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# Accepted Manuscript

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**The Effects of Moral Disengagement Mechanisms on Doping Likelihood  
are Mediated by Guilt and Moderated by Moral Traits**

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The Effects of Moral Disengagement Mechanisms on Doping Likelihood  
are Mediated by Guilt and Moderated by Moral Traits

**Abstract**

*Objectives:* We examined the effects of moral disengagement on doping likelihood and guilt, and determined whether the effects of moral disengagement on doping likelihood were mediated by guilt and moderated by moral traits.

*Design:* We used an experimental design to compare the effects of moral disengagement mechanisms on doping likelihood and guilt in hypothetical situations.

*Method:* Athletes indicated their doping likelihood and anticipated guilt in situations describing one of six moral disengagement mechanisms (moral justification, advantageous comparison, euphemistic labeling, distortion of consequences, displacement of responsibility, diffusion of responsibility) and in neutral (control) situations. They also completed measures of moral agency, identity, perfectionism, and values, to which we refer collectively as moral traits.

*Results:* Doping likelihood was higher in all six moral disengagement situations compared to neutral situations. Anticipated guilt was lower in five moral disengagement situations (except euphemistic labeling) compared to neutral situations. Doping likelihood and anticipated guilt differed among the moral disengagement mechanisms. The effect of five moral disengagement mechanisms (except euphemistic labeling) on doping likelihood was mediated by anticipated guilt. The effect of overall moral disengagement on doping likelihood was moderated by moral agency, moral perfectionism and moral values.

- 1 *Conclusions:* Moral disengagement increased the likelihood of doping and decreased
- 2 affective self-sanction for doping as predicted by the theory of moral thought and
- 3 action. The finding that the effects of moral disengagement on doping likelihood
- 4 were moderated by moral agency, moral perfectionism and moral values highlights
- 5 the role played by moral traits to restrain dishonest conduct in sport.

The Effects of Moral Disengagement Mechanisms on Doping Likelihood  
are Mediated by Guilt and Moderated by Moral Traits

1 The instrumental use of banned performance enhancing substances in  
2 competitive sport (WADA, 2015) has attracted attention from sport psychology  
3 researchers wishing to understand the phenomenon of doping (Barkoukis, Lazuras, &  
4 Tsorbatzoudis, 2016). Doping is viewed as a moral issue by both athletes (e.g.,  
5 Erickson, McKenna, & Backhouse, 2015) and academics (e.g., Atry, Hansson, &  
6 Kihlbom, 2013; Corlett, 2013; Corlett, Brown, & Kirkland, 2013). However, some  
7 academics have argued that doping does not violate the spirit of sport (e.g.,  
8 Savulescu, Creaney, & Vondy, 2013), and reported that sportspersonship does not  
9 predict doping (e.g., Barkoukis, Lazuras, Tsorbatzoudis, & Rodafinos, 2011; cf.  
10 Lazuras, Barkoukis, & Tsorbatzoudis, 2010). In order to advance the debate on the  
11 ethics of doping, behavioral researchers have looked to social cognitive theory of  
12 moral thought and action for guidance.

13 **Social Cognitive Theory of Moral Thought and Action**

14 Bandura's (1991, 2016) social cognitive theory of moral thought and action,  
15 which encapsulates the classic social cognitive model of triadic co-determinism  
16 connecting the person, their social environment, and their behavior (Bandura, 1986,  
17 1989), describes how moral conduct is influenced by external (e.g. other people) and  
18 internal (e.g., thoughts, feelings) factors. The theory argues that our behavior is  
19 guided by our moral standards and we are personally responsible for our actions. In  
20 other words, we are self-regulating moral agents. When our behavior is not in line

1 with our moral standards we experience negative emotions such as guilt and shame.  
2 These affective self-sanctions help to keep our behavior in line with our moral  
3 standards and avoid future misdeeds. However, it is possible to behave contrary to  
4 our moral standards, if we minimize or suppress the unpleasant feelings associated  
5 with transgressive behavior. Bandura (1991) has described the cognitive maneuvers  
6 deployed to achieve this goal and refers to them collectively as moral  
7 disengagement.

8 Bandura (1991) identified four sets of moral disengagement mechanisms, only  
9 three of which appear to be relevant to doping in sport (e.g., Kavussanu, 2016;  
10 Kavussanu, Hatzigeorgiadis, Elbe, & Ring, 2016; Lucidi et al., 2008; Mallia et al., 2016),  
11 that operate at different points in the regulatory process. With the first set, moral  
12 disengagement restructures the behavior itself via three mechanisms: moral  
13 justification, advantageous comparison, and euphemistic labeling. Moral justification  
14 transforms the behavior by portraying it as facilitating a valued moral or social  
15 purpose (e.g., doping is alright because it helps your team). Advantageous  
16 comparison compares the behavior with worse, making it appear relatively benign  
17 (e.g., compared to the illegal things people do in everyday life, doping in sport is not  
18 very serious). Euphemistic labeling uses language to disguise or sanitize the behavior  
19 (e.g., doping is just a way to 'maximize your potential'). With the second set, moral  
20 disengagement obscures agency for the behavior via two mechanisms: diffusion and  
21 displacement responsibility. Diffusion of responsibility operates by group action and  
22 decision-making (e.g., everyone is doing it). Displacement of responsibility describes



1 an authority figure ordering the individual to perform the behavior (e.g., a coach  
2 encourages doping). With the third set, moral disengagement disregards or  
3 misrepresents the harm caused by the behavior via one mechanism: distortion of  
4 consequences. This mechanism downplays or avoids the damage to others caused by  
5 the behavior (e.g., doping does not really hurt anyone). In sum, moral disengagement  
6 operates to lessen the severity of the behavior itself, the degree of agency for  
7 carrying out the behavior, and the severity of the repercussions of the behavior  
8 (Kavussanu, 2016).

9 A large body of evidence has established that moral disengagement is  
10 associated with increased doping in sport (e.g., Corrion et al., 2017; Hodge,  
11 Hargreaves, Gerrard, & Lonsdale, 2013; Kavussanu & Ring, 2017; Lucidi et al., 2004;  
12 Mallia et al., 2016). It is worth noting that all of the previous studies assessed moral  
13 disengagement using measurement scales that yielded a global index of moral  
14 disengagement. None of these cross-sectional studies compared the impact of the  
15 six mechanisms of moral disengagement on doping likelihood (cf., Engelberg,  
16 Moston, & Skinner, 2015). Accordingly, we do not know whether the six mechanisms  
17 exert equal or different amounts of influence on doping by athletes.

18 Bandura (1991) has stated that "... self-sanctions are activated most strongly  
19 when personal agency for detrimental effects is unambiguous" (p. 81). This suggests  
20 that some moral disengagement mechanisms may be more influential than others.  
21 However, there is limited evidence that speaks to the existence of mechanisms  
22 exerting different amounts of influence (e.g., Milgram, 1974; Osofsky, Bandura, &

1   Zimbardo, 2005; Pozzoli, Gini, & Vieno, 2012; Thornberg & Jungert, 2014). One  
2   exception is Milgram's (1974) seminal work showing that obedience, by complying  
3   with an authority figure's instruction to harm another person, was greater with the  
4   combination of both displacement and diffusion of responsibility compared to  
5   displacement of responsibility alone and displacement of responsibility with  
6   conflicting peer advice. To our knowledge, no study has examined the relative  
7   strength exerted by the different mechanisms on doping by athletes (cf. Ring,  
8   Kavussanu, Simms, & Mazanov, 2018), or indeed any form of cheating or antisocial  
9   behavior in sport. To improve our understanding of the moral disengagement-  
10   doping relationship, we used an experimental design to compare the effects of six  
11   moral disengagement mechanisms on doping likelihood in hypothetical situations.

12       Bandura's (1991, 2016) theory of morality contends that moral disengagement  
13   should facilitate immoral actions, such as cheating, by reducing feelings of guilt  
14   associated with wrongdoing. This is because self-conscious emotions, such as guilt  
15   and regret, are considered internalized self-sanctions, which operate anticipatorily to  
16   regulate behavior. In line with the theory, anticipated guilt and regret about the use  
17   of banned substances were found to be negatively related to doping likelihood (e.g.,  
18   Barkoukis, Lazuras, & Harris, 2015; Kavussanu & Ring, 2017; Lazuras, Barkoukis, &  
19   Tsorbatzoudis, 2015; Ring & Kavussanu, 2018; Strelan & Boeckmann, 2006). In the  
20   current study, we compared the effects of six moral disengagement mechanisms on  
21   feelings of guilt linked with doping in a hypothetical scenario.

22   **Moral Self**

1 Our moral standards serve to determine our behavior via self-regulatory  
2 processes, namely, monitoring of one's behavior, affective sanctioning of one's  
3 behavior, and judgment of one's behavior in relation to personal standards and  
4 situational pressures (Bandura, 1991). Human agency, which describes the process of  
5 behaving with intentionality, plays an important role in the regulation of our  
6 thoughts and actions (Bandura 1986). To date, there is scant evidence concerning the  
7 influence of moral traits in the decision about whether to use doping to enhance  
8 performance in sport (Ntoumanis, et al., 2014). Two studies found that moral identity,  
9 which describes the importance of moral values for the self-concept (Aquino & Reed,  
10 2002), was negatively associated with doping likelihood (Kavussanu & Ring, 2017;  
11 Ring et al., 2018). However, another study reported that moral norms were not  
12 significantly related to doping intention, although they were negatively associated  
13 with doping temptation in situations describing displacement and diffusion of  
14 responsibility (Barkoukis, et al., 2015). In the present study, we examined whether the  
15 effects of moral disengagement on doping likelihood were moderated by moral  
16 traits.

### 17 **The Current Study**

18 We examined the role of moral disengagement mechanisms on doping  
19 likelihood and anticipated guilt. We had four study purposes. First, we compared the  
20 effect of each of the six moral disengagement mechanisms on the likelihood of  
21 doping by athletes. We hypothesized that doping would be more likely in situations  
22 describing moral disengagement compared to neutral situations. Second, we

1 compared the effect of the moral disengagement mechanisms on anticipated guilt  
2 associated with doping. We hypothesized that feelings of guilt about doping would  
3 be blunted by moral disengagement. Third, we evaluated whether affective self-  
4 sanction mediated the effects of moral disengagement on doping. We hypothesized  
5 that moral disengagement would facilitate doping indirectly via reduced guilt. Finally,  
6 we evaluated whether moral traits moderated the effects of moral disengagement on  
7 doping. We hypothesized that the facilitatory effect of moral disengagement on  
8 doping likelihood would be thwarted by high moral agency, identity, perfectionism,  
9 and values.

## 10 **Method**

### 11 **Participants**

12 Participants were 467 (183 males, 284 females) athletes competing in individual  
13 ( $n = 258$ , 55%) and team ( $n = 209$ , 45%) sports in the UK. At the time of data  
14 collection, participants ranged in age from 18 to 65 years and had competed in their  
15 respective sport for an average of 11.72 ( $SD = 8.66$ ) years. The highest ever standard  
16 at which they had competed in their sport at the time of data collection was club  
17 (18%), county / regional (35%), national (21%), and international (26%).

### 18 **Measures**

#### 19 **Doping scenario and moral disengagement in hypothetical situations.**

20 Participants were presented with a scenario adapted from Ring et al (2018):  
21 *"Imagine that you are an athlete who is due to compete in an important sporting*  
22 *event. You are seriously considering using a banned performance enhancing substance,*

1 *but have not made a final decision. To help you make that decision, we have listed a*  
2 *number of situations you may find yourself in. We are asking you to tell us what you*  
3 *think you might decide to do in each situation. For each of the situations listed below,*  
4 *how likely is it that you would use the banned substance when ...".* The situations were  
5 presented in seven blocks of six situations (see Appendix). Each block comprised six  
6 situations describing a single moral disengagement mechanism (diffusion of  
7 responsibility, displacement of responsibility, moral justification, distortion of  
8 consequences, advantageous comparison, euphemistic labeling) or six neutral  
9 situations describing no mechanism that served as a control condition.<sup>1</sup>

#### 10 **Doping Likelihood**

11 Participants indicated how likely it is that they would use the banned substance  
12 in each situation on a 7-point scale, anchored by 1 (*not at all likely*) and 7 (*very*  
13 *likely*). The mean of the six ratings in each block of situations was computed as a  
14 measure of doping likelihood in each of the seven sets of situations ( $\alpha = .87$  to  $.97$ ).

#### 15 **Anticipated Guilt**

16 The guilt subscale of the state shame and guilt scale (Marschall, Saftner, &  
17 Tangney, 1994) was used to measure anticipated guilt about doping. After  
18 completing each block of situations, participants were asked to imagine that they  
19 used the banned performance enhancing substance mentioned in the scenario and  
20 then think about how they would feel. They were presented with the stem "I would  
21 ..." followed by five items (e.g., "feel remorse, regret; feel bad about using it"), which  
22 they rated on a 7-point scale, anchored by 1 (*not at all*) and 7 (*very strongly*). The

1 scale has exhibited very good internal consistency ( $\alpha = .82$ ) in previous research  
2 (Marschall et al., 1994). The mean of the five item ratings associated with each block  
3 of situations was computed as a measure of anticipated guilt about doping in each  
4 of the seven sets of situations ( $\alpha = .90$  to  $.96$ ).

### 5 **Moral Traits**

6 We measured moral traits with four instruments assessing moral agency, moral  
7 identity, moral perfectionism and moral values. We assumed that individuals with  
8 high moral standards would score high on these measures. These instruments are  
9 described below.

10 **Moral agency.** The moral agency scale was used to measure the ability to  
11 determine one's own behavior (Black, 2016). Athletes indicated their level of  
12 agreement with 15 statements (e.g., "I am the one responsible for my own behavior,  
13 good and bad") using a 7-point scale anchored by 1 (*strongly disagree*) and 7  
14 (*strongly agree*). The validity and reliability of the scale have been documented in  
15 past research (Black, 2016). The mean of all 15 item ratings was computed and used  
16 as a measure of moral agency ( $\alpha = .79$ ).

17 *Moral identity.* The internalization dimension of the moral identity scale  
18 (Aquino & Reed, 2002) was used to measure moral identity. Athletes were presented  
19 with nine moral traits (e.g., fair, hardworking, honest), and responded to statements  
20 concerning these traits (e.g., "It would make me feel good to be a person who has  
21 these characteristics") on a 7-point scale anchored by 1 (*strongly disagree*) and 7  
22 (*strongly agree*). This scale has shown very good internal consistency ( $\alpha = .83$ ; Aquino

1 & Reed, 2002). The mean of all five statement ratings was computed and used as a  
2 measure of moral identity ( $\alpha = .77$ ).

3 *Moral perfectionism.* The personal moral standards subscale and concern over  
4 moral mistakes subscale of the moral perfectionism scale (Yang, Stoeber, & Wang,  
5 2015) measured moral perfectionism. Participants were presented with statements,  
6 were told they reflected moral standards and expectations, and asked to indicate  
7 their level of agreement with 7 items about personal moral standards (e.g., "I set  
8 higher moral standards than most people") and 9 items about concern over moral  
9 mistakes (e.g., "I hate not adhering to the highest moral standard"), on a 7-point  
10 scale anchored by 1 (*strongly disagree*) and 7 (*strongly agree*). Both subscales have  
11 demonstrated reliability and validity (Stoeber & Yang, 2016; Yang et al., 2015). The  
12 mean of the items in each subscale was computed and used as a measure of  
13 personal moral standards ( $\alpha = .88$ ) and concern over moral mistakes ( $\alpha = .89$ ).

14 *Moral values.* The moral values subscale of the adolescents' values scale (Chen,  
15 2008; Yang et al., 2015) was used to measure moral values. Participants were  
16 presented with a list of 15 values (e.g., honesty, respect for others) and asked to  
17 indicate how important each value was to them on a 7-point scale, anchored by 1  
18 (*very unimportant*) and 7 (*very important*). The scale has exhibited good reliability ( $\alpha$   
19 = .94) and validity in previous research (Yang et al., 2015). The 15 item ratings were  
20 averaged to yield a measure of moral values ( $\alpha = .93$ ).

## 21 **Procedure**

1 After obtaining approval from the local research ethics committee, participants  
2 were recruited from local sports clubs. The athletes were informed about the study's  
3 aims, that participation was voluntary, honesty in responses was vital, data would be  
4 anonymous, and information would only be used for research purposes. After  
5 consenting, they completed the measures described above via a web-based  
6 questionnaire.

### 7 **Data Analysis**

8 Data were analyzed using SPSS version 24 (IBM). To examine our first study  
9 purpose we performed a seven mechanism (diffusion of responsibility, displacement  
10 of responsibility, moral justification, distortion of consequences, advantageous  
11 comparison, euphemistic labeling, no mechanism) repeated-measures Analysis of  
12 Variance (ANOVA) on the doping likelihood ratings from each of the seven blocks.  
13 We also computed Pearson correlations to examine the relationships between  
14 doping likelihood ratings in the situations describing the moral disengagement  
15 mechanisms.

16 To examine our second study purpose, we performed a seven mechanism  
17 repeated-measures ANOVA on anticipated guilt ratings. We also conducted Pearson  
18 correlation analyses to examine the relationships between anticipated guilt ratings in  
19 the situations describing the moral disengagement mechanisms.

20 To examine our third study purpose, we performed six within-participant  
21 mediation analyses, using the MEMORE 2.0 (Montoya & Hayes, 2017) SPSS macro  
22 (model 1), one for each mechanism of moral disengagement. In these analyses, we



1 examined the direct and indirect (via anticipated guilt) effects of each moral  
2 disengagement mechanism on doping likelihood relative to the neutral no  
3 mechanism control. In each of the six analyses, we entered the doping likelihood  
4 ratings for one moral disengagement situation plus the neutral situation as the  
5 paired outcome variable (e.g., doping likelihood for diffusion of responsibility and  
6 doping likelihood for neutral) and the corresponding guilt ratings as the paired  
7 mediator variable (e.g., guilt for diffusion of responsibility and guilt for neutral).  
8 These analyses allowed us to examine whether the effect of each moral  
9 disengagement mechanism on doping likelihood (compared to the neutral control  
10 condition) was mediated by anticipated guilt associated with doping in that situation.  
11 Bootstrapping was set at 10,000 samples. Bias-corrected 95% confidence intervals  
12 were estimated for all effects. An effect was considered significant when the  
13 confidence interval did not contain zero.

14 To examine our fourth study purpose, we performed a series of moderated  
15 mediation analyses for a two-condition within-participant design, using the MEMORE  
16 2.0 (Montoya, 2018; Montoya & Hayes, 2017) SPSS macro (model 2), which runs  
17 moderation of within-participants analysis using regression. In these analyses, we  
18 examined if the direct effects of moral disengagement on doping likelihood was  
19 conditional on moral agency, identity, perfectionism, and values. We entered the  
20 doping likelihood rating for the average of the six moral disengagement situations  
21 together with the doping likelihood ratings for the neutral situation as the paired  
22 outcome variable and each one of the moral trait measures (i.e., moral agency, moral

1 identity, personal moral standards, concern about moral mistakes, moral values) as  
2 the candidate moderator variable, thus examining one moderator at a time. We  
3 examined the overall doping likelihood rather than the likelihood referring to  
4 individual mechanisms to keep the analysis simple and because we did not expect  
5 differential moderation effects for each mechanism. Bootstrapping was set at 10,000  
6 samples. Bias-corrected 95% confidence intervals were estimated for all effects. An  
7 effect was considered significant when the confidence interval did not contain zero.

## 8 **Results**

### 9 **Moral Disengagement and Doping Likelihood**

10 Our first study purpose was to determine the effects of moral disengagement  
11 on the likely use of banned substances. The means and confidence intervals for  
12 doping likelihood scores associated with each moral disengagement mechanism are  
13 presented in Table 1. The descriptive statistics indicated that doping likelihood  
14 ratings were relatively low, and that they varied considerably among the  
15 mechanisms, ranging from close to one for neutral situations to midway between  
16 two and three for situations describing diffusion of responsibility. We performed a  
17 within-participant repeated measures ANOVA (7 Mechanisms) on the doping  
18 likelihood ratings to compare the influence of the six moral disengagement  
19 mechanisms and no mechanism (neutral situation) on doping likelihood; the  
20 multivariate solution yielded a significant and large-sized main effect,  $F(6, 461) =$   
21  $72.50, p < .001, \eta_p^2 = .485$ . Doping likelihood was greater in all of the moral  
22 disengagement situations compared to the neutral situations. The scores of doping

1 likelihood pertaining to each mechanism can be seen in Table 1. The scores varied  
2 monotonically among the moral disengagement mechanisms and are ranked from  
3 highest to lowest, as follows: diffusion of responsibility, displacement of  
4 responsibility, moral justification, distortion of consequences, advantageous  
5 comparison, and euphemistic labeling. It is worth noting that doping likelihood  
6 differed between every pair of mechanisms, with the exception of distortion of  
7 consequences and advantageous comparison. Correlations (see Table 1) showed that  
8 doping likelihood scores pertaining to the moral disengagement mechanisms were  
9 positively and highly correlated with each other (Table 1).

#### 10 **Moral Disengagement and Guilt**

11 Our second study purpose was to determine the effects of moral  
12 disengagement on anticipated guilt following use of a banned substance. The means  
13 and confidence intervals for guilt associated with doping for each moral  
14 disengagement mechanism are presented in Table 2. The descriptive statistics  
15 indicated that guilt ratings were relatively high and varied among the mechanism,  
16 ranging from below six to above six on the 7-point scale. To compare the influence  
17 of moral disengagement mechanisms on affective self-sanctions, we performed a  
18 within-participant ANOVA (7 Mechanisms) on the guilt ratings; the multivariate  
19 solution revealed a significant, medium-sized, main effect,  $F(6, 461) = 18.47, p < .001,$   
20  $\eta_p^2 = .194$ . Feelings of anticipated guilt about potential doping were lower than  
21 neutral situations for the situations associated with diffusion of responsibility,  
22 displacement of responsibility, moral justification, distortion of consequences and

1 advantageous comparison, but similar to neutral situations for euphemistic labeling  
2 situations (Table 2). Guilt was lowest for diffusion of responsibility, being lower than  
3 with the other five mechanisms. Anticipated guilt was similar for displacement of  
4 responsibility, moral justification and distortion of consequences, which were less  
5 than for advantageous comparison, which, in turn, was less than for euphemistic  
6 labeling (Table 2). Correlation analyses showed that guilt ratings were universally  
7 positively and highly correlated among the moral disengagement mechanisms (Table  
8 2).

### 9 **Guilt as Mediator of the Effects of Moral Disengagement on Doping**

10 Our third study purpose was to evaluate whether the effects of moral  
11 disengagement on doping likelihood were mediated by anticipated guilt. The direct  
12 and indirect (mediation) effects for each of the six within-participant analyses are  
13 summarized in Table 3 and Figure 1. All of the direct effects were significant: moral  
14 disengagement decreased guilt, guilt decreased doping likelihood, and moral  
15 disengagement increased doping likelihood. Most of the indirect effects were  
16 significant: the effects of moral disengagement on doping likelihood were mediated  
17 by guilt in five out of six mechanisms (diffusion of responsibility, displacement of  
18 responsibility, moral justification, distortion of consequences, advantageous  
19 comparison), with the sole null exception being the euphemistic labeling mechanism.

### 20 **Moral Traits as a Moderator of the Effects of Moral Disengagement on Doping**

21 The summary statistics show that athletes reported relatively high levels of  
22 moral agency, moral identity, personal moral standards, and moral values, together

1 with moderate levels of concern over moral mistakes (Table 4). Pearson correlations  
2 indicated that the aggregated doping likelihood score (computed as the arithmetic  
3 mean of doping likelihood ratings for all six mechanisms) was negatively and  
4 significantly correlated with all moral traits: moral agency ( $r = -.26, p < .001$ ), moral  
5 identity ( $r = -.13, p = .006$ ), personal moral standards ( $r = -.18, p < .001$ ), concern  
6 about moral mistakes ( $r = -.13, p = .006$ ), and moral values ( $r = -.14, p = .003$ ).

7 Our fourth study purpose was to evaluate whether the effects of moral  
8 disengagement on doping likelihood were moderated by moral traits. The  
9 conditional (interaction) effects for each of the five moderator variables are  
10 summarized in Table 4. Four of the conditional direct effects were significant: the  
11 effects of moral disengagement on doping likelihood were moderated by moral  
12 agency, personal moral standards, concern about moral mistakes, and moral values.  
13 Moral identity did not act as a moderator. That the coefficients for the conditional  
14 effects were all negative indicates that the direct effect of moral disengagement on  
15 doping likelihood was attenuated by stronger moral traits. The conditional effect  
16 (Table 4) was large for moral agency, medium for personal moral standards, and  
17 small for concern over moral mistakes and moral values. These analyses show that  
18 moral agency was the strongest moral trait at thwarting intended use of banned  
19 substances; personal moral standards was the next strongest, followed lastly by  
20 moral values and concern over moral mistakes.

## 21 Discussion

1 Grounded on Bandura's (1991, 2016) social cognitive theory of morality, we  
2 evaluated a model of doping in sport that considered the impact of cognitive  
3 maneuvers designed to disengage moral standards on the probability of using  
4 banned performance enhancing substances and affective self-sanction. Specifically,  
5 we evaluated the direct, indirect (via anticipated guilt), and conditional (depending  
6 on moral traits) effects of six moral disengagement mechanisms on athletes' doping  
7 likelihood in hypothetical scenarios.

### 8 **Moral Disengagement and Doping**

9 Our first study purpose was to compare the individual effect of each of the six  
10 moral disengagement mechanisms on the likelihood of doping by athletes. Bandura's  
11 (1986, 1991, 2016) theory of moral thought and action argues that cognitive  
12 maneuvers can disengage moral self-sanctions and thereby make any planned  
13 immoral conduct more acceptable to the perpetrator. In support of our hypothesis,  
14 the current findings revealed that doping was more likely in situations describing  
15 deployment of any one of six mechanisms of moral disengagement by athletes  
16 compared to neutral situations where no cognitive maneuvers operated. Moreover,  
17 the ability of the individual mechanisms to influence doping likelihood varied  
18 considerably, revealing a ranking of mechanisms. Specifically, the mechanisms that  
19 obscured causal agency for the behavior were the strongest (diffusion and  
20 displacement of responsibility), the mechanisms that ignored, minimized and  
21 misrepresented harmful consequences of the behavior for others were of  
22 intermediate strength (distortion of consequences), and the mechanisms that re-

1 construed the behavior were the weakest (euphemistic labeling, advantageous  
2 comparison, moral justification).

3       These novel findings for the moral disengagement-doping relationship share  
4 some similarities with the handful of studies that have noted differences among the  
5 mechanisms concerning disengagement from moral standards in relation to other  
6 forms of transgressive conduct, including aggression, execution of prisoners, and  
7 bullying (e.g., Milgram, 1974; Osofsky et al., 2005; Pozzoli et al., 2012; Thornberg &  
8 Jungert, 2014). Accordingly, the current data add further evidence to support the  
9 proposition that some mechanisms are more effective than others at excusing moral  
10 transgressions. Future research should aim to corroborate the current findings and  
11 investigate how the mechanisms act to regulate doping behavior (e.g., additive,  
12 synergistic, antagonistic) when two or more mechanisms are combined.

### 13 **Moral Disengagement and Guilt**

14       Our second study purpose was to compare the effect of moral disengagement  
15 mechanisms on anticipated guilt associated with doping. The theory of moral  
16 thought and action (Bandura, 1991) proposes that internalized affective self-  
17 sanctions are activated when behavior falls short of that expected based on moral  
18 standards. The use of moral disengagement mechanisms is believed to attenuate the  
19 ensuing unpleasant affective states and thereby make the behavior permissible to  
20 the individual despite being incongruent with their moral self. Extending past  
21 research and supporting our hypothesis, the current study provided evidence that  
22 each of the six moral disengagement mechanisms attenuated feelings of guilt

1 associated with doping compared to a no mechanism control. These findings are  
2 compatible with previous research showing that moral self-conscious emotions, such  
3 as guilt, shame and regret, have been negatively associated with doping intentions or  
4 likelihood (e.g., Barkoukis et al., 2015; Kavussanu & Ring, 2017; Lazuras, Barkoukis, &  
5 Tsorbatzoudis, 2015; Ring & Kavussanu, 2018; Strelan & Boeckmann, 2006). We also  
6 provided evidence that anticipated guilt varied among the mechanisms of moral  
7 disengagement.

8 Athletes expected to feel least guilt with diffusion of responsibility, suggesting  
9 that the mantra "everyone does it" is the best cognitive maneuver at reducing  
10 affective self-sanction. The collection of maneuvers that were less effective at  
11 reducing guilt included displacement of responsibility, distortion of consequences,  
12 and moral justification, which were followed in terms of effectiveness by  
13 advantageous comparison. Finally, the use of euphemistic labeling failed to reduce  
14 anticipated guilt, and so was ineffective as a means of suppressing affective self-  
15 sanction. It is worth noting that the pattern of anticipated guilt as a function of moral  
16 disengagement was similar but different to that displayed for doping likelihood. This  
17 discrepancy in the patterning of the responses between our two key outcome  
18 variables indicates that moral disengagement should facilitate doping via its effects  
19 on additional processes, such as social sanctions (Bandura, 1991).

## 20 **Guilt as Mediator**

21 Out third study purpose was to evaluate whether affective self-sanction  
22 mediated the effects of moral disengagement on doping likelihood. In line with our



1 hypothesis that moral disengagement would facilitate doping indirectly via reduced  
2 guilt, we found evidence for this indirect effect for five out of the six mechanisms.  
3 The sizes of the indirect effect were relatively large for diffusion of responsibility,  
4 medium for displacement of responsibility and moral justification, and small for  
5 distortion of consequences and advantageous comparison. The sole exception and  
6 null effect was for euphemistic labeling, which, incidentally, also exerted the smallest  
7 influence on both doping likelihood and guilt. Previous studies using cross-sectional  
8 designs have provided evidence that the effects of global moral disengagement on  
9 doping likelihood were mediated by guilt (e.g., Kavussanu & Ring, 2017; Ring &  
10 Kavussanu, 2018). Taken together with these previous findings, the current data paint  
11 a clear picture of the emotional aspect of the self-regulatory process in the context  
12 of doping and confirm that affective self-sanctions can be thwarted by most  
13 cognitive maneuvers and thereby make transgressive conduct more likely to happen,  
14 as predicted by Bandura's (1991, 2016) theory of moral thought and action.

### 15 **Moral Traits as Moderators**

16 Our final study purpose was to evaluate whether moral traits moderated the  
17 effects of moral disengagement on doping. We hypothesized that the facilitatory  
18 effect of moral disengagement on doping likelihood would be thwarted by relatively  
19 high moral agency, identity, perfectionism, and values. The data partially supported  
20 our hypothesis by showing that the positive effect of moral disengagement on  
21 doping likelihood was restrained by stronger moral agency (large effect), higher  
22 personal moral standards (medium effect), greater concern over moral mistakes

1 (small effect), and higher moral values (small effect). A null finding was noted for  
2 moral identity, which did not moderate the effects of moral disengagement on  
3 doping.

4 Moral agency, which describes the capacity to act according to personal  
5 standards (i.e., taking personal responsibility for one's actions), is believed to play a  
6 moderating role in determining the nature of the relation between moral standards  
7 and moral action (Bandura, 1989, 2001; Black, 2016). Moral agency, which is at the  
8 core of Bandura's (1986, 1991, 2018) theorizing about social cognition, emerged as  
9 the strongest correlate of doping likelihood and the strongest moderator of the  
10 effects of moral disengagement on doping likelihood. Our data therefore confirm  
11 speculations that self-regulatory processes depend on the individual's moral agency.  
12 Indeed, we found that the more athletes assume responsibility for their actions, resist  
13 external attribution, and stand up to group pressure (Black, 2016) – namely act as  
14 self-determining moral agents – the less vulnerable they are to the effects of moral  
15 disengagement on doping likelihood (Bandura, 2018).

16 We also found that moral perfectionism, assessed by the measures of personal  
17 moral standards and concern over moral mistakes, was negatively correlated with  
18 doping likelihood. Our findings show that the effects of moral disengagement on  
19 doping were blunted to a greater extent by personal moral standards than by  
20 concern over moral mistakes. This differential effect broadly agrees with the pattern  
21 of correlations between these two dimensions of moral perfectionism and measures  
22 of both moral thoughts and actions (Stoeber & Yang, 2016). However, our findings

1 are mostly at odds with studies that investigated the link between general  
2 perfectionism and doping attitudes (Bae, Yoon, Kang, & Kim, 2017; Madigan,  
3 Stoeber, & Passfield, 2016; Zucchetti., Candela, & Villosio, 2015). This discrepancy can  
4 be explained by our assessment of moral perfectionism and their assessment of  
5 general perfectionism. Although Stoeber and Yang (2016) reported that the general  
6 perfectionism and moral perfectionism subscales were positively correlated for  
7 personal standards and concern over mistakes, the two forms of perfectionism were  
8 differentially related to moral variables, including moral judgment, values, and  
9 identity. It is evident that perfectionism needs to be assessed using context-sensitive  
10 instruments to capture its role in doping.

11 We observed that moral values, which were negatively associated with doping  
12 likelihood, moderated the effects of moral disengagement on doping likelihood. It  
13 should be noted that the effect was small in size. Closer examination of the items  
14 used to assess moral values (Stoeber & Yang, 2016) may help explain these weak  
15 findings between moral values and doping. It remains for future research to further  
16 examine their relationship using other values, including sport-specific values such as  
17 those identified by Lee and colleagues (e.g., Lee, Whitehead, & Ntoumanis, 2007).

18 Moral identity is the cognitive schema that people hold about their moral  
19 character (Aquino, Reed, Thau, & Freeman, 2009). People with a strong moral identity  
20 consider being moral an important part of their self concept and are motivated to  
21 behave morally (Aquino & Reed, 2002). Our finding that moral identity was  
22 negatively correlated, albeit weakly, with doping likelihood is compatible with a large

1 body of evidence showing that moral identity is positively associated with prosocial  
2 behavior, avoidance of antisocial behavior, and ethical behavior (Hertz & Krettenauer,  
3 2016). In the context of doping, two studies have noted that moral identity was  
4 negatively associated with doping likelihood (Kavussanu & Ring, 2017; Ring et al.,  
5 2018). This observation was replicated by the current study. A couple of studies have  
6 reported that moral identity interacts with moral disengagement to jointly influence  
7 moral thought, feeling, and action (Aquino, et al., 2007; Hardy, Bean & Olsen, 2015),  
8 however, we did not support their findings with respect to doping likelihood.  
9 Accordingly, moral identity, which describes the importance of moral standards to  
10 the self, did not thwart the effects of moral disengagement on doping likelihood.

### 11 **Limitations of the Study and Directions for Future Research**

12 The present study yielded some important novel findings. However, some  
13 issues should be considered when interpreting our findings. First, we controlled for  
14 neither past behavior (i.e., past doping use or use of banned substances) nor use of  
15 nutritional supplements. Past history of doping has been linked with doping  
16 intentions (e.g., Lazuras et al., 2010, 2015), whereas use of nutritional supplements is  
17 a putative risk factor for doping (Hurst et al., 2017; Nicholls et al., 2017; Ntoumanis et  
18 al., 2014). Accordingly, the influence of past drug and supplement use should be  
19 assessed in future studies.

20 Second, there is potential overlap in the description of some of the situations  
21 between the social cognitive theory of morality (Bandura, 1986, 1991, 2016) and the  
22 theory of planned behavior (Ajzen, 1991, 2011). Specifically, it appears that diffusion

1 of responsibility situations resemble descriptive social norms (i.e., what most other  
2 people around me are doing), displacement of responsibility situations resemble  
3 subjective or injunctive social norms (i.e., perceived social approval or endorsement  
4 of the target behavior by referent others), and distortion of consequences situations  
5 resemble risk perceptions and optimistic bias (e.g., using it won't do any harm, risks  
6 are exaggerated). Past research suggests that norms are associated with doping  
7 intentions and temptations (e.g., Lazuras et al., 2010, 2015). Accordingly, researchers  
8 might wish to determine the extent to which moral disengagement mechanisms and  
9 social norms provide unique and shared explanations of doping likelihood (cf., Lucidi  
10 et al., 2008, 2013).

11 Third, some of our neutral situations described conditions where the  
12 motivational impetus to dope was lacking (e.g., no financial benefit, no pressure to  
13 perform). Our intention was to describe situations where moral disengagement was  
14 unlikely. The ratings of doping likelihood were close to one, suggesting that moral  
15 standards were not disengaged. Nonetheless, it would be interesting to examine  
16 doping likelihood in other neutral situations so that our moral disengagement  
17 manipulations can be replicated and extended.

## 18 **Conclusions**

19 Our findings supported our hypotheses and provided confirmation of, and  
20 extension to, a social cognitive model of doping in sport based on Bandura's (1986,  
21 1991, 2016, 2018) theoretical framework. First, we confirmed that doping by athletes  
22 is more likely when the situation describes use of moral disengagement, particularly

1 mechanisms that obscure agency for, and consequences of, the decision to use  
2 banned performance enhancing substances. Second, we showed that moral  
3 disengagement mechanisms, particularly diffusion of responsibility, blunted the  
4 potency of affective self-sanction. Third, we found that the effects of moral  
5 disengagement on doping were mediated by anticipated guilt about use of banned  
6 substances to enhance performance. Finally, we found that the effects of moral  
7 disengagement on doping were moderated by moral traits, specifically, moral  
8 agency, moral perfectionism and moral values, that reflect the moral self. Our study  
9 suggests a number of directions that the anti-doping community may want to  
10 consider and highlights a number of promising targets that seem most suitable for  
11 intervention.

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- 22

ACCEPTED MANUSCRIPT

**Note**

1  
2 <sup>1</sup>A pool of situations was generated or adapted from items taken from doping moral  
3 disengagement scales (e.g., Kavussanu et al., 2016; Lucidi et al., 2008; Boardley et al.,  
4 2018) by academics with extensive experience teaching and researching in sport  
5 psychology. Two academics and six college athletes, who played competitive sport at  
6 high levels (club, county, international), and who had many years of experience  
7 playing sport, were given definitions of each mechanism of moral disengagement  
8 and the pool of situations. They were asked to rate how representative each situation  
9 was of the definition of each mechanism on a scale ranging from –3 (not at all  
10 representative) to +3 (very representative). The six situations rated most  
11 representative of each definition were selected and used in the current study – every  
12 one of these situations was rated at least 2.

13

## MORAL DISENGAGEMENT MECHANISMS &amp; DOPING

Table 1

*Descriptive statistics, alpha coefficients, and zero-order correlations for doping likelihood in the moral disengagement and neutral situations*

Mechanism	<i>M</i>	95% <i>CI</i>	<i>A</i>	1.	2.	3.	4.	5.	6.
1. Diffusion of Responsibility	2.45	2.30, 2.59	.97						
2. Displacement of Responsibility	2.22	2.10, 2.34	.95	.79 *					
3. Moral Justification	2.00	1.88, 2.11	.94	.76 *	.72 *				
4. Distortion of Consequences	1.80 <sup>a</sup>	1.70, 1.91	.92	.70 *	.67 *	.73 *			
5. Advantageous Comparison	1.75 <sup>a</sup>	1.65, 1.86	.94	.69 *	.66 *	.72 *	.79 *		
6. Euphemistic Labeling	1.56	1.47, 1.66	.93	.69 *	.67 *	.75 *	.75 *	.82 *	
7. Neutral (No Mechanism)	1.13	1.09, 1.16	.87	.27 *	.30 *	.28 *	.30 *	.31 *	.39 *

*Note.* Possible range of scores: 1-7. \*  $p < .001$ . Means sharing the same superscript (<sup>a</sup>) are not significantly ( $p < .05$ ) different from each other.



## MORAL DISENGAGEMENT MECHANISMS &amp; DOPING

Table 2

*Descriptive statistics, alpha coefficients, and zero-order correlations for anticipated guilt in the moral disengagement and neutral situations*

Mechanism	<i>M</i>	95% <i>CI</i>	<i>A</i>	1.	2.	3.	4.	5.	6.
1. Diffusion of Responsibility	5.83	5.69, 5.98	.96						
2. Displacement of Responsibility	6.11 <sup>a</sup>	6.00, 6.24	.94	.79 *					
3. Moral Justification	6.09 <sup>a</sup>	6.00, 6.21	.95	.78 *	.76 *				
4. Distortion of Consequences	6.12 <sup>a</sup>	5.99, 6.25	.96	.76 *	.75 *	.83 *			
5. Advantageous Comparison	6.21	6.08, 6.33	.96	.76 *	.76 *	.87 *	.86 *		
6. Euphemistic Labeling	6.30 <sup>b</sup>	6.19, 6.42	.95	.73 *	.80 *	.84 *	.78 *	.88 *	
7. Neutral (No Mechanism)	6.36 <sup>b</sup>	6.26, 6.46	.90	.68 *	.85 *	.72 *	.73 *	.74 *	.81 *

*Note.* Possible range of scores: 1-7. \*  $p < .001$ . Means sharing the same superscript are not significantly ( $p < .05$ ) different from each other.

## MORAL DISENGAGEMENT MECHANISMS &amp; DOPING

Table 3

*Direct and indirect effects for moral disengagement (relative to neutral), guilt and doping likelihood*

Mechanism	Direct				Indirect					
	Effect		Effect		Effect		Intercept (Residual Effect)	Effect		
	$\Delta$ MD on $\Delta$ Guilt		$\Delta$ Guilt on $\Delta$ DL		$\Delta$ MD on $\Delta$ DL		$\Delta$ MD on $\Delta$ DL	MD on DL via Guilt		
	<i>b</i>	95% CI	<i>b</i>	95% CI	<i>b</i>	95% CI	<i>b</i>	95% CI	<i>b</i>	95% CI
Diffusion of Responsibility	-0.53	-0.63, -0.42	-0.33	-0.44, -0.22	1.32	1.18, 1.46	1.15	1.02, 1.27	.17	.10, .26
Displacement of Responsibility	-0.24	-0.31, -0.18	-0.29	-0.45, -0.13	1.09	0.98, 1.21	1.02	0.91, 1.13	.07	.02, .13
Moral Justification	-0.27	-0.36, -0.18	-0.27	-0.37, -0.17	0.87	0.76, 0.98	0.80	0.70, 0.90	.07	.03, .13
Distortion of Consequences	-0.24	-0.32, -0.15	-0.18	-0.28, -0.08	0.68	0.58, 0.78	0.63	0.54, 0.73	.04	.01, .08
Advantageous Comparison	-0.15	-0.23, -0.07	-0.23	-0.33, -0.13	0.63	0.52, 0.73	0.59	0.50, 0.68	.03	.01, .08
Euphemistic Labeling	-0.05	-0.12, 0.01	-0.24	-0.34, -0.14	0.44	0.35, 0.52	0.42	0.35, 0.50	.01	.00, .04

*Note.* MD = moral disengagement, DL = doping likelihood.

## MORAL DISENGAGEMENT MECHANISMS &amp; DOPING

Table 4

*Conditional effects of moral disengagement (relative to neutral) on doping likelihood moderated by moral traits*

	Descriptives		Moderation Effect				ΔMD on ΔDL at Values of Moderator			
	<i>M</i>	95% <i>CI</i>	<i>b</i>	95% <i>CI</i>	Moderator x ΔMD on ΔDL	<i>M</i> - 1 <i>SD</i>	<i>M</i>	<i>M</i> + 1 <i>SD</i>		
Moderator	<i>M</i>	95% <i>CI</i>	<i>b</i>	95% <i>CI</i>	<i>b</i>	95% <i>CI</i>	<i>b</i>	95% <i>CI</i>	<i>b</i>	95% <i>CI</i>
Moral Agency	5.69	5.63, 5.75	-0.33	-0.47, -0.18	1.04	0.91, 1.17	0.84	0.74, 0.93	0.63	0.50, 0.76
Moral Identity	6.32	6.25, 6.40	-0.10	-0.21, 0.01	0.92	0.79, 1.06	0.84	0.74, 0.93	0.75	0.62, 0.88
Personal Moral Standards	5.22	5.13, 5.31	-0.22	-0.32, -0.13	1.05	0.92, 1.18	0.84	0.74, 0.93	0.62	0.49, 0.75
Concern Over Moral Mistakes	3.96	3.85, 4.07	-0.11	-0.19, -0.03	0.97	0.84, 1.10	0.84	0.74, 0.93	0.70	0.57, 0.84
Moral Values	5.95	5.86, 6.03	-0.12	-0.22, -0.02	0.95	0.82, 1.08	0.84	0.74, 0.93	0.72	0.59, 0.85

*Note:* Possible range of scores: 1-7. MD = moral disengagement, DL = doping likelihood.

## APPENDIX

Mechanism	Situation
diffusion of responsibility	<p><i>all of my team/club mates use such substances</i></p> <p><i>everyone uses such substances</i></p> <p><i>most athletes in my sport use such substances</i></p> <p><i>my competitors use the substance</i></p> <p><i>the current champions in my sport use the substance</i></p> <p><i>many athletes in my sport are using the substance</i></p>
displacement of responsibility	<p><i>my coach encourages me</i></p> <p><i>a team/club mate encourages me</i></p> <p><i>my coach pressures me to use it</i></p> <p><i>a senior member of my team/club encourages me</i></p> <p><i>my coach assures me it is the right thing to do</i></p> <p><i>a member of my medical team tells me it is a good idea</i></p>
distortion of consequences	<p><i>using it won't do any harm</i></p> <p><i>risks associated with using it are exaggerated</i></p> <p><i>its negative side effects are overblown by the media</i></p> <p><i>me using it won't affect other athletes/players</i></p> <p><i>the athletes I beat will have other chances to win</i></p> <p><i>using it won't hurt anyone else</i></p>
moral justification	<p><i>it will help my team/club</i></p> <p><i>it will allow me to help and provide for my family</i></p> <p><i>it will allow my team/club to progress to the next level</i></p> <p><i>it will help me advise other athletes/players on how to do it right and safe</i></p> <p><i>it will make my team/club successful</i></p> <p><i>my exceptional performance will generate much needed interest and money for the sport I love</i></p>
advantageous comparison	<p><i>using it is safe compared to other drugs</i></p> <p><i>it is no different to using the best equipment</i></p> <p><i>I am not hindering my opponents, just enhancing my own</i></p> <p><i>it is not as harmful as other substances, such as tobacco and alcohol</i></p> <p><i>other athletes have been using it for a long time whereas I will only use it once</i></p> <p><i>it is not as serious as injuring (i.e., tripping, elbowing, hitting) your opponent</i></p>
euphemistic labeling	<p><i>it is a way to 'maximize potential'</i></p> <p><i>it will create a 'level playing field'</i></p> <p><i>describing it as using 'roids', 'gear' and 'juice' makes it sound acceptable</i></p> <p><i>using it is just 'succeeding through alternative methods'</i></p> <p><i>it is just a 'little helper'</i></p> <p><i>it is merely 'another weapon in an athlete's arsenal'</i></p>
neutral (no mechanism)	<p><i>no pressure to perform</i></p> <p><i>no career benefit</i></p> <p><i>no pressure to improve</i></p> <p><i>no injury to recover from</i></p>

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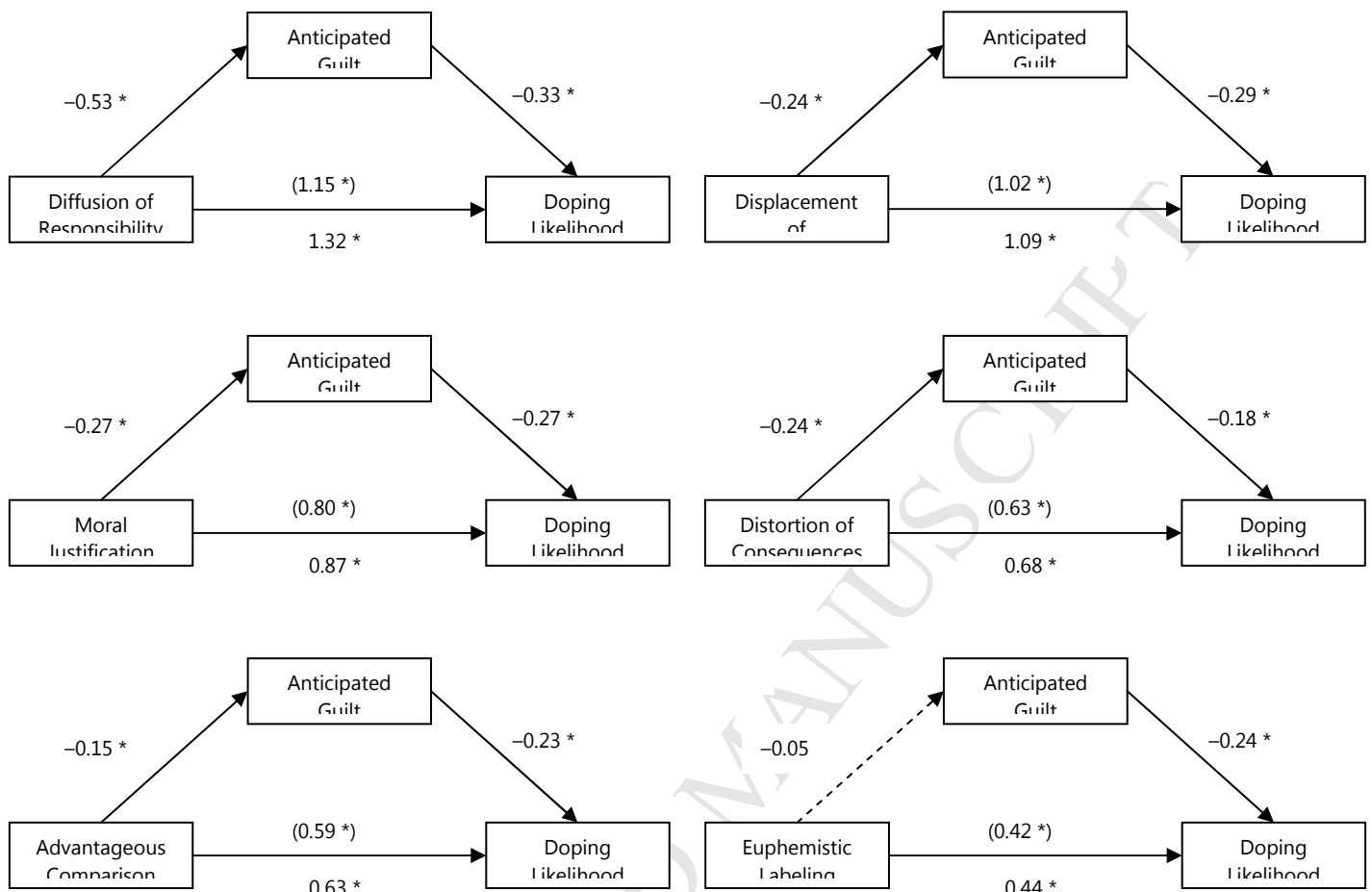
*no financial benefit*

*no performance benefit*

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ACCEPTED MANUSCRIPT

Figure 1. Guilt as a mediator of the effect of moral disengagement on doping likelihood. The unstandardized coefficients for each effect are reported. The residual effect is shown in brackets. Note: \*  $p < .05$



- Doping likelihood was increased by moral disengagement
- Guilt was decreased by moral disengagement
- Effects of moral disengagement on doping were mediated via guilt
- Effects of moral disengagement on doping were blunted by moral traits