Who's to blame? The role of power and attributions in susceptibility to match-fixing

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ABSTRACT

Objective: Official reports and anecdotal evidence suggest that people with power frequently put pressure on athletes to fix a match. Therefore, it is assumed that athletes may attribute their involvement to this pressure. The present study was designed to investigate the role that power, attributions and moral emotions may play in the decision to fix a match.

Method: Team and individual sport athletes ($N = 427$) competing in five European countries participated in a quasi-experimental vignette design. Participants completed eight vignettes manipulating power, source of attributions and stability of attributions. Match-fixing susceptibility and five discrete anticipated moral emotions (guilt, shame, pride, indifference, anger) were measured.

Results: The results of the analyses demonstrated that athletes are perceived to be most susceptible to match-fixing when the reason is related to a stable attribute of the individual (e.g., enjoying gambling, having a betting problem). However, participants reported also being susceptible to match-fixing when power is high. Anticipated emotions negatively predicted match-fixing susceptibility and mediated the effect of attributions and power on match-fixing susceptibility.

Conclusion: The findings provide information on the interplay between attributions, power and anticipated emotions in predicting match-fixing susceptibility, and the determinants of match-fixing susceptibility. This will be of benefit to policy makers, sporting organizations and researchers in developing policies and interventions to protect athletes from being vulnerable to match-fixing requests.

Match-fixing is considered a major threat to the integrity of sports by sport authorities such as the International Olymic Committee. In this study, we investigated contributing factors that increase susceptibility of athletes to engage in match-fixing. Drawing on attribution theory (Weiner, 1986), we investigated the joint effect of attribution and power on athletes' susceptibility to fix a match, and the mediating effect of anticipated emotions. According to Hill (2015) athletes are an important agent in the delivery of match fixing. Although Hill (2015) advocated that athletes are rarely coerced, evidence is accumulating to support the idea that match-fixing is influenced by a range of actors (e.g. coaches,

referees, officials, board members) exerting power on them (Yilmaz, Manoli, & Antonopoulos, 2019). If this is the case, it seems that such actors may abuse their power to promote illegal and unethical behaviours, such as match-fixing. Power has been associated with the attributions that people make (Auzoult, Hardy-Massard, & Ganglo, 2013), which in turn serve as important determinants of behaviour. For instance, Allen (2012; p. 5) concluded in their systematic review of studies on attributions in sport from 1954 to 2011 that "attributions can be a powerful source of motivation, influencing emotions, decisions, expectations, and behaviors". This is especially relevant with respect to

match-fixing as anecdotal evidence suggests that athletes often engage in match-fixing as a result of the pressure exerted by sources of external power (i.e., club officials, coaches, criminal networks etc.; Costa, 2018).

Our research contributes to the, as yet sparse literature on the psychology of match-fixing. Surprisingly little research to date has investigated the psychological aspects of the decision to engage in match-fixing, with some exceptions such as the research by Barkoukis, Lazurus and Kourelis (2020), which applied the theory of planned behaviour to the decision making process regarding match-fixing. Our study moves beyond this to investigate interpersonal processes such as attributional and power dynamics which play a role in the psychological decision making processes to engage in match-fixing also. Moreover, we examine the role of anticipated emotions as a mediating mechanism which may act as a protective factor in the relationship between power and attributions and match-fixing susceptibility. Developing an understanding of such processes is important to design interventions and policies to protect athletes from being vulnerable to match-fixing requests.

Match-fixing

Carpenter (2013; p. 215) defined match-fixing as "a dishonest activity by participants, team officials, match officials or other interested parties to ensure a specific outcome in a particular sporting match or event for competitive advantage and/or financial gain which negatively impacts on the integrity of the sport". It is associated with the manipulation of sports competitions defined by the Macolin Convention and the Council of Europe as "an intentional arrangement, act or omission aimed at an improper alteration of the result or the course of a sport competition in order to remove all or part of the unpredictable nature of the aforementioned sport competition with a view to obtaining undue advantage for oneself or for others". Two types of match-fixing have been identified; a) betting-related match-fixing and b) sporting match-fixing, of which tanking is an example (i.e., the benefits from match-fixing are not related to earning money from betting; for example, arranging to lose to receive cash offers or arranging to win for more favourable ranking; Caneppele, Langlois, & Verschuuren, 2020). Furthermore, match-fixing does not necessarily involve the outcome of a game or event but also specific activities during the game or event (known as spot fixing; Carpenter, 2013; Lastra, Bell, & Bond, 2016; Van Rompuy, 2015).

Match-fixing is often linked to criminal and gambling networks. Jacques Rogge, while being president of the International Olympics Committee (IOC), proposed that match-fixing is a substantial threat to sport integrity that should be addressed by the IOC and sport authorities (see Villeneuve, 2015). Furthermore, Carpenter (2013) reported match-fixing incidents across several countries and continents around the world and sport disciplines, ranging from football to sumo wrestling, and involving several actors, such as athletes, referees, and club officials, and concluded that match-fixing may be the biggest threat to sport in the 21st century. Similarly, a report by the Sorbonne University and the International Centre for Sport Security (Sorbonne University & ICSS, 2014) demonstrated that approximately 300–700 events are suspected of being fixed every year on a global basis since 2010, whereas the Europol investigation in 2013[1] showed that 425 match officials, club officials, athletes and criminals from more than 15 countries across Europe were suspects for fixing more than 380 football matches. Visschers, Paoli, & Deshpande, (2020) revealed that almost half of the referees participating in their study considered one out of ten football matches in Belgium was fixed. Furthermore, Barkoukis, Lazuras, and Kourelis (2020) indicated that 30% of the athletes in their study reported being engaged in a game which they suspected had been fixed, whereas Tak, Sam, and Choi (2020) found that 10% of their surveyed

athletes in South Korea had been approached for match-fixing. In addition, more than 30% of athletes have reported an attempt to illegally influence referees' decision (Frenger, Emrich, & Pitsch, 2019). The aforementioned evidence indicates the pervasive nature of match-fixing across levels and type of sport.

Despite this, research about why individuals engage in match-fixing is rather limited (see for examples Aquilina & Chetcuti, 2014; Hill, 2010; Nowy & Breuer, 2017; Numerato, 2015), and there is a call for more research on understanding the different facets of this phenomenon (Moriconi, 2020). There is particularly a need to understand the psychological mechanisms underpinning the decision to fix a match. To date, only a few studies have investigated the psychological processes related to match-fixing. For instance, Barkoukis et al. (2020), utilizing the theory of planned behaviour, demonstrated that subjective norms were significant predictors of match-fixing intentions, highlighting the important role of the social environment. Van Der Hoeven, De Waegeneer, Constandt, and Willem (2020) examined differences in the moral profile of athletes involved in non-betting and betting related match-fixing; with the former showing a lack of moral sensitivity and moral judgement and the latter a lack of moral motivation and moral character. Overall, research shows that athletes rationally engage in the decision to participate in match-fixing by calculating the costs and benefits of this behaviour, such as monetary and career gains (Forrest, 2018; Hill, 2015; Tak et al., 2020), or because they are vulnerable, in terms of personality, morality and/or finance, and/or they are coerced (Carpenter, 2012; Tak et al., 2018).

The existing evidence (Tak et al., 2018), official reports (e.g., Europol, 2013; Sorbonne University & ICSS, 2014; UNODC, 2016) and anecdotal evidence (see the Calciopolis scandal; Costa, 2018) suggest that criminal networks can be involved in match-fixing. Recent evidence suggested that these criminal networks are part of an ecosystem that influences athletes decision to engage in match fixing (Caneppele et al., 2020). Furthermore, previous evidence suggested that people with power (e.g. club officials, coaches, federations) put pressure on athletes in vulnerable situations to participate in this activity (Tak et al., 2018). On the other hand, athletes may attribute their involvement to this pressure by people with power. Past evidence on doping has suggested that athletes tend to justify their wrongdoing by attributing the blame to other people who exerted power on them (e.g., coaches, ASP, teammates; Engelberg, Moston, & Skinner, 2015). However, in the match-fixing literature, there is no evidence about how athletes justify their choice. To address this issue the present study was designed to investigate the role that power and attributions may play on the susceptibility to fix a match.

The role of power and attributions in decision making

Milgram's (1974) seminal work on obedience to authority stimulated a line of research investigating the role of power on decision making and since then, several theoretical approaches have been developed (e.g., social exchange theory, interdependence theory, normative resource theory, equity theory, dyadic power theory, etc.; see Dunbar, 2015 for a review). All these approaches agree that power is an important aspect of interpersonal interactions, even in the absence of an overt conflict. Power has been broadly defined as the ability to influence the behaviour of another person with the intention of achieving specific outcomes (Turner, 2005). Past evidence demonstrated that the exertion of power largely influences subordinates' cognition, affect and behaviour. More specifically, the exertion of power in an autocratic way diminishes subordinates' attitudes, job satisfaction, intentions, psychological and physical well-being and performance (Zhang & Liao, 2015). In the context of sport, power has been mostly studied with respect to the organizational structure of sport organizations (Doherty, Fink, Inglis, & Pastore, 2010; Schulz & Auld, 2006) and gender equity (Burnett, 2001; Burton, 2015; Sibson, 2010). This is an important gap in the study of the decision-making processes towards match-fixing as a behaviour largely

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[1] https://www.europol.europa.eu/newsroom/news/update-results-largest-football-match-fixing-investigation-in-europe.

influenced by the power of an authority (Costa, 2018) and it is this gap that the present study aimed to address.

Importantly, from the subordinate's perspective, the perception of power is frequently linked with a causal attribution (Auzoult, Hardy-Massard, & Gangloff, 2013; Erchul, Raven, & Wilson, 2004). Causal attributions refer to the attempts made by an individual to cognitively explain outcomes in an achievement situation and predict future behaviour (Heider, 1958). Attributions can describe the why of a behaviour (i.e., explanation) or the traits that can be inferred from a behaviour (i.e., inferences or ascriptions; Malle, 2011). Attributions, such as ability, effort, and luck, are classified along three dimensions, namely locus of causality (i.e. the cause of the outcome is internal, such as ability, effort, and mood, or external, such as task difficulty, and luck), control (i.e. the cause of the outcome is under the person's control, such as ability, and effort or not under the person's control, such as task difficulty, and luck) and stability (i.e. the cause of the outcome is enduring and stable, such as ability, task difficulty and bias, or unstable, such as effort, mood and luck; Weiner, 1986). Rodrigues and Lloyd (1998) conducted a series of studies demonstrating that power influences attributions and, more specifically, democratic exertion of power resulted in internally attributed compliant behaviour, whereas autocratic exertion of power to externally attributed compliant behaviour. These findings have been subsequently supported by findings in students' and school personnel's compliant behaviour (Alanazi & Rodrigues, 2003; Erchul, Raven, & Whichard, 2001; Erchul et al., 2004).

In the context of sports, causal attributions can influence collective efficacy beliefs (i.e. collective efficacy beliefs formed post-competition causal attributions, Allen, Jones, & Sheffield, 2009, Chow & Feltz, 2008; stability was associated with collective efficacy beliefs, Allen et al., 2009, Dithurbide, Sullivan, & Chow, 2009), team outcomes beliefs, (Martin & Carron, 2012), persistence during perceived failure (Foll, Rascle, & Higgins, 2006), emotions such as anxiety, guilt and shame (Crocker et al., 2014; Gardner, Vella, & Magee, 2015), intentions towards physical activity (Spink & Nickel, 2010), and achievement goals in physical education (Extremera, Ruiz-Juan, & Granero-Gallegos, 2016). However, there is a paucity of research with respect the effect of causal attributions on the decision to engage in unethical sport-related behaviour, such as match-fixing. Understanding the role of power and attributions are important in order to develop interventions and policies to design interventions and policies to protect athletes from being vulnerable to match-fixing requests.

The present study

Evidence is accumulating to support the idea that match-fixing is influenced by a range of actors exerting power on the people who in the end manifest the behaviour, in most cases, athletes. If this is the case, it seems that sport people may abuse their power to promote illegal and unethical behaviours, such as match-fixing. Power has been associated with the attributions that people make (Auzoult et al., 2013), which in turn serve as important determinants of behaviour. For instance, Allen (2012) concluded in their systematic review of studies on attributions in sport from 1954 to 2011 that "attributions can be a powerful source of motivation, influencing emotions, decisions, expectations, and behaviors" (p. 5). It is expected that this is especially relevant with respect to match-fixing as anecdotal evidence suggests that athletes often engage in match-fixing as a result of the pressure exerted by sources of external power (i.e., club officials, coaches, criminal networks etc.; Costa, 2018).

To address this issue, the aim of the present study was to identify the role of people with power on athletes' decision to fix a game and how they justify this decision. More specifically, the present study was designed to investigate the joint effect of attribution and power on athletes' susceptibility to fix a match. Understanding the role of power and where athletes attribute their choice to to fix a game has both conceptual and practical importance. Firstly, it will assist in the comprehending of the underlying psychological processes that lead athletes

engage in match-fixing. Secondly, understanding the determinants of match-fixing behaviour could, in association with existing research on doping, set the basis for a conceptual understanding of why athletes engage in unethical and illegal behaviours in sport. With respect to practical importance, understanding this effect would help researchers develop more effective interventions educating athletes how to resist pressure for match-fixing and sport authorities establish policies assisting athletes avoiding match fixing (e.g., appropriate whistleblowing platforms reporting club officials or criminal networks). Based on the premises of attribution theory (Weiner, 1986), we first hypothesised that individuals would be more susceptible to match-fixing if they were requested to do so from someone in a position of power over them:

Hypothesis 1. Susceptibility to match-fixing will be higher when the offer is made from a person in a high-power position, and lower when the offer is made from a person in a low-power position.

Attributions are cognitive representations of the specific causal explanations of events. The locus of causality refers to whether individuals see the cause as residing within or outside a person. Stability of causality indicates the degree to which the cause is anticipated to change over time, with stable causes not changing, while unstable causes may change (Martinko, 1995). They are defined a causal explanations or descriptions for behaviours of individuals (Weiner, 1986) and as such, should also influence how individuals explain the reasons or causes for why athletes may be susceptible to match-fixing. We hypothesised that individuals would consider those most susceptible to match fixing when the cause was a function of 'who they were' (e.g., they were a dishonest individual – a stable, internal attribution). Based on the aforementioned literature, we hypothesised the following:

Hypothesis 2. Match-fixing susceptibility will be higher when the reason is (a) stable and (b) internal to the individual, and lower when the reason is unstable and external to the individual.

This is quite different to a reason due to power, and we wanted to investigate how such attributions would operate when also in a context of power. One factor that may connect the effects of both power and attributions is anticipated emotions. The effect of attributions on decision making is achieved through emotions and motivation (Weiner, 2014). Attribution theorists argued that beliefs about causality can determine emotions which in turn influence future behaviour. For instance, a successful performance in a game can be attributed to several reasons that are associated with athlete's emotions (e.g., confidence, pride, surprise, regret). These emotions in turn, determine future behaviour (Depping & Mandryk, 2017; Weiner, 2014). Past research on doping, another corruption-related behaviour in sports, demonstrated that anticipated emotions can mediate the effects of distal predictors on doping intentions (Lazuras, Barkoukis, Mallia, Lucidi, & Brand, 2017; Ring & Hurst, 2019). However, the role of anticipated emotions on the decision to fix a match has not been researched thus far. A second objective of the study was to address this gap. Based on the aforementioned evidence, the following was hypothesised:

Hypothesis 3. Anticipated emotions will mediate the effect of power and attributions on match-fixing susceptibility.

Method

Research design

We adopted a quasi-experimental vignette design (Aguinis & Bradley, 2014; Grant & Wall, 2009). A vignette is a brief, carefully written description of a situation designed to simulate a real-world scenario (Evans et al., 2015). Vignette-based methodologies offer insights into how individuals' feelings and behaviours are influenced by factors that may not be easily accessible in real-life situations (Evans et al., 2015; Kirrane, O'Shea, Buckley, Grazi, & Prout, 2017). Such designs are a hybrid of traditional survey and experimental methods and exhibit both

internal and external validity by illuminating many of the complexities of human behaviour (Kirrane et al., 2017). Well-designed vignette-based studies can avoid many limitations of conducting field-based research, yet confidently extrapolate findings from their research to 'real-life' situations (Evans et al., 2015; Kirrane et al., 2017).

We used a 2 × 2 × 2 repeated measures experimental design, whereby power (high/low), stable-unstable causal attributions, and internal-external causal attributions were manipulated in each vignette (See Table S1 in the supplementary information). The vignettes were developed by the researchers and, prior to distribution, were reviewed by all authors and two experts in sport psychology. The names used within each vignette were chosen to have balanced male and female names, and the most popular birth names from across the countries sampled were used. The survey was developed in English in the first instance, and was translated and back-translated into French, German, and Greek by native speakers of each language, and checked for any anomalies. Consistency was achieved. Athletes completed the survey in their native language and whenever this wasn't possible they chose the language that they felt most comfortable with (i.e., English or the language of the country they were competing in; for instance, German language for those competing in Austria).

Sample

Participants (N = 427) comprised athletes from various sports participating in competitions in Austria, Cyprus, Greece, France, and Ireland. Participants were from Greece (n = 178), Cyprus (n = 185), Austria (n = 48), France (n = 12), Ireland (n = 2), Turkey (n = 1) and Finland (n = 1). Males comprised 75.4% of participants. The majority of participants played soccer (n = 130), basketball (n = 80), handball (n = 33), volleyball (n = 19), athletics (n = 15), water polo (n = 11), or badminton (n = 11). Half (50.4%) of participants reported they were professionals in their sports, while 49.6% reported that they were amateurs. Just under 16% of participants played in the first league or equivalent in their sport, 14.3% in the 2nd league, and 13.8% in the 3rd league.

In determining the appropriate sample size to provide sufficient power to detect our effects, we drew on a number of sources. Studies that use repeated measures (as our study did) usually have more power than comparable between-subjects studies (Murphy, Myors, & Wolach, 2009). Based on our within subjects design (with eight conditions), we conducted an a priori power analysis with G*power (Faul, Erdfelder, Buchner, & Lang, 2009; Faul, Erdfelder, Lang, & Buchner, 2007), selecting the test family as the F-test and the repeated measures, within subjects ANOVA as the statistical test, setting alpha to .05, power to .80 with a small effect size (0.1) which indicated that, we needed a sample size of 163 participants. We selected a small effect size in order to conservatively estimate the sample size that would be required.

From our 427 participants, we collected 2455 observations. For multi-level modelling (which we used to test our mediation hypotheses), the sample size depends on the total sample sizes for each level (Snijders, 2005). Although it is usually desirable to have as many units (in our case, participants) at the higher level, for hypotheses that are specified at level 1 (as is the case in our data), it is the level 1 sample size that is of main importance (2455 observations), and the cluster size (mean cluster size = 7.769) is less important for power (Snijders, 2005). As g*power does not have an option to assess the power for multi-level structures, we also drew on the guidelines for examining power and sample size in multi-level modelling by Snijders (Snijders, 2005; Snijders & Bosker, 2012) and the software programme PINT (Power IN Two-level designs; Snijders & Bosker, 1993). Conservatively estimating our level 2 (person level) N to be 400 with a cluster size of eight, PINT estimated a standard error of the regression coefficients with a random effect to be approximately .050. The standard error of the estimate is the estimated population standard deviation of the residuals of estimating the dependent variable from the predictor variables (Cohen, Cohen, West and Aiken,

2003), and this very small estimation provides confidence that our sample size and model had sufficient power. Snijders and Bosker (2012) specifically discuss power considerations when using multi-level modelling with experimental designs, reiterating Murphy et al. (2009) that randomisation within units (in our case, within participants) has higher power. Thus, based on the above recommendations and calculations, we deemed our sample size to be sufficient to assess our hypotheses.

Procedure

Ethical approval was obtained from the relevant university research ethics committee prior to proceeding with data collection. Universities and sport organizations across Europe were invited to participate in a large scale project on the determinants of match fixing. The aims and procedures of the study were explained. Universities with a vested interest in studying corruption in sport and sport organizations from Austria, Cyprus, Greece, France, and Ireland agreed to take part in the study. The same stratified sampling procedure to recruit participants was followed across all countries; firstly, the sports were randomly selected from the most popular sports in each country and then the clubs to be approached. All selected clubs were approached and informed about the study objectives and procedures. The majority of the clubs that were approached (approx. 80%) agreed to participate in the study. Following permission from the club, the athletes were informed about the study's objectives and provided with the survey. The online survey platform, Qualtrics™ was used to distribute the surveys in Austria, France and Ireland, whereas in Cyprus and Greece paper-and-pencil versions of the surveys were used. Participants were informed about the anonymity and confidentiality of their responses. They were also informed that they could withdraw from the study at any time and received instructions about the completion of the survey. Participants in Austria, France and Ireland entered the link to Qualtrics at their own free time. In Greece and Cyprus, survey completion took place in quiet conditions in the team's locker rooms under the supervision of trained personnel (and in the absence of the coach or any other member of the club). In the survey, participants were presented with a series of eight vignettes in random order (as described in the measures below) and were asked to provide their responses to measures of match-fixing susceptibility, causal attributions and anticipated emotions following each one. There were also asked to complete a number of demographic questions.

Measures

Condition. We had a 2 × 2 × 2 experimental design whereby we manipulated power (high vs low), source of attributions (internal vs external) and stability of attributions (stable vs unstable), resulting in eight separate vignettes. We created separate binary condition variables for power (0 = low power, 1 = high power), attribution source (0 = internal, 1 = external) and attribution stability (0 = stable, 1 = unstable), all coded as 0 and 1 respectively. Scenarios one through four were designed to elicit external attributions, while scenarios five through eight were designed to elicit internal attributions (see Table 1 and Table S1 in Appendix 1 of the supplementary information). All participants received the eight vignettes, although the order of presentation of the vignettes was randomised using the randomizer function in Qualtrics and manually with different versions of the paper-and-pencil surveys.

Match-fixing susceptibility was assessed at the end of each vignette using a one-item measure (Do you think that [NAME] should agree to this request under these circumstances?). Although the use of one-item measures is sometimes criticized, it is justified when individuals respond to similar questions multiple times (Ohly, Sonnentag, Niessen, & Zapf, 2010; Van Hooff, Geurts, Kompier, & Taris, 2007) and has been used in past vignette studies (Kirrane et al., 2017).

As a manipulation check, *causal attributions* for each vignette were

Table 1
Means (and standard deviations) of study variables across vignettes.

Vignette	Power	Attributions	Match-fixing susceptibility	Guilt	Shame	Pride	Indifference	Anger
1	High	External unstable	2.32 (1.70)	1.90 (1.01)	1.87 (1.00)	0.49 (.817)	0.74 (.871)	1.61 (1.08)
2	Low	External unstable	2.11 (1.50)	1.99 (.926)	1.92 (.972)	0.44 (.805)	0.75 (.857)	1.63 (1.02)
3	High	External stable	1.90 (1.39)	1.88 (1.02)	1.90 (1.02)	0.37 (.775)	0.75 (.849)	1.72 (1.06)
4	Low	External stable	1.90 (1.38)	2.02 (.987)	1.97 (.980)	0.50 (.855)	0.81 (.885)	1.55 (1.03)
5	High	Internal stable	2.18 (1.54)	1.72 (1.06)	1.67 (1.07)	0.58 (.912)	0.96 (1.02)	1.30 (1.12)
6	Low	Internal stable	3.39 (2.10)	1.27 (1.12)	1.27 (1.12)	0.74 (.888)	1.09 (.996)	1.02 (1.13)
7	High	Internal unstable	2.07 (1.59)	1.83 (1.03)	1.82 (1.05)	0.42 (.773)	0.87 (.930)	1.47 (1.10)
8	Low	Internal unstable	1.86 (1.38)	2.01 (.969)	1.96 (1.02)	0.49 (.856)	0.77 (.911)	1.52 (1.06)

assessed with 6 items evaluating the factors of locus of causality (internal or external source) and stability from the scale by McAuley, Duncan, and Russell (1992). Each item was rated on a 9-point Likert scale, where the statements represented the polarised ends of each scale (e.g., locus of causality 'Is the decision to match-fix something: that reflects an aspect of the situation .... that reflects an aspect of this player'; stability: 'Is the decision to match-fix something: temporary ..... permanent'). Cronbach alpha ranged from 0.702 to 0.785 for the locus of causality factor, and from 0.767 to 0.817 for the stability factor.

Five discrete *anticipated emotions* (guilt, shame, pride, indifference, anger) were assessed within each vignette using a 4-point Likert scale (0 = not at all; 3 = a lot). These anticipated emotions were previously validated by Roos, Salmivalli, and Hodges (2011). We did not combine the discrete emotions into an overall anticipated emotions measure, as recent research has advocated for, and demonstrated the benefits of, examining emotions at the discrete level (Edwards, Ashkanasy, & Gardner, 2009, pp. 83–111; Gooty, Gavin, & Ashkanasy, 2009; Hu & Kaplan, 2015).

Data analysis

We conducted multi-level regression analyses to test hypotheses 1 and 2, where the experimental vignettes (level 1) were nested in the person (level 2). The three binary 'condition' variables (power, attribution source, and attribution stability) were entered as predictor variables for each of the 5 anticipated emotions and match-fixing susceptibility, in line with recommendations by Hoffman and Rovine (2007) for the use of multi-level modelling with experimental designs. Using multi-level regression has the added advantage of dealing with some of the limitations of repeated measures ANOVAs where obtaining multiple measures from each respondent can lead to violations of assumptions of sphericity (Murphy et al., 2009). In two-level multi-level models, such as the ones we conducted, the variance is split into two components; level 1 which in our case is the within-subject component and level 2 which is the between subject component in our data. As all of our hypotheses are specified at level 1, we simply control for the nested nature of the data at level 2 (repeated measures nested in people), and our findings explain the extent to which each individual's responses to the different vignettes varies from their average response. As such, we are explaining variance at Level 1 or within person variance, rather than level 2 (between person) variance. Our findings can be interpreted in a similar fashion to non-nested regression analyses in terms of effect size estimations (R^2) and significance testing.

To test Hypothesis 3, we conducted a series of five multi-level path analyses (Preacher, Zyphur, & Zhang, 2010), whereby we investigated the indirect effect of the three 'condition' variables on match-fixing susceptibility via each of the five anticipated emotions. We used the Mplus syntax for a 1-1-1 mediation as outlined by Preacher et al. (2010). We could not test the parallel mediation of all five anticipated emotions simultaneously as this would have required the assessment of 75 separate indirect effects (3 independent variables and 5 mediators) in a multi-level structure and this model was too complex to converge. To account for this, we draw on effect size estimates (R^2), reductions in residual variance calculations and a more stringent p value of .01 to

interpret our findings. All multi-level models were assessed using Mplus Version 8. The model is depicted in Fig. 1.

Drawing on the guidelines of Bernerth and Aguinis (2016) for the use of control variables, we considered a number of demographic variables that could theoretically be posited to influence our findings. Evidence shows that match-fixing is evident across all levels of sport (Carpenter, 2012). However, the role of power and attributions may differ across different sport levels and gender. We examined these variables as between-level covariates in our repeated measures ANOVAs and did not find them to interact with condition in predicting match-fixing susceptibility. In our MLM analyses, our hypotheses are specified at the within person level and are examining an individual's deviations from their mean score, rather than examining between-person differences, thus, controlling for such variables at the between level does not influence our findings. Level 2 (between person in our case) can only explain variance at level 2 and not at level 1 (within person in our case), the level at which our hypotheses were specified.

Results

Preliminary data analysis

Correlations amongst study variables are outlined in Table 2. We conducted manipulation checks to examine differences across the vignettes with regard to attribution source and stability, using repeated measures ANOVAs. As Mauchly's test of sphericity was not satisfied ($\chi^2 = 141.02$; $df = 27$; $p < .05$), we report Wilk's lambda, as it does not depend on the assumption of sphericity (Field, 2006). For attribution source, results indicated that there were significant differences across the scenarios (Wilks' Lambda = 0.883; $F = 7.745$; $df = 7, 408$; $p < .05$). We then examined the pairwise comparisons. No significant differences in attribution source were found in scenarios five to eight (where the source was internal), as expected. However, scenarios five to eight were only significantly different from scenario one and three and were not significantly different from scenarios two and four (in scenarios one through four, the source was external). In line with this, scenarios one (high power, external-unstable) and three (high power, external-stable) were significantly different from two (low power, external-unstable) and four (low power, external-stable), contrary to our expectations. Thus, our manipulation was partially successful with regard to attribution source. Looking to the pairwise comparisons for stability, scenario four (low power, external stable attribution) was significantly different from scenario one (high, power, external unstable attribution) and scenario three (high power, external stable attribution). Scenario two (low power, external unstable attribution) was also significantly different from scenario three. Thus, our manipulation was largely successful with regard to the stability component of attributions.

Prior to conducting multi-level analyses, we assessed the amount of variance at level 1 (experimental manipulation) and level 2 (person) for each of our variables or interest. For all variables, the intra-class correlations (ICC1s) indicated that there was a substantial amount of variance at both levels: match-fixing susceptibility (ICC1 = 0.487 indicating that 48.7% of the variance is at level 2), guilt (ICC1 = 0.481), shame (ICC1 = 0.498), pride (ICC1 = 0.455), indifference (ICC1 =
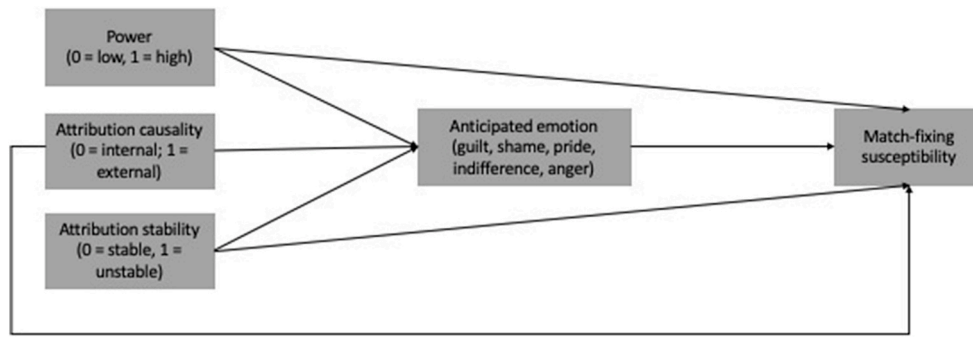
Fig. 1. Hypothesised indirect effect of conditions on match-fixing susceptibility via anticipated moral emotions. All relationships are modelled at Level 1 in the multi-level model. Only means and variances of the dependent variables are modelled at Level 2.

Table 2
Correlations amongst study variables.

		1	2	3	4	5	6	7	8	9	10	11	12
1	Age		−0.097	0.095	−0.094	−0.097	0.098	−0.102	0.008	0.080	0.084	−0.018	0.001
2	Gender	-.096**		0.012	−0.010	0.09	0.007	-.303**	.318**	.310**	-.203**	-.407**	.255**
3	Athlete status	.093**	.014		−0.065	−0.054	0.113	−0.113	.231**	.194**	0.114	0.048	.182**
4	Power	-.003	.000	-.001		.147**	.205**	−0.001	−0.056	−0.016	−0.061	−0.023	0.034
5	Attribution source	-.003	.002	-.001	-.002		.543**	−0.008	−0.068	−0.048	-.117*	-.111*	−0.036
6	Attribution stability	.002	.000	.002	.004	.005		0.000	−0.106	−0.065	−0.056	−0.095	−0.014
7	Match-fixing susceptibility	-.080**	-.224**	-.086**	-.054**	-.095**	-.070**		-.505**	-.452**	.325**	.319**	-.398**
8	Guilt	.000	.238**	.171**	.004	.121**	.093**	-.469**		.872**	-.360**	-.235**	.705**
9	Shame	.053*	.235**	.150**	.026	.112**	.083**	-.439**	.756**		-.273**	-.223**	.673**
10	Pride	.054*	-.147**	.081**	-.049*	-.070**	-.054**	.245**	-.326**	-.286**		.410**	−0.107
11	Indifference	-.005	-.282**	.041	-.007	-.097**	-.072**	.214**	-.246**	-.240**	.279**		-.149**
12	Anger	-.006	.188**	.131**	.053**	.133**	.071**	-.377**	.559**	.546**	-.139**	-.190**	

**Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).
Note: Correlations below the diagonal are based on the non-nested repeated measures. Correlations above the diagonal are based on the aggregated data.

0.397) and anger (ICC1 = 0.471). Thus, multi-level modelling was appropriate.

Hypothesis testing

To examine the effects of power (Hypothesis 1) and causal attributions (Hypothesis 2) on match-fixing susceptibility, we conducted a multi-level regression model in Mplus (version 8), regressing match-fixing susceptibility on the three binary condition variables (power, attribution source and attribution stability) at the within level and modelled the variance of the dependent variable at the between level.[2] The results (see Table 3) demonstrated that the manipulations explained a small amount of variance in match-fixing susceptibility ($R^2 = 0.033$) and were negatively associated with susceptibility to fix a match, indicating that when power is low (B = −0.178; p < .01), and the attribution is internal (B = −0.324; p < .01) and stable (B = −0.227; p < 01) individuals are likely to engage in match-fixing. Although the findings for power are contrary to those expected, they seem to indicate participants' view that match-fixing is most likely when it is a function of the individual (i.e., when they attribute the cause to internal stable characteristics of the individual) and in such situations, power may be less important. Thus, hypotheses 1 and 2 were partially supported.

We repeated the multi-level regression analyses for each of the five anticipated emotions (see Table 3). Guilt (Attribution source: B = 0.251; p < .01; Attribution stability: B = 0.195; p < .01), shame (Source: B = 0.235; p < .01; Stability: B = 0.176; p < .01) and anger (Source: B = 0.290; p < .01; Stability: B = 0.150; p < .01), were associated with external unstable attributions, and power was positively associated with

anger (B = 0.107; p < .01) but not guilt or shame. In contrast, pride was associated with low power (B = −0.087; p < .01) and internal attributions (B = −0.114; p < .01), but the stability of the attributions was not significant. Finally, indifference was associated with internal (B = −0.172; p < .01), stable (B = −0.128; p < .01) attributions but power was not significant. The model explained 4.7% of the variance in anger, 4.5% in guilt, 4.1% in shame, 2.3% in indifference, and 1.8% in pride (see Table 4).

To investigate whether the effect of power and attributions on match-fixing susceptibility acted through the anticipated emotions (Hypothesis 3), we conducted five multi-level path analyses drawing on the guidelines for multi-level mediation developed by Preacher et al. (2010). We used the Mplus syntax for 1-1-1 as outlined the appendix of Preacher et al. (2010). The findings are reported in Table 4 and we use the more stringent significance value of 0.01 when interpreting our findings. We also present the additional variance explained in each indirect effects model in Table 5. First, all five of the anticipated emotions predicted match-fixing susceptibility. Guilt (B = −0.608; p < .01), shame (B = −0.596; p < .01), and anger (B = −0.453; p < .01) were negatively associated with match-fixing susceptibility, while pride (B = 0.251; p < .01) and indifference (B = 0.172; p < .01) were positively associated.

Attribution source and attribution stability had an indirect effect on match-fixing susceptibility via guilt (attribution source B = −0.152; p < .01; attribution stability B = −0.119; p < .01), shame (attribution source B = −0.139; p < .01; attribution stability B = −0.106; p < .01) and anger (attribution source B = −0.131; p < .01; attribution stability B = −0.068; p < .01). In all cases, the indirect effect of attribution source and stability was negative indicating that external unstable attributions were associated with higher levels of guilt, shame and anger. There was an indirect effect from attribution source via pride (B = −0.029; p < .01) but not from attribution stability (using the more stringent p value of

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[2] For researchers interested in differences across the conditions using traditional repeated measures ANOVAs, we report these in Appendix 2.

Table 3

Direct effects of condition on match-fixing susceptibility and anticipated moral emotions.

Parameter	Match-fixing susceptibility		Guilt		Shame		Pride		Indifference		Anger	
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE
Fixed Effects												
Power	-.178**	.045	.005	.029	.051	.027	-.087**	.024	-.023	.027	.107**	.030
Attribution source	-.324**	.047	.251**	.033	.235**	.030	-.114**	.026	-.172**	.033	.290**	.036
Attribution stability	-.227**	.046	.195**	.029	.176**	.028	-.086	.025	-.128**	.029	.150**	.032
R^2	.033**	.008	.045**	.009	.041**	.008	.018**	.006	.023**	.007	.047**	.010
Variance components												
Random intercept	2.550	.084	2.216**	.100	2.107**	.097	1.146**	.079	1.003**	.045	1.611**	.078
Residual variance	1.358**	.098	.955**	.009	.959**	.008	.982**	.006	.502**	.029	.963**	.010
Fit statistics												
AIC, BIC	8254.45, 8289.11		6059.16, 6093.93		6052.82, 6087.59		5215.46, 5250.22		5793.09, 5827.85		6303.24, 6338.00	
AIC, BIC for null model	8327.97, 8345.33		6165.41, 6182.79		6146.97, 6164.36		5253.13, 5270.98		5842.51, 5859.89		6414.24, 6431.62	

Note: All parameters are unstandardized. AIC, Akaike Information Criterion, BIC, Bayesian Information Criterion, *p < .05, **p < .01.

Table 4

Indirect effects of condition on match-fixing susceptibility via each anticipated moral emotion.

Parameter	Via Guilt		Via Shame		Via Pride		Via Indifference		Via Anger	
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE
Fixed Effects (on match-fixing susceptibility)										
Power	-.180**	.044	-.150**	.044	-.157**	.045	-.177**	.045	-.130**	.044
Attribution source	-.159**	.044	-.172**	.043	-.286**	.046	-.286**	.046	-.183**	.046
Attribution stability	-.113**	.043	-.123**	.044	-.286**	.046	-.205**	.045	-.158**	.043
Anticipated moral emotion	-.608**	.055	-.596**	.057	.251**	.063	.172**	.054	-.453**	.046
Indirect 1: Power	-.002	.038	-.030	.016	-.022*	.008	-.002	.005	-.049**	.015
Indirect 2: source	-.152**	.026	-.139**	.024	-.029**	.011	-.030*	.012	-.131**	.021
Indirect 3: stability	-.119**	.020	-.106**	.020	-.022*	.009	-.022*	.009	-.068**	.016
Fixed Effects (on moral emotion)	**Guilt**		**Shame**		**Pride**		**Indifference**		**Anger**	
Power	.003	.029	.050	.027	-.087**	.024	-.013	.027	.107**	.030
Attribution source	.251**	.032	.234**	.030	-.114**	.026	-.172**	.033	.289**	.036
Attribution stability	.195**	.195	.178**	.028	-.086**	.025	-.129**	.029	.151**	.032
Variance components										
Random intercept (moral emotion)	1.611**	.052	1.570**	.052	.655**	.042	1.00**	.045	1.211**	.056
Random intercept (match-fixing susceptibility)	2.555**	.085	2.551**	.084	2.551**	.096	2.551**	.084	2.550**	.084
Residual variance (moral emotion)	.638**	.027	.532**	.028	.385**	.026	.503**	.029	.599**	.029
Residual variance (match-fixing susceptibility)	1.171**	.080	1.176**	.081	1.336**	.096	1.345**	.098	1.241**	.088
Fit statistics										
AIC, BIC	13995.12, 14070.60		14001.63, 14077.16		13434.62, 13468.80		14026.81, 14102.30		14365.20, 14440.68	

Note: AIC, Akaike Information Criterion, BIC, Bayesian Information Criterion, *p < .05, **p < .01. We use the more stringent value of p < .01 in the interpretation of the indirect effects and do not interpret indirect effects that have p values less than. 05 but greater than 0.01 as significant.

Table 5

Calculation of additional Level 1 variance explained by the addition of the indirect paths.

Outcome: Match-fixing susceptibility		Via Guilt	Via Shame	Via Pride	Via Indifference	Via Anger
Level 1 residual variance - direct effects only (a)	1.358					
Level 1 residual variance - indirect effects model (b)		1.171	1.176	1.336	1.345	1.241
Additional variance explained by addition of indirect paths (b - a)		0.187	0.182	0.022	0.013	0.117
% additional variance explained (b-a/a*100)		**13.77%**	**13.40%**	**1.62%**	**0.96%**	**8.62%**

Note: (a) is taken from Table 3, (b) is taken from Table 4.

.01) and the indirect effect via indifference did not reach significance at our more stringent p value of .01.

Power only had an indirect effect on match-fixing susceptibility via anger (B = −0.049; p < .01). This indirect effect was negative such that a request from a high power individual acted to increase anger and as anger was negatively associated with match-fixing susceptibility, this accounted for the negative indirect effect. Thus, Hypothesis 3 was partially supported.

Table 5 outlines the percentage of additional variance explained by the addition of the indirect paths in our models. This corroborates our interpretation that the anticipated emotions of guilt, shame and anger had the strongest effects as mediators, explaining an additional 13.77%, 13.40% and 8.62% of the Level 1 residual variance in our models, compared to the direct effects only model.

Discussion

In this study, we investigated the joint role of power and attributions on the susceptibility to engage in match-fixing. Our findings confirmed that engaging in match-fixing is most likely when the motivation for it was attributed as a stable aspect of the individual, and following this, in situations of high power, regardless of the attribution. Our findings also point to the importance of considering discrete emotions and the need to consider context (Gooty et al., 2009; Hu & Kaplan, 2015). The findings demonstrated distinct contextual differences in the experience of emotions, with guilt, shame and anger being associated with external, unstable attributions. High power was associated with higher levels of anger and lower pride, but not with other anticipated emotions.

More specifically, the findings point to the fact that respondents

considered those most susceptible to match-fixing when the reason has something to do with the individual themselves (i.e., when attributions are internal and stable). The vignette for this condition provided a character for whom betting was a hobby and who got a thrill from gambling (see Table S1 in the supplementary information). This finding suggests that the perception is that many athletes engage in match-fixing to satisfy their gambling behaviour, or even their gambling addiction. In fact, the internal and stable attribution was a stronger predictor of match-fixing susceptibility than power. These findings corroborate previous evidence suggesting that athletes with vulnerable personalities and finances are more likely to engage in match fixing (Tak et al., 2018). Therefore, our findings supported the assertion that gambling is an important determinant of match-fixing. Still, our study did not distinguish between gambling to earn money, as Tak et al. (2018) suggested, or gambling due to an addiction, as Hill (2015) implied, so it is inconclusive whether athletes fix a game and bet to earn money or if gambling addiction urges them to fix a match as a result of a sensation seeking lifestyle. Future research should more carefully investigate the association of betting and gambling with match-fixing. Nevertheless, betting and gambling should be taken into account in educational efforts to tackle match-fixing. Addressing the gambling addiction and increasing awareness about the legal consequences of betting for athletes should be included in any relevant educational campaigns.

As expected, the role of power was important. The results showed that when there was pressure to engage in match-fixing from a powerful authority, attributions had less impact. This is in line with previous evidence, policy reports and anecdotal evidence suggesting that authority is an important determinant of match-fixing (Costa, 2018; Europol, 2013; Sorbonne University & ICSS, 2014; Tak et al., 2018; UNODC, 2016) and highlight the important role socio-cultural environment may play in the decision to engage in match-fixing (Han, 2020; Tak et al., 2018; 2020). It is also in line with prior theorizing about the role of power on subordinates' cognition, affect and behaviour (Zhang & Liao, 2015). Our data suggest that athletes feel anger and a lack of pride in themselves if they succumb the pressure to fix a match when this is made by a powerful authority. This may stem from a sense of powerlessness or lack of control as to the consequences if they don't such as losing playing time in the games or a better contract, or even retaliation in case the offer is made by a criminal network. It is possible that athletes feel there is no way out from this position, and they can't avoid engaging in match-fixing. Another plausible explanation is that athletes make an incorrect moral judgement (see Hill, 2009, 2010; Van den Van Der Hoeven et al., 2020), and rationalise their behaviour by displacing their responsibility to others (i.e., coach, club officials, and criminal networks). The use of such justification mechanisms has been found useful in helping athletes while performing unethical behaviours to avoid negative emotions and maintain their self-worth (Bandura, 2002). If this is the case, education against match-fixing should assist athletes find ways to avoid the pressure, identify justifications and overcome them, and get out from the obligation to engage in match-fixing. Also, educational activities demonstrating the consequences of being associated with criminal networks if acquiescing to requests to engage in match-fixing (see the Calciopolis case) is expected to strengthen athletes' ability to turn the offer down and not engage in match-fixing in the first place. Furthermore, developing athlete's assertiveness skills would provide them with the necessary skills to refuse such offers and avoid future pressure by the authority. In addition, integrity organizations should provide ways to help athletes avoid such offers. For instance, the development of robust reporting systems ensuring anonymity, fast and transparent management of a report would be helpful in providing athletes with a way to avoid the pressure (see also Van de Hoeven, 2020). Still further research is needed on the way athletes perceive the pressure put by authorities with respect to match-fixing, how they deal with this pressure, and what psycho-social manoeuvres they use to justify their behaviour.

Importantly, our findings demonstrated that the effect of attributions and power on match-fixing susceptibility act through largely distinct anticipated emotions. External unstable attributions were associated with higher levels of guilt, shame and anger, which in turn reduced match-fixing susceptibility. These findings indicate that when athletes experience situations that are imposed externally by an authority and they can't exert any control on their behaviour they feel ashamed, guilty and angry. If this is the case, our findings confirm previous evidence on the role of anticipated emotions on the decision to engage in a corrupted activity (Lazuras et al., 2017; Ring & Hurst, 2019) and suggest that anticipated emotions may play a protective role in athletes' decision towards match-fixing. Thus, we extend these findings by examining the role of different distinct emotions as a result of different causal attributions in the context of match-fixing. Therefore, future interventions and awareness campaigns should incorporate actions highlighting the negative emotions athletes will experience when involved in match-fixing. In addition, these findings may indicate that athletes tend to justify their decision to engage in match-fixing in order to diminish the experience of such negative emotions (Bandura, 2002). Therefore, future studies should investigate more thoroughly how athletes deal with anticipated negative emotions associated with involvement in match-fixing.

Similar findings were reported for the relationship between power and anticipated emotions. Although the direct effect of power on match-fixing susceptibility was somewhat confusing at first glance (negative relationships between power and match-fixing susceptibility), our results point to the importance of considering the role of anticipated emotions as a mediator in this relationship. High power was associated with lower levels of pride and higher anger and these emotions seem to protect the individuals somewhat from acquiescing to a request to match-fix from a person in a position of power over an individual. These findings support previous evidence highlighting the role of emotions on our behaviour (Depping & Mandryk, 2017; Weiner, 2014) and point to the importance of considering the mediating role of emotions in understanding the role of power on match-fixing. More specifically, our findings provide evidence for the protective role of anticipated emotions on match-fixing susceptibility. Therefore, relevant educational activities such as case studies and examples of athletes should be included in interventions aiming to tackle match-fixing.

Limitations

Although the use of a quasi-experimental vignette design has some advantages in that it allowed us to experimentally manipulate the power of the individual requesting an athlete to engage in match-fixing as well as the causal attributions, it was not without limitations. While an experimental design limits the external validity of research, it is unlikely that individuals will honestly report accurately their own engagement in match-fixing and so, using a vignette design about a hypothetical other athlete allowed us to capture athlete's thoughts regarding the role of power and attributions in susceptibility to match-fixing. Furthermore, while there were significant differences in our scenarios in terms of power, there were some issues with our manipulation of attributions. It may be that external power in some instances overrides the necessity of individuals to infer attributions, which is something that future research may need to clarify. Furthermore, future studies should more closely examine whether perceptions of the authority's legitimacy (e.g., club officials; federation, etc.) can play a role on the effect of power on match-fixing susceptibility.

We obtained participants responses on a delicate issue, such as match-fixing, through self-reports. Future studies should include measures of social desirability to better control for honest responses. However, the use of vignettes based on the behaviour of hypothetical 'other people' are useful in capturing insights into individuals' feelings and behaviours that they may not be willing to answer with regard to their own behaviour (e.g., Evan et al., 2015). While there was a risk of common method bias in our design, the use of the within person design

meant that we compared an individual's deviation in each condition to their mean score, and so our results are less impacted by potential individual differences at the between person level.

Conclusion

Overall, this is one of the first studies to empirically test a potential psychological mechanism underpinning the decision to engage in match-fixing. The interplay among attributions, power and specific anticipated emotions was found to determine athletes' susceptibility to match fix. Our findings provide useful information for the understanding of athletes' cognition and emotions about match-fixing, and for the development of prevention interventions because it points to the role of interpersonal processes of power and attributions, as well as the protective role of anticipated emotions. Our findings highlight gaps to be addressed in future research, and to key psychological areas relevant to include in interventions and policies to protect athletes from being vulnerable to match-fixing requests.

Declaration of competing intererst

The authors declare that there is no conflict of interest.

Acknowledgements

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.psychsport.2021.101955.

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