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4 Coach-Athlete Dyads

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10   **Abstract**

11   Considering the limited attention paid to interpersonal aspects of emotions, this study explored

12   coaches' perceptions of athletes' performance-related states and how they used this information

13   for its regulation. Using a case study approach, three coach-athlete dyads from competitive

14   tennis took part in one-on-one semi-structured interviews. Individualized profiling of

15   psychobiosocial states was used to assess athletes' states in most and least successful

16   performances and as a way of data triangulation. Findings indicated that the coaches interviewed

17   paid attention to bodily, motor-behavioural, and operational components of a performance state,

18   and used this information to appropriately adapt their responses to the players' needs, via the

19   provision of positive reinforcement, and performance-related feedback. The coaches described

20   themselves as calm, patient, and understanding; characteristics that appeared to be vital for the

21   coach-athlete relationship and the coaches' emotional competence. Findings are discussed within

22   the contexts of emotion regulation and coach-athlete relationship, and how they might be useful

23   to help coaches develop emotional competence.

24   *Keywords*: athlete emotion state, athlete psychobiosocial state, coach behaviour, coach practice,

25   tennis

26   Coaches' Perceptions of Athletes' Psychobiosocial States: The Case of Tennis Three

27   Coach-Athlete Dyads

28   Emotions are an integral aspect of sport performance. Athletes' emotions experienced

29   prior to or during performance can have a direct impact on their behaviour and ultimately their

30   functioning (Jones, 2012). Empirical evidence indicates that emotional regulation is central to

31   success (Lane, Beedie, Jones, Uphill, & Devonport, 2012; Robazza, Pellizzari, & Hanin, 2004;

32   Uphill, McCarthy, & Jones, 2009; Wagstaff, 2014). Previous research has mainly focused on the

33   regulation strategies that athletes typically engage in to enhance their performance (Lane et al.,

34   2012; Lane et al. 2016). Coaches, however, can indirectly influence athletes' emotions and

35   subsequently their performance and wellbeing. Thus, for emotion regulation to be effective, it is

36   important to understand how coaches perceive their athletes' emotions and their role in the

37   emotion regulation process.

38   One theoretical framework acknowledging individual differences in the experience and

39   interpretation of emotions is the individual zones of optimal functioning (IZOF) model (Hanin,

40   2007). According to the IZOF model, emotions are conceptualized as the core component of a

41   person's psychobiosocial state, which can be manifested in psychological (i.e., emotional,

42   cognitive, motivational, volitional), biological (i.e., bodily, motor-behavioural), and social (i.e.,

43   operational, communicative) modalities (Hanin, 2010; Ruiz, Hanin & Robazza, 2016). Hanin

44   (2000) defined psychobiosocial states as situational, multimodal, and dynamic manifestations of

45   a person's total functioning. Athletes experience a wide range of functional and/or dysfunctional

46   (pleasant and unpleasant) psychobiosocial states associated with their performances. Substantial

47   IZOF-based research has focused on the study of the intra- and inter-individual variability in the

48   content or quality and intensity of athletes' experiences accompanying successful and

49   unsuccessful performances (for a review, see Ruiz, Raglin, & Hanin, 2017). Much of IZOF-

50   based research has examined athletes' states associated with two qualitatively opposite

51   performance contexts (i.e., success and failure) as they trigger specific content and intensity.

52   An accurate assessment of athletes' performance-related states is important for emotion

53   regulation. The use of an individualized approach capturing personally relevant and task-specific

54   content of the person's psychobiosocial states has been recommended in the study of athletes'

55   states (Hanin, 2007). Grounded in the IZOF model (Hanin, 2000, 2007, 2010), an Individualized

56   Profiling of Psychobiosocial States (IPPS, Ruiz et al., 2016) was specifically developed for the

57   assessment of athletes' performance-related psychobiosocial states. IPPS explicitly identifies the

58   content and intensity of the idiosyncratic descriptors of athletes' states associated with successful

59   and unsuccessful performances. Extending previous work on the assessment of athletes'

60   experiences, IPPS uses both hedonic tone (i.e., pleasure-displeasure) and functionality (i.e.,

61   success-failure) distinctions to assess the eight modalities of athletes' psychobiosocial states

62   related to performance, with the emotional modality including pleasant states, anxiety, and anger.

63   The practical utility of this profiling procedure in the assessment of athletes' performance-related

64   states has been documented. Empirical evidence supports the use of psychobiosocial states

65   profiling to identify the most task- and person-relevant descriptors of athletes' experiences in a

66   nomothetic manner, making it suitable for comparisons at the inter-individual or group level

67   (Ruiz, Robazza, Tolvanen, & Hanin, in press). The IPPS procedure has also been successfully

68   applied in an idiosyncratic manner to assess self-regulation of the whole range of

69   psychobiosocial states in competitive swimmers (Middleton, Ruiz, & Robazza, 2017). An

70   idiographic approach to psychobiosocial states profiling is most appropriate for the purpose of

71   the current study.

72   Most research attention in the emotion regulation literature has focused on the strategies

73   that individuals use to regulate their own states, a process called intrapersonal emotion regulation

74   (Gross, 2008; Lane et al., 2012; Robazza, Bertollo, Filho, Hanin, & Bortoli, 2016; see also

75   Robazza, Pellizzari, & Hanin, 2004). Yet, no person lives life in utter isolation and recently

76   researchers have started to pay more attention to interpersonal emotion regulation or the

77   deliberate attempts to influence another person's emotions (Campos, Walle, Dahl, & Main, 2011;

78   Friesen et al., 2013; Niven, Totterdell, & Holman, 2009; Rimé, 2007; Van Kleef, 2009).

79   Interpersonal emotion regulation strategies are assumed to serve two goals, namely instrumental,

80   aimed to achieve a particular goal, and hedonic, used to promote pleasant emotions (Tamir,

81   2009).

82   A significant interpersonal relationship in the context of sport is the coach-athlete one,

83   which typically involves behavioural, cognitive, and emotional aspects (Lorimer & Jowett,

84   2009). The coach-athlete relationship is characterized by interpersonal feelings of closeness,

85   thoughts of commitment, acceptance or behaviours of complementarity, and congruence of

86   perceptions, also called co-orientation (Jowett, 2007; Shanmugam & Jowett, 2017). Research

87   evidence indicates that the quality of the interaction between an athlete and the coach can

88   influence athletes' performance, development, and wellbeing (Jowett & Poczwardowski, 2007;

89   Prophet, Singer, Martin, & Coulter, 2017). Central to this relationship is the coach's ability to

90   perceive the psychological state of the athlete and to respond to the athlete's needs.

91   A theoretical model widely used to study individual differences in regard to how

92   individuals engage in processing information related to one's own and others' emotions, which

93   may explain high levels of co-orientation, is the four-branch model of emotional intelligence

94   (Mayer & Salovey, 1997). The model distinguishes four skills or branches related to how people

95 pay attention to, use, understand, and manage emotions. Emotional perception requires basic

96 information processing skills, which lead to attending to, and deciphering emotional messages as

97 they are expressed. The second component relates to the use of emotions to facilitate thought for

98 instance. The third component involves understanding emotions or their meaning. The final

99 branch refers to managing emotions in themselves and in others. Emotion intelligence and

100 emotion regulation literatures have been considered relatively independently until recently

101 (Peña-Sarrionandia, Mikolajczak, & Gross, 2015). Emotional intelligence, however, has proven

102 useful to capture individual differences in emotional regulation.

103   An accurate perception of one's own and other person's emotions might have an impact

104 on the success and effectiveness of sport coaching (Ickes, 2001; Lorimer & Jowett, 2010), while

105 deficiencies in perception may lead to emotion regulation failure (Gross, 2015). People can infer

106 information about the feelings, attitudes, or behavioural intentions of another person via their

107 emotional expression (Van Kleef, 2009). Systematic and recognizable relationships have been

108 found between emotion states, particular body movements, and gesture expressivity (Castellano,

109 Villalba, & Camurri, 2007). Inferences of emotional expressions may be implicit in the way the

110 coach and athlete interact and communicate with each other, leading to emotional or behavioural

111 reactions in the other person (Lorimer & Jowett, 2009). Thus, making accurate inferences of an

112 athlete's emotions or other internal states is an essential skill for the coach, which not only can

113 impact athlete's performance but also their wellbeing. To date, there has been limited research

114 exploring how coaches perceive their athletes' emotional or other performance-related

115 experiences, and how they use such information to self- manage their emotions or to regulate

116 those of their athletes.

117   In summary, previous research has examined intrapersonal emotion regulation focusing

118   on the strategies athletes use to regulate their own states. The role of others, particularly that of

119   the coach, has received scarce attention. Considering the importance of the coach-athlete

120   relationship for athletic success and the interaction and interdependence manifested in this

121   (Lorimer & Jowett, 2009), athletes' psychobiosocial states cannot paint the entire picture, which

122   makes the coaches' view just as essential. So far, what coaches assess from their perspective and

123   how they attempt to influence athlete emotion regulation processes is not adequately understood.

124   Coaches' perceptions of their athletes' states and how they use this knowledge to influence

125   athletes' emotion regulation processes is crucial and would have important implications for

126   effective interpersonal emotion regulation. The aim of this study was to explore coaches'

127   perceptions of their athletes' performance-related experiences. In particular, we inquired about

128   what they perceived, how they perceived it, and how they acted on these perceptions. We

129   employed Merriam's (1998) case study approach, which allowed us to make meaning of a reality

130   constructed within and by the coach-athlete interaction that of a coach perceiving the athlete and

131   acting on what was perceived. To make meaning of this coach-athlete interaction, the case study

132   design gave us the means to study in-depth three coach-athlete dyads by talking to both parties

133   and collecting data in more than one way. To delve in this coach-athlete interaction via a

134   qualitative approach, a constructionist epistemological position based on our relativist view of

135   reality (i.e., there is no one single truth, Lincoln & Guba, 1985) informed the methodological

136   decisions allowing us to explore the coaches' perceptions of athletes' performance-regulated

137   experiences.

138   **Method**

139   **The Three Cases**

140   Merriam (1998) defined a case as "a thing, a single entity, a unit around which there are

141   boundaries" (p. 27). In our study, a coach-player dyad from an individual sport was recognized

142   as a case, a unit of itself with clear boundaries around it. Considering that experienced

143   participants are expected to possess high level of experiential knowledge and awareness

144   (Greenwood, Davids, & Renshaw, 2014), we sought out experienced participants who were

145   involved in high-level competition. Specifically, the criteria for selecting the dyads were: (a) the

146   coach was the main coach of the player, (b) the coach-player dyad were working together for at

147   least one year, (c) the coach was qualified for professional coaching, and (d) the coach-player

148   dyad were involved in international competitions. We also aimed for a balanced representation of

149   gender (i.e., male and female coaches of male and female players). Three high-level tennis

150   coach-player dyads were recruited purposefully from the Swiss national squad and the Swiss

151   Tennis Academy, where most experienced players practice. The dyads had been training together

152   between one and three and a half years ($Mdn = 3$). Coaches' education ranged from License B

153   level (minimum level of professional coaching) to Swiss Olympic License (highest level of

154   professional coaching). The players' ages ranged from 19 to 22 years ($Mdn = 21$). The players

155   had a median of 15 years of playing experience, ranging from 15 to 17 years. All were highly

156   skilled players and had experience playing internationally. The coaches' experience in the job

157   ranged from one to seven years ($Mdn = 5$). All participants at the time of the study resided and

158   trained in Switzerland, while they had variable ethnic/cultural backgrounds coming from central,

159   north, and east Europe countries. Concerning gender representation, the dyads consisted of a

160   male coach coaching a female player, a female coach coaching a female player, and a male coach

161   coaching a male player.

162   **Data Collection**

163   **Interviews and Interview Guide.** Data were collected via individual semi-structured

164   interviews with each coach and player separately. The first author, a former competitive tennis

165   player, conducted all interviews. Two interview guides, one for coaches and one for players,

166   were developed in two languages (English and German) to accommodate the native languages of

167   the participants. The development of the interview questions was informed by the four-branch

168   model of emotional intelligence (i.e., perceive, facilitate, understand, and regulate emotions) and

169   the eight modalities of performance-related states (i.e., emotional, cognitive, motivational,

170   volitional, bodily, motor-behavioural, operational, and communicative). Before starting to

171   interview the participants, two pilot interviews were conducted, one with a coach and one with a

172   player who were not otherwise involved in the study. This allowed for the wording and sequence

173   of questions to be refined and the development of the research instrument. Following the pilot

174   interviews minor changes were made, mainly to ensure clarity and understanding of the

175   questions.

176   The interview guides for both coaches and players contained four sections inquiring

177   about: (1) demographic information, (2) the coach-athlete relationship, (3) awareness with regard

178   to player's emotional experiences, ways of expression and regulation strategies, and (4) how the

179   coach and athlete worked together in regards to player's states regulation. In particular, in the

180   first section coaches and players were asked separately about their age, sport/coaching

181   experience, etc. Players were asked about their tennis career (e.g., Could you describe your

182   sports career to the present day?), while coaches were asked to describe their coaching career

183   (e.g., Can you describe shortly your coaching career up to this date?). In the second section, the

184   coach-athlete relationship was explored. Examples of questions asked to both were: Could you

185   describe your relationship with your coach/player (as appropriate)? What is important in building

186   the coach-athlete relationship? In the third section, we explored awareness of player's

187   performance-related states, the expression of these states, and any strategies the player used in

188   their regulation. Coaches and players were asked questions like: What emotional experiences do

189   you (or the player) usually have on the court? How do you usually express your emotions? How

190   do you regulate them? To facilitate recall for the player, we asked them to identify the most and

191   least successful game performances and to elaborate specifically on these. At this point, IPPS

192   (see next section) was incorporated to the players' interview. IPPS was also used with coaches

193   using the same situations identified by the players. In the fourth and final section, the coaches

194   were asked about their practices for working and supporting athletes' emotion regulation, while

195   the players were asked about any expectations they held for the coach to help with emotion

196   regulation.

197   **Psychobiosocial States.** IPPS (Ruiz et al., 2016) is an idiographic profiling procedure to

198   assess the content (type) and intensity of eight modalities of a performance state (i.e., emotional,

199   cognitive, motivational, volitional, bodily, motor-behavioural, operational, and communicative).

200   The procedure uses a stimulus list of 74-adjectives presented in 20 rows, each forming an item.

201   Each modality is represented by two rows of synonym descriptors (3-4 per row), one for

202   functional states and another for dysfunctional states. Six items, namely functional pleasant

203   states, dysfunctional pleasant states, functional anxiety, dysfunctional anxiety, functional anger,

204   and dysfunctional anger, assess the emotional modality. Participants are asked to choose one

205   adjective per item to describe their states prior to performance. Following, participants rate the

206   intensity of their states using a modified Borg's Category Ratio scale (CR-10; Borg, 1982), using

207   the following anchors: 0 = *nothing at all*, .5 = *very, very little*, 1 = *very little*, 2 = *little*, 3 =

208   *moderate*, 5 = *much*, 7 = *very much*, 10 = *very, very much*, and • = *maximal possible*. The score

209   of 11 is assigned to *maximal possible*. Then, for each descriptor they rate its perceived functional

210   impact on performance with regard to being helpful (+), harmful (-), or hard to say (0). Examples

211   of items are: "alert, focused, attentive" (cognitive functional modality) and "distracted,

212   overloaded, doubtful, confused" (cognitive dysfunctional modality).

213   Back translation procedures (Brislin, 1986) and expert reviewers (Sperber, 2004) were

214   used to develop a German version of the individualized profiling. Initially, the original English

215   version was translated into German by the first author, a German-English bilingual. Following, a

216   panel of four bilingual experts compared the translated and original versions. The translated

217   descriptors were individually evaluated by each expert who rated the items on a scale with the

218   following anchors: 1 = *no change*, 2 = *change in wording*, and 3 = *retranslation* (with

219   suggestions offered by the expert). The panel of experts extensively discussed the ratings and

220   based on their suggestions changes were made to retain the meaning of descriptors. Then, a

221   bilingual individual, not previously involved, translated the revised German version back to

222   English. This translation was compared to the original profiling procedure and extensively

223   discussed by the researchers who agreed that the meaning of the original items remained the

224   same.

225   **Procedure**

226   Permission from the head of education of the Association of Swiss Tennis to recruit

227   players and coaches was requested and granted after the general purpose of the study was

228   explained. The Swiss Tennis Database was used to recruit most experienced participants for this

229   study. Swiss Tennis, nine Partner Academies of Swiss Tennis, and nine other tennis institutions

230   across the German speaking part of Switzerland were contacted via email. Eight of the invited

231   institutions replied to the communication and four of them became interested in participating.

232   Players and coaches from their premises were hand out an invitation letter outlining the aim of

233   the study, emphasizing voluntary participation and confidentiality of data. Of the six invited

234   dyads, five accepted and three were interviewed, as most representative with regard to gender

235   (i.e., male and female coaches of male and female players). One on one interviews were first

236   conducted with the players and then with the coaches at separate times. At first, each player was

237   interviewed and asked to identify their most and least successful performances and to assess their

238   psychobiosocial states using the IPPS. Following, the coach of the player was interviewed and

239   asked to assess the player's psychobiosocial states on the profiling procedure using the same

240   most and least successful performance occasions identified by his/her player. The profiling

241   procedure was integrated in the interview. Data collection was conducted in accordance with the

242   American Psychological Association's standards for research and publication, as specified in the

243   Ethical Principles of Psychologists and Code of Conduct (American Psychological Association,

244   2010). Following ethical guidelines, each participant was informed about the study purpose and

245   the procedures, and assured confidentiality of the responses. A signed informed written consent

246   was obtained regarding study participation and the audio recording of the interviews. The first

247   author conducted all interviews in a mutually convenient time and location. Four interviews were

248   conducted in German and two interviews in English. On average each interview lasted 50 min

249   ranging from 45 to 65 min.

250   **Data Analysis**

251   Interviews were transcribed verbatim and pseudonyms were ascribed to ensure

252   anonymity of the participants. The four interviews conducted in German were translated to

253   English by the first author and checked by a German-English speaking sport psychology

254   researcher, external to the study and knowledgeable on tennis. According to Merriam (1998),

255   data analysis is "the process of making sense out of the data...[which] involves consolidating,

256   reducing, and interpreting what people have said and what the researcher has seen and read--it is

257   the process of making meaning" (p. 178). For our cases, we worked to make sense out of what

258   coaches and players shared in the interviews while their answers on the individualized profiling

259   procedure revealed descriptors on situation-specific performance-related states that allowed us to

260   have trust in the interview data. Following prolonged engagement and familiarization with the

261   transcripts by the three authors, each interview was inductively and deductively analysed.

262   Specifically, the guidelines of Braun and Clarke (2006) were followed for conducting a thematic

263   analysis. The method was chosen as it is a theoretically flexible one for recognizing and

264   classifying qualitative data patterns (Clarke & Braun, 2013) and has been previously used in

265   sports psychology research (e.g., Arnold & Fletcher, 2012). Data were inductively analysed and

266   organized into emerging patterns and themes. Codes were generated based on their relevance to

267   athlete's emotion expression and regulation in order to organize and reduce the data into

268   meaningful parts. The codes were identified at a semantic level, looking for explicit meaning in

269   what participants shared. At the next step, these codes were organized into themes, which were

270   then reviewed and refined. In this step, we considered the existing literature on the eight

271   modalities of a performance-related state as specified by the IZOF model and the four constructs

272   of the emotional intelligence model, thus, combining the inductive with the deductive approach.

273   Lastly, we defined and named the themes before writing up our findings.

274   **Trustworthiness**

275   To ensure inter-rater reliability and establish trustworthiness, triangulation of analysis

276   was used (Lincoln & Guba, 1985). The first three steps of the analysis were conducted

277   independently while in the latter ones we worked jointly and discussed theme organization,

278   definitions, and names until consensus was reached. During discussions, some variance became

279   apparent in the organization of the themes into higher-order themes and particularly in the

280   labelling of one higher-order theme. These variances were re-examined bottom up (starting with

281   the raw data that led us to the theme). During this work, we re-classified three themes and re-

282   labelled one higher-order theme. The joint work was deemed especially beneficial in advancing

283   the analysis and improving the interpretation of the data. The first author, a former competitive

284   tennis player, held a research diary that helped increase self-reflection about subjective values

285   and biases, as well as various aspects that arose during data collection and analysis for further

286   reflection among the authors (see thick description, Lincoln & Guba, 1985). To enhance

287   trustworthiness on the retrospective character of the interviews asking players and coaches to

288   reflect and discuss emotions and emotion regulation strategies, we triangulated interview data

289   with data collected via the IPPS. This profiling procedure was used to assess the content and

290   intensity of players' emotional experiences during their most successful performances during the

291   time working with their present coach. The same procedure was followed for the description of

292   athletes' states before least successful performances. The coaches also completed the IPPS to

293   assess their players' experiences regarding the same performance occasions. Data from the IPPS

294   for athletes and coaches were analysed separately. First, individualized profiles were constructed

295   with players' feeling states in most and least successful performances. Second, profiles based on

296   the coaches' descriptors of players' experiences for the same occasions were developed. Third,

297   players' profiles were compared with those identified by their coaches by calculating the degree

298   of content overlap for each modality using the formula proposed by Krahé (1986). Overlap is the

299   ratio between the number of similar descriptors in two conditions and the square root of the

300   number of descriptors in condition a multiplied by the number of descriptors in condition b.

301   Overlap scores range from 0 (all descriptors are different) to 1 (all descriptors are similar). This

302   formula has been previously used to compare individual perceptions of emotions (Hanin &

303   Stambulova, 2002; Ruiz & Hanin, 2004). Finally, subtractions of intensity values states identified

304   by a player and his or her coach were performed for each state modality to compare player- and

305   coach-generated profiles. Member checking was conducted by providing participants the

306   practical opportunity to acknowledge and/or explore the individualized profiles or graphic

307   representations of psychobiosocial states (Smith & McGannon, 2017).

308   **Results**

309   The following section presents a brief description of the relationship within each coach-

310   player dyad that sets the stage for the content of coaches' perceptions of their players' states and

311   regulation.

312   **The Three Dyads**

313   **Tom coaching Lisa**. The dyad was working together for three and a half years. The

314   relationship was described by Lisa as close and warm, Tom was perceived as a key supporter of

315   hers as a player and person. Reflecting on the relationship, Tom described it as friendly, reliable,

316   and close both on and off the court, as he stated:

317   Our relationship is based on friendship. We have a good and trusting relationship. Lisa

318   comes and talks to me about other problems, not simply tennis-specific issues. I guess

319   you can say that we have a trusting relationship both on and off the court.

320   Lisa felt safe with her coach because she knew that she could fully trust Tom, as she

321   indicated:

322   Tom and I have a pretty good relationship. He supports me as a coach but he is also there

323   for me if I have problems in my private life. I can talk with him about almost anything.

324   There is this special bond between us. I trust him very much.

325   **Sue coaching Maria**. Sue and Maria were working together for a year. The relationship

326   was described by Maria as exceptionally close, inspiring, and empathic. She felt safe and

327   comfortable with her coach on and off the court, which allowed her to be herself. As Maria

328   mentioned:

329   I played really bad tournaments back to back. So, when I came back I was down. After

330   such a hard time you need a person who encourages you to keep working and to see the

331   situation from a more optimistic point of view… and she was that person. She took care

332   of me. We had so many talks and I realized that I can be the real me with her. She gets

333   me… I am not scared to tell her what I did good or bad, whether it is on or off the court.

334   She takes me for the person I am. I am glad that I don't feel afraid to be myself.

335   Sue described the relationship as very deep, trusting, and friendly both on and off the

336   court, as she stated:

337   We have a very, very close relationship. She knows that she can rely on me. She knows

338   that I do anything possible to support her… and I guess, she knows that she can trust me

339   when it comes to tennis-specific aspects… Last season she struggled a lot. She needed a

340   lot of attention, encouragement, and appreciation. I took the time and energy to help her

341   realize that development on and off the court is possible and valuable. I wanted to help

342   her to feel at ease again.

343   **Ron coaching Nick**. The dyad was working together for three years. Nick described the

344   relationship as respectful, well-balanced, and effective considering their achievements. He

345   appreciated sharing the same goals with his coach and having a good basis for goal-oriented

346   communication, as the following quote exemplifies:

347   We work really well together on the court. I can improve my tennis with him and we can

348   also have fun together on the court. I think we have a good connection. We understand

349   how we have to work together to bring the best effort on the court. I think it is important

350   that you share the same goals and work ethic. You need to have an understanding for each

351   other.

352   Ron described the relationship as task-oriented and trusting while he pointed out of some

353   challenges when dealing with the player's anger. The following quote depicts this:

354   I would not say that our relationship is like a friendship. I pay attention that the

355   relationship does not get too close. I want to keep a certain distance. But of course, if you

356   spend so many weeks a year together, you need to get along on and off the court. Nick

357   and I get along pretty well. Of course, we sometimes have our differences in opinion but

358   we can talk it through and find a solution.

359

360   The main themes identified in the interview data on coaches' perceptions of their athletes

361   and how they used this information, are presented in Figure 1. While the focus of the study was

362   on coaches' perceptions, extracts from the athletes' interviews are embedded throughout the

363   results section as they enrich our understanding of the coaches' data and of how the coach-athlete

364   dyad interacts.

365   < Insert Figure 1 here >

366   **Coaches' Perceptions about their Athletes**

367   The three interviewed coaches elaborated on cues they used to recognize the players'

368   emotional states based on the players' actions and reactions. They all perceived the emotional

369   states of the player via (1) *bodily cues*, (2) *motor-behavioural cues, and* (3) *verbal cues* to a

370   lesser extent. Tom and Ron also talked about paying attention to *operational cues* (4) in

371   perceiving the player's states. Paying attention to bodily cues, meant looking closely at their

372   players' body-posture (e.g., tensed posture, shoulder position) and facial expression (e.g., eyes

373   rolling, smiling). The motor-behavioural cues encompassed elements like throwing the racket,

374   slapping one's leg with the racket, brisk walking between games, and lack of coordination,

375   among other things. Regarding verbal cues as signals of emotional expressions, the coaches paid

376   attention to incidents such as cursing or shouting. Lastly, the operational cues involved their

377   player's offensive playing style and changes in the technical and/or tactical aspects of the game.

378   For instance, if the player was moving slower than usual between points or became more

379   introverted than usual, these indicated to the coach an increase of unpleasant emotions. Sue

380   exemplified what she perceived as follows:

381   Her body language during and between points. If she feels down then her energy

382   level drops, her body posture changes. If she doesn't feel well, if she is carrying a

383   lot on her shoulders, if she is heavy-hearted, she still fights but she cannot

384   disconnect. She takes a lot on the court... She is very sensitive, she knows what is

385   going on around her. You see it in her facial expression, her look…

386   From the players' point of view, all three were well aware that they sent

387   information about their emotional states via multiple cues to their coaches. They talked

388   about the bodily signals they sent to the coach via body posture (e.g., head down, tension)

389   and facial expressions (e.g., gazed look, smiling), as well as via motor-behavioural cues

390   (e.g., coordination, throwing racket or towel, clapping on laps), and operational ones (e.g.,

391   making more mistakes, ineffective task-execution). They are aware that these serve their

392   coaches as hints for perceiving their emotions and thoughts. Following is an example from

393   Lisa:

394   I guess it is mainly my body-posture… I guess I show it very openly. If I am

395   playing poorly, I am very nervous, I tense up, and I swear. I start playing like I

396   don't care. I just hit as hard and not as smart as I can. If I feel good, then I fire

397   myself up after points by shouting c'mon or allez… and I guess he can also know

398   how I feel by my facial expression. My look is different when I am demotivated or

399   when I am fighting.

400   **Coaches Responses to their Perceptions about Athletes**

401   The interviewed coaches reported using a variety of interpersonal regulation strategies as

402   a follow-up to what they perceived in the athlete aiming to help the player regulate present-

403   moment states. The most common and frequently employed strategies (described by all coaches

404   occurring prior, during, and after practices and matches) were: (1) *adapting their own emotional*

405   *and behavioural responses*, (2) *providing verbal and non-verbal positive reinforcement*, and (3)

406   *giving performance-related feedback*.

407   The coaches elaborated on how they adapted their emotional and behavioural responses

408   according to the players' states and performances to help them regulate their states. The

409   following quote from Ron exemplifies this practice:

410   If he is close to losing his head during practice, I take him out and we sit down for a short

411   time. I tell him to relax, I ask him what the problem is, what is going on in his mind. He

412   starts telling me that it's s**t… I give him some time. I do this on purpose… but of

413   course, I will address it and explain that this [player's behaviour] doesn't work. But not

414   before he has calmed down. I stay positive and calm when he is having trouble.

415   The coaches were aware of the influence their own emotions could have on the players,

416   and considered this knowledge when responding to players' needs. An illustration of this is

417   provided by Tom:

418   I believe that my emotions can influence a player. With women more than with men... If

419   you get on the court and you are in a bad mood or stressed out, women will recognize it

420   instantly while guys are less perceptive… and often, they are then directly more stressed

421   out or tense. So, you have to be extremely careful, especially with women. Over time you

422   get to know each other, and I also start realizing immediately if something is wrong.

423   Therefore, I try not to show my emotions openly.

424   All coaches emphasized adapting their emotional and behavioural reactions to the

425   players' needs, as every player has a unique way to be approached. For instance, Ron said, "With

426   another player I had to show more emotions. Some players like it when coaches are charged with

427   emotions and experience the players' performances vividly. Nick does not need it." Tom

428   explained that his player, Lisa, needed his coach to be positive but not to overwhelm her with

429   positive and motivational speeches, as these do not work for her.

430   The players appeared to know that the coaches adapted to their emotions to help

431   them regulate their current states. They reported experiencing the coaches' adaptive

432   behaviour as helpful for regaining an optimal performance state during practice and

433   competition. The following quote by Lisa is indicative of this:

434   I think that he adapts to my performance. If I am playing poorly then he doesn't

435   pull me down. He regulates his emotions so that he can help me… Actually, Tom

436   does not show his emotions. He always claps after a good point and he says 'super',

437   'well done', or 'it does not matter, keep playing'… When he recognizes that I am

438   getting angry or nervous, he stays calm, he is not that kind of coach, who jumps up

439   and shouts 'yes', 'very good', he stays calm … after a good point he praises and

440   fires you up. So, he calms me and supports so I can get myself back together.

441 All players acknowledged the positive impact of the coaches' adaptation to their emotional

442 states. They perceived their coaches as a key resource for regulating their psychological

443 and behavioural states in practices and competitions. They emphasized how coaches helped

444 them to calm down when emotions were too intense on the court. As Maria said:

445   In some situations, she smiles while she tells me what I need to do differently. She

446   can say it in a nice way when I am in a good mood. Then, I understand what I need

447   to do, but when I am in a bad mood… Then I need someone who tells me directly

448   and in a strong tone what I need to do. If she sees that I am in such a bad mood, she

449   picks me up. She would tell me that we leave this 'bad mood planet' and go to

450   another planet and play tennis again. She adapts her behavior because she cares.

451   The second interpersonal emotion strategy identified in the data was providing

452 verbal and non-verbal positive reinforcement, which was employed by all coaches. They

453 all were aware that they influenced the players' beliefs and emotions by encouraging and

454 reinforcing them. As Tom indicated, "Generally said, the most important thing is that a

455 coach believes in his player. You should not use negative gestures; show consciously that

456 you believe in your player, say stuff like, come on!" The coaches also pointed out how

457 important it was to remind the players of their strengths and of past occasions they played

458 and/or responded well. Positive reinforcement was used to put performance into

459   perspective and to reflect on the situation to deal with or avoid irrational thoughts and

460   boost the player's confidence. The following quote from Ron exemplifies this:

461   I always try to support him and to verbally encourage him ... As a coach you listen,

462   you try to put the performance into perspective; you outline the positive aspects;

463   you tell him that it is not as bad as he thinks; you try to give him back some

464   confidence... you highlight the good aspects.

465   Aside from verbal reinforcement, non-verbal boosts appeared to be also essential,

466   considering that in tennis during competition (and in some practice conditions) there is no

467   time and place for discussions. Therefore, positive looks and gestures (e.g., showing a fist,

468   thumbs up) were aids that could help players with their up-regulation. Tom said on this:

469   We are always in a certain contact on the court. If I am close enough, I can give her

470   some short inputs such as "Come on!" But sometimes it doesn't work; sometimes

471   you are too far away and in such occasions you try to support the player with

472   positive gestures.

473   The players perceived coaches reinforcement to be helpful and supportive. They

474   believed that positive gestures and encouraging remarks positively affected both their

475   emotional states and motivation. As Lisa said:

476   He encourages from the sideline, this is very important. If you do not believe in

477   yourself, you have the feeling that there is somebody who believes in you... He is

478   usually next to the court saying things like 'c'mon', 'move'. He tells you what to do

479   because you can get lost in tennis. He tells you 'it is possible', 'I believe in you',

480   'just stick to this or that...' This helps you to believe in yourself again.

481   Another strategy reported by the coaches was giving performance-related feedback.

482   Immediate and clear feedback during and after performances was described as valuable

483   and effective for the athletes to regulate their states. The coaches explained that during

484   practices they interfered either after a point or during breaks to discuss mistakes and

485   struggles. The purpose of this feedback was related to technical and tactical errors, while at

486   the same time they paid attention to the content and form of feedback delivery to minimize

487   or avoid players' emotional reactions such as frustration. The coaches agreed on keeping

488   feedback positively toned, while negative aspects of the performance were not ignored;

489   instead they focused on correct task-execution rather than mistakes. The following account

490   from Tom exemplifies this:

491   I pick out aspects, which are, to some extent, good and emphasize the positives [in

492   her game]. I explain to her what she needs to do differently next time to get better.

493   After we talk about the positive aspects, I illustrate the ones that are not so good.

494   But I try to stay positive; I point out what we need to keep working on.

495   Sue commented on the type of feedback and how she conveyed it:

496   I try to convey the things to improve in a positive manner. I do not tell her that she

497   performed badly. I tell her that we will integrate this aspect in the next training

498   sessions and work on it… I point out her potential and I try to emphasize the

499   aspects we can work on and the aspects we can improve. This gives her a good

500   feeling… during practice sessions, I immediately point out what she has to do. We

501   always try to talk with each other in a positive way. But, of course, she needs to

502   know that she has to work … but no criticizing, never! This does not work with

503   girls.

504   The players were conscious of the coaches' use of feedback for technical, tactical,

505 and mental aspects. They also pointed out that they perceived feedback as encouraging,

506 regardless of its content. Below is an example from Lisa:

507   If he [coach] asks me to change my game or strategy and I just stick to the old way,

508   then he gets angry. He takes me out and explains what I did wrong. But I know that,

509   even if I play poorly, there is always something I can improve. … If I make a

510   mistake, which is pretty normal in tennis, I get nervous. But then he says things like

511   'it doesn't matter', 'keep playing', 'focus on the next hit!' This is very helpful, it

512   gives me security, and it helps me believe in myself again.

513 **Who Are These Coaches?**

514   With all that coaches and athletes talked about, we identified certain characteristics

515 commonly shared by these coaches and viewed as key for building and maintaining a close,

516 trusting, and supportive coach-player relationship. These were: (1) *being calm*, (2)

517 *communicating their care for the player*, and (3) *working to build trusting relationships while*

518 *demanding high standards of performance.*

519   The three coaches described themselves as being calm. They highlighted that tennis

520 players often become emotional on the court, which requires from coaches to be patient. They

521 shared the intention to radiate a sense of calmness before, during, and after performances and

522 view this as a strength and key element for creating a close relationship with the player. The

523 following quote from Ron describes the benefit of being calm:

524   It comes naturally to me to stay calm and patient. I bring back the balance. When I

525   see that he [the player] is on the edge to explode and I could get angry too, then

526   everything would blow off. Instead, I keep calm and try to calm him down.

527   The players also talked about their coaches being calm and further described them as well

528   balanced. They experienced the coaches' calmness on and off the court as beneficial and

529   helpful for their own performance and psychological states. As Nick said:

530   I think he is calm and he can stay very calm. Sometimes I get a little angry on the

531   court. I think we are a good mix there; he brings the calmness on the court. That is

532   really good part of him. … I think his calmness is the best thing… he brings me

533   down.

534   Concerning this calmness, the coaches said that they normally do not have trouble in maintaining

535   it, even if a player was performing poorly or losing the match. Particularly Sue said:

536   [At the tournaments] I never had the impression that I got upset. I rather felt sorry for her

537   after defeats because I knew how important it had been for her and her family, for her

538   self-confidence. I can calm myself down. I focus on her. I try to stay calm and be

539   positive. I always try to stay in the green zone with Maria. But I never had the feeling that

540   I had to pull myself together.

541   The coaches agreed that when reaching a certain point, they could also change the tone of

542   voice and reprimand the players. Two of them pointed out the importance of personal time to

543   regain their emotional balance. A tough match or a stressful day also has an impact on the

544   coach's psychological states; who may feel tired, stressed out or frustrated by the situation. In

545   order for their emotions not to trigger dysfunctional reactions in the player and to maintain a

546   supportive interaction with the player, these coaches took a step back. As Tom shared:

547   If I realize that there is generally too much going on – it doesn't really matter if it is

548   stress, tiredness or something else, I try to get some rest. I am a person that needs

549   rest to recharge my batteries. I back out. I might do some computer work, some

550   exercise, go for a walk or get some fresh air.

551   The coaches also elaborated on the value of communicating their care for the

552   player, and emphasized the importance of listening and being genuinely interested in them.

553   In their view, to build a successful and effective coach-athlete relationship, the coach ought

554   to invest time on and off the court to listen to the player's concerns, desires, and needs and

555   to take these seriously. For instance Sue stated:

556   She is a very emotional person. From time to time, she needs praise, appreciation,

557   and attention. She needs a lot of affection. I invested time and energy and I showed

558   her that it is important to me that she can succeed and develop as a person both on

559   and off the court, and that she feels comfortable. She needs to feel good to function.

560   The coaches described themselves as passionate about the job and aware of the necessity to

561   be empathic and caring when interacting with the player. The value of bi-directional

562   communication was pointed out when coaches talked about the importance of

563   communicating with the players and developing shared language and values. Coaches and

564   players working in the same direction and for the same goals, facilitated the development

565   of trust, the feeling of mutual commitment and understanding. The following quote shows

566   Sue's take on this:

567   Players need to have the feeling that we care for them. As coaches, we need to

568   show players our respect and interest, and players need to feel understood. Above

569   all, we have to engage with each player individually, we have to provide personal

570   conversations and invest time in them.

571   The players perceived their coaches' care via the use of feedback, which they viewed as a

572   sign of interest and care from the coach and as a mean to merely correct mistakes. When on the

573   court, coaches were seen as focusing on the player unconditionally while avoiding distractions.

574   Players perceived their coaches' undivided interest as an essential gesture of care and a key

575   source for building trust and commitment between them. As Lisa indicated:

576   His key characteristic is his character. He is very understanding, he listens and he

577   gives tips. He doesn't pull you down, he supports you. He feels with you. As soon

578   as something is bothering me, he directly asks me about it; he wants to help me. He

579   notices immediately when I am not feeling well.

580   Lastly, the coaches shared a common approach for building relationships of trust. In

581   particular, they talked about facilitating a non-judgmental atmosphere that supports and

582   encourages players to open up and feel comfortable talking about emotions and thoughts

583   with the coach. The following quote from Sue exemplifies this:

584   As a coach, you need to convey that you care for your players and that you trust

585   them. It is important that the players feel we [coaches] care for them, that we trust

586   them, that they are understood and that they are responded to. Overall, they need to

587   feel that you are dealing with them individually, and that the coach also has

588   personal conversations and really takes time for this.

589   The interviewed coaches also pointed out the importance of keeping a 'healthy' distance

590   on and off the court from the player. The coaches indicated that being a coach was a job where

591   they needed to know how to separate hard work from fun. Tom described his practice as "the

592   carrot and stick approach," where sometimes he would joke with the player but at the same time

593   demanded complete and serious effort in practice. Sues' account describes her approach:

594   In my opinion, players should have fun with what they do. They have to love it…

595   As a player, you have to motivate yourself every day. Therefore, as a coach you

596   should find a way to help players get motivated and to experience fun. Of course, it

597   is hard work, but from time to time you should have time for some fun, time to take

598   it easy. You need to be able to switch from being serious to being easy to being

599   serious again. Finding a balance is important to be successful in the long run.

600   The players described their coaches as trustworthy and loyal, which facilitated and

601   encouraged them to share performance-related and/or personal concerns. They talked about

602   having faith in the coaches and trust they would help them develop as players and persons. Maria

603   shared with us her view:

604   I am not scared to tell her what I did well or badly on and off the court. She takes

605   me for the person I am. I am glad that I don't need to be scared to be myself. I can

606   be really open and share anything without being nervous.

607   The players also acknowledged and welcomed that a line existed between being amicable

608   with the coaches and following their instructions at practices and matches, which were

609   demanding of high standards. They viewed coaches demanding approach as beneficial and

610   crucial for their development as athletes. As Lisa said:

611   When I am not moving enough during an exercise it is enough for her to say in a resolute

612   tone 'Come on, move now!' The second I hear it, something in my mind changes. I start

613   moving. When I am in a bad mood, he stays very positive. But if I say stuff like 'today

614   everything is s**t', then he can get angry and tells me in a clear tone 'well, then just play

615   how you should play!' This wakes me up. It is like a reminder that helps you realize that

616   you are playing badly.

Accuracy of Coaches' Perceptions

617

618   Table 1 presents extracts from what participants shared in the interviews and what they

619   identified on the IPPS with regard to their most and least successful performances. These data

620   indicated accuracy between what athletes experienced and what coaches perceived.

621   < Insert Table 1 here >

622   The coaches' accuracy in perceiving their players' emotional states is supported by

623   the coaches' accuracy in assessing players' performance states via the IPPS. Regarding the

624   content of performance-related experiences, a high overlap was found for all descriptors

625   identified by the coaches and players in each dyad with overlap scores ranging from 0.4 to

626   0.6 for most successful performances and from 0.3 to 0.5 for least successful performances.

627   Highest overlap scores were found for functional motivational and cognitive states, while

628   dysfunctional motor-behavioural and volitional revealed lowest overlap scores.

629   Figure 2 shows player and coach intensity ratings of the player's psychobiosocial states

630   before most and least successful performances. As it can be seen, the coach was rather accurate

631   in assessing the intensity of most state modalities, deviating a maximum of 3 points (out of 11

632   possible points), with the exceptions of the dysfunctional operational modality in most successful

633   performance, and functional volitional modality in least successful performance, for which there

634   was a 5-point mismatch. Similar results were found in the other two dyads. Taken together,

635   contrasts between coaches' and players' intensity ratings in most successful performances

636   indicated highest accuracy for dysfunctional anger with differences in intensity ratings ranging

637   from zero to half point across dyads. Lowest accuracy was found in intensity of dysfunctional

638   operational and dysfunctional communicative modalities, with a discrepancies ranging from two

639   to five points. In contrast, regarding the least successful performances, highest accuracy was seen

640   in functional pleasant, dysfunctional anxiety, dysfunctional anger, and dysfunctional volitional

641   with differences in intensity ratings ranging from zero to one point across all dyads. Lowest

642   accuracy between coaches' and players' ratings was found for the intensity of dysfunctional

643   communicative (differences ranging from one to seven points) and functional anger (zero to six

644   points difference).

645   < Insert Figure 2 here >

646   **Discussion**

647   The study aimed to explore an important ability for coaches, which is that of perceiving

648   athletes' performance-related states in the effort to support them via helping them regulate their

649   states. We focused the exploration on what coaches perceived and what they did with this

650   information. Three high performance tennis coach-athlete dyads helped us pinpoint the

651   following: (i) the coaches paid attention to athletes' bodily, motor-behavioural, verbal cues, and

652   operational components of a performance state; and (ii) they used this information to adapt their

653   own emotional and behavioural responses, to provide verbal and non-verbal positive

654   reinforcement, and to give performance-related feedback. Furthermore, the data revealed that

655   certain characteristics of the coaches were key for the coaches' perception ability and

656   consequently coach-athlete relationship. The coaches were calm, communicated their care for the

657   player, and worked hard to build trusting relationships, while keeping a distance and demanding

658   high standards of performance. We situate the interpretation and discussion of these findings

659   within the context of effective emotion regulation practices and the coach-athlete relationship, as

660   these are key for athletic performance.

661   The coaches in this study paid most attention to athletes' specific bodily and motor-

662   behavioural cues including facial expressions, body posture and gestures. Verbal expressions

663   were also used to identify players' states. These findings are in line with previous research on the

664   relationships between emotion states, body movements and gesture expressivity (Castellano, et

665   al., 2007). Our findings highlight the role of the body in expressing and perceiving emotions,

666   supporting the idea that one's perception of facial emotional expressions may depend on bodily

667   expressions (Aviezer, Trope, & Todorov, 2012). The athletes in our study were aware that their

668   coaches perceived their performance-related state displays and used this information to infer

669   athletes' experiences.

670   Our findings revealed that coaches were aware of how their own states could influence

671   those of the players. Therefore, they actively adapted their own emotional and behavioural

672   responses depending on what they thought the athletes needed at that time. Verbal and non-verbal

673   positive reinforcement provided by the coaches as attentional deployment emotional regulation

674   strategies, which are aimed to direct player's attention towards positive aspects of their

675   performance (Gross, 2015). The coaches expressed nonverbal behaviours to their players

676   sometimes together with verbal reinforcement. These behaviours were positive emotional

677   displays, which were useful in modifying players' appraisals of a situation in order to change its

678   impact. For instance, based on players' reports, coaches' gestures were effectively used to up-

679   regulate the players' emotional experiences and increase their motivation. The coaches also

680   reported providing feedback related to performance, including correction of technical or tactical

681   aspects of performance. Although this would not be considered a direct emotion regulation

682   strategy per se, the consequences of the modification of performance may trigger pleasant

683   emotions. Coaches' interpersonal emotional regulation strategies served both hedonic and

684   instrumental goals (Tamir, 2011).

685   Coaches and players highlighted the importance of trusting each other, sharing language,

686   values, and common goals, as well as being appreciative, all of which are characteristic of an

687   effective coach-athlete relationship. The coaches' ability to perceive and respond appropriately to

688   players' emotional states reflects empathic understanding (Jowett & Poczwardowski, 2007).

689   Based on players' accounts, the coaches' understanding of their feeling states and behaviours

690   results in positive interactions and satisfaction (Lorimer & Jowett, 2009). All in all, our findings

691   provide support to the notion that a coach-athlete relationship is characterized by closeness,

692   commitment, complementarity, and co-orientation (Jowett, 2007; Shanmugam & Jowett, 2017).

693   Being able to perceive and to alter their own behaviour so that it is congruent to the players'

694   needs reflects a high level of emotional intelligence. In fact, emotion perception is the core

695   component of the four-branch model of emotional intelligence (Mayer & Salovey, 1997). This

696   exploratory study presents valuable preliminary information about what coaches perceived, and

697   how this information was used for regulation, which can be used to promote further study of the

698   underlying individual differences in the coaches' perceptions of their athletes' emotions.

699   Results from the IPPS data, indicated that coaches reported somewhat accurately the type

700   of experiences of their players in most successful and most unsuccessful performances, with

701   highest overlap score values of 0.6 (with 1 indicating maximum accuracy). It is important to note

702   that IPPS includes a stimulus list of 3-4 descriptors for each state modality, and an overlap of 0.6

703   would indicate that the coaches are exact in reporting 60% of the adjectives the players used to

704   describe their states, which in this case indicates fairly good accuracy. This accuracy may be

705   explained by the fact that feeling states associated with such memorable situations (i.e., best and

706   worst performances) may reflect functional and dysfunctional experiences that the coach-athlete

707   dyad may be working on to reproduce or deal with, respectively. The accuracy of coaches in

708   perceiving some of the players' state modalities may be challenged by the fact that some of the

709   modalities may only be subtly expressed or the athletes have learned to suppress the expressions.

710   **Limitations and Future Research**

711   A limitation of the present study was the specific target group. It may be that coaches

712   were familiar with the particular elements of emotional expression in tennis, which may have

713   resulted in high perception accuracy. Future research targeting other sports can help ascertain

714   whether or not the findings were characteristic of tennis coach-player dyads. A second limitation

715   is the use of recall, which may be criticized on the basis of reliance on memory. An advantage of

716   recalled experiences, however, is that the examination of the athletes' past performance history

717   allows gathering information about functional and dysfunctional experiences associated with

718   extreme situations (i.e., most successful and least successful performances), which would not be

719   feasible to measure otherwise. Nevertheless, the coaches and players' interview data was

720   triangulated with data collected via the use of the IPPS, which supported coaches' accuracy in

721   perceiving athletes' states. The context of success and failure has been previously used in the

722   study of performance-related states in the past as it allows for the exploration of the whole range

723   of possible experiences an athlete can feel. Moreover, these situations are very significant for the

724   athletes and coaches, who may recall their feelings long after they happened. Future research

725   examining the coaches' perceptions of athletes' actual experiences is warranted. By using a

726   small, homogeneous sample, these results might only provide in-depth insights into the

727   perceptions and experiences of selected high performance tennis coach-athlete dyads. Although

728   this may be considered a limitation of the study, it can also be considered its strength,

729   emphasizing the results in terms of their theoretical transferability instead of their empirical

730   generalizability. A final, yet important limitation is related to the gender representation of the

731   dyads included in the study. A female coach - male player dyad, which is unfortunately still

732   exceptional in the realm of sports, was not included in the study. Thus, future research should

733   look into gender variations with regard to intrapersonal and interpersonal emotion regulation

734   strategies.

735   **Applied Implications**

736   This study extended previous emotion literature by examining the coaches' ability to

737   perceive athletes' emotional states, an area of research important for interpersonal emotion

738   regulation that has received scarce attention. The findings have important implications from an

739   applied perspective. Our findings revealed that the coach has an important role in emotion

740   regulation process. The findings can be used in coach education programs aiming to develop

741   effective support for athlete emotions regulation. For instance, the knowledge regarding

742   particular cues signalling athletes' emotional states is useful for the development of skills in

743   novice and inexperienced coaches. Because the inability to understand, experience, or express

744   emotions effectively leads to loss of social support or disintegration of groups (Niedenthal &

745   Brauer, 2012), it can be assumed that development of such skills in coaches can lead to

746   strengthening coach-athlete relationships. An effective perception of athletes' feeling states and

747   understanding of the impact on their performance is also helpful in the development of athletes'

748   meta-experiences (i.e., preferences, attitudes). As such, coaches, with the assistance of sport

749   psychology practitioners, can help athletes develop effective beliefs and attitudes towards their

750   own experiences instead of focusing directly on changing their emotions. Overall, coaches can

751   be instrumental in the facilitation of an optimal emotional climate. Guiding coaches direct their

752   attention to specific aspects of emotion expression in their athletes may improve their perception,

753   and thus, increase the effectiveness of the inferences about their athletes' internal states. This in

754 turn, may enhance coaches' communication and connectedness with their athletes. Our findings

755 indicated that coaches self-managed their emotions to regulate their players' emotions. This is an

756 important aspect of interpersonal regulation. Increasing novice coaches' awareness of the impact

757 of their own emotions on others may be helpful for a successful and effective coaching

758 relationship.

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891   Table 1

892   *Athletes' experiences, and coaches' perceptions in most and least successful performances identified by the players.*

Dyad	Most successful performance		Least successful performance	
	What the player felt	What the coach perceived	What the player felt	What the coach perceived
1	I was very self-confident and motivated. My hits were smooth and controlled. *Focused, confident, fighting spirit, nervous, pleased, worried, resentful, motivated, purposeful, energetic, powerful movement, powerless, effective, outgoing*	She was very self-confident what is unusual. Normally, she has self-doubts. … She played very efficiently. She was motivated and purposeful. *Focused, confident, fighting spirit, nervous, complacent, anxious, motivated, purposeful, energetic, physically tense, relaxed movement, effective, unskilful, outgoing*	I had trouble with breathing, I was very nervous, tensed up. I did not play well; I made a lot of mistakes. I was not carefree and not excited. I was only a bit confident and not very coordinated. *Overloaded, attentive, fighting spirit, discontent, satisfied, troubled, irritated, uninterested, motivated, purposeful, unwilling, vigorous, physically tense, coordinated, powerless, skilful, inconsistent, uncommunicative, communicative*	Her preparation and arrival were poor. She was very stressed when we arrived. From the start on she was not confident, with no fighting spirit. She had doubts, was nervous, frustrated, sluggish and not engaged nor interested. Physically she was charged but in a negative way. She was angry, uncoordinated and clumsy. She didn't manage to calm down. *Doubtful, focused, aggressive, nervous, pleased, troubled, irritated, uncommitted, motivated, undetermined, physically charged, physically tense, inconsistent, clumsy, inconsistent, withdrawn, outgoing*
2	I was very confident and I was first seated. The way I was walking, I did not care	She was very enthusiastic and joyful. She had a high fighting spirit but was relaxed	I remember I was worried, I was thinking what my parents would say. I was confused; I	She had a fighting spirit, but the rest was not so good. *Overloaded, focused,*

	what others might say. I was walking relaxed. Anyway, it felt like I will win 6-1, 6-1. I knew that the ball can't fly stronger and faster than I can imagine. *Confused, focused, confident, fighting spirit, nervous, satisfied, worried, annoyed, unmotivated, motivated, purposeful, unwilling, energetic, tired, powerful, clumsy, effective, ineffective, alone, connected*	at the same time. During the match there was a situation with the crowd where she got very annoyed and a bit distracted. *Distracted, focused, enthusiastic, fighting spirit, nervous, satisfied, concerned, annoyed, unmotivated, motivated, determined, indecisive, vigorous, physically tense, powerful, sluggish, consistent, inconsistent, alone, outgoing*	didn't really know what to do. I was confident in the first 10min. Then realized there was no confidence. I was not aggressive, not pushing the ball exactly. *Confused, focused, confident, aggressive, nervous, overjoyed, worried, annoyed, unmotivated, motivated, persistent, unwilling, energetic, tired, coordinated, clumsy, effective, ineffective, disconnected, outgoing*	*confident, fighting-spirit, nervous, satisfied, worried, resentful, uncommitted, motivated, determined, undetermined, energetic, physically tense, coordinated, uncoordinated, effective, ineffective, disconnected, outgoing*
3	I knew already before the match that I have good chances ... I was not confident before the match that I am going to win for sure, but I had good chances. I was OK confident, but not really. *Focused, doubtful, confident, fighting spirit, nervous, complacent, concerned, irritated, motivated, decisive, physically tense, physically charged, coordinated, effective, unreliable*	He was worried and concerned. But then he became confident and carefree. … He was looking forward to the match. *Focused, doubtful, confident, aggressive, nervous, satisfied, worried, annoyed, uninterested, motivated, determined, indecisive, energetic, physically tense, powerful movement, uncoordinated, skilful, inconsistent, uncommunicative, connected*	I was not happy on the court, really negative about it, about myself, had no confidence, or enthusiasm. I was too aggressive in my game and in mind. … I was physically fit because we had a good practice a week before. *Doubtful, alert, aggressive, dissatisfied, concerned, annoyed, uncommitted, motivated, decisive, undetermined, physically charged, physically tense, powerful movement, uncoordinated, unreliable*	He was neither confident nor happy. … He was not relaxed, but was quite coordinated. *Doubtful, attentive, confident, aggressive, dissatisfied, troubled, furious, uncommitted, motivated, persistent, unwilling, physically charged, physically tense, coordinated movement, sluggish, inconsistent, disconnected*

893   *Note.* In normal font are data extracts from the interviews and in italicized font are psychobiosocial states identified on the IPPS.

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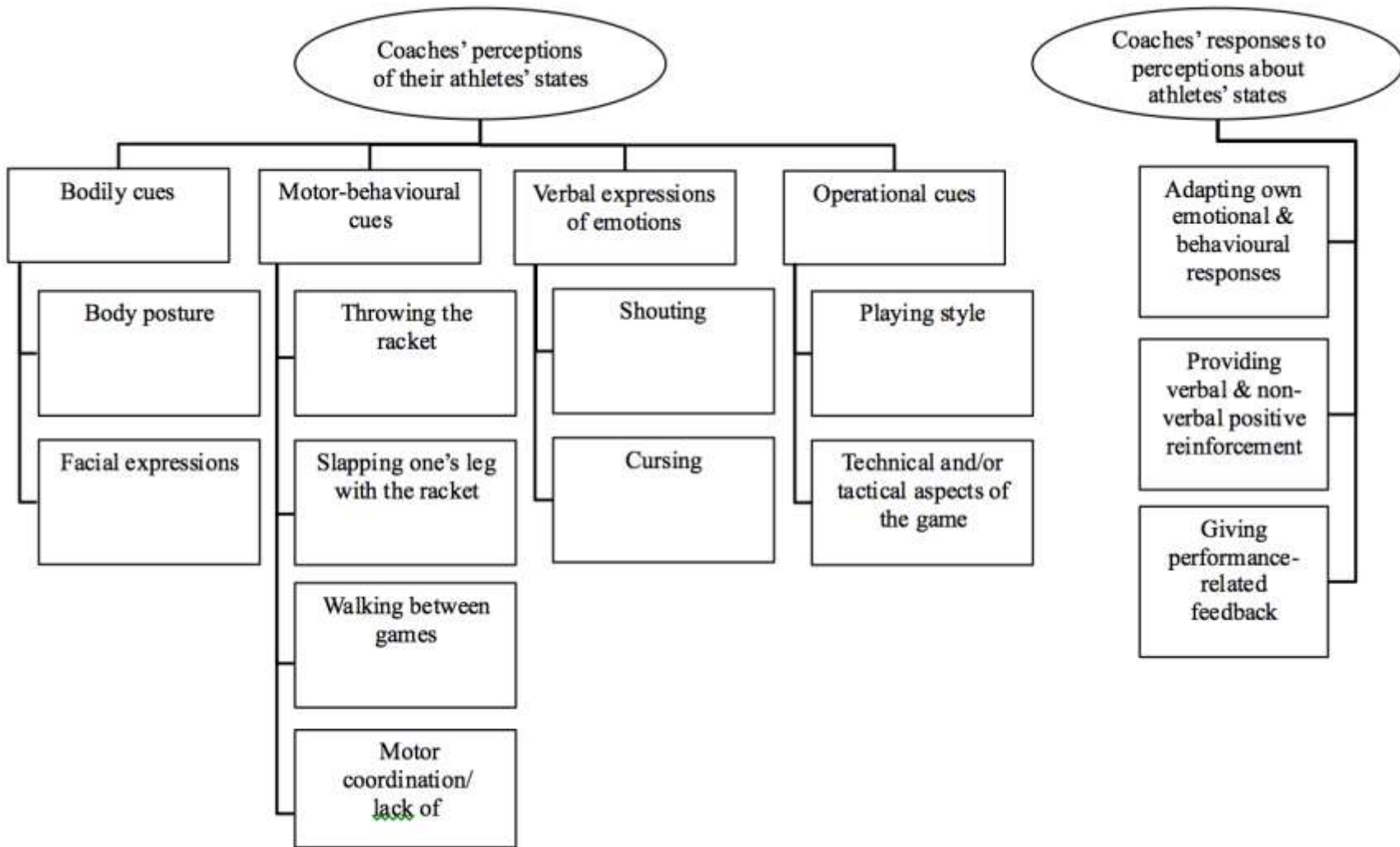
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896   Figure 1

897   Superordinate and subordinate themes identified regarding what coaches perceived and how they responded in relation to their players' states
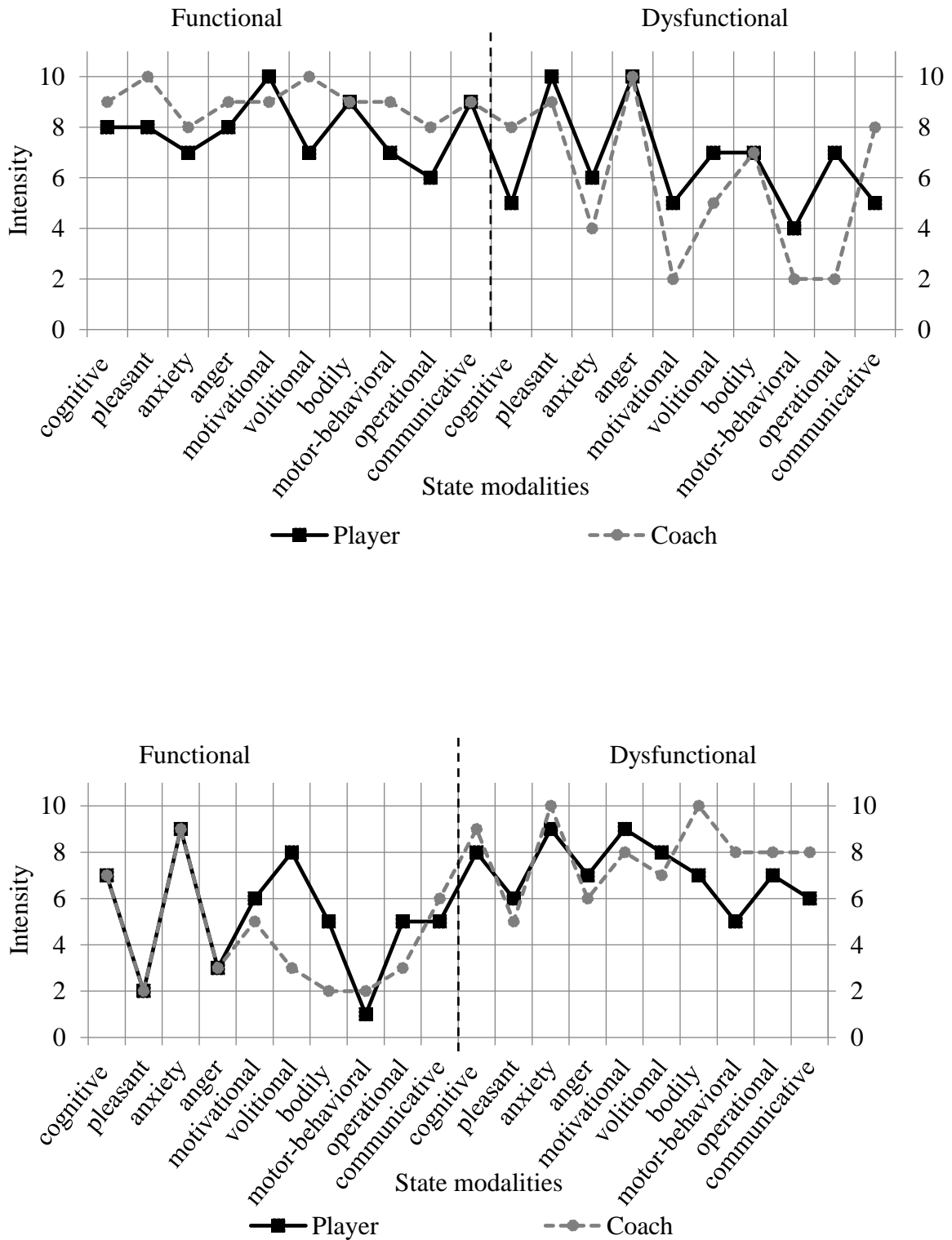
Figure 2

Individual profiles of a tennis player's psychobiosocial states before most (upper part) and least (lower part) successful performances as assessed by his coach and herself