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A qualitative investigation of coaches' doping confrontation efficacy beliefs

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DOI: 10.1016/j.psychsport.2019.101576 License:

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Document Version Peer reviewed version

Citation for published version (Harvard):

Boardley, I, Grix, J, Ntoumanis, N & Smith, A 2019, 'A qualitative investigation of coaches' doping confrontation efficacy beliefs', *Psychology of Sport and Exercise*, vol. 45, 101576. https://doi.org/10.1016/j.psychsport.2019.101576

Link to publication on Research at Birmingham portal

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3	A Qualitative Investigation of Coaches' Doping Confrontation Efficacy Beliefs
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Objectives: To investigate the nature of doping confrontation efficacy (DCE) beliefs – as well as their antecedents and outcomes – through a qualitative examination of Sullivan, Feltz, LaForge-MacKenzie, and Hwang's (2015) DCE model with high-level technical and strength and conditioning (S&C) coaches from athletics and rugby union. Design: Qualitative, descriptive. *Methods*: Semi-structured interviews were conducted with 21 coaches ($n_{male} = 15$, $n_{female} = 6$; $n_{\text{technical}} = 11$, $n_{\text{S\&C}} = 10$; $n_{\text{athletics}} = 5$, $n_{\text{rugby}} = 13$, $n_{\text{rugby}} \& a_{\text{athletics}} = 3$), working at a regional, national, or international level in athletics, rugby, or both sports. Study data were analyzed deductively using content analysis techniques. Results: Data analysis supported the relevance of all five dimensions of DCE (i.e., personal resources, initiation, legitimacy, intimacy, and expected outcomes) to coaching practice in athletics and rugby, identifying key potential antecedents (e.g., coach education) and outcomes (e.g., likelihood of confronting athletes on doping-related issues) of coach DCE beliefs relevant to one or more of the DCE sub-dimensions. Deficits in coaches' anti-doping knowledge were also identified, supporting the need for improved anti-doping education for coaches.

18 *Conclusion:* By conducting the first qualitative examination of DCE beliefs, we enriched

understanding of the DCE model and identified a range of possible antecedents and outcomes

of DCE beliefs in technical and S&C coaches. Based on the results of this study,

²¹ recommendations are posed for revising and expanding the DCE model. Practical

recommendations are also offered for coach education.

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Keywords: Performance-enhancing drugs, semi-structured interviews, coach behavior, coach athlete relationship, coaching efficacy.

A Qualitative Investigation of Coaches' Doping Confrontation Efficacy Beliefs				
Coaches are important social agents in sport, with significant potential to shape athlete				
outcomes (Côté & Gilbert, 2009). Conceptual models of coaching suggest coach confidence				
is an important antecedent of coach behaviors leading to effective athlete development				
(Boardley, 2018; Feltz, Chase, Moritz, & Sullivan, 1999). A specific aspect of coach				
confidence relevant to athlete development is confidence in the ability to confront doping				
(Sullivan, Feltz, LaForge-Mackenzie, & Hwang, 2015). The world anti-doping code				
(WADC) defines doping as the engagement in any of ten anti-doping rule violations (ADRV;				
World Anti-Doping Agency, 2015). However, for the purposes of the current research we				
focus mainly on ADRV 2.2, which relates to the use or attempted use by an athlete of a				
prohibited substance or method (World Anti-Doping Agency, 2015). Given its potential for				

facilitating an unfair advantage over opponents and possible negative health effects, doping

constitutes a significant issue in sport (Donovan, Egger, Kapernick, & Mendoza, 2002). As

such, it is vital coaches develop the confidence to confront athletes on doping issues. The

overall aim of the current research was to investigate the nature of such confidence and

factors that may influence and result from it.

Research to date supports the potential role of coaches in regulating doping in sport (e.g., Dodge & Robertson, 2004; Engelberg, Moston, & Blank, 2019; Laure, Thouvenin, & Lecerf, 2001; Ntoumanis, Barkoukis, Gucciardi, & Chan, 2017; Patterson & Backhouse, 2018). For instance, 98% of graduate professional coaches in France believed they have a role to play in preventing doping (Laure et al., 2001). However, of concern is that 80% considered themselves to be inadequately trained in doping prevention. Also, of concern is research reporting athletes at times justify doping based upon coaching behaviors (Dodge & Robertson, 2004). This finding is supported by research demonstrating positive links between perceptions of controlling coach behaviors (e.g., coercive, pressuring, and authoritarian

behaviors) and doping intentions and doping behavior (Ntoumanis et al., 2017). It is possible 1 coaches who use controlling behaviors may communicate messages (e.g., win at all costs) 2 through their actions or words that potentially promote justification of doping by athletes. 3 Further, recent research interviewing elite-level coaches from a range of sports found many 4 coaches showed evidence of very poor knowledge on key anti-doping control systems 5 (Engelberg et al., 2019). Importantly, Patterson and Backhouse (2018) found similar deficits 6 in knowledge with a sample of football and rugby coaches, also finding such poor knowledge 7 and understanding led to a perceived lack of self-efficacy to work with players on doping 8 related issues. Thus, whilst the extant literature highlights the considerable potential coaches 9 have to influence athlete doping, it also signifies coaches may not have the knowledge or 10 confidence to effectively address doping issues with athletes. As such, there is a need to 11 better understand the key aspects of coaches' confidence to address doping, as well as 12 important factors that may influence the development of these aspects. 13

A recent model of relevance to coaches' confidence in addressing doping is the 14 doping confrontation efficacy (DCE) model proposed by Sullivan et al. (2015). Two 15 theoretical frameworks were central to the development of this model. The first was the 16 coaching efficacy model proposed by Feltz, Chase, Moritz, and Sullivan (1999). Coaching 17 efficacy represents coaches' belief in their ability to impact the learning and performance of 18 athletes. Given this model does not focus specifically on coaches' confidence in doping 19 confrontation, Sullivan et al. (1999) developed a model of coach efficacy directly centered on 20 coaches' confidence to confront doping. The second guiding model was Newell and 21 Stutman's (1988, 1991) social confrontation model, which conceptualizes confrontations as 22 active discussions between the confronter and the confronted (Newell & Stutman, 1991). 23 Effective confrontations should include discussion of not only the problem (i.e., doping in 24 this case), but also possible causes and solutions. The confronter should also present the 25

reasons for behavior change and express concern for the confronted, whilst avoiding personal
 attacks or criticisms (Malis & Roloff, 2007).

Given the various components of confrontations proposed in Newell and Stutman's 3 (1988, 1991) guiding framework, Sullivan et al. (2015) proposed DCE as an overarching 4 construct reflected in five lower-order dimensions. The first of these is *initiation*, which 5 refers to coaches' beliefs in their ability to confront athletes regarding doping issues and 6 establish the purpose (e.g., understand the athletes' perspective, offer appropriate solutions) 7 for the confrontation. In turn, efficacy regarding *legitimacy* is also important, relating to 8 belief in a coach's ability to establish valid grounds for establishing a confrontation. Such 9 grounds are whether the athlete has violated a rule and whether the infringed rule is relevant. 10 Next, coaches need to be confident they have the *personal resources* (i.e., time, energy, and 11 information) required to cope effectively with the cognitive and emotional demands involved 12 in confrontations (see Reznik, Roloff, & Waite Miller, 2010). The fourth sub-dimension is 13 intimacy, pertaining to coaches' confidence in their ability to confront athletes without 14 appearing judgmental, which could threaten the coach-athlete relationship. Finally, expected 15 outcomes relate to coaches' beliefs in their ability to confront athletes despite the possibility 16 of both positive (e.g., cessation of intention to dope) and negative (e.g., weakening of the 17 coach-athlete relationship) outcomes. These five lower-order dimensions sit under the 18 overarching DCE construct, which represents the extent to which coaches believe in their 19 abilities to effectively confront athletes regarding doping and offer appropriate solutions 20 (Sullivan et al., 2015). 21

Sullivan et al. (2015) employed several stages to develop and test a measure designed to examine and represent the DCE model. First, they created a comprehensive list of 64 items designed to assess the five dimensions of DCE represented in the social confrontation model (Newell & Stutman, 1988, 1991), with items based upon those used in existing social

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confrontation measures. Eight experts then appraised the 64 items for face and content validity. Based on the appraisals the researchers deleted some items and revised others, resulting in a final list of 45 items to take forward for further testing. Sullivan and colleagues (2015) then collected DCE ratings on these items from five hundred and sixty coaches of high-school athletes, using the responses to examine the dimensional structure and select the final measure items. Factor analyses supported the hypothesized 5-factor structure, and the researchers selected 21 items for use in the final measure. Whilst this work supports the proposed DCE model, it was focused on developing a quantitative measure of DCE and not

on capturing in-depth perspectives of coaches. As such, qualitative examination of the model
with coaches could further enrich our understanding of it. This could be especially helpful in
understanding antecedents and outcomes of DCE.

Based upon the nature of the five sub-dimensions, it is possible to identify some 12 probable antecedents of coach DCE beliefs. For example, coaches are likely to have elevated 13 levels of legitimacy beliefs if they have reliable information on the issue tied to a 14 forthcoming player confrontation (Newell & Stutman, 1991; Sullivan et al., 2015). If a coach 15 has dependable evidence that an athlete has violated an anti-doping rule, it is legitimate to 16 confront the athlete on this issue. Also, coaches' personal resources beliefs are likely to be 17 higher if they are well educated on doping issues, as this should increase their abilities to 18 clearly communicate and defend their position (see Reznik, Roloff, Waite, & Miller, 2010). 19 Further, adequate space within coaches' workloads should underpin the time element of 20 personal resources. A final example of an antecedent to DCE may be empathy, which could 21 be important in bolstering intimacy beliefs. The ability to understand and experience an 22 athlete's possible responses to being confronted should promote coaches' confidence in the 23 ability to provide support for the athlete and avoid the confrontation being viewed as a 24 personal attack (see Malis & Roloff, 2007). Despite the importance of understanding factors 25

that may influence coaches' DCE beliefs, researchers to date have not examined possible
 antecedents of these beliefs.

There are also several possible outcomes of coach DCE beliefs. For instance, 3 heightened levels of initiation should lead to more effective openings to confrontations, 4 increasing the likelihood that confronted athletes will fully understand the purpose of the 5 confrontation (Newell & Stutman, 1991; Sullivan et al., 2015). Next, coaches with elevated 6 levels of legitimacy should be more likely to initiate a confrontation (Malis & Roloff, 2007; 7 Reznik & Roloff, 2009). Similarly, coaches who are low in expected outcomes may be more 8 likely to avoid confrontations if they anticipate negative outcomes stemming from them (see 9 Caughlin & Afifi, 2004). However, as with possible antecedents, researchers have not so far 10 examined coaches' perspectives on possible outcomes of DCE beliefs. 11

Although researchers have not yet examined direct outcomes of coach DCE beliefs, 12 athlete attitudes towards doping have been examined as a possible outcome of athlete 13 perceptions of coach DCE beliefs. Weak-to-moderate negative associations have been 14 observed between athletes' perceptions of their coaches on all five dimensions of DCE and 15 their attitudes towards doping (Sullivan & Razavi, 2017). Thus, as levels of perceived coach 16 DCE are higher, athletes show less positive attitudes towards doping. Based upon the revised 17 coaching efficacy model (see Boardley, 2018), it is possible athlete perceptions of coach 18 DCE are influenced by observations of relevant coaching behaviors (e.g., coach responses to 19 media reports of doping). For instance, heightened athlete perceptions of coach DCE may 20 result from athletes frequently observing coach behaviors that explicitly deter use of 21 performance enhancing drugs (Sullivan et al., 2015). Such behaviors reflect negative coach 22 attitudes toward doping, attitudes that may come to be internalized by athletes. Therefore, in 23 the absence of more direct evidence, the findings of Sullivan and Razavi (2017) provide 24

- indirect support for the possibility that elevated levels of coach DCE may be linked with
- 2 desirable outcomes for coach behavior.

Whilst Sullivan et al.'s (2015) DCE model has clear potential to inform our 3 understanding of factors influencing coach behaviors relevant to doping, to date researchers 4 have not qualitatively examined this model. As a result, we have little understanding of how 5 coaches perceive the different components of DCE. Thus, one aim of the current research was 6 to investigate the nature of DCE beliefs from the perspective of coaches. Also, researchers 7 have so far not investigated factors that may influence and stem from DCE beliefs. It is 8 therefore possible there are important factors beyond those proposed by Sullivan et al. (2015) 9 that could inform the model. Therefore, a second aim was to identify and examine possible 10 antecedents and outcomes of DCE beliefs through qualitative interviews with coaches. In 11 doing so, we sought to identify which antecedents are most salient and which outcomes are 12 most prominent, from the perspective of coaches. The WADC (World Anti-Doping Agency, 13 2015) specifies that athlete support personnel should "be knowledgeable of and comply with 14 all anti-doping policies and rules adopted pursuant to the Code and which are applicable to 15 them or the Athletes whom they support" (p. 114). As they work with athletes within testing 16 pools, there is an onus upon high-level coaches to understand and comply with anti-doping 17 policies and rules. As such, we focused our research on coaches working at this level. 18

A further limitation in current research is that the potential impact of S&C coaches on athlete doping has largely been neglected. Instead, studies designed to investigate the effect of coaching on athlete doping have exclusively focused on technical (i.e., head) coaches. However, S&C coaches may be well placed to influence athlete doping, with some research even suggesting S&C coaches are potential suppliers of doping substances (Engelberg et al., 2019). This is likely due to coaches working predominantly in gymnasia, environments in which doping is uniquely prevalent (Boardley, Smith, Mills, Grix, & Wynne, 2017; Sjöqvist,

Garle, & Rane, 2008). Because S&C coaches generally interact with athletes in environments
in which doping is more pervasive than other sport training environments, S&C coaches may
be ideally situated to confront and guide athletes on doping issues. Thus, research
investigating coach influences on doping should consider the potential influence of S&C
coaches alongside that of technical coaches. When addressing the main aims of the study, we
examined the perspectives of both technical and S&C coaches accordingly.

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Methodology

8 Philosophical Underpinnings

This research is philosophically grounded in post-positivism. More specifically, whilst 9 adhering to the notion there is some objective reality within the social world, we 10 acknowledge social science is often interpretative which precludes the categorical discovery 11 of such reality (see Fox, 2008). Whilst maintaining there is an objective social reality that 12 could be discerned if sufficiently sophisticated tools were available, we recognize any 13 examination of the social world is inevitably value- and theory-laden, as well as context-14 dependent. However, we believe through sustained examination of a topic using relevant 15 approaches applied with methodological rigor and scrupulous data analysis, it is possible to 16 derive an approximation to truth. Naturally, it follows that the questions we ask, the way our 17 data is collected and analyzed and the conclusions we draw are inextricably linked to our 18 post-positivist position (see Hay, 2002). Considering our post-positivist position, we use 19 interviews because we believe participant responses provide a window to understanding 20 values of coaches in a context-informed way. Further, our adoption of a primarily deductive 21 approach to data analysis using categories derived from theory also aligns with our post-22 positive stance. 23

24 Participants

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1	Twenty-one coaches participated in the study ($n_{male} = 15$, $n_{female} = 6$; $n_{technical} = 11$, $n_{S\&C} = 10$).
2	Coaches' ages ranged from 27 to 72 years ($M = 38.1$); they worked at a regional ($n = 8$),
3	national $(n = 7)$, or international $(n = 6)$ level in either athletics $(n = 5)$, rugby $(n = 13)$, or
4	both sports ($n = 3$). ¹ See Table 1 for details for each coach. Rugby and athletics were selected
5	because they utilize both technical and S&C coaches, and relatively high percentages of anti-
6	doping rule violations (ADRVs) have been reported for their athletes (World Anti-Doping
7	Agency, 2019). Specifically, between 2013 and 2016 these two sports were consistently in
8	the top ten sports for number of ADRVs and were above the mean for the samples to ADRV
9	ratio (World Anti-Doping Agency, 2019).

10 Interview Schedule

Interviews followed a protocol developed by the first and second author based upon relevant 11 theory and past research to identify themes relating to the five dimensions of DCE defined by 12 Sullivan et al. (2015). The protocol opened with introductory comments, definitions of key 13 terms (e.g., performance enhancing drugs, doping) to be used during the interview, and a 14 brief discussion of the interviewee's coaching history. Following this, open-ended questions 15 on doping in general (e.g. "In general, what do you think are the main reasons athletes in your 16 sport use performance enhancing drugs?"; "What are your thoughts regarding the morality of 17 using performance enhancing drugs?"), were posed, followed by more targeted questions 18 regarding DCE beliefs (e.g., "What things are likely to influence a coach's abilities to ask an 19 athlete if they have used performance enhancing drugs?"; "How confident are you in your 20 ability to confront an athlete about doping whilst avoiding personal criticism?"; "How 21 confident are you in your ability to establish the reason for confronting an athlete about 22

¹ Although we sampled specifically from these two sports, the study was not designed to make comparisons between them.

doping?"). The interview then closed with an opportunity for the interviewee to discuss any

- ² further topics believed to be relevant to the topics discussed during the interview.
- 3 **Procedures**

Purposeful sampling was used to recruit male and female technical and S&C coaches who 4 had coached in one of the two target sports at a regional level or higher for a minimum of one 5 year. Participants were recruited by contacting UK governing bodies for the two sports, as 6 well as the English Institute of Sport and asking them to provide potential participants with 7 details of the study and the contact details for members of the research team. Existing 8 contacts within the research team were also used to recruit participants. Finally, several clubs 9 were contacted directly using publicly available contact information to recruit participants. 10 Once contact was made, all potential participants were fully informed regarding the aims of 11 the research and what participation would involve, as well as what would be done with the 12 data collected. Upon receipt of participant consent, semi-structured interviews were 13 conducted face-to-face and in private by a research associate who followed a pre-determined 14 schedule. Interviews were recorded using a Dictaphone and lasted 28 to 52 minutes (M = 3715 minutes). Interviews were subsequently transcribed verbatim by the research associate. 16

17 Data Analysis

Data were analyzed deductively using content analysis techniques, which are appropriate 18 when examining a specific model using qualitative data (Hsieh & Shannon, 2005). This 19 involved the application of operational definitions (see introduction for definitions) for the 20 five dimensions of DCE when content-analyzing the data. The second author content 21 analyzed the data by reading each transcript and highlighting all text relevant to one of the 22 dimensions of DCE; he then coded each highlighted passage according to the relevant 23 predetermined code (see Hsieh & Shannon, 2005). We also allowed for an 'other' category 24 within our data analysis strategy to include any data that we could not code directly into one 25

of the five DCE dimensions. However, this did not lead to the development of any new
 themes.

3 Research Quality

Given our post-positivist philosophical position, we appreciate the influence we will have had
on our study. For instance, our collective assumptions, knowledge, skills and experiences will
have influenced our research aims, the interview protocol, data analysis, and report writing.
To maximize the quality of this qualitative research, we were guided by contemporary views
on this issue (Smith & McGannon, 2017). Key aspects of our approach follow below.

First, consistent with our deductive approach, we developed a coding frame and set of 9 coding rules to guide data analysis. Specifically, the unit of coding used throughout data 10 analysis was the complete response to a question. This unit of coding was chosen to ensure 11 each response was coded whilst considering the entire response. This was to prevent any loss 12 of context which may have occurred if we had coded individual sentences. Next, an 13 experienced qualitative interviewer with experience in sport as an athlete and anti-doping 14 practitioner conducted all interviews to encourage a strong and trusting relationship between 15 interviewer and interviewee (see Woodward, 2008). Also, early in the coding process, the 16 first author independently coded five of the interviews coded by the second author. Both 17 authors then met to compare findings, and agreed relevant sections were consistently being 18 identified and linked to the relevant definition/s. We employed this process to confirm there 19 was general agreement between the two researchers on how they were identifying sections of 20 text and linking them to definitions, and not for the purposes of establishing inter-rater 21 agreement (see Smith & McGannon, 2017). Finally, the first author presented this work at an 22 international conference attended by leading scholars. This allowed us to share our findings 23 and deliver and defend them through critical engagement with an informed audience. 24 Audience responses supported the credibility and plausibility of our approach and findings. 25

In the following sub-sections, we present the results for each of the pre-determined categories, based upon the DCE model proposed by Sullivan et al. (2015). The numbers that follow exemplar quotes refer to the interviewee number (see Table 1). Within each subsection, discussion of the sub-dimension itself is followed by any antecedents or outcomes of it. Where appropriate, square brackets [] have been used to add additional words or phrases to clarify quotes.

8 Initiation

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Confidence in the ability to effectively initiate a confrontation is considered crucial when
confronting someone on sensitive topics, as only when the target recognizes the confronter's
purpose does the conversation become a confrontational episode (Newell & Stutman, 1991).
For this reason, it is important that coaches can successfully communicate their intent when
confronting athletes regarding issues relating to doping.

In general, coaches were confident in their ability to effectively communicate their 14 purpose when confronting potential doping. For many, one purpose centered on finding out 15 why an athlete would want to dope. For instance, TC3 said, 'the whole thing with me is 16 what's driving you [the athlete]'. Although it would be easy to assume what is driving the 17 athlete to dope would be obvious (i.e., performance enhancement), coaches were generally 18 cognizant this was not necessarily the case, showing awareness that some drugs can be taken 19 to enhance image rather than performance. This was evidenced by TC8 when she 20 commented, 'they might not be doing it for rugby reasons'. 21

Another key purpose for some coaches was to highlight the risks that doping can pose for athletes. For example, TC6 said his aim would be to 'highlight the risks of it, the potential consequences...'. The underlying implication being that, by making salient the potential risks, a coach can deter an athlete from doping. The objectives of other coaches were aligned

with this underlying aim. For instance, TC4 explained that for him, 'that player has to leave
the room with an understanding that a) he doesn't need to go down that route, and b) what the
alternatives are'. Consistent with purposes highlighted to this point, S&C4 suggested she
would, 'try to understand why they felt that [the need to dope] and try to sort of convince
them that this was not a good idea'.

Regarding possible antecedents, there was evidence that for some coaches personal 6 morality was a key factor motivating the desire to initiate a confrontation. Specifically, TC2 7 explained 'I think you've got a moral obligation to yourself haven't you [to initiate a 8 confrontation]'. That doping was viewed as morally abhorrent by some coaches was also 9 evidenced by TC11 and TC6, respectively, who stated 'I genuinely detest it...I just can't 10 stand cheats' and 'I'm totally against it...it's cheating isn't it'. Aligned with these views, the 11 unfair competitive advantage stemming from doping would encourage confronting possible 12 doping for TC2, '...because I think of the boys who lost medals as a result of it [others 13 doping]'. Thus, being morally opposed to doping may be a strong motivating factor for 14 developing confidence in the ability to initiate doping confrontations for some coaches. 15

16 Legitimacy

As well as being confident in their ability to effectively initiate a confrontation, it is also 17 important coaches believe they can establish legitimate grounds for a confrontation. Given 18 there is only really a single basis for initiating a doping confrontation (i.e., evidence of 19 potential doping), discussion of this sub-dimension centered largely on antecedents and 20 outcomes of the belief, rather than the belief itself. In terms of antecedents, the primary 21 contributor to this belief appeared to be the degree of evidence relating to possible doping. 22 Highlighting its perceived importance, one coach went as far as to make a clear distinction 23 between situations in which an athlete is suspected of a doping violation and a situation 24 where someone is known to be doping, with legitimacy beliefs likely to be far stronger in the 25

latter situation than the former. When making this distinction, S&C9 suggested that when
doping was only suspected, 'I dunno how I'd approach that conversation.... I'm not sure that
it'll be something I feel comfortable confronting an athlete about...', whereas in the latter
situation [known to be doping] he '... wouldn't have any problems...'. As such, coaches'
legitimacy beliefs may be stronger when they have clear evidence of an athlete doping, and a
key outcome of such legitimacy beliefs may be the likelihood of the coach initiating a
confrontation.

8 Personal Resources

Beyond legitimacy, confidence in having the personal resources (i.e., time, energy, and
information) to cope effectively with the cognitive and emotional demands involved in
confrontations may also be important for coaches' DCE beliefs. There were clear differences
among coaches on the degree to which they believed they possessed such resources. Again –
as with legitimacy beliefs – the main foci during interviews were the likely antecedents and
outcomes of the belief rather than the nature of the belief itself.

In terms of antecedents relating to informational resources, anti-doping education was 15 important for several coaches. Such education allows coaches to learn information about anti-16 doping (e.g., different types of doping rule violations) that may be critical during doping 17 confrontations. However, whilst several coaches identified the importance of anti-doping 18 education, there was clear evidence this did not necessarily translate to coaches engaging 19 with sufficient education to develop adequate knowledge on doping. For instance, when 20 questioned on them, coaches were not consistently aware of important resources for coaches 21 and athletes (e.g., Informed Sport or Global DRO), mixed up the two, or did not know where 22 to source or find out about such information, let alone direct others to their whereabouts. It 23 would seem questionable whether coaches lacking in such basic information would have the 24

informational resources necessary to cope effectively with a challenging doping

² confrontation.

Some coaches acknowledged a desire to enhance their knowledge on anti-doping, but 3 then implicated a lack of time to sufficiently engage with relevant education programs to 4 satisfy this desire. For instance, when discussing informational personal resources he would 5 like to develop, S&C3 said, '...nutrition is something that, from my personal perspective I 6 need to know more about and obviously the whole banned substance thing, I mean that's 7 continually evolving as well.' However, despite acknowledging the importance of developing 8 such knowledge, he then indicated he may not be able to develop such knowledge because of 9 the danger of 'spreading yourself too thin', suggesting 'it's a time constraint type thing'. 10 Thus, it seems a perceived lack of time may inhibit effective engagement with anti-doping 11 education for some coaches. Related to this, some coaches who had received anti-doping 12 education demonstrated limited continued engagement with it, which may again limit their 13 informational resources. For instance, S&C1 described '...we took umm, the...was it the UK 14 Anti-Doping Agency test?' before going on to admit '... I need to do it again actually'. The 15 implication here being engagement with anti-doping education was not viewed as a priority. 16 Providing another possible explanation for inadequate anti-doping education in 17 coaches, TC3 suggested a lack of financial investment was also an issue, 18 I don't think there is enough money invested in education in the UK; I 19 certainly don't think it's in athletics... I think more money needs to be 2.0 invested in the education of coaches... There should be almost like CPD 21 [continued professional development]; it should form part of your license to 22 be able to be involved in that world. 23 Therefore, whilst some coaches appeared to have the informational personal resources to 24 confront athletes on doping issues, this was not consistently the case across the sample of 25

coaches we interviewed. Responses from some coaches suggest that a lack of financial
 investment may explain this.

For those coaches who did feel suited to confront athletes on doping issues, personal 3 experience also appeared to be an important source of personal resource beliefs. For instance, 4 TC10 believed her international career in rugby would make her the obvious choice to 5 confront athletes on doping issues, stating '... I think that's why it would be me [the one to 6 speak to athletes] ... because I used to play internationally'. The implication being that her 7 background as an international-level player gave her skills that would help her cope 8 effectively during a doping confrontation. Similarly, S&C10 suggested he possessed the 9 knowledge and expertise to cope effectively during doping confrontations, stating 'I feel 10 comfortable enough that if the situation did come about... the correct course of action would 11 be taken'. Here, having established networks was of importance, ensuring 'you know the 12 right connections and the people'. Thus, past experiences as an athlete and established 13 networks may also be important antecedents of coaches' beliefs around personal resources. 14

In terms of possible outcomes, coaches with weak personal resource beliefs described 15 a tendency to outsource responsibility for confronting athletes on doping issues to other 16 members of staff. For example, a technical coach from rugby reported 'I'd pass the buck. I'd 17 just get the S&C Coach in' (TC11). Similarly, another technical coach – TC6 – said, '...I'd 18 have to go through the S&C'. Interestingly, despite some technical coaches suggesting S&C 19 coaches are best placed to confront doping, several S&C coaches themselves described how 20 they would pass the issue on to others. For example, S&C10 explained that if he was told of 21 someone who was considering doping, he would 'probably go through the channels that are 22 appropriate, direct to my line manager....' Therefore, lack of belief in the personal resources 23 required to cope effectively with doping confrontations may increase the likelihood a coach 24 will pass doping-related issues on to others rather than deal with them personally. 25

17

1 Intimacy

As well as feeling capable of coping with the demands of confrontations, coaches' belief in 2 their ability to confront an athlete without appearing judgmental and the confrontation being 3 viewed as a personal attack is also potentially important. For instance, elevated intimacy 4 beliefs are thought to increase the likelihood that coaches will look to assist athletes regarding 5 doping issues, regardless of whether such assistance is requested or not (Sullivan et al., 6 2015). This is because the abilities that likely underpin such beliefs should ensure coaches 7 feel able to confront an athlete without fear of threatening the coach-athlete relationship. 8 Levels of intimacy efficacy were generally high, and those who had strong intimacy 9 beliefs openly discussed some of the approaches and interpersonal skills that may underpin 10 such beliefs. This was seen with TC10, who explained how 'it's just the environment that you 11 create...I would definitely bring it up with a player just to say, "can I help in any way?"". 12 Going on to provide actual examples of how she would approach confrontations, TC10 stated 13 how she would ask questions such as 'What can we do or put in place to help you get over it 14 [the desire to dope]?'. Similarly, TC11 stated he'd '... probably approach it from a 15 personable side....', and S&C4 pointed out how she would, 'help them and try to understand 16 why they felt that'. Along similar lines, TC8 suggested, 'I think you gotta open up a two-way 17 communication with the person...'. 18

19 Several approaches described above highlight the potential importance of a possible 20 antecedent of intimacy beliefs that came up during some interviews, that of empathy. In 21 particular, the ability to demonstrate empathy during a doping confrontation seemed of 22 importance, as showing understanding of the factors that could lead an athlete to consider 23 doping was thought to prevent the coach-athlete relationship being undermined during a 24 confrontation episode. For instance, S&C2 suggested 'I think it's important to empathize 25 about their reasoning [why they wish to dope], try and understand what they want to gain

from it'. As far as we can generalize from our respondents, it did seem female coaches
 described the need for empathy and understanding more than males did. However, this was
 also seen with some male coaches. Thus, empathy appeared to be an important antecedent of
 intimacy beliefs.

One further antecedent of intimacy beliefs was the strength of pre-existing coach-5 athlete relationships. This was seen with both technical and S&C coaches believing that 6 having established strength in coach-athlete relationships means you can discuss sensitive 7 topics more easily with an athlete without the confrontation being seen as a personal attack. 8 For instance, S&C6 put forward that '.... a big part of the role is creating relationships with 9 the players... we've got good, strong relationships with them'. Similarly, a female coach 10 (TC10) related how she knows many players inside out, including their personal lives and 11 following them on social media, 'I think it's knowing your players...you create that personal 12 relationship'. Thus, it is possible having existing strength in the coach-athlete relationship 13 may bolster intimacy beliefs in advance of a confrontation because it makes it easier to 14 maintain a strong connection during the confrontational episode. 15

16 Expected Outcomes

Finally, expected outcomes relate to coaches' beliefs in their ability to confront athletes 17 regardless of the possible outcomes, be those positive or negative. Such outcomes can include 18 cessation or persistence of doping, strengthening or weakening of the coach-athlete 19 relationship, and improved understanding of the viewpoints of both partners within the 20 coach-athlete dyad (Sullivan et al., 2015). Across the sample levels of expected outcome 21 beliefs fluctuated markedly, and perhaps unsurprisingly it was primarily the possible negative 22 outcomes stemming from confrontations that had the potential to undermine such beliefs. For 23 instance, S&C2 illustrated a degree of reticence around initiating a doping confrontation if 24 there was potential for trust to be undermined. Specifically, she suggested if this occurred, 25

'they're not gonna confide in you again about anything'. That is, confrontations could lead to 1 athlete trust in the coach being undermined, leading to a weakened coach-athlete relationship 2 associated with a lack of openness in the future. Similar in some ways, TC3 expressed 3 concern that doping confrontations could negatively impact the coach-athlete relationship by 4 undermining the coach's trust in the athlete. Specifically, he described how following a 5 confrontation he may remain suspicious of the athlete, '... the problem for me is if that 6 conversation isn't an open conversation.... isn't open and honest.... I would be pretty wary, 7 and I will be having a very close watch on those people...'. Thus, the degree of potential 8 damage to trust within the coach-athlete relationship appears to undermine expected outcome 9 beliefs. 10

An associated but distinct theme also came up during interviews with S&C coaches exclusively, expressing how negative outcomes may also stem from not confronting suspected doping. Such possibilities only strengthen their resolve to confront suspected doping. Specifically, several S&C coaches described how not addressing doping could have negative implications for the coach and/or team in terms of employment and reputation damage. For instance, S&C7 described,

...we don't want to be affiliated with anybody that's either doping or had got 17 the stigma around them in terms of you know being caught for something... 18 Consistent with this view, S&C5 expressed how, '... it puts your job on the line, puts the club 19 you know and everyone else's job on the line as well...'. Further, and along similar lines, 20 S&C8 explained, 'I wouldn't on a professional level allow myself to be put in a position 21 where I was seen to be condoning the use of [drugs]...'. Finally, in terms of possible 22 reputation damage, S&C2 described how, 'I have a good reputation as a coach. I have no 23 reason to compromise that... why would I want to be working with somebody that would 24 ultimately bring that down?'. Thus, although several coaches expressed reticence around 25

expected outcome beliefs because of the potential for damage to the coach-athlete
 relationship, others considered potential negative outcomes stemming from doping
 confrontations were worth the risk when compared against the possible detrimental outcomes
 stemming from not acting. In general, preserving the coach-athlete relationship was of greater
 importance to technical coaches, whereas avoiding potential reputation damage was a priority
 for S&C coaches.

7

Discussion

The current study provided an in-depth investigation of the DCE model in 21 high-level 8 technical and S&C coaches from rugby and athletics, contributing important information on 9 coach perceptions of DCE as well as potential influences and outcomes of DCE sub-10 dimensions. In doing so, this work makes several important contributions to the literature. 11 First, our findings support the relevance of all five dimensions of DCE to coaching practice in 12 athletics and rugby. Next, we identified key antecedents and outcomes of coach DCE beliefs 13 relevant to one or more of the DCE sub-dimensions. In doing so, we have identified possible 14 ways that coach DCE beliefs can be enhanced and highlighted the potential importance of 15 doing so given the important behavioral outcomes that appear to stem from such beliefs. For 16 instance, coach education was viewed as a key antecedent of DCE, and lower levels of DCE 17 were linked with a reduced likelihood of confronting athletes on doping-related issues. 18 Finally, we identified several aspects of the DCE model that could potentially be developed 19 and/or improved. Each of these contributions is discussed in more detail over the ensuing 20 paragraphs. 21

22 Strength of DCE Beliefs

In terms of the levels of coaches' efficacy beliefs, beliefs relating to initiation and intimacy
 were most consistent, which may be because the foundations for such beliefs are less
 situation dependent than for the other three beliefs. Regarding initiation, most coaches were

1	Running head: COACH DOPING CONFRONTATION EFFICACY generally confident they could clearly articulate the purpose/s they would outline when					
2	initiating confrontations. The main purposes espoused included understanding why athletes					
3	may be considering doping, highlighting the risks of doping, and changing athletes' minds					
4	about choosing to dope. Consistent with these findings, research has found coaches have an					
5	aspiration to influence athletes' doping-related decisions (Ntoumanis, Brooke, Barkoukis, &					
6	Gucciardi, 2015), and view negative health consequences as a strong deterrent to doping					
7	(Backhouse & McKenna, 2012). With respect to coaches aspiring to influence athletes'					
8	doping related decisions, this may be motivated by feelings of disdain towards doping or -					
9	for S&C coaches in particular – a desire to protect the coach's/club's reputation. Coaches in					
10	the present study reported such feelings, as have coaches in previous studies. For example,					
11	coaches have described how they are against doping, considering it cheating, unfair, and					
12	disadvantageous toward others (e.g., Engelberg & Moston, 2016; Mazanov, Hemphill,					
13	Connor, Quirk, & Backhouse, 2015; Patterson & Backhouse, 2018).					
14	With respect to intimacy, most coaches recognized and felt confident in the					
15	interpersonal skills that underpin intimacy beliefs. Such skills include the ability to					
16	communicate effectively, and form and maintain positive bonds with athletes both inside and					
17	outside of sport (Bowes & Jones, 2006). Given the coaches interviewed were of a high					
18	standard, it is perhaps unsurprising that most coaches felt confident in their interpersonal					
19	skills given such skills are considered a key component of effective and expert coaching (see					
20	Côté & Gilbert, 2009). The potential importance of coaches having strong intimacy beliefs is					
21	highlighted by research that has shown that strong personal relationships between coaches					
22	and athletes may be an important protective factor against doping (Dimeo, Allen, Taylor,					
23	Dixon, & Robinson, 2012).					

In contrast to initiation and intimacy, levels of expected outcomes beliefs (i.e.,
 coaches' confidence in their ability to confront athletes regardless of possible positive or

negative outcomes) were more variable. A potential negative outcome that concerned several 1 coaches was the potential for a damaging effect on trust within the coach-athlete relationship. 2 As a result, some coaches expressed a degree of reticence regarding confronting athletes 3 because of such potential consequences. However, countering this were the possible negative 4 consequences that could stem from not confronting possible doping. Namely, these related to 5 the stigma attached to doping, and the damaging effect of not addressing doping for a coach's 6 or club's reputation. Such reference to the stigma of doping was a sub-theme that came up in 7 many interviews and one that has also arisen in previous qualitative research with athletes 8 (Dimeo et al., 2012). Presently, this stigma appeared to serve a positive self-regulatory 9 function, as some coaches felt confident they would confront possible doping despite possible 10 negative consequences because the repercussions of not doing so may be worse. However, at 11 times there was a suggestion that clubs were likely to try and deal with any instances of 12 suspected doping 'in-house', rather than risking reputational damage by reporting such 13 instances to the anti-doping authorities. Patterson and Backhouse (2018) reported similar 14 responses to suspected doping in past work with football and rugby coaches. As such, 15 coaches' expected outcome beliefs might ultimately result from a cost-benefit analysis 16 regarding the possible consequences of confronting doping versus those stemming from not 17 doing so. 18

19 Antecedents of DCE Beliefs

For some dimensions of DCE, data themes related more to antecedents and outcomes of beliefs rather than on the belief itself. This was the case for legitimacy beliefs, for which coaches tended to find it hard to categorically determine the strength of their beliefs. This was largely because they perceived their efficacy beliefs for this dimension to be very situation dependent. In particular, coaches felt the degree of evidence they had to suspect an athlete was doping would heavily influence the degree to which they would feel confident in their

ability to establish strong grounds for a confrontation. Given legitimacy relates to whether the 1 target (i.e., athlete) has broken a rule (see Newell & Stutman, 1991), it is perhaps not 2 surprising that levels on this dimension would be highly dependent upon the degree of 3 evidence supporting an anti-doping rule infringement in any particular case. However, given 4 coaches may still find themselves in situations where they are required to speak with an 5 athlete about suspected doping without strong evidence, it may be useful to develop 6 interventions that help coaches deal effectively with such situations. For example, guidance 7 could be offered on what constitutes a sufficient degree of evidence to support moving 8 forward with a confrontation, and the best approaches to gathering such evidence. Based 9 upon our findings, effective evidence gathering would help bolster legitimacy beliefs before a 10 confrontation is initiated. Maximizing legitimacy prior to a confrontation is likely important, 11 as these beliefs have been positively linked with greater use of direct support mechanisms 12 (Reznik & Roloff, 2009) and positive resolutions following confrontations (Newell & 13 Stutman, 1988). 14

Consistent with one of our presuppositions, several coaches expressed how the coach-15 athlete relationship could be maintained more effectively (i.e., therefore supporting intimacy 16 beliefs) if coaches have high levels of empathy. Specifically, several participants suggested 17 that when coaches can demonstrate their empathy and understanding of the athlete's 18 situation, athletes are less likely to view the coach as being judgmental and to consider the 19 confrontation a personal attack. In concert with these views, empathy reflects the ability to 20 share and experience someone else's feelings and has been associated with increased 21 likelihood of engaging in helping behaviors (Eisenberg, Eggum, & Di Giunta, 2010). The 22 present finding adds to a burgeoning literature highlighting the potential importance of 23 empathy for engagement in appropriate and desirable coaching behaviors (e.g., Matosic, 24 Ntoumanis, Boardley, Sedikides, Stewart, & Chatzisarantis, 2017). 25

Data analysis also identified strong themes relating to possible antecedents for 1 personal resource beliefs (i.e., whether coaches have the personal resources [i.e., time, 2 energy, and information] required to cope effectively with the cognitive and emotional 3 demands involved in confrontations; Newell & Stutman, 1991). Interestingly, whilst most 4 coaches acknowledged the importance of coaches having a good knowledge and 5 understanding of anti-doping, many also suggested they did not have the time to achieve or 6 maintain such knowledge. Thus, it seems limitations in one personal resource (i.e., time) may 7 be contributing to deficits in another (i.e., information). This finding adds to a burgeoning 8 literature base that suggests coaches lack the time to develop their knowledge on doping 9 prevention (Engelberg & Moston, 2016; Mazanov et al., 2015; Patterson & Backhouse, 10 2018). Our findings here correspond with research showing that whilst coaches acknowledge 11 the potential importance of being knowledgeable regarding anti-doping, they do not see it as 12 a high priority (e.g., Engelberg & Moston, 2016; Mazanov, Backhouse, Connor, Hemphill, & 13 Quirk, 2014; Patterson & Backhouse, 2018), do not see it to be of personal relevance 14 (Patterson, Duffy, & Backhouse, 2014), and may even view anti-doping education as a 'box-15 ticking exercise' that is largely a waste of time (Dimeo, Allen, Taylor, Dixon, & Robinson, 16 2011). Further, research considering aspects of coaches' knowledge on anti-doping have 17 identified deficits in knowledge relevant to prohibited substances/methods and their effect on 18 performance (Blank, Leichtfried, Fürhapter, Müller, & Schobersberger, 2014; Engelberg & 19 Moston, 2016; Patterson & Backhouse, 2018), as well as on key anti-doping control systems 20 such as the biological blood passport and the whereabouts system (Engelberg et al., 2019). 21 Therefore, governing bodies may need to place an increased organizational emphasis on anti-22 doping education to highlight its importance and relevance and encourage coaches to 23 prioritize anti-doping education over other responsibilities by ensuring they have the requisite 24 time, energy, and financial support. 25

1 Outcomes of DCE Beliefs

Data analysis also identified several possible outcomes of DCE beliefs. One of the 2 most positive of these was for the athlete to cease doping or desist from considering doping. 3 This finding provides strong support for Sullivan et al.'s (2015) model given cessation of 4 doping was one of the primary outcomes proposed in the model. For many coaches, the way 5 in which they would seek to achieve such outcomes would be to provide athletes with 6 information on alternatives to doping, such as improved training techniques, appropriate use 7 of nutritional supplements, and improved dietary support. This was an encouraging finding 8 given the evidence supporting the efficacy of such approaches. Specifically, effective anti-9 doping education programs often include alternatives to doping (Backhouse, McKenna, 10 Robinson, & Atkin, 2007). An example of this is a school-based anti-doping intervention that 11 incorporates a module on nutrition as an alternative to doping which was found to be 12 effective in weakening attitudes towards doping in Greek high-school children (Barkoukis, 13 Kartali, Lazuras, & Tsorbatzoudis, 2016). As such, ensuring coaches are adequately educated 14 on the most effective alternatives to doping could be an effective means of improving DCE 15 outcomes. 16

Not all the proposed outcomes were positive though. Coaches who feared 17 confrontations may lead to a breakdown in the quality of the coach-athlete relationship 18 described being unlikely to confront an athlete if this was an anticipated outcome. This 19 finding is consistent with the propositions of Sullivan et al. (2015). This is also consistent 20 with research findings in parent-child and dating relationships, which have shown people 21 tend to avoid confrontations if they have the potential to result in negative outcomes 22 (Caughlin & Afifi, 2004). Similarly, regarding personal resource beliefs, coaches who didn't 23 feel they had a good level of knowledge on anti-doping were the ones most likely to 'pass the 24 buck' to others rather than address doping issues themselves. Furthermore, coaches low in 25

initiation and intimacy beliefs also reported being less likely to confront athletes regarding potential doping. Regarding intimacy, this is consistent with research investigating peer interventions and communication that has shown people are more likely to look to intervene to help others when intimacy between the potential confronter and confronted is high (Malis & Roloff, 2007; Reznik et al., 2010). Thus, optimizing coaches' DCE beliefs across the different sub-dimensions of DCE could increase the likelihood coaches will take personal

7 responsibility for confronting possible doping.

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8 Theoretical and Definitional Considerations

Whilst the findings discussed to this point highlight the important contribution of the DCE 9 model, given the model's infancy it may be worthwhile to consider some possible revisions 10 and/or additions to the model that may heighten its potential contribution in future work. 11 First, given several coaches questioned our use of the term confrontation, it is worth 12 considering adopting a different term to represent coach attempts to engage with athletes on 13 issues relating to doping. Using this term with coaches may implicitly suggest that coaches 14 should be confrontational in their style, which is likely to detract from the empathic approach 15 coaches considered most effective (see also Ntoumanis et al., 2018). Accordingly, any future 16 revisions of the DCE model could potentially include an alternative term, potentially one 17 more reflective of the empathic and supportive coaching style considered most effective by 18 the coaches interviewed presently. A more appropriate term may be akin to doping 19 intervention efficacy, as this still reflects confidence in the ability to intervene, but without 20 the possible negative connotations of the term confrontation. 21

Along similar lines, another area of the model for possible revision relates to the term legitimacy. When discussing this sub-dimension during interviews, coaches largely focused on the evidence base available to establish valid grounds for a confrontation. In contrast, within the existing doping literature this term relates to whether anti-doping rules and their

Running head: COACH DOPING CONFRONTATION EFFICACY implementation are viewed as desirable, proper, and appropriate (e.g., Efverström, Ahmadi,					
Hoff, & Bäckström, 2016). As such, retaining this term within the DCE model could lead to					
confusion amongst coaches and researchers given it has an existing meaning in the doping					
literature. Researchers looking to develop the DCE model may therefore consider adopting an					
alternative term (e.g., evidence base, valid grounds) for this sub-dimension.					
One final possible revision to the DCE model relates to the development of a broader					
model that encapsulates more completely the likely antecedents and outcomes of DCE					
beliefs. Although Sullivan et al. (2015) proposed some initial precursors (e.g., information on					
a forthcoming player confrontation) and consequences (e.g., effective openings to					
confrontations) of DCE beliefs, these were largely hypothetical and based upon research					
investigating confrontations outside of sport and doping (e.g., Malis & Roloff, 2007; Reznik					
& Roloff, 2009). The current findings now provide a starting point for future research					
working towards the development of a more complete and empirically supported model. A					
worthy aim for such research may be to develop a model more akin to the coaching efficacy					
model itself, which includes much broader coverage of the likely antecedents and outcomes					
of coaching efficacy (see Boardley, 2018; Feltz et al., 1999) than is currently the case for the					
DCE model. For instance, antecedents within the DCE model have tended to focus on					
personal influences on coach DCE such as doping knowledge, doping education, evidence of					
athlete doping, and empathy. In contrast, the coaching efficacy model includes broader social					
and environmental influences such as community support and competitive success (Boardley,					
2018; Feltz et al., 1999). A revised DCE model that included both personal and					
social/environmental influences on DCE would provide a more holistic picture of the					
contributory factors influencing coach DCE beliefs. Similarly, within the DCE model the					
proposed outcomes predominantly focus on coach behaviors such as the effectiveness of					
openings to confrontations and the likelihood a coach will initiate a confrontation. In contrast,					

the revised coaching efficacy model considers how changes in coach behavior may then have
consequent impacts at the team and athlete level, including athlete competence and collective
efficacy (Boardley, 2018). Thus, future iterations of the DCE model could benefit from
inclusion of both proximal (i.e., coach-focused) and distal (i.e., athlete- and team-focused)
outcomes.

6 Limitations and future directions

The current research contributes important knowledge on potential coach influences on 7 doping in sport. As with all research though, there are limitations that should be 8 acknowledged and considered when interpreting the findings and that indicate potential 9 avenues for future research. For instance, because only one side of the coach-athlete dyad 10 was examined the analyses may not have captured further relevant outcomes of DCE sub-11 dimensions. Given that research has highlighted the importance of athlete perceptions in 12 mediating effects of coach efficacy beliefs on athlete- and team-level outcomes (see 13 Boardley, 2018), there may be downstream effects of coach efficacy beliefs that couldn't be 14 identified through coach interviews. As such, future qualitative research that considers 15 athletes' perceptions of their coaches' DCE could help paint a more complete picture of the 16 outcomes stemming from DCE beliefs. Such research could add depth of understanding on 17 possible processes explaining quantitative links between athletes' perceptions of coach DCE 18 and athletes' doping attitudes (see Sullivan & Razavi, 2017). Also, as our sampling strategy 19 focused specifically on coaches working in rugby and athletics within the UK, our findings 20 are delimited to coaches working within these sports in this country. As the prevalence, 21 nature, and acceptance of doping are likely to differ based upon the physical demands of 22 specific sports as well as cultural influences, future research examining DCE beliefs in 23 coaches working within sports with differing physical demands and unique cultural 24 influences is warranted. Such work could provide evidence that supports or refutes 25

transferability (see Smith, 2018). Upcoming work could also examine whether DCE differs
 across coach levels and experience.

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Conclusion

By collecting and analyzing qualitative data from high-level technical and S&C coaches 4 working in rugby and athletics, the current research made several important contributions. 5 Foremost, the coach interviews identified key antecedents and outcomes for sub-dimensions 6 of DCE. As well as revealing key antecedents and outcomes, data analyses unearthed some 7 complexities around them. For example, analyses revealed how at times coaches must weigh 8 the potential costs (e.g., eroding trust in the coach-athlete relationship) and benefits (e.g., 9 protecting the reputation of the coach/club) before deciding whether to initiate a 10 confrontation. Also, the current work showed that S&C coaches and technical coaches 11 possess unique perceptions tied to their DCE beliefs. Accordingly, a full understanding of 12 external influences on doping likely requires examination of the broader athlete-support 13 network rather than focusing on technical coaches as has largely been the case to date. 14 Finally, the findings highlight the importance of coach education on anti-doping, in that 15 coaches view such education as important yet often find other priorities to supersede it. As 16 such, anti-doping organizations and sport governing bodies are encouraged to support the 17 development and evaluation of coach-based anti-doping interventions in ways that overcome 18 barriers to broad coach participation. 19

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Code	Age	Sex	Coach Type	Sport	Standard
TC1	40	Male	Technical	Athletics	National
TC2	72	Male	Technical	Athletics	International
TC3	45	Male	Technical	Athletics	International
TC4	33	Male	Technical	Rugby	International
TC5	35	Male	Technical	Rugby	International
TC6	38	Male	Technical	Rugby	International
TC7	38	Female	Technical	Rugby	Regional
TC8	40	Female	Technical	Rugby	Regional
TC9	37	Female	Technical	Rugby	Regional
TC10	33	Female	Technical	Rugby	Regional
TC11	36	Male	Technical	Rugby	National
S&C1	27	Male	S&C	Athletics	National
S&C2	41	Female	S&C	Both	National
S&C3	38	Male	S&C	Both	International
S&C4	35	Female	S&C	Both	National
S&C5	25	Male	S&C	Rugby	Regional
S&C6	37	Male	S&C	Rugby	Regional
S&C7	26	Male	S&C	Rugby	Regional
S&C8	45	Male	S&C	Rugby	National
S&C9	43	Male	S&C	Rugby	Regional
S&C10	36	Male	S&C	Athletics	National

Running head: COACH DOPING CONFRONTATION EFFICACY TABLE 1. *PARTICIPANT DEMOGRAPHICS*.