanu et al., 2015). Participants in the control group were asked to refer to nine neutral words that were devoid of moral content, namely: *book, car, chair, computer, desk, house, pen, street, and table*. Considering and thinking about these words in relation to themselves were not expected to induce moral identity in the control group (Aquino et al., 2009; Kavussanu et al., 2015).

Following the moral identity manipulation, participants read each of the scenarios to manipulate moral disengagement and completed the measures for moral judgement, anticipated guilt and likelihood to dope as per Phase 2. Identical to Phase 2, to help protect against order effects we counterbalanced the moral disengagement conditions as well as the order of the scenarios. However, during the 3-minute break between the low and high moral disengagement conditions, participants were presented with their story that they wrote for the moral identity manipulation and asked to read the story during the break

Manipulation check: The manipulation check for moral identity was similar to that applied in previous research (e.g., Kavussanu et al., 2015) whereby participants were asked to reflect on their story and indicate on a 7-point scale anchored from 1 (*to some extent*) to 7 (*to a great extent*), how much the story reflected how they see themselves as a moral person, a student, and a member of an organization. A 2 Group (moral identity, control) Analysis of Covariance (controlling for gender) revealed that the moral identity group ($M = 6.03, SD = 0.81$) reported higher ratings for being a moral person than the control group ($M =$

3.22, $SD = 1.74$), $F(1, 71) = 74.33, p < .001, \rho\eta^2 = .52$. There were no group differences for seeing the stories reflecting themselves as a student, or a person of an organization.

At the end of each moral disengagement condition, participants were asked to complete the three manipulation check items as per Phase 2. A repeated measures ANOVA revealed that participants reported higher moral disengagement use if they were to take the substance in the situations for the high moral disengagement condition ($M = 2.31, SD = 1.38$) compared to the low moral disengagement ($M = 1.96, SD = 1.04$) condition, $F(1, 71) = 11.11, p < .001, \rho\eta^2 = .14$.

Results

Effect of moral identity and moral disengagement

To check for the effect of moral identity and moral disengagement on moral judgment, anticipated guilt and doping likelihood, we conducted a mixed design MANCOVA whereby moral identity (between-subjects factor), moral disengagement (within-subjects factors) and gender as a covariate. A significant multivariate effect for moral disengagement was found, $F(4,66) = 9.14, p < .001, \rho\eta^2 = .36, \text{Observed power} = 1.00$. As shown in Table 5, follow-up repeated measures ANCOVAs revealed significant differences for each variable. Specifically, participants perceived taking the banned substance as more acceptable and less morally wrong, anticipated feeling less guilt if they were to take a banned substance as well as reported greater likelihood to dope in the high moral disengagement condition compared to the low moral disengagement condition. Therefore, similar to Phase 2, in situations where opportunities for morally disengagement were amplified players perceived taking banned substances as more acceptable, less wrong, would experience less anticipated guilt, and likelihood to dope.

In terms of moral identity, no significant main multivariate effect for moral identity, $F(4,66) = 0.18, p = .95, \rho\eta^2 = .01, \text{Observed power} = 0.09$, or moral disengagement x moral identity interaction, $F(4,66) = 0.69, p = .60, \rho\eta^2 = .04, \text{Observed power} = 0.21$ were found. Moreover, follow-up ANCOVAs confirmed no differences between the moral identity and the control group for any variable.

Table 5. Effects of moral identity and moral disengagement on moral judgment, anticipated guilt and likelihood to dope in Phase 3.

	Low Moral Disengagement (MD)				High Moral Disengagement (MD)				Total (N= 72)			
	Control Group (N = 36)		MI Group (N = 36)		Control Group (N =36)		MI Group (N = 36)		Low MD	High MD	F (1, 69)	$\rho\eta^2$
	M	SD	M	SD	M	SD	M	SD				
Morally Wrong	6.17	1.13	6.31	0.97	5.99	1.29	5.83	1.16	6.24	5.91	10.64**	.13
Acceptable	1.47	0.75	1.52	0.84	1.87	1.14	1.96	1.15	1.50	1.92	24.09***	.26
Guilt	4.01	0.97	4.13	0.87	3.80	1.11	3.77	0.93	4.07	3.79	22.96***	.25
Likelihood	1.39	0.47	1.38	0.69	2.08	1.27	2.10	1.45	1.38	2.09	35.20***	.34

Note: * $p < .05$, ** $p < .01$, *** $p < .001$.

Mediating Role of Guilt for the effect of moral disengagement on doping likelihood

As there were no main effects for moral identity on doping likelihood, we tested whether the effect of moral disengagement on doping likelihood was mediated through anticipated guilt by conducting within-subject mediation analysis using bootstrapping via the MEMORE macro for regression analyses in SPSS (Montoya & Hayes, 2017) as per Phase 2.

As depicted in Figure 6 moral disengagement positively predicted anticipated guilt and doping likelihood, and anticipated guilt negatively predicted doping likelihood. When, controlling for anticipated guilt the effect of moral disengagement on doping likelihood was attenuated. Mediation analyses revealed that the indirect effect of moral disengagement on likelihood to dope through anticipated guilt was significant (indirect effect = 0.254, 95% CI of 0.12 to 0.44). Therefore, suggesting the moral disengagement increased players’ likelihood to dope by reducing the regulatory role of anticipated guilt for taking the banned substance thereby replicating the findings from Phase 2.

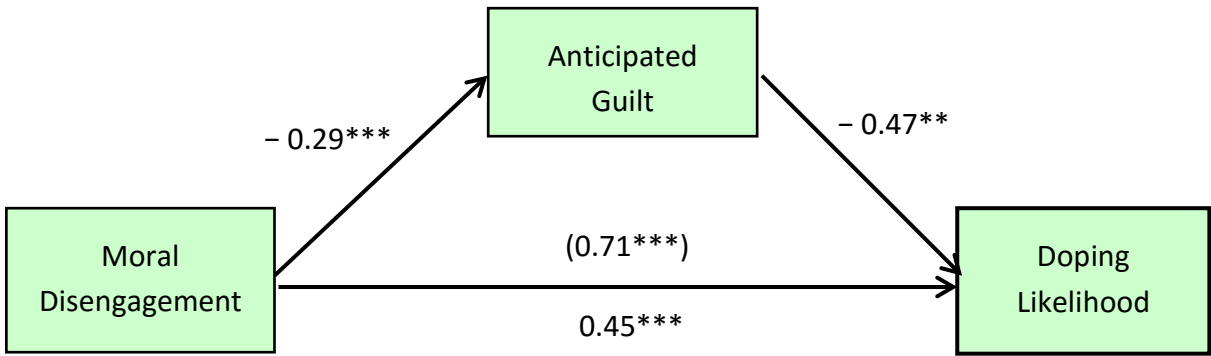


Figure 6. Model for the mediating role of anticipated guilt in Phase 3. Unstandardized regression coefficients are presented. The uncorrected coefficient for the effect of moral disengagement on doping likelihood is in parentheses. Note: *** $p < .001$.

Dispositional moral identity on doping likelihood.

Although we found no main effect for moral identity on doping likelihood, we tested whether dispositional moral identity and doping moral disengagement predicted doping likelihood as per Phase 2. However, as each group received different moral identity priming instructions, we ran the moderated hierarchical regression

analyses as per Phase 2, separately for the moral identity group and control group. Specifically, the variables were entered into regression models in a four-step process. We entered the gender as the control variable in Step 1, moral identity in Step 2, doping moral disengagement in Step 3, and the product terms (interaction) of mean centred moral identity and mean centred doping moral disengagement in Step 4 (Aiken & West, 1991). The results are presented in Table 6.

Table 6. Hierarchical regression analysis for moral identity and dispositional doping moral disengagement on likelihood to dope in Phase 3.

		<i>Control Group (N = 36)</i>					<i>Moral Identity Group (N = 36)</i>				
Step	Predictor variable	<i>B</i>	<i>SE B</i>	β	ΔR^2	ΔF	<i>B</i>	<i>SE B</i>	β	ΔR^2	ΔF
<i>Likelihood to dope under conditions of low moral disengagement</i>											
1	Gender	-0.04	0.17	-.04	.00	0.05	0.10	0.28	-.06	.00	0.13
2	Moral identity (MI)	-0.07	0.16	-.08	.01	0.22	-0.31	0.17	-.31#	.09	3.30#
3	Moral disengagement (MD)	0.24	0.08	.52**	.24	10.19**	0.34	0.09	.54**	.29	14.97**
4	MI × MD	-0.23	0.17	-.21	.05	2.00	0.08	0.22	.05	.00	0.12
<i>Likelihood to dope under conditions of high moral disengagement</i>											
1	Gender	-0.56	0.46	-.20	.04	1.48	0.16	0.60	-.04	.00	0.07
2	Moral identity (MI)	-0.35	0.42	-.14	.02	0.72	-0.77	0.37	-.35*	.12	4.40*
3	Moral disengagement (MD)	0.63	0.20	.50***	.22	9.70**	0.76	0.19	.56***	.31	17.06***
4	MI × MD	-0.48	0.45	-.16	.03	1.11	-0.15	0.45	-.05	.00	0.12

Note. # $p < .08$, * $p < .05$, ** $p < .01$, *** $p < .001$. The products were formed by multiplying mean-centred moral identity and mean centred moral disengagement

Low moral disengagement condition. For doping likelihood under conditions of low moral disengagement in the control group, dispositional moral identity was not a significant predictor, while doping moral disengagement was a significant positive predictor, of likelihood to dope. Specifically, doping moral disengagement accounted for 24% of the variance in likelihood to dope. Moreover, a significant moral identity x moral disengagement interaction was not revealed. In terms of doping likelihood under conditions of low moral disengagement in the moral identity group, moral identity was a marginal negative predictor ($p = .08$), and moral disengagement a significant positive predictor of likelihood to dope. Specifically, moral identity accounted for 9% of the variance in likelihood to dope whereas moral disengagement accounted for an additional 29% of variance in doping likelihood over and above moral identity. No dispositional moral identity x moral disengagement interaction was noted.

It should be noted that the moral identity x moral disengagement interaction was stronger in the control group, and similar in strength to that found in Study 1. Specifically, the interaction in the control group may not be significant as a consequence of splitting the sample size for these analyses. Therefore, the interaction noted in Phase 2 was partly replicated in the control group, but not in the high moral identity group. However, the protective effect of moral identity found in Phase 2 (i.e., as a main effect) was partly replicated in the moral identity group. This may indicate that the protective role of moral identity on doping likelihood may be stronger when moral identity is made more salient, but less so when not activated.

High moral disengagement condition. For doping likelihood under conditions of high moral disengagement in the control group, moral identity was not a significant predictor, while moral disengagement was a significant positive predictor. Specifically, doping moral disengagement accounted for 22% of the variance of doping likelihood over and above gender and moral identity. Moreover, no significant moral identity x moral disengagement was revealed. However, in the moral identity group, dispositional moral identity was a significant negative predictor of doping likelihood which accounted for 12% of the variance in doping likelihood. Doping moral disengagement was again a significant positive predictor of doping likelihood which contributed an additional 31% of variance over and above moral identity. No dispositional moral identity x doping moral disengagement was revealed.

Discussion

The aim of Phase 3 was to investigate whether manipulating moral identity reduces athletes' likelihood to dope, and whether this was accounted for via moral judgment and anticipated guilt across situations that differ in opportunities to morally disengage. Though our manipulation of moral identity was effective, our findings indicate that activating moral identity alone may not be sufficient to reduce athletes' likelihood to dope. However, we found that dispositional moral identity negatively predicted athletes' likelihood to dope when opportunities to morally disengage was both low and high when moral identity was activated. Taken together these findings indicate that when moral identity is made more salient, the potential protective effect of dispositional moral identity may be more evident compared to when moral identity is not activated. Accordingly, these findings suggest that the development of dispositional moral identity may help reduce the potential likelihood of doping. However, strategies that attempt to facilitate the potential salience of activating one's moral identity may provide an additional benefit to reducing athletes' likelihood to dope when opportunities for moral disengagement is heightened for those high in dispositional moral identity.

Moreover, the findings from Phase 3 also provided further support that situational moral disengagement influences athletes' moral judgement towards doping and increased athletes' likelihood to dope via activating the role of anticipated guilt. In addition, the interactive effect (although not significant) between dispositional moral identity and doping moral disengagement found in Phase 2 was partially replicated in this study in the control group. Thereby providing further support for anti-doping efforts to consider the development of athletes moral identity, reducing athletes inclination to morally disengage (e.g., enhancing responsibility) as well as targeting the social environment (e.g., entourage, organisational structure) to reduce the potential for athletes to morally disengage.

To provide further evidence for the role of moral identity and moral disengagement on doping, we also wanted to extend the findings to a larger sample and develop the psychometric properties of a measure that assesses athletes' likelihood or willingness to dope in situations where they were potentially more vulnerable to do so. Accordingly, we conducted some supplementary studies to develop a doping willingness measure and test the interactive effect of moral identity and doping moral disengagement on doping willingness, and doping intentions.

Supplementary Projects

With the support of this funding, we have also been able to test the interactive effect of moral identity and moral disengagement on athletes' willingness to dope, and doping intentions in a cross-sectional study. Based on the premise of the prototype willingness model (Gibbons, Gerrard, & Lane, 2003), decision making concerning risk behavior is considered across two pathways. One pathway which related to the theory of planned behavior (Ajzen, 1985; Ajzen & Fishbein, 1980) whereby behavioral intentions is seen as a key proxy or determinant of behavior. The second pathway termed the social reaction path suggests that behavioral willingness is a key determinant of behavior. This path focuses on certain situations that facilitate the risky behavior in question. Specifically, behavioral willingness reflects an individuals' openness to opportunity. That is, behavioral willingness recognises that although people may find a particular behavior unfavourable and may have no intention to do it, they may consider it under certain (risk-conducive) circumstances. Previous research has highlighted that there are a range of risk-conducive circumstances that may make athletes consider taking a banned PED in sport. These include; (a) perception that taking a banned substance could increase their opportunities for selection, gaining a contract or funding; (b) have been underperforming in competition and/or training; (c) injury; (d) perceptions that everyone else is doping; (e) perceptions that substances can quickly enhance one's physical condition; and, (f) being offered substances from trusted others (e.g., Whitaker et al., 2012, 2013). Thus, under such circumstances, athletes may be more vulnerable and willing to dope, similar to their likelihood to dope under conditions where they have the opportunity to morally disengage.

Previous research examining doping behavior, or proxies of doping behavior (e.g., doping susceptibility, reported doping) including doping willingness (e.g., Whitaker et al., 2013) have had shortcomings in terms of limited psychometric support for the scales used. Therefore, we first aimed to refine an existing measure, and test the psychometric properties of a doping willingness in sport scale (Whitaker et al., 2013). Specifically, we aimed to first test aspects of internal validity, and then aspects of external validity in three separate samples of athletes. In Study 1, we first refined and developed items and tested for content validity which pertains to whether items characterise the construct that the items are intended to measure,

which is typically undertaken through expert opinion. We then undertook the initial stages of factorial validity via distributing the items to a sample of athletes. In Study 2, we further tested the factorial validity of the scale in an independent sample of athletes as well as tested for the scale's test-reliability in a subsample. Then in Study 3, we further tested the factorial validity of the scale in team sport players as well as aspects of external validity. After providing psychometric support for our doping willingness measure, we then tested the main purposes of this supplementary study which was to examine whether moral identity and doping willingness were linked with doping willingness and doping intentions, and also examine the interactive effects of moral identity and moral disengagement on doping willingness and doping intentions in a sample of team sport players.

Supplementary Study 1

Method

Preliminary scale development. First, nine items were developed based on previous research (Whitaker et al., 2012, 2013) to measure doping willingness that aimed to reflect one of the risk-conducive or vulnerability factors that may make athletes more willing to dope (e.g., Whitaker et al. 2013). To test for the content validity of the items, the items were evaluated by a sample of sport and exercise psychology professionals with expertise in doping or measurement development. Specifically, experts were asked to rate how representative each item was of the respective definition of doping willingness and whether they comprise of at least one of the vulnerability factors on a scale ranging from -3 (*not at all representative*) to +3 (*very representative*). Though some items were rephrased to improve clarity or grammar, all items had a median and a mean of above 2. Therefore, we retained all items.

Participants. The sample comprised 207 (146 men; 61 women) athletes with an average of 19.53 ($SD = 1.01$) years from a range of team ($N = 151$) and individual sports ($N = 56$). The most common sports athletes participated in were soccer ($N = 72$), rugby ($N = 31$), and cricket ($N = 15$). Participants competed in their respective sport for an average of 8.69 ($SD = 4.20$) years at international/national (22%), county/ regional (45%), and club (33%) level.

Measures. Participants were asked to answer questions concerning demographics, and then responded to each of the nine doping willingness items following the stem "Would you be willing to use a banned substance if you..." on a 5 point Likert-type scale anchored from 1 (*not at all willing*) to 5 (*extremely willing*). All items are presented in Appendix B.

Procedure. Following receiving ethical approval from the university ethics committee, participants were approached in university classes or at training following previous permission from the coach to approach players. Participants were informed about the purpose of the study, that participation was voluntary, that their responses would be kept confidential and anonymised and that they had the right to withdraw. Participants were reminded that honesty was vital in their responses. After reading a participant information sheet and signing a consent form, participants were handed the questionnaire to complete. Once completed,

participants sealed their completed questionnaire in an envelope provided and returned it directly back to the researcher.

Results

Exploratory factor analysis (EFA) was conducted on the nine items of the doping willingness scale using principal axis extraction and direct oblimin rotation with extractions based on eigen values > 1.00 . We also tested that the Bartlett's test sphericity was significant, and the Kaiser-Meyer-Olkin measure of sampling adequacy of $>.80$, to ensure the matrices were appropriate (e.g., Dzuiban & Shirkey, 1974). The EFA supported the appropriateness of the matrices (Bartlett test of sphericity $p < .001$; KMO = .943) and revealed a unidimensional solution with only one factor with an eigenvalue of above 1 (eigenvalue = 6.185), with all items having a factor loading of at least .54.

We then conducted Confirmatory Factor Analysis (CFA) to identify the best items which also provide a more rigorous method of confirming hypothesized factor structures (e.g., Fabrigar et al., 1999; Kline, 2015). Stata v14 software was used. During initial analysis normalized estimate of Mardia's coefficient revealed significant deviation from multivariate normality. Therefore, we applied Satorra-Bentler estimation for these analyses. Factor loadings were checked for each item and the model fit was evaluated using the chi-square test, the compare fit index (CFI), the Tucker-Lewis index (TLI), and the root mean square error of approximation (RMSEA) and standardised root mean squared residual (SRMR). Conventional criteria (Marsh, Hau, & Wen, 2004) were used to assist with model assessment whereby values of $\chi^2/df < .3$, CFI and TLI $> .90$, and RMSEA and SRMR $\leq .10$, were considered to reflect adequate model fit, whereas $\chi^2/df < .2$, CFI and TLI $> .95$, and RMSEA and SRMR $\leq .06$, were considered to present excellent model fit.

The CFA revealed that all items had a high factor loading (between .73 to .89), and **the scale had an excellent fit**, Satorra Bentler $\chi^2 (27) = 33.493$, $p = .18$; $\chi^2/df = 1.24$, RMSEA = 0.034, CFI = 0.991, TLI = 0.988, SRMR = 0.027.

Supplementary Study 2

Next, we tested the factor structure of the scale on an independent sample of 200 athletes (140 men and 60 women), with an average age of 19.40 ($SD = 2.62$) years. The sample comprised of predominantly team sport players (179 team sport athletes; 21 individual sport athletes) and mainly competed in soccer ($n = 64$), rugby ($n = 40$), netball ($n = 13$), and field hockey ($n = 11$). Participants competed in their respective sports at international/ national (7%), regional/ county (21%) and club level (72%) levels for an average of 8.18 ($SD = 4.63$) years.

A subsample of 74 participants were also approached to examine test-retest reliability by completing the measures two weeks apart. In total 50 athletes (36 males, 14 females; 34 team sport players, 16 individual sport athletes) completed measures on both occasions.

The CFA with all nine items revealed appropriate factor loadings (.64 to .89) and the model had an excellent fit, Satorra Bentler $\chi^2(27) = 32.387$, $p = .22$; $\chi^2/df = 1.20$, RMSEA = 0.032, CFI = 0.994, TLI = 0.992, SRMR = 0.025. Therefore, supporting the 9-item scale. Test-retest reliability was examined on the subsample using correlations between the mean scores across the two-time points (i.e., 2-week interval). Results revealed a strong positive relationship between the scores across the two-time points ($r = .86$, $p < .001$), **providing support for the test-retest reliability of the measure.**

Supplementary Study 3

The previous stages of scale development provided support for the internal validity including content and face validity of the items (i.e., via expert opinion), factorial validity and test-retest reliability, so we then aimed to test the external validity of the scale.

The first aspect of external validity that we tested was concurrent validity which is concerned with whether a measure is associated with a criterion variable when data are collected at the same point in time (Kline, 2005). We tested for concurrent validity by investigating whether doping willingness measured via our scale was associated with variables it would be expected to be associated with.

As doping is considered a form of morally questionable behaviour, particularly if undertaken intentionally, it can be considered an antisocial behavior which is defined as an act with the intention to harm or disadvantage another (e.g., Sage, Duda, & Kavussanu, 2006). Therefore, we examined whether doping willingness was associated with antisocial behavior in sport. Moreover, we also tested whether doping willingness was associated with moral disengagement towards general transgressions in sport. Therefore, if there are positive relationships between doping willingness with antisocial behavior and moral disengagement then there is support for the concurrent validity of the scale.

A second aspect of external validity is discriminant validity, which entails the evaluations of a measure against another and is evident when different constructs are not too highly associated. We investigated this aspect of validity by examining whether doping willingness was differentially associated with antisocial and prosocial behavior in sport. Previous research has highlighted that antisocial behavior and prosocial behavior are unrelated, or weakly associated (e.g., Kavussanu & Boardley, 2009; Kavussanu et al. 2013). Therefore, differential relationships for doping willingness with antisocial behavior and prosocial behavior, and doping willingness being weakly associated with prosocial behavior would provide some evidence of discriminant validity.

In sum, the first aim of the next study was to provide support for the external validity of the doping willingness scale. The second aim of the study was to examine whether moral identity and moral disengagement were associated with doping willingness. We also aimed to test whether the moral identity moderated the relationship between doping moral disengagement and both doping willingness and

doping intentions.

Method

Participants. Participants were 245 team sport players (164 men and 81 women), with an average age of 19.42 ($SD = 1.95$) years. They competed in soccer ($n = 86$), rugby ($n = 53$), field hockey ($n = 46$), netball ($n = 17$), cricket ($n = 17$), basketball ($n = 13$), volleyball ($n = 5$), lacrosse ($n = 4$) American football ($n = 4$). Participants competed in their respective sports at international/ national (21%), regional/ county (61%) and club (18%) level for an average of 9.37 ($SD = 3.99$) years.

Measures (for external validity)

Prosocial and antisocial behaviour: The 20-item Prosocial and Antisocial Behaviour in Sport Scale (PABSS; Kavussanu & Boardley, 2009) was used to measure athletes' prosocial and antisocial behaviour towards both teammates and opponents in sport. The PABSS comprises four subscales that measure: antisocial behavior towards opponents (8 items; e.g., deliberately fouled an opponent), antisocial behavior towards teammates (5 items; e.g., verbally abused a teammate), prosocial behavior towards opponents (3 items; e.g., helped an injured opponent) and prosocial behavior towards teammates (4 items; e.g., congratulated a teammate for good play). Participants were asked how often they engaged in each behavior whilst competing in their team sport during the past 12 months on a 5-point Likert type scale anchored by 1 (*never*) and 5 (*very often*). Research has supported the convergent, discriminant, and factorial validity of the PABSS, and all subscale scores had good to very good internal consistency (alpha range: .73 to .86) (Kavussanu & Boardley, 2009; Kavussanu et al., 2013).

Moral disengagement in sport: Moral disengagement in sport was measured using the 8-item Moral Disengagement in Sport Scale – Short (Boardley & Kavussanu, 2008). Participants were asked to rate their level of agreement to statements on a 7-point Likert type scale, anchored by 1 (*strongly disagree*) to 7 (*strongly agree*). An example item is "bending the rules is a way of evening things up". Each item assesses one of the eight mechanisms of moral disengagement. Psychometric support for the scale has been provided with alpha coefficients ranging from .80 to .85 (Boardley & Kavussanu, 2008).

Doping willingness in sport: The 9-item doping willingness in sport scale was used as per Supplementary Studies 1 and 2 for the development of the scale.

Measures (for testing predictors of doping willingness)

Moral identity and doping moral disengagement: These were measured as per Phases 1 - 3 in the primary project above. Behavioral intention was also measured as per Phase 1.

Procedure

Participants were invited to take part in the study. A subsample ($N = 165$) comprised of participants who completed the questionnaire component of the primary experimental phase but did not take part in the follow-up experimental session. Specifically, following ethical approval from the university ethics committee, participants were approached at training, sporting events or seminar sessions. Participants were provided with an information sheet informing them about the purpose of the study, the voluntary nature of participation, and assured responses would be kept confidential and questionnaires were completed and stored anonymously and reminded about the right to withdraw from the study. After completing a consent form, participants completed the questionnaire comprising of the measures described above. Once completed, participants returned the questionnaire directly back to a researcher.

Results

Factorial validity. To test for the factor structure of the doping willingness scale on this third sample comprising of team sport players, we conducted a CFA. The CFA revealed high factor loading for each item and demonstrated an adequate model fit, Satorra Bentler $\chi^2 (27) = 54.325$, $p = < .001$; $\chi^2/df = 2.01$, RMSEA = 0.064, CFI = 0.957, TLI = 0.942, SRMR = 0.041.

To provide a final check on the factorial validity of the doping willingness scale, we conducted a composite CFA combining all three samples into one analysis. This analysis revealed high factor loading for each item (between .69 to .87), with an excellent model fit based on most indices, Satorra Bentler $\chi^2 (27) = 80.004$, $p = < .001$; $\chi^2/df = 2.96$, RMSEA = 0.055, CFI = 0.975, TLI = 0.967, SRMR = 0.025. Therefore, we retained the 9-item measure.

External validity. To test for the external validity of the doping willingness scale, we conducted correlations to examine relationships between the scale with prosocial behavior, antisocial behavior, moral disengagement in sport, and gender differences. As shown in Table 7, the doping willingness scale comprised of excellent internal consistency. Also, doping willingness was positively associated with moral disengagement in sport as well as antisocial behavior towards teammates and opponents, thereby providing support for the concurrent validity of the doping willingness scale. Moreover, doping willingness was unrelated with prosocial behavior providing support for the discriminant validity of the scale.

Taken together, the results across all three samples demonstrate support for the internal and external validity (in supplementary study 3) of the doping willingness scale. Accordingly, we then addressed the primary purpose which was to examine whether moral identity and moral disengagement were associated with doping willingness and doping intention in team sport players.

Table 7. Descriptive statistics and correlations with doping willingness ($N = 245$).

	<i>M</i>	<i>SD</i>	α	<i>r</i>
1. Doping willingness	1.60	0.75	.93	-
2. Moral disengagement	3.33	1.06	.79	.21*
3. Prosocial teammate	4.25	0.49	.69	.02
4. Prosocial opponent	3.09	0.86	.74	.04
5. Antisocial teammate	2.30	0.76	.82	.15*
6. Antisocial opponent	2.59	0.78	.80	.28***
7. Gender				-.05

Note. Willingness to dope, prosocial and antisocial behaviour were measured on a 1-5 scale Moral disengagement was measured on a 1-7 scale. Gender was coded as 0 = Male; 1 =Female. * $p < .05$, ** $p < .01$, *** $p < .001$.

Predictors of doping willingness. Prior to undertaking regression analyses to determine the unique variance accounted for on doping willingness by moral identity and moral disengagement, we first investigated relationships using correlation analysis. Data screening revealed two outliers (> 3 SD from the mean) and because of the potential impact outliers can have on correlational

analyses, we removed these two participants from subsequent analysis. Moreover, as expected for doping intentions the data was heavily skewed, so we ran Spearman’s correlation for relationships with doping intention.

As shown in Table 8, doping willingness was positively associated with doping moral disengagement, and doping intention. Doping moral disengagement was negatively linked with moral identity, and positively linked with doping intention. Moral identity was negatively (and weakly) associated with doping intention but was not associated with doping willingness.

Table 8. Descriptive statistics and correlations with doping willingness ($N = 243$).

	<i>M</i>	<i>SD</i>	1	2	3
1. Doping willingness	1.58	0.74	-		
2. Moral disengagement	2.12	1.04	.48***	-	
3. Moral identity	5.87	0.90	-.07	-.19**	-
4. Intention	1.19	0.66	.35***	.30***	-.13*

Note. Willingness to dope, and reported doping were measured on a 1-5 scale. Doping moral disengagement and moral identity were measured on a 1-7 scale. Doping intention on a 1-6 scale. Pearson’s correlations were run for all variables apart from doping intention where Spearman’s coefficients are reported. * $p < .05$, ** $p < .01$, *** $p < .001$.

Subsequently, we conducted two separate hierarchical regression analyses to examine whether moral identity predicted doping (i.e., willingness and intention to dope), and if moral disengagement predicted doping, over and above moral identity. Specifically, we entered gender in Step 1 (covariate), moral identity in Step 2, and doping moral disengagement in Step 3. Then, to test whether moral identity moderated the relationship between moral disengagement and doping we included the interaction term for mean-centred moral identity and moral disengagement in Step 4 (Aiken & West, 1991). As doping intention was not normally distributed we ran the regression for doping intention with 1,000 bootstrap samples. The results are presented in Table 9.

Table 9. Hierarchical regression analysis for moral identity and dispositional doping moral disengagement on doping willingness, and doping intention ($N = 243$).

Step	Predictor variable	<i>B</i>	<i>SE B</i>	ΔR^2	ΔF
<i>Doping willingness</i>					
1	Gender	-0.06	0.10	.00	0.35
2	Moral identity (MI)	0.04	0.10	.00	0.74
3	Moral disengagement (MD)	0.35***	0.04	.23	70.08***
4	MI × MD	0.02	0.04	.00	0.20
<i>Doping intention (bootstrap B coefficients reported)</i>					
1	Gender	-0.18	0.07	.02	4.22*
2	Moral identity	-.11#	0.08	.02	5.61*
3	Moral disengagement	0.27***	0.06	.17	49.58***
4	MI × MD	-0.12	0.03	.04	13.62***

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

For doping willingness, moral identity was not a significant predictor whereas doping moral disengagement was a significant positive predictor and contributed 23% of the variance in willingness to dope, over and above moral identity. However, no moral identity × doping moral disengagement interaction was found for doping willingness.

For doping intention, moral identity was a marginal negative predictor which contributed 4% of the variance in doping intention. Moral disengagement was a positive predictor of doping intentions and accounted for an additional 17% of variance over and above moral identity. Additionally, though a moral identity × moral disengagement interaction added a significant unique variance to the model, adjustments made via bootstrapping indicated that this interaction was not significant.

Discussion

The aim of the supplementary projects was to develop and provide some initial psychometric support for a doping willingness measure. Then, to extend the primary project by examining whether moral identity and moral disengagement predict doping willingness and intentions, and test whether dispositional moral identity

moderated any relationships between doping moral disengagement and doping willingness and doping intentions.

This research has provided support for the scales' internal and factorial validity (Supplementary Studies 1-3), test-retest reliability (Supplementary Study 2), and external validity (Supplementary Study 3). Specifically, the items were checked for content validity from experts in the field, factor structure was supported across three independent samples, the test-retest reliability was supported with strong correlations across a 2-week interval, and the score from the measure were correlated as expected with other variables to support the scale's concurrent and discriminant validity. Though, as with any scale, further testing is warranted to provide further evidence for the psychometric properties, our research has enabled a proxy measure of doping for other researchers to consider to facilitate further anti-doping research. For instance, this measure could provide an appropriate approach to test the effectiveness of anti-doping interventions.

This research also provided partial support and partly replicated the findings from our primary experimental project. Specifically, moral identity was negatively linked with intentions to dope and appears to have some protective effect on players' intentions to dope, however this effect is over-ridden in situations where players may be more vulnerable to take banned substances (as assessed by doping willingness). These findings are thereby aligned to our primary project whereby moral identity appeared to have a potential protective effect on athletes' likelihood to dope under situations where they have less opportunities to morally disengage, but not in situations when moral disengagement is amplified (or indeed when players may be more willing to dope). These findings provide further support for the need for interventions to take a corroborative approach that focuses on the athlete (e.g., enhancing moral identity and reducing inclinations to morally disengage), and the social environment (e.g., to reduce situation or contexts where players are more vulnerable to doping).

Synthesis and Discussion

To address the profound lack of experimental based research on antecedents of doping (e.g., Backhouse et al., 2007, 2015; Ntoumanis et al., 2013), the aim of this research was to provide the first experimental evidence into the effects of moral disengagement and moral identity on doping. Specifically, across a range of studies we tested the role of dispositional moral identity and doping moral disengagement on doping likelihood, moral judgment and anticipated guilt. Moreover, we tested the effects of manipulating the situational characteristics to trigger the opportunities for moral disengagement and priming moral identity on athletes' likelihood to dope. Finally, we have also developed and provided psychometric support for a self-report doping willingness measure to facilitate future research on understanding factors underpinning doping which could also be applied to test the effectiveness of doping interventions over time.

Overall, our findings indicate that higher inclinations for moral disengagement was associated with judgments that doping was more acceptable and less wrong. They were also linked with reduced negative emotional reactions to such conduct (Phases 1, 2 and 3) as well as associated with higher likelihood (Phases 2 & 3) and willingness to dope (Supplementary Study 3). Moreover, our research provided the first experimental evidence showing that situational characteristics that amplify the potential for moral disengagement led athletes to judge doping as less wrong, more acceptable, and increased athletes' likelihood to dope via reducing anticipated guilt (Phases 2 & 3). These findings are aligned to theoretical predictions that moral disengagement is a key factor in transgressive conduct via reducing the regulatory mechanism of anticipated negative affective reactions (e.g., guilt) that typically refrain individuals from engaging in antisocial conduct (Bandura, 1991).

Our findings are also aligned to previous research indicating the moral disengagement is a strong positive predictor of doping susceptibility (Hodge et al., 2013), doping intentions (Lucidi et al., 2008) as well as doping likelihood (Ring & Kavussanu, 2017). Our research extends previous research by testing moral disengagement as a process that can be influenced by situational characteristics. Specifically, although athletes with higher inclinations to morally disengage were associated with higher likelihood to dope, if athletes are in situations where potential for moral disengagement are amplified this also increases athletes' likelihood to dope.

As revealed in Phase 2, moral identity was negatively associated with doping likelihood in situations when the opportunities for moral disengagement was lower, even in individuals who have a greater inclination to morally disengage. These findings are aligned to conceptual and theoretical arguments suggesting that moral identity provides a sense of moral motivation in the regulation of immoral conduct (e.g., Aquino et al., 2009) as well as previous research showing that moral identity is negatively associated with other forms of antisocial conduct in sport (e.g., Kavussanu et al., 2015). In addition, these findings support previous qualitative research that demonstrated a strong moral stance against cheating and valuing moral traits such as fairness, appeared to help protect athletes from doping (Erickson et al., 2014). Thus, a key finding pertains to the moderating role of moral identity on the relationship between dispositional moral disengagement and transgressive conduct (e.g., Aquino et al., 2007), and extends on research that demonstrated similar effects in relation to negative emotional reactions towards transgressive conduct in war (Aquino & Reed, 2007).

Interestingly, although dispositional moral identity appeared to have a protective effect on athletes' likelihood to dope, this effect was weakened in situations where opportunities for moral disengagement were amplified (Phase 2). Similarly, moral identity was only negatively associated with intentions to dope but not doping willingness which comprise of circumstances when athletes are more vulnerable to doping (Supplementary Study 3). That is, though moral identity may be linked with lower intentions to dope, when athletes are in situations where they are more likely to morally disengage and/or more vulnerable to be open or willing to take banned substances (as assessed via doping willingness) the relationship between moral identity and doping is negated. These novel findings are also aligned to other recent research (Ring, Kavussanu, Simms, & Masanov, in press) that revealed that moral identity was only negatively associated with doping likelihood when there were potential costs to the athletes (e.g., had chances of being caught, fined or negative implications on health). In contrast, moral identity was not directly associated with athletes' likelihood to dope when they perceived that some potential benefits from doping (e.g., low chances of being caught, facilitate career advancement, and being encouraged to dope by entourage). Therefore, our findings provide further insight that moral identity only appears to potentially protect athletes from being likely to dope in some situations or contexts. In other words, our findings highlight that in situations

where potential for moral disengagement is amplified (Primary Studies 2 and 3), or athletes are more vulnerable to be open or willing to dope (Supplementary Study 3), the protective role of moral identity on doping is attenuated.

A final noteworthy finding from this research is that we provided some support that dispositional moral identity may negatively predict athletes' likelihood to dope in situations where moral disengagement is amplified if moral identity is activated (indicated by the relationships noted in the experimental group in Phase 3). Though these findings do need to be taken with caution until replicated, and the analyses adopted did not find a significant interaction between dispositional moral identity and experimental group (i.e., control group vs. moral identity group), these findings provide some indication that activating moral identity may potentially reduce athletes' likelihood to dope in athletes who already have high moral identity. Thus, these findings suggest that interventions aimed at targeting moral identity to reduce doping may need to consider approaches that attempt to enhance dispositional moral identity as well as potentially aim to regularly activate moral identity during participation in sport.

Taken together, our findings further highlight that moral disengagement is a strong positive predictor of doping both at a dispositional level and as a situational process. Accordingly, it would be prudent for doping interventions to consider approaches that reduce the inclination of athletes to morally disengage in sport as well as reduce the potential opportunities for athletes to be more susceptible to morally disengage. In addition, moral identity may have a protective effect in some situations towards doping. We provide some further specific suggestions in the "implications for practice" section below.

Limitations and Future Research Directions

Though this research provided a range of novel findings that can help to inform some suggestions for anti-doping efforts, these do need to be considered in light of potential limitations. First, the research was reliant on self-report measures that can be prone to reporting bias. Given the experimental approach adopted, an inherent limitation is the potential for demand characteristics. Therefore, it is possible that participants might have been trying to understand the true purpose of the research and what it intended to find which could affect responses. Our findings could be extended further through longitudinal designs to see whether changes in moral identity and moral disengagement predict doping over time.

As this was the first study to manipulate moral disengagement in the context of doping, we decided to manipulate three mechanisms of moral disengagement which were predominantly reported in qualitative research to justify doping (e.g., Boardley & Grix, 2013; Boardley, et al., 2014). We decided to only manipulate three mechanisms due to the within-subjects approach adopted to strengthen the experimental design but did not want to overwhelm participants by reading and rating their responses in relation to too many situations. However, other mechanisms of moral disengagement have also been shown to be applied to justify doping in sport, namely euphemistic labelling, moral justification and distortion of consequences. Moreover, the responses to each mechanism are in relation to one situation for each mechanism. Therefore, participants were responding to particular contexts. Accordingly, researchers could try and consider approaches to manipulate the other three mechanisms of moral disengagement used to justify doping and consider a wider range of situations to broaden the contexts that participants were asked to consider.

The manipulation we employed for moral identity is one that has been widely used in previous research (e.g., Aquino & Reed, 2002; Aquino et al., 2007; Kavussanu et al., 2012, 2015). However, given that there were no main effects of the manipulation and some of the traits used to prime moral identity may not be specifically aligned to morality of doping (e.g., friendly, generous, helpful). A fruitful suggestion for future research is for researchers to develop and test a manipulation of moral identity that may represent moral traits more closely aligned to morality of doping behavior. Consideration of themes generated in recent qualitative research demonstrating that

a strong moral stance against doping may protect athletes from taking banned PEDs (e.g., Erickson et al., 2014), could be utilised as a starting point to develop such manipulations. Moreover, the strength of the relationship between moral identity and doping likelihood found in this research - particularly under situations where there were greater opportunities to morally disengage - could also be moderated by self-regulatory efficacy (e.g., Bandura, 1991). Specifically, it is possible that although some athletes may have a high moral identity if they are not confident to resist temptations or social pressure to dope then this may weaken the effect of moral identity reducing the likelihood to dope in these situations. Future research could consider the potential moderating role of self-regulatory efficacy and/ or consider developing experimental manipulations of self-regulatory efficacy to test its effects on athletes' likelihood to dope.

Lastly, this is the first research to manipulate key social cognitive variables on athletes' likelihood to dope. Given the effects noted, researchers would do well to develop and test interventions that reduce the potential of athletes to morally disengage and increase moral identity. Some suggestions that could be considered in such interventions are provided in the implication for practice section next.

Implications for Practice

Our findings suggest that enhancing athletes' moral identity and reducing the potential for moral disengagement could be effective approaches to guide doping prevention. Interventions would benefit from approaches to enhance athlete personal responsibility over their own behaviour to reduce the potential of employing mechanisms of moral disengagement such as displacing or diffusing responsibility as well as promoting moral values through sport such as respect, honesty, integrity and fairness. Under situations where athletes may be more susceptible to morally disengage the protective role of high moral identity (and low dispositional moral disengagement) can become weakened. Therefore, this suggests that interventions would benefit from corroborating athlete-centred interventions with strategies targeted towards entourage (e.g., coaches, support personnel) to reduce athletes' susceptibility to being exposed to situations where they are likely to morally disengage and engage in doping.

One approach that can help to enhance athlete personal responsibility is via coaches promoting an autonomy supportive environment. This involves providing opportunities for athletes to use their own initiative, solve problems independently, have a say, and a sense of choice and freedom (within limits) over setting goals (e.g., Ryan & Deci, 2000). Based on Hellison's (2003) model of responsibility, the highest levels of responsibility are demonstrated when people extend responsibility beyond themselves giving support, showing concern, and helping others. Accordingly, strategies aimed at promoting a team ethos that focuses on integrity, support, and looking out for the welfare of other members of the team would promote a sense of collective responsibility for one another. Approaches such as promoting a sense of team cohesion (e.g., via team building activities) where players feel comfortable to share concerns or pressures without the fear of any potential cost (e.g., being perceived weak, being de-selected) could be one mechanism to facilitate this. Naturally, trust would need to be developed first for such approaches to be effective.

To facilitate athletes' moral identity approaches that aim to increase prototypes, such as promoting a mental image about what it means to be a (moral) sportsperson or demonstrate sportspersonship, accompanied by problem-solving activities where consideration of ways to respond to a range of moral conflicts could be suggested as ways to develop moral identity (e.g., Hardy & Carlo, 2011; Narvaez & Lapsley, 2005).

Moral identity could also be enhanced using approaches targeted at increasing the team's moral identity. For example, workshop activities oriented around players developing their team, personal/ professional values and ethos for competing in their sport. Applying 'gentle' use of prompts from the facilitator, players can start to consider morally relevant values such as respect towards others, integrity, and healthy and conducive ways to reach success. For instance, the facilitator could prompt with questions such as (what makes a good sports-team? How does this team conduct themselves? What makes a good sportsperson? What are some characteristics of sportspersonship?). Such approaches would help the team consider a team ethos and goals about how they aim to achieve success. With such values coming mainly from the athletes this can also help promote a sense of autonomy, responsibility, and ownership in the process. Such approaches could be combined with problem-solving activities that may involve considering a range of sporting situations that involve some form of moral conflict including situations where the players may be susceptible or vulnerable to engage in doping (i.e., increased opportunities to morally disengage). This would thereby assist athletes in helping to manage situations where the susceptibility for moral disengagement is heightened, and thereby reduce the likelihood of doping.

The moral identity manipulation did not have main effect on reducing athletes' likelihood to dope in our research. However, we did find that dispositional moral identity predicted lower doping likelihood even in situations when opportunities for moral disengagement was amplified when players' moral identity was activated through priming. Though caution needs to be taken due to the strength of this finding in this research, in combination with approaches targeted at developing individual and potential team moral identity, frequent revisiting of the team ethos or code of conduct that includes morally relevant values (e.g., such as via a poster on the changing room wall, or in a team motto) would help to continually prime athletes on the behaviours they wish to collectively demonstrate in the pursuit of success.

Anti-doping efforts could benefit from workshops targeted at entourage and sport organizations to facilitate awareness about potential contexts where athletes may be more susceptible to morally disengage and vulnerable to doping. For instance, support personnel could be provided with scenarios that players may face where players may be vulnerable to morally disengage, and consider how they could support the athletes to reduce such vulnerabilities. To facilitate potential "warning signs" for support

personnel in recognising whether players appear to perceive they are performing in a context where they may be vulnerable to morally disengage and dope, interventions could target support personnel and athletes working together to address and limit situations where doping may become more likely.

Some other approaches entourage could apply to reduce athletes' vulnerability to morally disengage and engage in doping are promoting autonomy support, avoiding over-pressurizing climates particularly involving unrealistic goals, and identifying and reducing "win-at-all costs" attitudes. Though not directly examined in this research, it could be argued that such approaches would need to be extended beyond direct athlete entourage, but to higher order organisational personnel (e.g., performance directors, National Governing Bodies) to manage externally imposed pressures on coaches and support personnel that could in turn, impact on athlete welfare and conduct.

In sum, our findings provide the first step in acquiring the temporal sequencing of relationships between moral identity and moral disengagement with doping. Specifically, our findings point towards interventions that consider a range of key antecedents of doping as well as corroborating athlete-centered strategies with those targeted at entourage in the fight against doping. Though we present some practical suggestions for intervention stemming from the programme of research (Table 10), we naturally urge the reader to take the necessary caution as this research did not involve the development or testing of interventions. Therefore, based on our findings, research is now needed to test and refine approaches that can reduce athletes' dispositional inclinations for moral disengagement, and helping to manage situations where they are more susceptible to employ morally disengagement, and in turn, be more likely to dope. Moreover, the testing of suggested approaches to enhance (both individual and team) moral identity is warranted as well as the involvement of entourage (e.g., coaches, support personnel) to help reduce the potential of athletes (or at least as much as reasonably possible) being pre-disposed to situations where they are more vulnerable to dope.

Table 10. Summary of possible future actions for practical implications based on findings.

Target population	Intervention function	Examples of suggested approaches or activities
Athlete	Increase dispositional moral identity	<ul style="list-style-type: none"> • Develop individual codes of conduct. • Develop team ethos, "mottos" and/ or codes of conduct that may include prompting about moral attributes (e.g., sportspersonship, respect), and awareness of positive ways to deal with success and failure.
	Reduce dispositional doping moral disengagement	<ul style="list-style-type: none"> • Increase personal responsibility in athletes. • Promote autonomy over conduct and involvement in sport.
	Reduce situational moral disengagement	<ul style="list-style-type: none"> • Promote teamwork, and social support to facilitate conducive moral conflict resolutions. • Promote collective responsibility and autonomy in teams. • Working through problem solving activities, and scenarios where players may be more vulnerable to morally disengage, and dope. • Role-playing exercises to work through moral-conflict situations that may increase risk of moral disengagement and doping.
	Increase priming of moral identity	<ul style="list-style-type: none"> • Reminders of team ethos and code of conduct. • Prompts of team ethos and "mottos" in changing rooms.
Coaches/ athlete support personnel	Increase team moral identity	<ul style="list-style-type: none"> • Promote a team ethos that acknowledges moral attributes, and promotes a positive approach to reach success, and accept failure. • Prompting of team ethos/ codes of conduct developed with involvement of players (that involve aspects of sportspersonship).
	Reduce players dispositional moral disengagement	<ul style="list-style-type: none"> • Promoting an autonomy and mastery supportive climate (and reducing or at least regulating a controlling or ego-involving climate as well as avoiding the promotion of "win-at-all costs" attitude in players). • Promoting a team atmosphere where doping is not acceptable.
	Reduce situations/ opportunities for moral disengagement	<ul style="list-style-type: none"> • Raise awareness of potential contexts where athletes may be vulnerable to morally disengage (and engage in doping). • Develop a supportive and caring environment where athletes feel comfortable to confide in support personnel without fear of repercussions (e.g., being dropped). • Use of role-playing to appreciate athletes' perspective under situations where they may be more vulnerable to dope and facilitate positive resolution strategies as well as consideration of their role in supporting athletes with such strategies.
Performance Directors	Reduce moral disengagement (both dispositional & situational)	<ul style="list-style-type: none"> • Managing pressure on coaches and athletes to reach unrealistic goals. • Develop a mission statement and ethos that facilitates welfare driven approaches to success and managing failure.
National Governing Bodies	Increase awareness of potential implications	<ul style="list-style-type: none"> • Assistance in disseminating knowledge of the risks of doping and research informed anti-doping approaches.
	Promote the development of research informed anti-doping efforts	<ul style="list-style-type: none"> • Continued support for vigorous research informed anti-doping strategies (and associated research) to be developed and evaluated.
	Reduce unrealistic pressure on sports team/ sports/ coaches/ athletes	<ul style="list-style-type: none"> • Careful consideration of unrealistic goals on coaches and athletes that increase potential risks of reaching goals through illegitimate means (e.g., via doping).

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Appendices

APPENDIX A: MORAL DISENGAGEMENT SCENARIOS

Displacement of Responsibility

Low Moral Disengagement: Imagine that recently your sport performances have not been as good as last season. **Your coach has been very supportive and loyal, instilling you with confidence and encouragement that you will soon re-discover your form.** You have noticed that one of your teammates' performances have really improved recently. After practice one day your teammate tells you that he/she has been using a banned performance enhancing substance and there are no tests to detect it.

High Moral Disengagement: Imagine that recently your sport performances have not been as good as last season and particularly not to the level that your coach expects. **Your coach is putting intense pressure on you to perform better and threatens that he/ she may drop you from the squad if you do not find a way to improve your performances soon.** You have noticed that one of your teammates' performances have really improved recently. After practice one day your teammate tells you that he/she has been using a banned performance enhancing substance and there are no tests to detect it.

Diffusion of Responsibility

Low Moral Disengagement: A teammate introduces you to a substance that you are aware can greatly help improve sports performance and there are no tests to detect it. You are aware that use of this substance is banned in your sport, **but you do not suspect** that any of your teammates or opponents is using such substances to give them an advantage.

High Moral Disengagement: A teammate introduces you to a substance that you are aware can greatly help improve sports performance and there are no tests to detect it. You are aware that use of this substance is banned in your sport, **but you suspect** many of your teammates and opponents that you compete against are using such substances to give them an advantage.

Advantageous Comparison

Low Moral Disengagement: You have a very important match approaching and have become aware of a banned substance that helps to improve performance and there are no tests that can detect it. You perceive that this substance would only provide a slight advantage to your performance, **and you do not suspect any of your teammates or opponents deliberately commit rule-breaking behaviours to gain an advantage.**

High Moral Disengagement: You have a very important match approaching and have become aware of a banned substance that helps to improve performance and there are no tests that can detect it. You perceive that this substance would only provide a slight advantage to your performance **particularly in comparison to some of your teammates and opponents who you suspect try to deliberately injure other players to gain an advantage.**

APPENDIX B: DOPING WILLINGNESS SCALE

Sport players face a variety of situations where they have to use their decision making skills. Imagine you are faced with the following situations and have the option of using a World Anti-Doping Agency banned substance (e.g., anabolic steroids, human growth hormone, EPO). Please indicate how willing you would be to use a banned substance in the following scenarios

Would you be willing to use a banned substance if:	Not at all Willing Extremely Willing				
1. It increased your chances to gain a professional contract or funding	1	2	3	4	5
2. You have been heavily underperforming	1	2	3	4	5
3. You suffered an injury and needed to recover quickly	1	2	3	4	5
4. You thought everyone you were competing against was using a banned substance and getting away with it	1	2	3	4	5
5. You were struggling to keep up in training/competition with those around you	1	2	3	4	5
6. You were told that you needed to bulk up because all the other players/ athletes were much bigger and stronger than you	1	2	3	4	5
7. You were offered them by someone you trusted (e.g., coach, friend, team mate, family member)	1	2	3	4	5
8. It increased your chances of getting selected (for the team)	1	2	3	4	5
9. You became more attractive to others	1	2	3	4	5



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