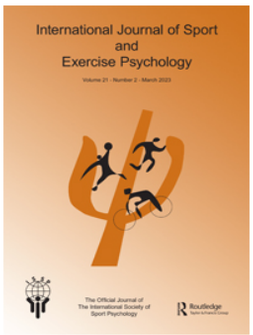

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The role of moral identity and regret on cheating in sport

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ABSTRACT

Cheating in sport can have adverse interpersonal consequences and violate the ideal of fair play, which involves abiding by the rules when competing. To help develop effective methods to prevent cheating in sport, research is needed that identifies the psychological factors underpinning an athlete's decision to cheat. The purpose of this multi-study research was to examine the role of moral identity and regret on cheating in sport. In Study 1, we used a cross-sectional design to examine relationships between moral identity, regret, and cheating attitudes. In Study 2, we used a field design to examine relationships between moral identity, regret, and cheating attitudes during competitive running races to win prize money. After awarding the prize money to the winners, we asked participants whether they would change their decision to cheat if given the opportunity. In Study 1, moral identity was directly and indirectly (via regret) related to cheating attitudes. In Study 2, participants who cheated reported lower moral identity, greater regret, and more favourable cheating attitudes than those who did not cheat. After the prizes were awarded to winners, those who did not cheat, but wanted to change their decision to cheat, reported greater feelings of regret compared to those not wanting to change their decision. In conclusion, cheating in sport elicits regret, which could modify future cheating behaviour. However, athletes may be more likely to cheat in the future if they had chosen not to cheat and foregone a benefit.

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Anti-social behaviour; anticipated regret; counterfactual regret; emotion; unethical behaviour

Introduction

> In March 2018, the Australian cricketer, Cameron Bancroft, was banned for nine months after being found to have cheated in a Test match against South Africa. After receiving the ban, Bancroft reported that the incident '*clearly compromises my values, what I stand for as a player and as a person*' and that 'I *will regret my actions for the rest of my life*'. (ICC, 2018)

Cheating is an unethical, deceptive behaviour intended to break the rules and make illegitimate gains (Reddiford, 1998). It ranges from large-scale doping (e.g., Russian state-sponsored doping scandal) and match-fixing (e.g., Calciopoli scandal) to individual

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diving in soccer and "boring in" while scrummaging in rugby. Such examples can have negative interpersonal consequences and violate the ideal of fair play (Kavussanu, 2019), which involves abiding by the rules when competing. Sport organisations spend considerable resources to prevent cheating, with the Athletics Integrity Unit (AIU) spending over $8 million annually to manage cheating in athletics (e.g., age manipulation, bribery, doping; AIU, 2019) and the Tennis Integrity Unit (TIU) spending over $7 million annually to prevent, investigate and prosecute cheating in professional tennis (TIU, 2020). To help sport organisations develop effective methods to prevent cheating, research is needed that identifies the psychological factors underpinning an athlete's decision to cheat. Two theoretical frameworks that could help understand decisions to cheat in sport are the social cognitive theory of moral thought and action (Bandura, 1991) and socio-cognitive model of moral identity (Aquino & Reed, 2002). The aim of the present research is to test a model of cheating based on these two frameworks and conduct a field study to identify how these frameworks operate when participants are given the opportunity to cheat during a competition to win prize money.

Social cognitive theory and cheating

Albert Bandura (1991) proposed that people develop moral standards from several sources, such as instruction from others, observation, and punishment, which in turn, regulate behaviour via affective self-sanction. That is, people feel positive emotions, such as pride and happiness when they act in line with their moral standards and feel negative emotions, such as regret and guilt when they violate them. These self-sanctions are suggested to regulate behaviour anticipatorily, whereby people avoid behaviour that will induce self-condemnation (Bandura, 1991).

One emotion that is suggested to regulate behaviour is regret (Zeelenberg & Breugelmans, 2008), which is defined as a painful cognitive-emotional state of feeling sorry for misfortunes, limitations, or losses (Landman, 1993). A precursor of regret is the knowledge that something would or might have been better had one acted differently. Regret can be influenced by a complex set of cognitive processes, drawing on memory, causal inference, inductive reasoning, social and personal norms and beliefs (Coricelli & Rustichini, 2010), and can operate both anticipatorily (i.e., what may happen) and counterfactually (i.e., what might have happened).

Anticipated regret occurs before a decision or response has been made and represents the expected negative affective response to undesirable behavioural outcomes. Whereas counterfactual regret refers to a person reflecting on a decision (e.g., fouling an opponent and being sanctioned) and believing that a different option would have resulted in a more favourable outcome (e.g., not fouling an opponent and receiving no sanction). Research into regret has shown that anticipated regret is negatively related to intention to use a prohibited substance (Barkoukis et al., 2015; Lazuras et al., 2017). While this suggests athletes may be less likely to cheat by doping due to feelings of anticipated regret, it is limited in that it has not considered counterfactual regret and whether this holds for other forms of cheating.

Regret is often considered an emotion that plays a central role in inhibiting unethical behaviours (Gotlib, 2019; Kavussanu, 2019; Pletti et al., 2016). However, there is some evidence suggesting counterfactual regret may *encourage* cheating (Corcoran & Rotter, 1987;

Ruedy et al., 2013). Jamison et al. (2020) reported that when participants read a scenario where they were given the option to harm an opponent during a tennis match and win $20,000, those who chose *not* to harm the opponent to win the money experienced greater counterfactual regret than those who did. This suggests that the decision to not cheat and forego a benefit can increase counterfactual regret, which may increase future cheating (Effron et al., 2015). Although these effects have been noted in non-sport contexts, such as gambling (Chua et al., 2009) and interpersonal harm (Feldman et al., 2020), it is unknown whether the effect generalises to athletes. Given this gap in our understanding, there is a clear need to determine the impact of athletes' counterfactual regret on future cheating behaviour in sport.

Moral identity and cheating

Similar to social cognitive theory, Aquino and Reed (2002) described the psychological construct, moral identity, within a socio-cognitive approach that stresses the importance of situation-specific knowledge and experiences that guide behaviour and decision making. Moral identity, defined as the degree to which a person's moral self is experienced as a central part of that person's overall self-concept (Aquino et al., 2011), can help explain why people experience regret in sport. Cheating violates moral values (e.g., fairness, honesty, respect) and can make people feel bad (Kavussanu, 2019). Moral identity reflects the significance and salience of moral values in one's identity and plays a key role in how people interpret and respond to situations involving moral decisions (Aquino et al., 2011; Aquino & Reed, 2002). For people with a high moral identity, moral decisions are salient in their everyday life choices, and they are likely to act morally.

From a trait-based perspective, moral identity is a trait-like personality attribute that is stable across many contexts and time (Blasi, 1993). However, from a socio-cognitive approach, moral identity is situation-specific, that is malleable and flexible to change depending on the given situation (Aquino et al., 2009). The latter approach, therefore, suggests that depending on the situation, moral identity can be manipulated depending on personal experiences. In a recent study, Krettenauer et al. (2021) asked participants to self-report the importance of moral identity once a day for 50 days and found that scores for each person varied by 64%. This suggests that moral identity can fluctuate, which may be activated by various schema that influence decision making and behaviour. While a body of research has examined the state-like feature of moral identity in the broader field of psychology (Hertz & Krettenauer, 2016; Krettenauer & Hertz, 2015), to our knowledge, no research has examined whether moral identity changes after a person decides to cheat during a sport-specific task. It is therefore unknown whether the socio-cognitive approach to moral identity holds true during competitive situations involving cheating.

In sport, moral identity has shown to deter athletes from cheating. Moral identity is strongly negatively associated with anti-social behaviours, such as injuring an opponent and breaking the rules (Sage et al., 2006; Shields et al., 2018), and doping (Kavussanu & Ring, 2017; Stanger & Backhouse, 2020). Moreover, moral identity is indirectly related to anti-social behaviour in sport via anticipated guilt (Kavussanu et al., 2015). That is, moral identity can increase anticipated guilt, which in turn, decreases anti-social behaviour (Kavussanu et al., 2015). Taken together, these findings suggest that athletes with high moral identity may be less likely to cheat due to anticipated affective self-sanctions.

While several studies have shown relationships between moral identity, anticipated guilt and cheating, no research has examined the role of anticipated regret in the moral identity-cheating relationship. To help provide a better understanding of athletes' cheating decisions, research is needed to examine whether moral identity thwarts cheating, both directly and indirectly via anticipated regret.

Examining cheating in sport psychology research

As it is unethical to ask athletes to purposefully cheat during a competition and risk being sanctioned, researchers often rely on hypothetical scenarios or simulated field tests that offer opportunities to cheat (see Kavussanu, 2019 for review). This approach often involves a moral conflict, whereby participants are pulled in contrary directions both for and against the behaviour, such as conflicts between personal interests (e.g., winning a medal by doping) and accepted moral values (e.g., doping is against the rules and can result in being sanctioned). This in turn, allows researchers to systematically explore how distinct psychological factors modulate moral judgement and decision making.

In sport psychology, researchers have used hypothetical scenarios by asking participants to read and respond to vignettes about deliberately injuring a competitor (Stanger et al., 2013), using a prohibited substance to gain an advantage (Huybers & Mazanov, 2012), or intimidating an opponent to help their team (Kavussanu & Ring, 2016). Similarly, other researchers have conducted field tests and asked participants to cheat during simulated hypothetical scenarios, such as a matrix solving task (Nicholls et al., 2020) and competitive sprint races (Ring & Kavussanu, 2018).

While hypothetical scenarios are limited in their ecological validity and ability to study "real-life" cheating decisions, they do offer several advantages (c.f. Christensen & Gomila, 2012). First, hypothetical scenarios offer the opportunity to include various variables in the cheating decision and can offer a more holistic approach to understanding moral behaviour. Second, they provide a high degree of control, whereby participants are given the exact same scenario for each person and are thus, not subjected to the variability that may occur when other people may intervene within the experiment. Third, hypothetical scenarios can elicit strong moral reactions in participants that allow researchers to thoroughly examine the variables in question. In short, hypothetical scenarios offer an opportunity to study moral decision making in a valid, controlled, and ethical manner.

Present research

Social cognitive theory and the socio-cognitive model of moral identity (Aquino & Reed, 2002) provide useful frameworks to help understand cheating in sport. In this study, we integrated elements from both frameworks to examine cheating in sport. Specifically, we conducted two studies to examine relationships between moral identity, regret (anticipated and counterfactual), and cheating in sport. In the first study, we examined whether moral identity was related to cheating attitudes in the sport directly and indirectly via anticipated regret. In the second study, we examined differences in moral identity and anticipated and counterfactual regret on the decision to cheat during simulated sprint competition.

Study 1

In Study 1, we used a cross-sectional design to examine whether moral identity was related to cheating attitudes in sport directly and indirectly via anticipated regret. We tested two hypotheses. First, we hypothesised that moral identity and anticipated regret would be negatively associated with cheating attitudes. Second, we hypothesised that the relationship between moral identity and cheating attitudes would be indirectly related via anticipated regret.

Material and methods

Participants

We recruited 380 athletes (mean ± SD: age = 20.13 ± 2.88 years, training history = 8.00 ± 4.65 years, training = 6.40 ± 4.00 h per week) from team (67%) and individual (33%) sports. Sample size calculations based on Fritz and MacKinnon's (2007) recommendations suggest that this sample is powered at 80% power for detecting a medium effect size of the direct effect and a small effect of the indirect effect. Participants were male (70%) and female (30%) and competed at club (43%), university (17%), county (19%), regional (10%), national (6%), and international (5%) level. Inclusion criteria stipulated that participants competed regularly in sport (i.e., trained twice or more a week) and were aged 16 or older.

Measures

Moral identity

The internalisation dimension of the Moral Identity Scale (Aquino & Reed, 2002) was used to measure moral identity. Participants were presented with nine traits (e.g., fair, hard-working, honest) considered common characteristics of moral people, and were asked to respond to five statements concerning these traits (e.g., "It would make me feel good to be a person who has these characteristics", "I strongly desire to have these characteristics") on a seven-point Likert-type scale, anchored by 1 (*strongly disagree*) and 7 (*strongly agree*). The mean of the responses to the five items was calculated and used in all analyses – with higher scores indicating high moral identity. Internal consistency has shown to be good ($\alpha = .83$; Aquino & Reed, 2002).

Anticipated regret

We measured anticipated regret about cheating in sport using a single item from the State Shame and Guilt Scale (Marschall et al., 1994). Although multi-item scales are generally regarded as a more reliable and valid measure (Diamantopoulos et al., 2012; Sarstedt & Wilczynski, 2009), given that regret is a clear and unambiguous construct, the use of multi-item scales have been suggested to be unnecessary and provide no more information than that of a single-item scale (Bergkvist & Rossiter, 2009). Participants were therefore presented with the statement: "Imagine that you cheated to gain an advantage over your opponent during an important competition", followed by one item "I would feel remorse, regret". Participants responded on a seven-point Likert-type scale, anchored by 1 (*not at all*) to 7 (*very strongly*), with higher scores indicating greater anticipated regret about cheating in sport.

Cheating attitudes

We measured attitudes towards cheating using the cheating subscale of the Attitudes to Moral Decision-making in Youth Sport Questionnaire (Lee et al., 2007), which has shown strong validity of cheating behaviour in sport (Lucidi et al., 2017). Using a seven-point Likert scale anchored by 1 (*strongly disagree*) and 7 (*strongly agree*), participants responded to three items ("I would cheat if I thought it would help me win", "It's OK to cheat if nobody knows", and "If other people are cheating, I think I can too"). The mean of the responses to the three items was calculated, with higher scores indicating more favourable attitudes toward cheating. Cronbach's alpha coefficients have been shown to be acceptable ($\alpha = .73$; Lee et al., 2007).

Procedure

After obtaining approval from the lead author's local institution, participants were recruited from local sport clubs and university teams. Stakeholders of sports clubs and teams (e.g., coaches, managers, secretaries) were contacted by telephone or email and informed about the study purposes. After gaining permission, participants were recruited in person at the club/team's training facility. Prior to providing informed consent, eligible participants were informed about the study aims, that participation was voluntary, and that all data would be kept anonymous and used for research purpose only. Participants then completed the measures described above.

Results

Preliminary analyses

Variance inflation factor (VIF) was calculated and indicated that scores for all measures were below 1.4, suggesting that the data were not affected by multicollinearity (Akinwande et al., 2015). Cronbach's alpha coefficients were computed for moral identity and cheating attitude measures, which displayed good internal consistency (Table 1). Descriptive statistics were also calculated and revealed that participants were characterised by high moral identity and high-anticipated regret for cheating, and unfavourable attitudes against cheating (Table 1). In support of our first study hypothesis, zero-order correlations indicated that moral identity was negatively associated with cheating attitudes, moral identity was positively associated with anticipated regret, and anticipated regret was negatively associated with cheating attitudes (Table 1).

Table 1. Alpha coefficients, descriptive statistics, and zero-order correlations for measures in Study 1 ($N = 380$).

Measures	*a*	Mean (SD)	1	2
Moral identity	.84	5.80 (1.59)		
Anticipated regret	n/a	5.40 (0.95)	.36*	
Cheating attitudes	.83	2.04 (1.18)	−.40*	−.41*

Possible range scores of all measures = 1–7.
SD = standard deviation, *$p < .001$.

Direct and indirect effects of moral identity on cheating attitudes via anticipated regret

Our second study hypothesis was that moral identity would be related to cheating attitudes, both directly and indirectly via anticipated regret. We used the PROCESS 4.0 (Hayes, 2013) SPSS macro (model 4), to test direct and indirect (via anticipated regret) effects of moral identity on cheating attitudes. Given that sex and ability level are likely to affect the likelihood of cheating in sport, we included these as covariates in the analyses. Bootstrapping was set at 10,000 samples and percentile 95% confidence intervals (*CI*) were estimated for all effects. We report the partially standardised indirect effect (PSIE), with values of .01, .09, and .25 indicating small, medium, and large effects sizes, respectively (Preacher & Kelley, 2011). Both direct and indirect effects are shown in Figure 1 and provide support for our hypothesis. That is, moral identity had a medium indirect relationship to cheating attitudes via anticipated regret (PSIE = 0.11, 95% *CI* = 0.06–0.17). There was also a direct effect of moral identity on cheating attitudes.

Discussion

In support of our first hypothesis, we found that both moral identity and anticipated regret were negatively associated with cheating attitudes. This suggests that athletes who consider that being a moral person is central to their self-concept and who anticipate feeling more regret, are more likely to report unfavourable attitudes towards cheating. These findings support and extend previous research, which reported relationships between moral identity, anticipated negative emotions (e.g., guilt), and anti-social behaviour in sport (Kavussanu et al., 2015; Stanger et al., 2013). In support of our second hypothesis, moral identity was indirectly related to cheating attitudes via anticipated regret. This suggests that athletes with a strong moral identity are more likely to report unfavourable attitudes to cheating because they anticipate stronger negative self-sanction. These

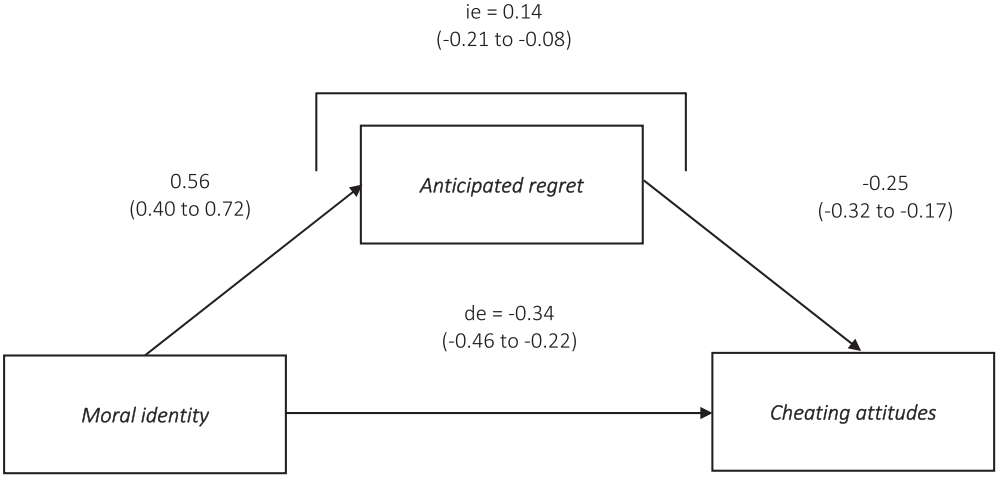

Figure 1. The direct (de) and indirect (ie) effect via anticipated regret of moral identity on cheating attitudes, controlling for sex and ability. Note: Unstandardised coefficients are reported, with 95% confidence intervals in brackets.

findings are in line with past research reporting that anticipated negative affective self-sanctions, such as guilt, mediate the relationship between moral identity and other forms of unethical behaviour in sport, such as doping (Kavussanu & Ring, 2017; Ring et al., 2019) and harming an opponent (Kavussanu et al., 2015; Stanger et al., 2013).

Study 2

Study 1 provided insights into the relationships between moral identity, anticipated regret, and cheating attitudes. However, the findings are characterised by two limitations. First, we measured attitudes towards cheating rather than cheating behaviour. There may be a difference between attitudes and behaviour (Bohner & Dickel, 2011). Second, the design of the study precluded a test of measuring counterfactual regret. Accordingly, in Study 2, we improved the study design by measuring cheating behaviour during competition and measured anticipated regret before and counterfactual regret following the decision whether to cheat to try and win prize money.

Recently, Ring and Kavussanu (2018) used an intervention whereby participants competed a series of sprint races to win prize money. Authors also offered participants the opportunity to cheat and increase their chances of winning the prize money; 33% of participants decided to cheat. In the current study, we used a similar cheating intervention to Ring and Kavussanu (2018) and aimed to replicate and extend the study twofold. First, we examined differences in scores for moral identity, anticipated regret, and cheating attitudes between participants deciding to cheat (i.e., cheats) and those that do not (i.e., non-cheats). Second, we measured moral identity, counterfactual regret, cheating attitudes and whether participants would change their decision to cheat after the intervention. We tested two hypotheses. First, we hypothesised that compared to non-cheats, cheats would report lower moral identity, higher anticipated regret for cheating, and more favourable attitudes towards cheating both before and after the cheating intervention. Second, we hypothesised that cheats and non-cheats wanting to change their decision would experience greater counterfactual regret than those who were happy to stick with their decision.

Material and methods

Participants

We recruited 68 participants (mean ± SD: age = 19.23 ± 2.62 years, training history = 8.68 ± 4.50 years training, training = 6.31 ± 4.30 h per week) from university undergraduate classes at the lead author's institution who were not involved in Study 1. Participants were male (50%) and female (50%), competing in team (67%) and individual (33%) sports at club (51%), university (13%), county (13%), regional (8%), national (8%), and international (7%) level. Inclusion criteria stipulated that participants completed a physical activity readiness questionnaire (PAR-Q; Thomas et al., 1992), reported no physical injury, and regularly participated in sport (i.e., trained twice or more per week). Eligible participants were informed that participation was voluntary, and data were confidential, before providing informed consent. The study was approved by the lead author's Institutional Ethics Committee.

Cheating intervention

The cheating intervention consisted of participants running two 20-m sprints, separated by 10 min, and a public prize ceremony conducted one-week later. In the first sprint, participants were informed that the objective was to determine the fastest person in the study and ran 20-m as fast as possible. They were then given a 10-min break and informed they would run a second 20-m sprint with the opportunity to win one of ten cash prizes. Participants were told that the 10 participants from the entire study who improved their time by the greatest margin than the first would receive a cash prize as follows: 1st place £50, 2nd place £30, 3rd place £20, and 4th to 10th place £10 each. Running times would be standardised to create a fair competition, so that if someone who ran 3.0 s in the first sprint, and ran 2.9 s in the second, would score 3.3% (i.e., $((3.0–2.9)/3.0) \times 100 = 3.3\%$).

Before completing the second sprint, participants were told individually and in confidence that they had the option to increase their chance of winning one of the prizes by cheating and automatically improving their time by 3% without anyone knowing. Participants were also told that there was a 10% chance of being caught and disqualified from the competition and prizes, which was chosen based on previous research (Ring & Kavussanu, 2018) and to simulate real-life events, whereby athletes who cheat can be disqualified from competing and honours. Participants were handed a 4×5 cm card and indicated whether to cheat by writing yes (i.e., cheat) or no on the card. Participants returned the card in a sealed envelope and performed the second 20-m sprint.

One-week after the sprints, participants attended a prize-ceremony and the top 10 participants who improved their times were awarded cash prizes. To mimic the receipt of rewards at sport competitions, those who won a prize were asked to walk to the front of the room and collect their reward in front of all participants. After prizes were awarded, participants were told the amount of people who had cheated in the entire study and the number of people who cheated and won a prize.

Measures

Participants completed measures immediately prior to the cheating intervention (i.e., pre-measures) and immediately after the prize ceremony (i.e., post-measures).

Pre-measures

Pre-measures were the same as described in Study 1: moral identity, anticipated regret, and cheating attitudes.

Post-measures

Post-measures included the same pre-measures of moral identity and cheating attitudes. Participants also completed a measure of counterfactual regret and were provided with the following statement: "Based upon your decision to cheat during the 20-m sprint, how do you feel about your choice?". They then responded to the item "I feel remorse, regret" on a seven-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Finally, participants indicated whether they would change their decision to cheat after reading the statement "if you had the chance to perform the second sprint once more, would you change your decision?", with responses scored as 0 (no) and 1 (yes).

Procedure

An overview of the study procedure is shown in Figure 2. Participants arrived at the lead authors University's Sport Centre in small groups ($n = 13 \pm 3$) and completed pre-measures described above. To encourage honesty in responses, participants returned completed

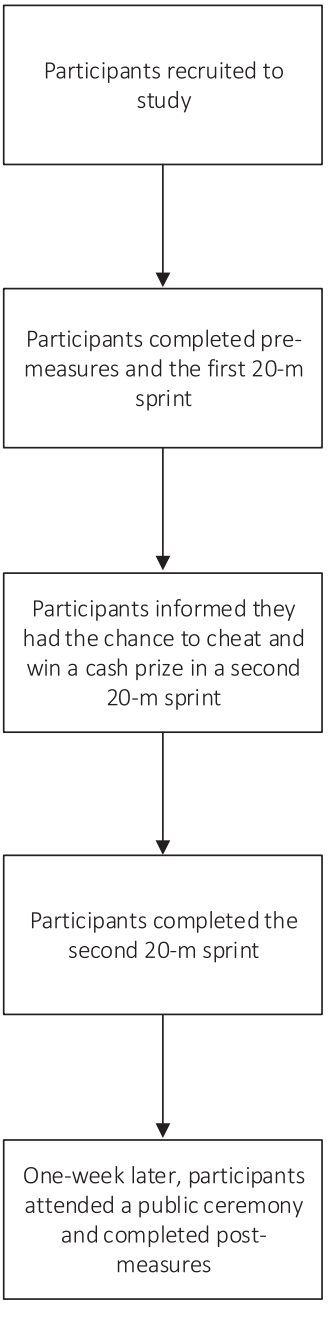

Figure 2. Illustration of Study 2 design

questionnaires to the lead author in a sealed envelope (Bowling & Ebrahim, 2005). They then completed a 10-min standardised warm-up, involving continuous jogging and light running drills, before completing the first 20-min sprint. To limit spectator effects (Edwards et al., 2018), participants completed sprints individually, with all other participants in a separate room unable to hear or see participants completing the sprints.

After completing the first sprint, participants were given a 10-min break and informed that they would run another 20-m sprint with the opportunity to win one of ten cash prizes. They then regrouped in a separate room away from the sprint area and the lead researcher called participants one by one to complete their second sprint. Upon approaching the 20-m sprint, participants were told in confidence that they could cheat to improve their chances of winning the cash prize, but could be disqualified for doing so. After deciding, they then completed the second sprint. To prevent contamination with other group members, immediately after finishing the sprint, participants were escorted away from those still waiting to complete their second sprint.

One week later, all participants attended the prize ceremony in a lecture theatre at the lead authors' university campus. The 10 participants who improved their times to the greatest margin from the first sprint were awarded their cash prizes, and all participants were informed of how many cheated in the entire study ($n = 9$) and how many cheated and were awarded a cash prize ($n = 6$). Participants then completed post-measures in the same manner as pre-measures.

Results

Preliminary analyses

Variance inflation factor scores (<2.1) indicated that scores for all measures were not affected by multicollinearity. Cronbach's alpha coefficients were computed for all multi-item scale scores, are presented in Table 2, and indicate good-to-very good levels of internal consistency for both pre- and post-measures. Table 2 also shows means and standard deviations for pre- and post-measures.

Cheats versus non-cheats

Overall, nine (13%) participants decided to cheat. Our first study hypothesis was that compared to non-cheats, cheats would report lower moral identity, higher anticipated regret

Table 2. Pre- and post-measure descriptive statistics for the overall sample ($N = 68$), cheats ($n = 9$) and non-cheats ($n = 59$) in Study 2.

	α	Overall	Cheats	Non-cheats
Pre-measures				
Moral identity	.80	5.88 (0.10)	5.62 (0.32)	5.92 (0.11)
Anticipated regret	n/a	5.81 (0.15)	5.22 (0.52)	5.90 (0.15)
Cheating attitudes	.80	2.80 (0.14)	3.70 (0.35)	2.66 (0.15)*
Post-measures				
Moral identity	.78	5.65 (0.12)	4.93 (0.26)	5.76 (0.13)*
Counterfactual regret	n/a	2.34 (0.25)	4.00 (0.58)	2.08 (0.26)**
Cheating attitudes	.91	2.81 (0.14)	3.80 (0.42)	2.66 (0.15)**

Possible range scores of all measures = 1–7.
Data are means with standard error in parentheses. *$p < .05$ and **$p < .01$ vs. cheats.

for cheating, and more favourable attitudes towards cheating both before and after the cheating intervention. Given the low number of participants who decided to cheat, we ran a series of Mann-Whitney *U* tests to examine differences in pre- and post-measure scores between cheats and non-cheats.

For pre-measures, compared to non-cheats, cheats reported higher scores for cheating attitudes ($U = 398.00$, $p = .02$). No differences in scores between cheats and non-cheats were found for anticipated regret for cheating ($U = 204.50$, $p = .25$) and moral identity ($U = 210.00$, $p = .31$). For post-measures, compared to non-cheats, cheats reported lower scores for moral identity ($U = 171.00$, $p = .01$) and higher scores for counterfactual regret for cheating ($U = 414.50$, $p < .001$) and cheating attitudes ($U = 410.00$, $p = .01$). This partially supports our hypothesis. That is, cheats reported more favourable attitudes to cheat prior to and after the cheating intervention, and lower moral identity and anticipated regret for cheating after the intervention. Whereas cheats and non-cheats reported similar feelings of anticipated regret and moral identity before the intervention.

Changing decisions to cheat

Our second study hypothesis was that cheats and non-cheats wanting to change their decision would experience greater counterfactual regret than those who were happy to stick with their decision. After the cheating intervention, 28% ($n = 13$) of non-cheats reported that they would change their decision if they could and would now cheat. Mann-Whitney *U* tests were computed and identified that compared to those who would not change their decision, those who would subsequently cheat reported greater counterfactual regret ($U = 556.00$, $p < .001$; Figure 3). Among those who cheated, 66% ($n = 6$) wanted to change their decision after the public ceremony and subsequently *not* cheat. Mann-Whitney *U* tests indicated that compared to those that would change their decision, those who would not cheat reported higher counterfactual regret ($U = 16.50$, $p = .04$; Figure 3). These results support our second study hypothesis and indicate that those who regret their decision to cheat are more likely to change their decision if given the opportunity.

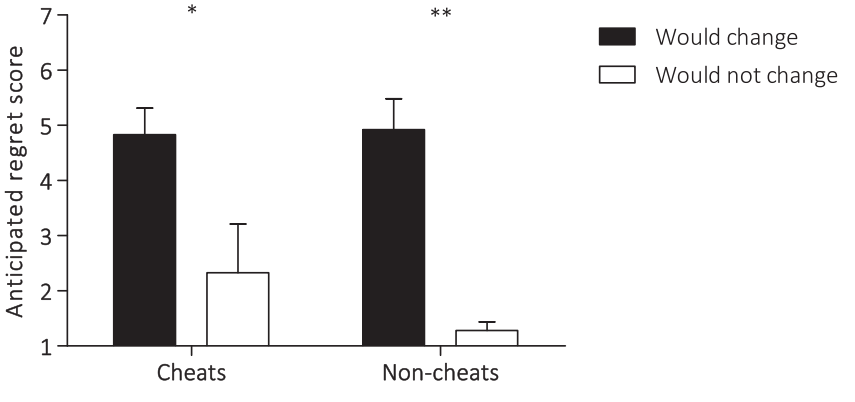

Figure 3. Differences in anticipated regret scores between those that would change their decision to cheat and those that would not for cheats and non-cheats in Study 2. Note: *$p < .05$, **$p < .01$.

Discussion

In Study 2, we examined differences between cheats and non-cheats in moral identity, anticipated regret, counterfactual regret, and cheating attitudes. In line with our first hypothesis, we found that cheats reported more favourable attitudes to cheating than non-cheats prior to the cheating intervention. These results are in line with previous research reporting associations between cheating attitudes and anti-social behaviours in sport (Lucidi et al., 2017; Ring & Kavussanu, 2018) and indicate that athletes displaying favourable attitudes to cheating, may be more likely to cheat.

Contrary to our hypothesis, we found no differences in anticipated regret between cheats and non-cheats prior to the cheating intervention. This is surprising given that anticipated regret was strongly correlated to cheating attitudes in Study 1. Thus, while anticipated regret for cheating may be associated with cheating attitudes, it may not thwart cheating behaviour. Those that cheated, however, reported feeling more counterfactual regret than those who did not cheat. Counterfactuals reflect how the past might have been and can elicit feelings of regret when a person believes the outcome could have been better (Epstude & Roese, 2008; Roese & Olson, 1995). Based on this understanding, the greater counterfactual experienced by those that cheated is likely the result of acting dishonestly and gaining an unfair advantage over their competitors.

For pre-measures, cheats and non-cheats did not differ in moral identity scores. This was not in line with our hypothesis, where we reported in Study 1 that moral identity was negatively associated with cheating attitudes in Study 1 and has been suggested to play an important role in the decision to cheat (Kavussanu, 2019). However, while no differences were reported at pre-measures, in post-measures, it was found that moral identity scores differed between cheats and non-cheats. This suggests that by cheating, and acting immorally, participants changed how they perceived their moral self (Aquino et al., 2011), which aligns with the suggestion that moral identity is state-like and may fluctuate depending on situational inputs (Krettenauer et al., 2021). Based on the socio-cognitive model of moral identity, during the experiment, participants actively construed the social context according to anticipated affective mechanisms (e.g., regret) and their moral identity was influenced by their decision to cheat (c.f., Walker, 2014). For those that cheated, they felt less regret, which suppressed the importance of moral identity. Thus, while moral identity was not associated with whether participants cheated before the study, it is likely that the decision to cheat affected, at least temporarily, their moral identity.

We found that among non-cheats, over a quarter (28%) wanted to change their decision (i.e., would now cheat) after attending the prize ceremony. In support of our second study hypothesis, non-cheats wanting to change their decision reported stronger feelings of counterfactual regret than non-cheats who did not want to change their decision. Although regret typically inhibits unethical behaviour (Gotlib, 2019; Kavussanu, 2019; Pletti et al., 2016), we found that athletes may be more likely to cheat due to the counterfactual regret of *not* cheating. This is similar to research in other contexts (Effron et al., 2015; Feldman et al., 2020; Jamison et al., 2020), and suggests that counterfactual regret may motivate unethical behaviour. For an athlete who decides not to cheat, feelings of counterfactual regret may therefore increase the likelihood of that athlete cheating, especially when they see that cheats are rewarded.

Two-thirds (66%) of cheats wanted to change their decision (i.e., opt to not cheat). These participants reported stronger feelings of counterfactual regret than those who would not change their decision to cheat. This suggests that negative self-conscious emotions experienced because of cheating act as a strong motivator to change future cheating behaviour. The emotion of counterfactual regret is elicited by thoughts that things could have been better, and it is assumed to regulate behaviour because people strive to minimise affective dissonance caused by moral transgression (Coricelli & Rustichini, 2010). Thus, cheats experienced stronger affective self-sanction and, in turn, intended to reverse their decision to cheat.

General discussion

In this multi-study research, we investigated relationships between moral identity and regret (counterfactual and anticipated) on cheating in sport. In the first study, we used a cross-sectional design to examine the relationship between moral identity and cheating in sport, and whether this was indirectly related to anticipated regret. In the second study, we used a field test design to examine differences in moral identity and anticipated and counterfactual regret between participants who decided to cheat and participants who did not during a running competition.

We found strong negative relationships between cheating attitudes and anticipated regret (Study 1), and that cheats experienced greater counterfactual regret than non-cheats (Study 2). Although regret is suggested to act as a deterrent for cheating in sport (Kavussanu et al., 2020), we also found that some participants experienced greater counterfactual regret for *not* cheating. Given that some elite athletes have stated that they believe that they competed against competitors who cheated, the implications of our findings are important.[1] Athletes who resist cheating, and witness other athletes winning by breaking the rules, may counterfactually regret adhering to the rules and cheat in the future. Thus, sport stakeholders (e.g., AIU, TIU, World Anti-Doping Agency) should be aware that athletes may be more likely to cheat when they believe that other athletes break the rules, and so they should target their interventions at athletes who have been disadvantaged by cheating (e.g., match-fixing, doping) to curb feelings of counterfactual regret and reduce the likelihood of cheating.

Previous research has reported negative associations between cheating and unethical behaviour in sport (Kavussanu, 2019; Kavussanu & Ring, 2017; Stanger & Backhouse, 2020) and non-sport contexts (Barclay et al., 2014; Krettenauer & Casey, 2015; Thornton & Rupp, 2016). Our results from Study 1 are in line with this, where we found that moral identity was negatively associated with cheating attitudes. However, in Study 2, while moral identity did not differ between cheats and non-cheats prior to the running competition, differences were reported afterwards. Moral identity may therefore not regulate whether an athlete decides to cheat. Instead, it is likely that moral identity is challenged after an athlete decides to cheat and may fluctuate depending on situational factors (e.g., deciding to cheat). These results have important implications for the design and interpretation of future research, where researchers should consider the impact cheating has on athlete's moral identity.

Attitudes towards cheating were found to be higher in participants that decided to cheat than non-cheats. Attitudes are an evaluation of an object of thought and are

suggested to influence behaviour (Bohner & Dickel, 2011). Our results partially support this proposition and indicate that participants who hold favourable attitudes to cheating are more likely to cheat than those who have less favourable attitudes. For stakeholders and researchers interested in preventing cheating, our results highlight the importance of targeting athletes' attitudes towards cheating in interventions, which in turn may prevent future cheating behaviour.

Our findings should be interpreted in light of the following potential limitations. First, our measures of cheating may not have fully captured the atmosphere, pressure and demands experienced during competitive sport scenarios (e.g., national and international championships). It is possible that athletes may respond differently in our assessment compared to what may be experienced during important competitions. Further research should aim to examine cheating during real-life competitions. Second, the proportion of participants cheating in Study 2 was small ($n = 9$; 13%), resulting in unbalanced sample sizes between groups and an underpowered study. This was unexpected given that previous research using similar designs reported one-third ($n = 20$; 33%) of participants cheated (Ring & Kavussanu, 2018), and results should therefore be interpreted with caution. Third, participants in Study 2 were university students and recruited by the lead author, who conducted the cheating intervention and lectures at the same institution as participants. Given the researcher's position of authority, participants' decision to cheat may have been influenced by self-presentation bias and not be a valid representation of cheating behaviour.

Conclusion

Our findings extend previous research by showing that anticipated regret, counterfactual regret, and moral identity are important factors in decisions about cheating. We showed that the relationship between moral identity and cheating attitudes was indirectly related to anticipated regret. We also found that counterfactual regret may inhibit and encourage cheating. Counterfactual regret experienced by those who cheat, were less likely to cheat in the future, however, those who do not cheat, also experience counterfactual and were more likely to cheat. This suggests that counterfactual regret may serve as both an important motivator and deterrent for future cheating behaviour. Given that regret can guide future decision making, it is important that sport organisations recognise that athletes who do not cheat, but are aware that other athletes cheat and get away with it, may be more likely to cheat in the future.

Note

1. Michael Phelps, 23× Olympic Gold Medallist, acknowledged that he never competed on a level-playing field Guardian (2017), , Wyn Jones, Welsh international Rugby Union player, reported that he expected competitors to cheat BBC (2020), and Edwin Moses, 2× Olympic Gold Medallist, recognised that he always competed against cheats Guardian (2020).

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No potential conflict of interest was reported by the author(s).

Data availability statement

The data that support the findings of this study are available on request from the corresponding author.

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