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Empathic accuracy in coach-athlete dyads who participate in team and individual sports

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Abstract

Objective

The purpose of the present study was to investigate the empathic accuracy of coach-athlete dyads participating in team and individual sports.

Method

An adaptation of Ickes's (2001) unstructured dyadic interaction paradigm was used to assess the empathic accuracy of 40 coach-athlete dyads. Accordingly, each dyad was filmed during a training session. The dyad members viewed selected video footage that displayed discrete interactions that had naturally occurred during that session. Dyad members reported what they remembered thinking/feeling while making inferences about what their partner's thought/felt at each point. Empathic accuracy was estimated by comparing self-reports and inferences.

Results

The results indicated that accuracy for coaches in individual sports was higher than coaches in team sports. Shared cognitive focus also differed between team and individual sports, and fully mediated the effect of sport-type on coach empathic accuracy. Moreover, coaches whose training sessions were longer demonstrated increased empathic accuracy. No differences were found for athletes.

Conclusions

The results suggest that the dynamics of the interaction between a coach and an athlete play a key role in how accurately they perceive each other.

Keywords: Empathy, understanding, interaction, coach-athlete dyads

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Coaches and athletes work closely together, they form close relationships, and have a high degree of interaction and reliance upon each other. This is manifested in interdependence of the coach's and the athlete's affect, cognition, and behaviours (Jowett, 2007), and in the athlete's need to acquire knowledge and skill from the coach, the coach's need to impart knowledge, experience, and expertise to the athlete, and for them both to translate this information into positive outcomes such as performance success (Antonini Philippe & Seiler, 2006). This highly complex and interdependent process primarily unfolds in the training environment or during periods of practicing the requisite skills, techniques, and strategies.

The manner in which coaches and athletes interact can have a profound impact upon the effectiveness of their training sessions which, in turn, it is possible that this may directly or indirectly influence such factors as satisfaction, enjoyment, motivation, and performance. The manner in which coaches and athletes interact can shape the quality of their dyadic athletic relationship and also determine the quality of coaching (Jowett & Poczwardowski, 2007). Yet there are many unknown factors that may potentially contribute to positive coach-athlete relationships and successful coaching.

One aspect that is likely to help develop and maintain positive coach-athlete relationships and successful coaching is the notion of mutual understanding between a coach and an athlete. Understanding requires an ability or capacity to perceive, recognize, and appreciate others' behaviors, feelings, attitudes, and intentions (Losoya & Eisenberg, 2001). Because the terms understanding and empathy are often used synonymously in the broader social psychology literature, these terms have been used interchangeably in this paper. The notion of understanding others, '*knowing what makes them tick*', is an idea that is present in both the coach education and coaching philosophy literatures (Jones & Cassidy, 2004; Lyle,

2002). For example, Jones, Armour, and Potrac (2004) highlighted the significance coaches place on understanding their athletes on a daily basis. This was exemplified by an elite football coach who described coaching as “The art of... recognising the people and responding to the people you are working with” (Jones et al., 2004, p. 18). In addition, Côté, Young, North, and Duffy (2007), in their definition of coaching excellence, stated that “coaches should understand and be responsive to athletes’ needs in the different environments in which they coach” (p. 6).

Other evidence in the sport psychology literature also suggests the importance of the notion of understanding between coaches and athletes. For example, both the Multidimensional Model (Chelladurai, 1993) and the Mediational Model of Coach Leadership (Smith, Smoll, & Curtis, 1978) appear to indirectly implicate the concept of understanding in their main postulates. The multidimensional model states that athletes’ satisfaction and performance are determined by the degree to which the three states of coach behavior - actual, required, and preferred - are congruent. It is thus possible that congruence among the three states of coach behaviors depends upon a coach’s understanding and appreciation of the athlete’s preferences. Correspondingly, the mediational model suggests that the athlete’s experience of sport, including satisfaction and performance, depends on the type of behavior the coach manifests. It also proposes that this association is mediated by how the athlete perceives the manifested behaviors of the coach. It is reasonable to assume that athletes who are more understanding of their coaches’ intentions and behaviors are more likely to respond positively to their coach and enjoy their sport. The model is also reciprocal, suggesting that athletes’ experiences are monitored by the coach, which in turn influences the coaches’ behavior - another process in which accurate perception and understanding should lead to more appropriate reactions.

More recently, Jowett and colleagues have proposed a model of the coach-athlete relationship that incorporates the interplay of coaches' and athletes' closeness, commitment, and complementarity (Jowett, 2005, 2007). A key dimension of this model is the idea of co-orientation. Co-orientation was a term used by Laing, Phillipson, and Lee (1966) in describing relationship members' interperceptions. It reflects two distinct vantage points from which coaches and athletes view their relationships, namely, direct perspective (e.g., "I trust my coach/athlete") and meta-perspective (e.g., "My coach/athlete trusts me"). The different combinations of these perspectives yield three dimensions of co-orientation: (a) assumed similarity, (b) actual similarity, and (c) empathic understanding. Kenny and Cook have described these as important factors in interpersonal perception. They distinguish between assumed and actual similarity, and empathic understanding. Empathic understanding concerns the congruence between an individual's meta-perspective (e.g., "My coach trusts me") and their partner's direct-perspective (e.g., "I trust my athlete"), the degree to which the coach and the athlete can infer accurately each other's perceptions about the quality of their relationship. Jowett (2007) suggests the ability to understand and accurately perceive each others' viewpoint allow coaches and athletes to identify and resolve potential conflicts.

The significance of understanding one another in the coach-athlete relationship context has been demonstrated in a series of qualitative studies that have been conducted recently using the integrated conceptual model of closeness, commitment, complementarity, and co-orientation (e.g., Jowett, 2003; Jowett & Frost, 2007; Jowett & Cockerill, 2003; Jowett & Meek, 2000). Overall, the findings suggest that coaches and athletes viewed their ability to accurately perceive and understand each other as a key factor in positive relationships (e.g., "One of her qualities was that she made us feel she understood us", "I can infer whether the program works or not from what I see... how she moves, how enthusiastic,

and energetic she is” extracts from Jowett & Cockerill, 2003), and viewed a lack of understanding as a negative factor (e.g., [coach] did not understand how I felt and he pushed me, something I could not tolerate at the time” extract from Jowett, 2003).

Furthermore, quantitative research using a questionnaire has studied the dimension of empathic understanding. Jowett and Clark-Carter (2006) collected data from 121 coach-athlete dyads who participated in individual sports. Athletes and coaches recorded their direct and meta-perspectives of closeness (mutual affective ties), commitment (intention to maintain the athletic partnership), and complementarity (co-operative interactions). Comparison of individuals’ meta-perspectives with their partners’ direct-perspectives revealed that athletes were significantly more capable of inferring accurately their coaches’ feelings of closeness, than their coach was at inferring theirs. Furthermore, athletes in moderately developed relationships (6 months - 2 years) were more capable of inferring accurately the content of their coaches’ commitment and complementarity, than athletes in more established relationships. Jowett and Clark-Carter’s (2006) study supplies a limited view of empathic accuracy by focusing on generalised judgements about relationship characteristics. Thus, the present study sought to explore a means by which empathic accuracy or the degree to which coaches and athletes understand each other is assessed during a typical training session where coaches and athletes interact on a moment-to-moment basis.

Empathic accuracy: The unstructured dyadic interaction paradigm

According to Ickes and colleagues, empathic accuracy is defined as the capacity to perceive, from moment-to-moment, the psychological condition of another, such as thoughts, feelings, and moods, and the motivations and reasoning behind behaviors (Ickes, Stinson, Bissonnette, & Garcia, 1990). Ickes and colleagues’ (Ickes, 2001; Ickes et al. 1990) research has significantly contributed to the field of empathy by developing a methodological paradigm that attempts to capture the concept of *empathic accuracy* as defined above.

This methodology involves a paradigm in which the spontaneous interaction between two individuals is unobtrusively filmed in a laboratory setting (i.e., unstructured interactions). The participants are then invited to watch the film separately and record the specific thoughts and feelings they remember having during the interaction. Subsequently, participants watch the film a second time and write down what it was they believed their partner had thought or felt at the designated points indicated by their partner. The congruence of each self-report and inference is rated by external observers and an average rating of accuracy is determined. This paradigm has been used extensively in social psychology research in the last two decades, and has been used for example to explore a variety of relationships such as strangers (Thomas & Fletcher, 2003), friends (Stinson & Ickes, 1992), romantic partners (Kilpatrick, Bissonnette, & Rusbult, 2002), and siblings (Neyer, Banse, & Asendorf, 1999). To our knowledge, Ickes' (2001) paradigm has never been applied to the coach-athlete relationship or to the sport domain; previous research in other fields has highlighted several potentially relevant correlates.

Correlates of empathic accuracy

Team versus individual sports and group size. Coach-athlete relationships occur across a spectrum of different sports, and the nature of a sport may potentially influence the level of empathic accuracy that coaches and athletes exhibit. The coach-athlete relationship unfolds in either individual sports where the athlete competes individually (e.g., gymnastics, badminton, boxing) or in team sports where the athlete competes as part of a team (e.g., football, rugby, hockey). Researchers have described how the dynamics between the coach and the athlete may vary between these two broad categories of sports (Bloom, Durand-Bush, Schinke, & Samela, 1998; Jowett, Paull, & Pensgaard, 2005). It is believed that in individual sports the coach and athlete operate on a one-to-one basis, and even though the coach may train with several athletes, the focus is on individual development and progression. In

contrast, in team sports the focus is upon the synergy between players and the performance of the team; therefore athletes will most often train as a group, working together, with the coach overseeing the whole.

Salminen and Liukkonen (1996) investigated the perceptions of the leadership behaviors of 68 Finnish coaches and their 400 athletes. They found that perceptions of leadership behaviors between coaches and athletes in individual sports were more similar than in team sports. They interpreted this finding by arguing that coaches and athletes of individual sports have more and better opportunities to develop close relationships. Thus, because more frequent and longer interactions with one another are thought to give greater opportunities to develop a closer athletic relationship, the first hypothesis was formulated.

Hypothesis 1. Coaches and athletes in individual sports will display higher empathic accuracy in comparison to those involved in team sports.

Shared cognitive focus. Shared cognitive focus is a notion introduced by Thomas, Fletcher, and Lange (1997). They defined it as “the actual similarity between the contents of the partners’ thoughts and feelings at the same point... considering the degree to which the same topic was being addressed” (p. 843). They claim that this similarity increases empathic accuracy because individuals can perceive with greater ease what their partner is thinking about and can rely on their own reactions as a basis for inferring the thoughts and feelings of their partner (Thomas et al., 1997). For example, if a coach is focused on the technical instruction they are giving, it is reasonable that they would assume that their athlete would also be focused on this. However, if the athlete thinks the coach is talking about a different technical point, or is focused on something different, an upcoming drill or what other athletes are doing, it will be more difficult for the coach to accurately perceive what that athlete is thinking and feeling.

Jowett and Clark-Carter's (2006) finding that coaches rely on how similar they actually are (i.e., actual similarity) with their athletes to draw accurate inferences about them as individuals (i.e., empathic understanding), provides some support for this claim in the coach-athlete relationship context. Thus, because it is believed that addressing similar issues and perceiving them in a similar way makes it easier for an individual to make accurate inferences about their partner's thoughts, the second hypothesis was formulated.

Hypothesis 2. Empathic accuracy will be positively associated with shared cognitive focus.

Within this notion of shared cognitive focus, it is also important to consider the group size of team and individual sports. Considering the group size of a sport, regardless of whether it is a team or individual sport, may enable a clearer interpretation of the relationship between empathic understanding and team versus individual sports. This notion is based on Carron, Hausenblas, and Eys's (2005) assertion that larger groups require the coach to take a more central role which inevitably affects the amount of one-to-one interaction. Moreover, individuals in larger groups have been shown to display less congruence in their shared goals (Carron et al., 2005; Hare, 1981). Thus, because the increasing size of a group can change the dynamics and interactions of the individuals, the following two hypotheses were formulated.

Hypothesis 3. Empathic accuracy and shared cognitive focus will be decrease as groups increase in size.

Hypothesis 4. Shared cognitive focus and group size will mediate the relationship between sport type (i.e. team versus individual) and empathic accuracy.

Relationship and contact time. Researchers (Thomas & Fletcher, 2003) in the empathic accuracy field have found that accuracy increases during the initial stages of relationships, before decreasing in the later stages of the relationship. The idea of

relationship duration would seem particularly pertinent in sport, where it may take many years for an athlete to progress to the higher levels of performance, taking as long as 10 years of training to develop the expertise needed to compete at the highest levels (see Ericsson, 2003). Jowett and Clark-Carter (2006) found that athletes in moderately developed (2 or fewer years in duration) as opposed to established relationships (greater than 2 years in duration), demonstrated higher levels of empathic accuracy. It was explained that athletes are more motivated to observe their coaches closely in an attempt to get to know them during the early stages of the athletic partnership (Jowett & Clark-Carter, 2006). Based on the above, the following hypothesis is proposed.

Hypothesis 5. Empathic accuracy will be negatively associated with relationship duration.

Method

Participants

Forty coaches ($M_{age} = 29.45$ $SD = \pm 10.7$) and forty athletes ($M_{age} = 21.35$ $SD = \pm 3.87$), forming 40 coach-athlete independent dyads were recruited from a range of team ($n = 21$), and individual sports ($n = 19$). Coach-athlete dyads had been together for an average of 18.6 months ($SD = \pm 30.34$), trained for an average of 2.68 sessions per week ($SD = \pm 1.42$), for 1.86 ($SD = \pm 0.41$) hours at a time. Forty percent (40%) of dyads had both a male coach and athlete, 22.5% a male coach with a female athlete, 7.5% a female coach with a male athlete, and 10% a female coach and female athlete. Coaches had been involved in coaching for an average of 7.98 years ($SD = \pm 7.87$). Athletes had an average competitive experience of 6.69 years ($SD = \pm 4.49$). The performance level of the participants was categorised as follows: regional (30%), national (35%), and international (35%).

Procedure

Coach-athlete dyads were approached via either the coach or the athlete using a variety of means including personal contact, email, and letter. Participants were invited to take part in a study exploring how coaches and athletes interact during training. Brief descriptions of the study's aims and practical implications were supplied with information related to confidentiality and anonymity, as well as the voluntary nature of the study. There were two criteria for participation: (a) both coach and athlete participants were at least 18 years of age, and (b) athlete participants were actively engaged in training under the supervision of a coach and participated on a regular basis in competitions. Prospective participants who expressed an interest completed informed consent forms before any further involvement. Ethical approval was granted by the University's Ethical Advisory Committee before the data collection phase of the study.

Materials

Collection of video-footage. The protocol is based on Ickes and colleagues' (Ickes, 2001; Ickes et al., 1990) methodological paradigm. This paradigm was modified appropriately to reflect the context in which coach and athlete interactions naturally occur. A mutually convenient date and time were identified for the video recording of a typical training session. Coaches were asked to wear a small portable lapel microphone that allowed their conversations to remotely be recorded directly onto the video camera. This meant filming could be done from a distance with a zoom function – minimizing disruption caused by filming. Coach and athlete dyads were also asked to conduct the session as they normally would. After briefing the coach and the athlete, the researcher had no further interaction with them until the conclusion of the training session. The session was recorded, from an unobtrusive position. The coach and athlete were ideally kept in shot the whole of the session - there were instances when this was not possible.

Editing. The video-recording of each dyad's training session was uploaded to computer and reviewed by the first author. As the training sessions in this sample varied in length (from 20 minutes up to 4 hours) and were most often far longer than the brief discussions used in previous empathic accuracy research, a representative sample of discrete coach-athlete interactions was used.

All interactions between the coach and athlete were first identified. Interactions were rejected if sound quality was poor enough to make dialogue unclear or the view of the coach or athlete was obscured. Interactions were identified as being where a single topic or issue was addressed. For example, a coach and athlete may have talked continuously for several minutes, first about a drill and then about a future competition. This would be divided into two interactions. Interactions were sampled using a simple formula: 20% of sampled interactions were selected from the first third of the footage (usually the-warm up phase), 50% from the middle (main training session), and 30% from the final section (usually the cool down and conclusion). No criteria based upon types of behavior/interaction was used. This gave a representative sample from across the training session. Selected interactions were compiled into a continuous video, with each discrete interaction sequence separated by 80-seconds of blank footage. 12 ($M = 11.53$, $SD = 0.93$) episodes of interaction were selected as a sufficient amount, giving a range of interactions from across the training session, without making the end video so prohibitively long that coach-athlete dyads would be unwilling to participate.

Data Collection

Collection of thought and feeling data. The day following the video-recordings, coach-athlete dyads attended the laboratory where each member of the dyad was asked to independently review the video. Participants were each given a standardised coding sheet on

which to record their thoughts and feelings, like the one Ickes and colleagues use in their studies (Ickes, 2001; Ickes et al., 1990).

The coding sheet was broken down into numbered sections, one for each interaction. Each section was completed during the period of blank footage following the viewing of an interaction. Pilot testing of this method had established that an 80-second period was sufficient for participants to record their thoughts and feelings, while still placing a time pressure on them to more accurately reflect how inferences are made on a moment-to-moment basis. Participants were asked to only record what they clearly remembered experiencing during the training session and not to create new thoughts and feelings. They were told that their partner would not be allowed to see these responses. Three specific responses were required: (i) the general feelings they remembered experiencing, (ii) the specific thoughts they remembered having, and (iii) their interpretation of training at each selected point (i.e., positive, neutral, negative). Participants could report as many thoughts and feelings as they remembered experiencing during the depicted interaction.

Collection of inference data. Each coach-athlete dyad was then asked to watch the video a second time. Participants were supplied with new coding sheets, identical to those used to record their own thoughts and feelings. This time the coach and athlete were instructed to watch the recording and at each break to record what they believed their partner had been feeling and thinking at that selected point in the training session, and how their partner would have interpreted it.

At the conclusion of this task, coaches and athletes provided various demographic data. These data included gender, age, performance level, relationship duration, the average number of trainings sessions together per week, and the average length of a typical training session. The coach and athlete were fully debriefed about the nature of the study, the variables involved, its purpose, and expected findings.

Results

Aggregating the empathic accuracy data and shared cognitive focus data

According to Ickes's (2001) computation of empathic accuracy scores, accuracy is calculated, for example, by comparing an athlete's inferences with his/her coach's self-reported thoughts and feelings, for each of the selected interactions. Three raters independently assessed the similarity of each pairing (i.e., inferences and self-reports) using a 3-point scale: 0 – *essentially different*, 1 – *similar, but not the same*, and 2 – *essentially the same*. The mean score for each individual (i.e., athlete and coach) is then calculated. This is the average score of all three raters for all inferences made by an individual. This average score is divided by 2 and then multiplied by 100 to produce a percentile score describing the level of accuracy: 0% *describing total inaccuracy* and 100% *describing perfect accuracy*.

The empathic accuracy scores of the present study were corrected for accurate inferences based purely upon chance as follows. Individuals' self-reported thoughts and feelings were randomly paired with their partners' inferences. Three raters then independently scored the similarity of the content of these random pairings using the same method described above. The resulting score (called baseline accuracy, see Ickes et al., 1990) was subtracted from the original empathic accuracy score to yield a chance-corrected value. From this point onwards all references to empathic accuracy refer to this corrected value. The inter-rater reliability for the original empathic accuracy measure was 0.88 for both coaches and athletes, and 0.82 and 0.81 respectively for the baseline accuracy measure.

As described by Thomas et al. (1997), shared cognitive focus was assessed by comparing the self-reports of both partners for each point. Three raters independently scored the similarity of the content of these pairings and a mean value was then calculated. The degree to which the same topic/subject was being addressed by both the coach and the athlete, irrespective of how they felt about that topic was rated as, 0 - *different topics*, 1 –

similar topics, 2 - the same topic. The inter-rater reliability for shared cognitive focus was 0.88.

Data Analyses

Hypothesis 1. This hypothesis explored whether athletes and coaches involved in individual sports as opposed to team sports would report higher levels of empathic accuracy. There was a significant medium to large effect, $t(38) = 2.50, p < .05, d = 0.81$, with coaches demonstrating higher empathic accuracy in individual sports. No significant difference was found for athletes. A significant medium-to-large effect for shared cognitive focus was also found, $t(38) = 2.23, p < .05, d = 0.72$, with coaches and athletes showing a higher shared cognitive focus in individual sports.

Hypotheses 2 and 3. Here it was anticipated that empathic accuracy would be positively associated with shared cognitive focus, and that both empathic accuracy and shared cognitive focus will be negatively associated with group size. Table 2 shows the bivariate correlations between these variables. Coach empathic accuracy was strongly correlated with shared cognitive focus, $r(38) = .63, p < .01$, whereas athlete empathic accuracy was not. Only shared cognitive focus was significantly and negatively correlated with group size $r(38) = -.40, p < .05$.

Hypothesis 4. It was hypothesized that shared cognitive focus and group size would mediate the relationship between sport type (i.e. team versus individual) and empathic accuracy. However, as there was no significant difference between team and individual sports for either group size or for athletes' empathic accuracy, only the possibility of shared cognitive focus mediating the relationship between sport type and coach empathic accuracy was further investigated. Baron and Kenny's (1986) procedures for mediation regression were followed. First, coach empathic accuracy was regressed on sport-type to establish if there was a relationship to be mediated. Sport-type significantly predicted coach empathic

accuracy, $\beta = .38$, $t(38) = 2.49$, $p < .01$, explaining a significant proportion of the variance, $R^2 = .14$, $F(1, 38) = 6.23$, $p < .05$. Next, coach empathic accuracy was regressed on shared cognitive focus and shared cognitive focus was regressed on sport-type to establish if shared cognitive focus could act as a mediator. Shared cognitive focus significantly predicted coach empathic accuracy, $\beta = .63$, $t(38) = 4.95$, $p < .01$, $R^2 = .39$, $F(1, 38) = 24.53$, $p < .01$. Sport-type significantly predicted shared cognitive focus, $\beta = .34$, $t(38) = 2.23$, $p < .05$, $R^2 = .12$, $F(1, 38) = 4.96$, $p < .05$. Finally, coach empathic accuracy was regressed both on sport-type and shared cognitive focus. In this analysis the association between sport-type and coach empathic accuracy became insignificant, while shared cognitive focus still significantly predicted coach empathic accuracy $\beta = .56$, $t(37) = 4.24$, $p < .05$, while explaining a significant proportion of the variance $R^2 = .42$, $F(2, 37) = 13.51$, $p < .01$. As sport-type predicted no significant independent variance in coaches' empathic accuracy, the association between sport-type and empathic accuracy was mediated by shared cognitive focus.

Hypothesis 5. We predicted that athletes and coaches in longer athletic relationships and whose training sessions are longer in duration will be associated with high levels of empathic accuracy. Three variables addressed the amount of contact between coaches and athletes: overall length of the relationship, number of training sessions per week, and the length of these training sessions. Coach and athlete empathic accuracy were each in turn regressed on these three variables. Only the regression for coach empathic accuracy was significant, $R^2 = .25$, $F(3, 36) = 5.38$, $p < .05$, with only training session length significantly predicting any variance, $\beta = .53$, $t(36) = 3.73$, $p < .05$.

Discussion

The objective of this paper was to investigate the role of empathic accuracy in the context of the coach-athlete relationship by assessing it during a typical training session where there is a plethora of interactions on a moment-to-moment basis. An adaptation of

Ickes's (2001) paradigm was employed to obtain data of coaches and athletes' feelings and thoughts as well as their inferences of each others' feelings and thoughts. The analysis of the obtained data indicated coaches and athletes display a degree of error in their inferences, on average less than 40% accuracy, suggesting that a large proportion of the time they were unaware of what their partner was thinking and feeling. This is consistent with previous empathic accuracy research, which revealed lower than 50% accuracy in relationships such as friendships (Stinson & Ickes, 1992) and dating partners (Thomas & Fletcher, 2003). In addition, relative low accuracy has also been observed in the coach-athlete relationship; Jowett and Clark-Carter (2007) demonstrated an average co-efficient of less than 0.30 between coaches' and athletes' direct and meta-perspectives of each other.

The findings also indicate that the distinct nature of team versus individual sports and group size can affect the empathic accuracy of coaches. This finding partially supports the hypothesis that higher levels of empathic accuracy will be demonstrated by those involved in individual sports as opposed to team sports. The present findings demonstrated that coaches in individual sports may have more and better opportunities to get to know their athletes and hence understand their thoughts and feelings than coaches in team sports (cf. Salminen & Liukkonen, 1996). Furthermore, the findings revealed that coaches in individual and team sports may be more accurate in their perception of athletes' feelings and thoughts for two interrelated reasons: (a) due to the smaller group sizes they train, and (b) due to their shared cognitive focus. The findings from the mediational analysis highlighted that shared cognitive focus predicted substantially more variance in coach empathic accuracy than just sport-type alone, explaining over 40% of the variance. This suggests that shared cognitive focus is an important mechanism through which sport-type affects coach empathic accuracy.

Shared cognitive focus is obviously an important factor in coach empathic accuracy; it may also explain why no difference in athlete empathic accuracy was found between team

and individual sports. First, coaches in team sports are more likely to interact with the group as a whole than those involved in individual sports, and interactions with any given individual athlete will be limited (Carron et al., 2005; Bloom et al., 1998; Jowett et al., 2005). Second, it is also likely that in team sports, what the coach is saying may not always apply to the whole of the group being addressed. On such occasions, athletes' minds may wander. Stinson and Ickes (1992) found that in situations where an individual was thinking about something other than the current situation, their partner had greater difficulty making accurate inferences about their thoughts and feelings. Hence, as the situation differs for coaches in team sports compared to individual sports, shared cognitive focus may become an influential factor on coaches' empathic accuracy than on athletes' empathic accuracy.

Thomas et al. (1997) have shown that when married couples were focused on the same task their empathic accuracy increased, they also explained that shared cognitive focus was less important when individuals were better able to pick up on contextual information such as verbal and nonverbal cues. The nature of the coach-athlete relationship means that interaction typically involves the coach playing a leadership role in orchestrating the training session. The coach is largely preoccupied with technical instruction or encouragement, strongly focused on the here and now. This focus on the here and now, and typically abundant verbal information, is likely to make it easier for athletes to make accurate inferences about what the coach is thinking and feeling even if they do not have a shared cognitive focus. Additionally, athletes usually have one principal coach, whilst coaches have a number of athletes to focus their attention on.

An important issue when considering relationship length may be that of "precision". In previous empathic accuracy research, two relationships of a similar length of years (e.g., five-year relationship) have been considered to have had an equivalent amount of contact time (Kilpatrick et al., 2002; Thomas & Fletcher, 2003). However, we argue here that such

relationship length as a measure of may be imprecise, because relationship members may have been together for five years but have only actually interacted half of that time, whereas other members spent all of their time together. In the coach-athlete relationship, an athlete who has trained with a coach for five year, two days a week, for two hours a time, may be completely different from one that has trained with the same coach for five years, but for four times a week, for three hours a time. Thus, in the present study contact time was measured not only by recording the coach-athlete relationship length but also the frequency and duration of their training sessions.

Relationship length in term of years revealed no association with empathic accuracy even when the frequency and length of sessions were controlled for. This conflicts with previous findings that have shown a correlation between relationship length and empathic accuracy (Thomas & Fletcher, 2003). It has been suggested that it is only in relatively new relationships that the relationship length makes a positive difference to empathic accuracy (see Ickes, 2003; Stinson & Ickes, 1992), with newly formed relationship initially showing an increase in empathic accuracy that then decreases as the relationship continues (Thomas & Fletcher, 2003). The closest example in sport is provided by Jowett and Clark-Carter (2006), who found that moderately, developed relationships (6 months to 2 years) displayed higher levels of empathic understanding than those in more established relationships (greater than two years). In this sample, the majority of coaches and athletes were from relationships one and a half to two years long. Thus, future research should examine whether shorter and longer term relationships are significantly different in terms of athletes and coaches' empathic accuracy.

The only contact time variable to show any association with empathic accuracy was the length of the training sessions, and that was for coaches only. One possible explanation is that shorter training sessions due to time constrains are more focused on the task at hand (i.e.,

skill development and performance enhancement), whereas longer sessions allow time to talk, interact, and engage about sport as well as other topics outside sport. Another is that a longer training session is simply reflective of a more intensive task-oriented session with greater amounts of interaction.

Increased time together would afford coaches and athletes greater awareness and personal knowledge of each other, a factor that has been argued to have a positive impact on empathic accuracy (Stinson & Ickes, 1992; Thomas & Fletcher, 2003). It is also possible that coaches who are exposed to additional information about specific athletes from their parents, support staff, and other coaches and athletes may be more likely to make accurate inferences – even in the absence of shared cognitive focus (i.e., individuals are thinking about things other things than the current location and events), (cf. Stinson & Ickes, 1992). For example, if an athlete is distracted at training due to worries about home life, personal knowledge of that athlete's situation would allow a coach to accurately infer what the athlete was thinking and feeling, and the reason for their distraction. Longitudinal research would significantly enhance our knowledge of the temporal patterning of empathic accuracy.

Ickes's (2001) paradigm has been used in social psychology research extensively to explore the ideas behind empathic accuracy; however, certain criticisms have been leveled at it. Wilhelm and Perrez (2004) have suggested that the ecological validity of the findings it generates is suspect because (a) the laboratory setting influences the dynamics of the interactions and (b) the relatively short duration of the interactions (e.g., 5 or 10 minutes) does not reflect changes that can occur over time in extended interactions.

The present study expands previous work by addressing such limitations. First, it strengthens the ecological validity of previous work and findings by assessing interactions of a more extended duration in the environment where they naturally occur (e.g., typical training session). Second, it broadens the knowledge base of empathic accuracy research by

investigating a dyadic relationship that was not examined previously, namely, the coach-athlete relationship.

The validity of Ickes' (2001) paradigm is well established in the broader social psychological research, yet the validity of the adaptations made in the present study has yet to be established. The paradigm introduced and tested in this article opens up new avenues of investigation in both empathic accuracy and coach-athlete relationship domains. However, the present study's findings must be considered against the backdrop of its limitations. The measurement of empathic accuracy, a moment-to-moment process, is a highly problematic, involved, and time consuming process. The process of recall and inference may raise issues as to the validity of the findings. Participants may not clearly recall what they were thinking and feeling the previous day, and those involved in longer training sessions may have more difficulty in recalling exactly what was going on at any one point in time. Nonetheless, specific steps were taken to minimize this potential confounding effect. Moreover, it is unknown whether such factors as who initiated the interaction and what type of exchange (e.g., social, instruction, encouragement, punitive), affect coaches and athletes' empathic accuracy. Additionally, we acknowledge that the classification offered here in terms of team versus individual sports is only one way of categorizing sport types. Other categorizations such as combat sports and non-combat sports, indoor and outdoor sports, feminine and masculine, wet and dry sports, may have offered different results. Finally, it is important to note that the correlational and exploratory nature of this investigation does not permit causal inferences to be made. Investigating possible causal relationships between these variables in future will require an experimental or longitudinal design. Empathic accuracy is clearly a new area that requires the attention of sport and exercise psychology researchers.

Despite the exploratory nature of this investigation, the present study can provide some tentative guidelines for coaches. Coaches need to be aware that athletes will not always

be focused on the same things as them, nor will they see things in a similar way. It is therefore important for coaches to establish a focus when interacting with an athlete. Coaches should also encourage feedback from the athletes to ensure that this focus is maintained and to check understanding. This should go beyond simply clarifying understanding in relation to instruction, but should include information regarding how the athlete thinks and feels about what is involved. Coaches and athletes should take time to develop an athletic partnership. This means not exclusively focusing on instruction and sport. Time should be taken outside training sessions, sessions lengthened, or less attempted within the allotted time, to allow for conversation and social interaction. Additional information sources are essential in understanding how an individual.

This is the first study exploring empathic accuracy in the coach-athlete relationship employing an adaptation of Ickes' (2001) methodological paradigm. Subsequently, there is great potential for future research. The authors of this paper have additionally completed a further study showing links between empathic accuracy and athletes' satisfaction with the training and instruction they receive from their coach (Lorimer & Jowett, 2008). Researchers also need to consider other specific outcomes that are linked to empathic accuracy such as performance. Future researchers should also explore how individual difference characteristics influence empathic accuracy. For example, are more experienced coaches with better training more empathically accurate? Does the gender of the coach and athlete make a difference in empathic accuracy scores (e.g., female coaches in male dominated sports)? Other research needs to focus on contextual factors such as alternative classifications of sport type whilst considering the environment in which they are set. Future research may also consider filming multiple training sessions for each dyad to better reflect their average empathic accuracy and how it may change.

In summary, the findings of the present study highlight that the dynamics of the interaction between a coach and an athlete play a key role in how well they can perceive each others' thoughts and feelings. They also highlight that coaches and athletes are not as accurate in perceiving each others' thoughts and feelings. Finally, the present study presents a new methodological paradigm that while well established in social psychology, is an innovative adaptation in the burgeoning research field of coach-athlete interactions and relationships that could be employed in future research to generate valuable insights expanding further our knowledge and understanding in this complex yet exciting area of research.

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Table 1

Means and standard deviations for team sports, individual sports, and total sample

	Team		Individual		Total	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Coach empathic accuracy (raw)	36.01	10.99	46.11	13.92	40.80	13.32
Coach baseline accuracy	8.20	7.22	7.74	6.84	7.99	6.95
Coach empathic accuracy (refined)	27.80	13.70	38.36	12.97	32.82	14.23
Athlete empathic accuracy (raw)	38.27	12.27	43.67	11.28	40.84	11.97
Athlete baseline accuracy	8.47	7.53	8.19	7.94	8.33	7.63
Athlete empathic accuracy (refined)	29.80	12.30	35.49	12.83	32.51	12.72
Shared cognitive focus	27.99	11.41	36.04	11.39	31.82	11.97
Group size	14.10	8.59	8.53	13.15	11.45	11.20
Relationship duration	15.81	13.97	21.68	41.93	18.60	30.34
Sessions per week	2.67	1.28	2.68	1.6	2.68	1.42
Length of session	1.79	0.29	1.95	0.49	1.86	0.41
Coach age	28.24	6.53	30.79	13.16	29.45	10.17
Athlete age	20.86	2.29	21.89	5.10	21.35	3.87

Table 2

Correlations between empathic accuracy, shared cognitive focus, and group size

Subscale	1	2	3	4
1. Coach empathic accuracy	-	.21	.63**	-.05
2. Athlete empathic accuracy		-	.23	.04
3. Shared cognitive focus			-	-.40*
4. Group size				-

* $p < .05$, ** $p < .01$