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Section: Applied Research

Article Title: Exploring Sledging and Interpersonal Emotion Regulation Strategies in Professional Cricket

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Exploring sledging and interpersonal emotion regulation strategies
in professional cricket

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Abstract

The present study examines cricketers' perceptions of emotional interactions between competitors. Semi-structured interviews with twelve male professional cricketers explored experiences (i.e., emotions, cognitions, behaviours) relating to incidents during competition where they or an opponent attempted to evoke an emotional reaction (e.g., sledging). Cricketers described their use of sledging as aggressive actions and verbal interactions with the aim of disrupting concentration and altering the emotional states of opponents. Cricketers described experiencing a variety of emotions (e.g., anxiety, anger) in response to opponents' attempts at interpersonal emotion regulation; linguistic analyses indicated that both positive than negative emotions were experienced. A range of strategies in response to competitors' deliberate attempts at interpersonal emotion regulation were outlined. The present study extends previous research investigating interpersonal emotion regulation within teams, by highlighting that professional cricketers are aware of the impact of cognitions and emotions on performance and attempt to negatively influence these factors in competitors.

Key Words: Emotions; coping; qualitative; aggression; elite

Competitive sport positions athletes against each other in pursuit of superiority and successful performance outcomes. A wide variety of strategies are used in attempts to gain a tactical advantage; for example, athletes may seek to exploit competitors' weaknesses by targeting poor technique, inferior strength and conditioning, or the psychological and behavioural factors that can negatively impact upon their oppositions' performance (Den Hartigh, Gernigon, Van Yperen, Marin, & Van Geert, 2014). In particular, athletes may appraise an opponent's psychological state and attempt to induce dysfunctional cognitions and emotions (Jones & Harwood, 2008; McPherson, 2000). Within this process of evaluation, athletes may consider the emotional state of their fellow competitors and attempt to determine whether or not an opponent is in his/her optimal emotional state for performance (Hanin, 2003).

The emotion-performance relationship has received substantial attention within sport psychology research (Hanin, 2007; Lazarus, 2000; Neil, Bowles, Fleming, & Hanton, 2016; Vallerand & Blanchard, 2000) with the predominant focus of research being on the emotions of anxiety and anger (Mellalieu, Neil, Hanton, & Fletcher, 2009; Ruiz & Hanin, 2011; Woodman, Davis, Hardy, et al., 2009). More recently, research has moved beyond the emotion that is experienced by individual athletes – and started to consider the social or interpersonal aspects of emotion that occur *between* athletes (predominantly teammates; Campo, Sanchez, Ferrand, et al., 2016; Tamminen & Bennet, 2016; Tamminen & Crocker, 2013, Tamminen, Palmateer, Denton, et al., 2016). Although recent studies have examined the process and implications of emotion regulation within individual athletes (i.e., *intrapersonal* emotion regulation; Wagstaff, 2014) and between teammates (i.e., *interpersonal* emotion regulation; see Friesen, Lane, Devonport, et al., 2013, for a review), very few studies have explored athletes' strategic attempts at regulating the emotions of their opponents. In light of developments, in sport emotion research, and the acknowledged gaps in the literature, the current study presents a qualitative exploration of the different types of strategies athletes use

to influence opponents' emotions, as well the rationale and the perceived inter- and intrapersonal implications of the use of these strategies.

Strategies to regulate emotional states are deemed critical for competitive success (Jones, 2003; Wagstaff, 2014). Emotion regulation research in sport has expanded within recent years and been considered in relation to the emotional experiences of both athletes and coaches (Hill & Davis, 2014; Stanley, Lane, Beedie, Friesen, & Devonport, 2012). Although a number of theories have been advanced to explain individuals' attempts at controlling or regulating emotions (see Koole 2009, for a review), within sport researchers have predominantly applied Gross's (1998) model to better understand patterns of emotion regulation (e.g., Lane, Beedie, Devonport, & Stanley, 2011; Uphill, McCarthy, & Jones, 2009; Wagstaff, Hanton, & Fletcher, 2013). Intrapersonal emotion regulation strategies, as outlined by Gross (1998; Gross & John 2003), are categorized as being either (a) antecedent-focused (i.e., initiated prior to the occurrence of the emotion) or (b) response-focused (i.e., initiated after the emotion occurs). Emotion regulation strategies are largely implemented to align with efforts associated with goal pursuit (Tamir, 2009) and may extend to attempts to regulate the emotions of others (Niven, Totterdell, & Holman, 2009). In particular, individuals may seek to either improve or worsen the emotions of others through the use of cognitive and behavioural strategies that alter the emotional state of the targeted receiver (Niven, Totterdell, Stride, & Holman, 2011). In sport, Tamminen, Gaudreau, et al. (2016) and Tamminen, Palmateer, et al. (2016) highlight that athletes play an active role in attempts to augment the emotional experiences of others by implementing strategies intending to alter thoughts and behaviours; although the focus of research examining interpersonal emotion regulation has been predominantly concentrated on interactions between teammates.

Across athletes, numerous individual difference variables have been observed to influence both emotion regulation strategy preferences and the emotion-performance

relationship (Hanin, 2000; Robazza, Pellizzari, & Hanin, 2004; Uphill, et al., 2009). In particular, general personality variables such as extraversion (Woodman et al., 2009) and narcissism (Roberts, Woodman, Hardy, Davis, & Wallace, 2013; Wallace, Baumeister, & Vohs, 2005) as well as cognitive orientation styles including optimism and pessimism (Wilson, Raglin, & Pritchard, 2002) have been found to influence an athlete's experience of emotions and subsequent performance. Moreover, emotion regulation styles (e.g., repression) can augment the emotion-performance relationship (Mullen, Lane, & Hanton, 2009; Woodman & Davis, 2008) and individual differences in the regulation of specific emotions such as anger (i.e., anger-in and anger-out) have been observed to influence performance outcomes on physical tasks (Davis, Woodman, & Callow, 2010).

In consideration of individual differences in the emotion-performance relationship, Hanin's (1997, 2000) individual zones of optimal functioning (IZOF) model has been one of the most widely used models in the study of the impact of emotions on individual athletes' performance (Robazza, 2006; Ruiz, Raglin, & Hanin, 2017). The IZOF model offers an explanation of optimal and dysfunctional effects of emotions upon performance with consideration of athletes' best and worst performance patterns. The IZOF in conjunction with related explanations of the motives for athletes' use of emotion regulation strategies (e.g., Tamir, 2009) suggest that athletes aim to experience emotions they identify as being appropriate for enhanced performance, regardless of their hedonic tone. For example, athletes will promote feelings of anger (usually perceived to be unpleasant) if they perceive the emotion will facilitate performance (Davis, 2011; Lane, et al., 2011; Robazza & Bortoli, 2007). In order to manifest emotions associated with optimal functioning athletes may alter their cognitions and behaviours to induce particular feeling states (Robazza & Bortoli, 2003; Ruiz, Hanin, & Robazza, 2016), however research has not examined how athletes attempt to influence

opponents' thoughts and emotions with the aim of disrupting competitors from their zone of optimal functioning.

The IZOF model suggests that athletes are most successful when they consider meta-experiences and develop meta-emotional beliefs that guide their selection and use of effective regulatory strategies (Hanin, 2003; Lane, Davis, & Devonport, 2011; Woodcock, Cumming, Duda, & Sharp 2012). Similarly, Nieuwenhuys, Vos, Pijpstra, and Bakker (2011) suggest that meta-experiences may determine how athletes decide the selection, implementation, and effectiveness of related coping strategies. In consideration of these studies, it may be suggested that athletes are required to first be aware of their opponents' emotional state prior to initiating strategies aimed at altering competitors' cognitions and emotions that subsequently worsen performance.

Competitive athletes engage in an ongoing process of evaluation that aims to develop a tactical advantage over their opponents (Den Hartigh, et al., 2014, Henschen, Statler, & Lidor, 2007); within this process of evaluation, athletes may consider their opponents' cognitions and associated emotional state (Lazarus, 2000). For example, if an athlete determines that an opponent's performance could suffer from cognitive interference, they may implement a strategy that induces anxiety (Hatzigeorgiadis & Biddle, 2000; McCarthy, Allen, & Jones, 2013; Nieuwenhuys & Oudejans, 2012). In particular, "sledging" in cricket (Joseph & Cramer, 2011), is identified as a tactic aimed at gaining a psychological advantage over opponents through cognitive interference and emotion induction. Within the inquest into the death of Phillip Joel Hughes (former Australian Test cricketer) the State Coroner's Court of New South Wales (2016) stated, "'Sledging' is a term used to describe humorous, insulting or threatening remarks directed at a batsman¹ or spoken in his or her hearing with a view to intimidating the batsman or breaking his or her concentration." (p. 23)

In sport psychology research, verbal exchanges (e.g., sledging, trash talk) between competitors have been identified as a form of unsporting behaviour that is intended to distract opponents through the presentation of irrelevant cues that interfere with optimal information processing as well as the alteration of emotional states (Eveslage & Delaney 1998; Joseph & Cramer, 2011; Moran, 1996). One high profile example from November 2013 occurred in a cricket match between Australia and England, when a microphone positioned in the field of play recorded a player stating to the batsman, "Get ready for a broken f***ing arm" (Australian Broadcasting Corporation, 2013). A more humorous example of sledging is widely reported between Australian bowler Merv Hughes asking England's Graham Gooch at bat, "would you like me to bowl a piano and see if you can play that?" Such verbal exchanges can alter an opponent's thought processes and emotions so that they are not easily regulated and negatively impact upon performance. Furthermore, tactics aimed at altering opponents' emotions may extend beyond verbal exchanges to involve acts of physical aggression (e.g., bowling intentionally at the batsman's head) that are carried out in attempts to intimidate opponents and regulate competitors' emotions (Grange & Kerr, 2010).

Although an increasing number of studies in sport psychology attempt to describe the practice of interpersonal emotion regulation between teammates (e.g., Friesen et al., 2013; Tamminen et al., 2016), little is known about the processes that guide the interpersonal emotion regulation that occurs between athletes of competing teams. Focusing on interpersonal interactions in male professional cricket, where use of potential examples of interpersonal emotions regulation strategies have been documented in the form of sledging (e.g., verbal exchanges and physical aggression), the current study aimed to address this gap in the research literature. Based on semi-structured interviews with professional cricket players, we first established the range of emotions associated with competition and during interpersonal interactions; we then considered actual acts of interpersonal emotion regulation. In so doing,

the study aimed to explore: (i) the different types of strategies used by cricketers to influence opponents' cognitions and emotions, (ii) cricketers' rationale for using those strategies, and (iii) the perceived inter- and intrapersonal implications of these strategies.

Method

In review of the limited research that has explored the emotions associated with interpersonal interactions between sport competitors, qualitative methods were determined to be most appropriate for this line of enquiry (Creswell, 2003). These methods are typified by an explorative approach to collecting rich, descriptive data that depict complex human experiences and perspectives (Silverman, 2006). Semi-structured interviews devised by the researchers assisted in the exploration of participants' perceptions of their experiences of sledging and associated emotions during competition (Kvale & Brinkman, 2009).

Participants

Twelve male athletes ($M_{age} = 26.33$; $SD = 4.50$) competing in Division One of the County Championship cricket league were recruited and agreed to take part in the study. All participating athletes were required to have at least two years playing experience at the elite (professional) level to allow them to have participated in a significant number of competitive matches and as a result to have experienced a range of emotion inducing interactions with competitors. The athletes participating in the study were from a variety of countries including Australia, South Africa, Trinidad and Tobago, and the United Kingdom.

To address the main aim of the study a purposive sampling technique was adopted, which is often the case in qualitative research when only a limited number of participants have the required expertise or experience in the research field (Flick, 2008). A further reason for using a purposive sampling method was to ensure all playing positions were included within the sample to attain a greater understanding of sledging and interpersonal emotion regulation within cricket (Batsman = 4, Bowler = 6, 'All Rounder' - Bat and Bowl = 1, Wicket Keeper =

1) as previous research has only focused on the experience of batsmen (Joseph & Cramer, 2011).

Data Collection

Upon receiving institutional ethical approval for the study, information about the study was sent via an email to potential participants outlining the general nature of the study and to elicit their possible interest in taking part in the study. Those who responded were sent a second email containing the participant information sheet; upon confirmation of intention to participate, a date for interview was subsequently arranged. The third author conducted all the interviews as he had experience of high-level cricket competition and was able to share experiences from the sport to develop rapport with the athletes.

A pilot interview was conducted with a professional cricketer that had played in the in Division One of the County Championship cricket league during the previous season; this ensured that the proposed interview guide addressed the relevant aspects of the emotion-performance relationship as well as explored the rationale and implications of interpersonal interactions in sport at this level of competition. The pilot interview allowed the sequencing and wording of the questions to be reviewed and enhance clarity. Finally, the pilot interview enabled the interviewer to refine their interview skills and techniques whilst also checking the length of time required for completion of the interviews (Gratton & Jones, 2010).

Prior to commencing the interview, each participant completed a written consent form and was reminded that their participation in the study was voluntary. Confidentiality and anonymity were also assured by the author conducting the interviews. The interviews took place over a four-week period and were conducted individually, in a quiet and comfortable setting at the training grounds of the cricket club. The participants were told they would be interviewed about their performance related experiences of various interactions with

competitors and emotions in cricket; the choice of which experiences to discuss was left to the participants.

Based upon a review of literature of the emotion-performance relationship and interpersonal interactions in sport, the questions were grouped into three sections: (i) general emotions in cricket; (ii) specific situations in which interactions with competitors were perceived to be aimed at disrupting performance; and (iii) response strategies. The interviews were semi-structured and contained primarily open-ended questions aimed at encouraging insightful responses. Initially, introductory questions were asked allowing the participant to discuss their feelings towards their sport and their early developmental experiences. Questions progressed to be more specific in nature by asking participants to recall specific situations and interactions with competitors, their perceptions of the implications of these interactions, as well as the their response². In the first section of the interviews participants were asked to recall an emotionally intense experience in cricket, this question was purposefully stated in a in general manner so as not to lead the recall of participants to either a positive or a negative experience. Later in the interviews, when required, follow up questions were used to encourage further discussion or if participants did not fully understand the question. The interviews ranged in from 30-65 minutes and were recorded on two digital audio recorders; the recordings were transcribed verbatim and checked by the interviewer to ensure accuracy.

Data Analysis

First, to establish the range of emotions experienced in relation to the sport of cricket and during interpersonal interactions between opponents, the transcribed interviews were analysed using the Linguistic Inquiry and Word Count (LIWC) software (Pennebaker, Francis, & Booth, 2001). Next, to analyse the processes and implications of interpersonal emotion regulation the transcribed interviews were subjected to coding using inductive content analysis.

Linguistic Inquiry and Word Count. The transcripts generated from the interviews were analysed using the LIWC software which performs a word count of the text files and quantifies the use of specific words against an internal dictionary of over 2300 words and stems. The LIWC application was developed as a means to study cognitive, emotional, and structural components present within individuals' speech patterns (Pennebaker, et al., 2001). Based upon extensive study of linguistic representations of thoughts and emotions the postpositivist approach of the LIWC offers an objective method of measuring words in language (Guba & Lincoln, 1994; Kahn, Tobin, Massey, & Anderson, 2007). The word count groups each word into specifically assigned linguistic categories; for the purposes of the present study, the expressions of emotion were analysed and quantified via the emotion process categories of the LIWC (Pennebaker, et al., 2001). The LIWC word counts for emotion processes in relation to 615 affect based words with both pleasant and unpleasant hedonic connotations. The general category of *positive emotions* reflects feelings and words associated with positive judgements (e.g., happy, good) and is comprised of 261 words. The general category of *negative emotions* (e.g., hate, anger) is comprised of 345 words that are associated with negative feelings and words indicating negative judgements. All word counts are reported as a percentage of the total number of words being analysed, thus controlling for the length of the sections being scrutinized and enabling the researcher to make comparisons across participants.

Coding. A range of approaches to qualitative analysis has been used within sport psychology research; in the present study, a conventional content analysis procedure was adopted in order to analyse and represent the responses of participants in a coherent manner. Inductive content analysis was used to facilitate the emergence and interpretation of categories from each of the interview transcripts (Hsieh & Shannon, 2005). This method was deemed appropriate as it allowed specific contextual experiences to be identified (e.g., response strategies used by batsmen following aggressive behaviour from the bowler).

The first stage of the coding process was open coding which allowed the researchers to immerse themselves in the transcripts and enable raw-data quotes related to the emotion-performance relationship to be extracted (Hsieh & Shannon, 2005). The first and third authors read through the transcripts independently and attached notes to each segment to guide subsequent reviews and facilitate the coding of chunks of data regardless of the context. Quotes which were indicative of common themes were accordingly grouped and labelled as categories before being combined and recorded as higher order categories (Aronson, 1995). The categories were organised into general dimensions allowing a comprehensive picture of participants' collective experiences to be formed (Patton, 2002; Vaismoradi, Jones, Turunen, & Snelgrove, 2016). Two members of the research team conducted the coding process and developed the higher order themes independently; these themes were debated and agreed upon amongst the research team. Further, in the role of critical friends (Sparkes & Smith, 2014) colleagues of the investigators offered critical questions and discussion on the proposed themes that emerged from the analysis. Additionally, the applied and theoretical implications of the findings were debated with colleagues to identify and clarify the results of the study through peer review.

Results and Discussion

The present study sought to examine strategies used by cricketers to influence opponents' cognitions and emotions, as well as the rationale and perceived inter- and intrapersonal implications of their use. First, data collected from individual semi-structured interviews with male professional cricketers were inspected using the LIWC software programme (Pennebaker, et al., 2001) to determine the word count arising from the interviews. The sum of words across all 12 interviews totalled = 26595 ($M_{word} = 2216$; $SD = 1258$). The LIWC programme was then used to identify the emotions most frequently experienced during competition and interpersonal interactions with opponents. Only the participants' responses

were analysed, the questions from the interviewer were excluded. Using the dictionaries developed by Pennebaker et al. (2001), words associated with particular emotions and feeling states were measured; in particular the categories of words reflecting *positive* emotions (e.g., happy, joy) and *negative* emotions (e.g., anxiety, anger) were used. Specifically, the first section of the interviews with participants was analysed; here participants were asked to recall an emotionally intense experience (participants were free to determine which experience to discuss; the question was posed generally to avoid leading the participant towards negative or positive experiences). In order to examine whether participants' reported more positive or negative emotions in the recall of an emotionally intense experience related to cricket we performed a paired samples *t*-test on the use of words reflecting positive and negative emotions. Results indicate there was no significant difference between the use of words reflecting positive emotions ($M = 2.97$, $SD = 3.62$) and negative emotions ($M = 1.33$, $SD = 1.38$), $t(11) = 1.31$, $p = 0.22$.

We also asked participants to recall an instance in which an opposing bowler got particularly aggressive (verbally or physically) with them when they were batting, and to report the emotions they felt during this interaction. Results from a paired samples *t*-test indicate there was no significant difference between the use of words reflecting positive emotions ($M = 1.63$, $SD = 1.41$) and negative emotions ($M = 1.48$, $SD = 1.56$), $t(11) = 0.26$, $p = 0.796$. Further, in terms of the participants' own experience of specific emotions there were no significant differences in reports of anxiety ($M = 0.26$, $SD = 0.55$) and anger ($M = 0.85$, $SD = 1.40$), $t(11) = -1.29$, $p = 0.22$. This indicates that when participants were targeted with aggressive behaviour from opponents, it did not result in a significantly greater amount of negative emotion; also, they were just as likely to experience anger as they were to experience anxiety. Participants' reports of experiencing a range of emotions (both positive and negative) in association with competition supports previous research outlining the central role of emotions in sport (e.g.,

Botterill & Brown, 2002; Jones, 2003). Athletes' varying responses to aggressive behaviour from opponents highlights individual differences in the appraisal and experience of emotion (Lazarus, 2000) and are likely to have implications for performance (Ruiz et al., 2016; Woodman et al., 2009) as well as the implementation of performance enhancement interventions (e.g., IZOF; Hanin, 1997; Ruiz et al., 2017). During the interviews, the cricketers frequently reflected on the emotions they believed were associated with peak performance. This observation is in line with the IZOF model of the emotion-performance relationship put forward by Hanin (1997, 2000). The IZOF model offers an explanation for the differential performance outcomes of specific emotions based on individual differences; an optimal profile of emotions that facilitates peak performance is dependent on an athlete's unique perspective of his/her ideal emotional state (Hanin, 2000).

The results obtained from the inductive content analysis highlight participants' collated emotional interpersonal experiences and responses. The interview data generated 77 distinct raw-data quotes which were initially identified to represent 8 subcategories; to improve the clarity of presentation of the findings these were then reorganised into 5 subcategories, and 3 higher order categories (See figure 1). In general, all of the participants reported that they had experience of interpersonal interactions during competitive matches that were perceived to be aimed at disrupting performance. Specifically, they suggested that interactions with competitors influenced their own cognitions and emotions; these interactions were outlined as being an inherent aspect of elite level performance in cricket. The participants noted that the use of emotion regulation strategies could influence performance outcomes for themselves and others. In the following sections, the different categories are described in subsections reflecting the perspective of the experience, that is, the perspectives of the fielding team (i.e., bowler, wicket keeper) and the batsman are reported using participant codes (e.g., P1).

Purposes of Interpersonal Strategies Used by the Fielding Team to Influence the Batsman. From the perspective of the fielding team, participants reported the *purposes of interpersonal strategies* associated with augmenting the batsman's cognitions and emotions; these are collectively presented as the first higher order category. Specifically, these strategies were intended to *disrupt concentration*, and *induce anxiety through intimidation* of the batsman and are grouped into two subcategories. Participants' descriptions of behaviours aiming to disrupt concentration and induce anxiety are consistent with research examining sledging (e.g., Joseph & Cramer, 2011) and are discussed in relation to the study of the emotion-performance relationship (e.g., Hanin, 2000; Lazarus, 2000).

Each of the participants who were responsible for bowling ($n = 6$) suggested that getting the batsman out of their ideal performance state was the purpose of sledging and bowling aggressively. They recognised that the ability to maintain focus and control attention underpin the batsman's performance, and these cognitive processes are associated with emotions. Positive emotions have been found to promote a task-relevant focus in sport (Ruiz, Hanin, & Robazza, 2016), whilst negative emotions such as anger and anxiety have been associated with both diminished concentration (Allen, Jones, McCarthy, Sheehan-Mansfield, & Sheffield, 2013; McCarthy et al., 2013) and enhanced task-relevant processing (Moran, 1996).

Bowlers reported using strategies in attempts to *disrupt concentration*; this was explained in a similar manner by four participants, "...you are trying to take them away from their processes and routines. If you can actually make them step back because they are laughing or smiling, then you've actually done your job partly, cause it means they've sort of been taken out of sort of their own internal little bubble." (P2) Additionally it was suggested, "...if you get him out of his comfort zone...basically getting in his head and he will be in two minds and then suddenly there is a ball he should leave and he's nicked it because obviously he is not in the right frame of mind." (P1) Another member of the fielding team outlined the purpose of

aggressive play and verbal interactions was to influence underlying cognitive aspects of performance, “He’s in the zone; I do it to take his mind off what he’s doing and concentrate on other things which will leave things unnoticed in his technique.” (P7) The creation of a hostile performance environment can introduce cognitive interference and divert concentration away from a task-oriented goal (Allen et al., 2013; McCarthy, et al., 2013; Nieuwenhuys & Oudejans, 2012; Vast, et al., 2010). The intentions underlying the use of interpersonal emotion regulation strategies between competitors highlight that athletes are aware of the balance between emotional states and optimal performance, with the subcomponents of concentration and focus underpinning this relationship (Vallerand & Bouchard, 2000). In particular, concentration can be disrupted by intense experiences of anxiety that interrupts the automaticity and smoothness of task execution (Vast, et al., 2010).

Members of the fielding team also outlined how they use aggressive play and verbal interactions to *induce anxiety through intimidation* with the aim of impacting upon the batsman’s thoughts and emotions. When asked about using intimidation tactics to influence opponents’ emotions, one bowler outlined the following strategies, “It would be to try and knock the batsman’s head off or tell him ‘I’m going to take your head off, I’m gonna break your arm, I’m gonna hit you somewhere’ you know.” (P8) Other members of the fielding team recognized how their style of play could encourage teammates to play aggressively and intimidate the batter, “As a wicket keeper I’ll run to the stumps and get as close to the batter as I can and then the fielders can throw it in hard...it can come across as quite intimidating.” (P12) The purpose of competitors’ displays of intimidating behaviour is to induce worrying thoughts (i.e., cognitive anxiety; Woodman & Hardy, 2003); for example, increasing a batsman’s concern about being struck by a ball thrown towards him or her. Moreover, these reports from participants highlight a potential link between the IZOF model and social processes (Ruiz, et al., 2017); however, previous research of IZOF has not examined interpersonal aspects between

competitors. For example, the tactical aim of a bowling side and their use of aggression is an attempt to intimidate batsmen for the purpose of gaining a tactical advantage. Attempts to augment an opponent's emotional state, and negatively impact upon the subcomponents of performance (i.e., cognitive and physical) associated with emotions, suggests that athletes extend their awareness of the implications of IZOF to their opponents.

The professional cricketers in the present study report that they are aware of the impact of arousal and emotions on performance. Nieuwenhuys et al. (2011), suggests athletes continuously monitor their own emotional state and – based on knowledge about the impact of emotional experiences on performance (i.e., so-called 'meta-experiences') – employ targeted self-regulation strategies to maintain optimal performance (cf. Robazza, et al., 2004). Further, the interviews with the cricketers highlighted that they also deliberately attempt to influence these factors in their opponents. This observation supports previous research outlining that competitors engage in a continuous process of evaluating their opposition with the aim of gaining a tactical advantage (e.g., Henschen, et al., 2007). Specifically, cricketers comprising the sample of this study reported they appraise the opposition's emotional state and adapt their intra and interpersonal emotion regulation strategies accordingly. Extending the IZOF model to examine interpersonal interactions may advance knowledge and enhance interventions aiming to address the links between emotions and performance.

Interpersonal interactions between teammates may also serve the purpose of influencing the opposition. Two members of the fielding team suggested teammates provide verbal encouragement to the bowler to promote aggressive play, this communication is intended to be audible to the batsman with the secondary aim of inducing anxiety, "...they'll say like, 'smash his face...hit him in the throat...and hit him in the head...let's see if he likes it round the nose, let him smell it.'" (P12) The nature of these attempts to worsen opponents' emotional states relate to interpersonal emotion regulation strategies used in other domains

(e.g., Niven et al., 2009) and between teammates (e.g., Friesen et al., 2013). The interpersonal emotion regulation strategies observed between competitors may have their origins rooted in learned responses modelled and reinforced differently for each athlete within a team (Gee & Leith, 2007). This suggests that the culture of the team may have an impact on the use of interpersonal emotion regulation strategies (e.g, verbal interactions; Tamminen et al., 2016); in the present study, bowlers discussed the influence their aggressive behaviour had on their teammates. The mechanisms and reasons underlying interpersonal emotion regulation between teammates is more established in sport psychology research (Tamminen & Crocker, 2013); specifically motives for their use can be to help a teammate, for an athlete’s own benefit, or both (Campo et al., 2016). It is also worth noting that leaders and captains may influence emotions and the related use of interpersonal emotion regulation strategies within a team (Fransen, Steffens, Haslam, et al., 2016; Tamminen et al., 2016). In cricket, the captain is a central figure involved in extensive communication amongst the team; his or her mood or use of interpersonal emotion regulation strategies can influence those of their teammates (Totterdell, 2000). Further, the manner in which coaches regulate their own emotions and those they work with can impact upon performance and wellbeing (Davis & Jowett, 2010); in particular how coaches regulate their anger can influence their athletes’ emotional experiences and interactions with teammates and opponents (Davis & Davis, 2016; Hill & Davis, 2014).

Responses to interpersonal strategies. Each of the five batsmen outlined a number of responses they have implemented when being confronted by the opposition’s attempts at interpersonal emotion regulation. Batsmen suggested that on occasion they would either *use the aggression to improve their performance* or conversely *attempt to minimize the impact of aggression on performance*; these are presented as subcategories.

Three out of the five batsmen acknowledged that being the target of aggression could enhance their performance through *increasing motivation* and *enhancing attention*. In terms of

increasing motivation one batsman suggested, "Personally it spurs me on, it makes me more determined to prove them wrong and beat them." (P3) Another suggested it maintained motivation through enhanced confidence, "It actually made me feel like I was on top, um, you know he was obviously trying to get me out my comfort zone, so, I actually felt like I was making him do something different. So that gave me the feeling of, right I'm ahead here basically so, just try and remind myself to keep doing what I was doing." (P1)

An athlete's motivation in response to aggressive play can be influenced by both individual differences (e.g., goal orientation, personality; Davis, 2011) and situational factors (e.g., motivational climate; Tod & Hodge, 2001). The subsequent impact of increased motivation upon performance can be optimized through the use of coping strategies that seek to narrow attentional focus (Moran, 1996); specifically, a batsman outlined how being the target of aggressive play can *enhance attention*, "I just get a heightened sense of awareness; I'm a lot more switched on, a lot more focused." (P5) Several cricketers in the present study indicated that specific emotions associated with being the target of aggressive play can influence attentional focus and the ability to maintain concentration. However, the intensity of the emotions can augment the effects of emotional states on attentional patterns (Vast, et al., 2010; Ruiz et al., 2016). Athletes who judge they possess a degree of control over emotion-provoking situations, and are able to effectively cope with their emotions, are more likely to interpret their emotional state as being facilitative to performance (Jones, 2003).

In attempting to minimize the impact of aggression on performance, athletes responded by using a variety of strategies that are classified as *engagement-oriented*, *reappraisal*, and *suppression*. In particular, *engagement-oriented* responses were described by one batsman's proposal, "If the batsman is willing to puff his chest out and walk back down the wicket...then the bowler is always going to have to back down." (P10) This example suggests that if an athlete engages the instigator of the aggression with a direct physical approach, it can deter further

Similar to Joseph and Cramer's (2011) study of batsmen's experiences of sledging, the participants in the present study outlined the utility of mental skills by adapting them for use in the context of cricket and within the parameters that comprise the sport. These strategies are categorized as *mental skills for intrapersonal emotion regulation* and include *refocusing routines, imagery, and self-talk*. Three of the batsmen outlined that similar to other sports like baseball, the period of time between deliveries of the ball afforded the opportunity to use *refocusing routines* (Moran, 1996); in particular they used terminology specific to cricket, "It's

called gardening, when you take your guard and repair some of the pitch...slow the tempo, get your breathing right...check the field...commence play when you're ready." (P10)

Batsmen also linked *refocusing routines* with the use of *imagery*; three of the participants outlined the use of the mental skill in attempts to minimize the effects of potential interpersonal interactions. One batsman suggested that visualising his performance prior to batting provides a cue or an ideal performance state to return to when under pressure from interpersonal interactions, "trying to get back into that state of mind that I got into when I'm visualising really. Trying to remain as calm as possible, as relaxed as possible, trying to keep my head as clear as possible, so I can just watch the ball." (P1)

Two of the cricketers also discussed how they use *self-talk* to maintain focus and motivation when managing emotions arising from interpersonal interactions, "I talk to myself, just reassure myself, 'keep doing what you're doing, you're fine, keep going, keep going.'" (P7) The use of a range of well-known mental skills (e.g., imagery, self-talk; Hatzigeorgiadis, Zourbanos, Mpoupaki, & Theodorakis, 2009; Jones, Mace, Bray, MacRae, & Stockbridge, 2002) and self-regulation strategies (e.g., refocusing, cognitive reframing, expressive suppression; Gross, 1998) offer further evidence of athletes' meta-emotional beliefs of their ideal emotional state for optimal performance (Hanin, 2000; Nieuwenhuys et al., 2011). In consideration of these findings, practitioners may seek to support athletes in attempts to enhance their ability to appraise both their own and their opponents' emotional state prior to initiating strategies aimed at altering cognitions and emotions that augment performance (Hanin, 2000; Niven et al., 2009).

To underline the importance of the current topic, it warrants noting that all of the participants (i.e., batsmen & bowlers) in the present study indicated that their emotions during competition are influenced by interpersonal interactions; this finding extends previous research by Joseph and Cramer (2011) that exclusively examined batsmen's experiences of sledging.

However, due to the nature of the research design and the requirement of participants to recall intense emotional experiences, a limitation of the interview method used in the study may have skewed athletes' responses towards reporting particular negative (or positive) experiences. The interview was designed to be as open as possible to avoid biasing participants' responses; however, athletes may have chosen to focus on specific events that guided subsequent responses. Future research may adopt alternative methodologies (e.g., observation, critical incidence interviews; Allan, Turnnidge, Vierimaa, Davis, & Côté, 2016) to investigate specific emotions and interpersonal emotion regulation that reflect contextual and individual differences.

In regards to individual differences, participants suggested that each athlete possesses a preferred emotional state (Hanin, 2000), and in response to interpersonal interactions with their opposition they regulate their emotions to align with their preferred state using strategies such as reframing, refocusing, and suppression (Gross & John, 2003). However, it must be noted that the present study did not assess the accuracy of athletes' evaluations of situations, or the perceived effectiveness of the implementation of specific emotion regulation strategies. Future research should explore the utility of specific interpersonal emotion regulation strategies to determine if they are potentially ineffectual and may be associated with self-regulation failures (Huberts, Evers, & De Ridder, 2014). Furthermore, it is likely that individual differences play a role in the effectiveness of athletes' interpersonal emotion regulation strategy use; future research could extend the current findings by investigating the influence of personality traits on intrapersonal emotion regulation in sport (e.g., Davis, et al., 2010; Hill & Davis, 2014), and consider their impact upon interpersonal interactions.

The findings arising from the present study present a number of implications for practitioners' consideration. Although, cricketers report the purpose of sledging is to impede the opposition's performance, some of the participants in the present study suggest it can

facilitate performance through enhanced motivation and a narrowing of focus. Sport psychology practitioners may explore athletes’ perceived utility of sledging behaviour and discuss whether the effort of engaging in this strategy would be better served by investing in self-regulation rather than ineffective attempts at interpersonal emotion regulation. Further, the impact of sledging behaviour appears to be influenced by individual differences that can be explained by the IZOF model (Hanin, 2000). IZOF interventions focusing on the assessment of optimal and non-optimal emotions (Ruiz et al., 2017) may guide practitioners in developing effective responses with athletes affected by intense emotional interpersonal interactions.

In summary, the current study extends previous research on sledging (Joseph & Cramer, 2011) by confirming that interpersonal interactions in cricket influence both batsmen and bowlers’ experience of emotions. In addition, it identified a number of considerations underlying the use of interpersonal emotion regulation strategies and their perceived effects upon the performance of opponents. The present study extends previous research investigating acts of interpersonal emotion regulation within teams (e.g., Campo, et al., 2016; Tamminen & Crocker, 2013), by highlighting that athletes are aware of the impact of cognitions and emotions on performance and – to gain a competitive advantage – deliberately attempt to negatively influence these factors in their competitors (Hanin, 2000). Future study is required to confirm the current findings and assess the utility of specific interpersonal emotion regulation strategies across different individual athletes and sporting contexts.

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Table 1: Summary of Higher Order Categories and Subcategories Pertaining to Processes and Implications of Interpersonal Interactions

Higher Order Category	Subcategory	Raw Quote
Purposes of interpersonal strategies	Disrupt concentration	“It’s all about trying to draw the Batsmen outside of their own little bubble and give them something else to think about... to make them think about something differently” (P2)
	Induce anxiety through intimidation	“A long stare maybe just telling him like I was saying, I’m gonna take your head soon or yeah you can’t bat, I’m gonna break your arm (P8)
Responses to interpersonal strategies	Use aggression to improve performance	“I think I concentrated more and I was more determined not to get out or not to give into the verbal’s I was getting (P3) “I just get a heightened sense of awareness; I’m a lot more switched on, a lot more focused.” (P5)
	Attempt to minimize the impact of aggression on performance	“I know that whatever I get I can give back as well, so that also helps me mentally.”(P4) “I’ve actually remembered the words and turned it on its head completely... actually turn it to your advantage...” (P2) “Maybe just go within myself and think of something else and uh, try and get way from what the batsmen is trying to say to me...”(P3)
	Mental skills for intrapersonal emotion regulation	“I’ve got various different pre ball routines... basically, it’s taking everything that the bowler has just done or said, or someone behind the wicket has said, it takes that out the equation and you just try and get yourself back into the right frame of mind to perform at your best really. (P1) “I just remind myself that the best way for myself to play is to control it and just, like I say, self-talk is good for me.” (P7)

Footnote. 1 The use of the term “batsman” refers to both male and female cricketers and is used in accordance with the terminology used in the laws of the game of cricket see <https://www.lords.org/mcc/laws-of-cricket/introduction>

Footnote. 2 The interview guides are available from the first author upon request.