

Seeing Double? A Practice-Based Investigation into Twins experiences of Sporting Talent
Development

Robin D. Taylor^{*1}, Howie J. Carson² & Dave Collins^{2,3}

¹Institute for Coaching and Performance, University of Central Lancashire

²Moray House School of Education and Sport, The University of Edinburgh

³Grey Matters Performance Ltd.

*Correspondence concerning this paper should be addressed to Robin Taylor, 006 Greenbank
Building, University of Central Lancashire, Preston, PR1 2HE, United Kingdom. Email:

RDTaylor2@uclan.ac.uk

Abstract

While there is an established body of research on twins within the wider social science domain, scarce attention has been applied to this relationship within sport coaching practice. Specifically, this is apparent during talent development, despite a growing empirical interest toward the developmental impact of age-gapped siblings on sporting success. Accordingly, this study explored potential mechanisms through which the twin relationship may impact on talent development. Longitudinal observation of two twin sets (one monozygotic and one dizygotic) took place within a UK regional hockey performance centre training environment. Observations were used to inform semi-structured interviews with twins and their parents, which facilitated the interpretation of observations and exploration of the relationship, before a codebook thematic analysis was conducted. Findings revealed several themes (regularity of interaction, emotional interpersonal skills, rivalry, skill development, communication, and type of separation) consistent with previous studies, alongside two new themes; namely, conflict and identity. The study highlights the complex and individualized nature of the sibling subsystem, illuminating the possible impact of twin type on several themes, and highlights the potential for observations as a practice-based tool for coaches to consider when individualizing the talent development process.

Key words: coaching, family systems theory, pragmatism, siblings, self-regulation

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2 development

3 Twin studies have long been recognized as valuable in examining the coactive
4 influences of genes and the environment on specific characteristics (Galton, 1875). Most
5 common within study designs is the recording of differences between monozygotic (MZ) and
6 dizygotic (DZ) twin sets (e.g., Huguet et al., 2017). Indeed, these differences are perhaps of
7 most significant interest to social scientists during or following important developmental
8 processes or events. Certainly, within the psychology domain, twin research is a well utilized
9 paradigm for this purpose (e.g., Haworth et al., 2013). However, there is a dearth of twin
10 research within sport coaching and talent development (TD; Baker & Horton, 2004), despite
11 recognition and increasing interest towards sibling influences within these challenging and
12 transitory environments (e.g., Blazo et al., 2014; Taylor et al., 2017). As such, this paper
13 focusses on the specific twin relationship during the TD coaching process.

14 **Family Systems Theory: Its Application to Sport Coaching**

15 Recent identification of family systems theory (FST; Bowen, 1978) as a lens to
16 further understand TD in sport (cf. Taylor & Collins, 2015) has promoted theory-driven
17 enquiry into the role of siblings (Blazo & Smith, 2018). FST views family members as part of
18 an inherently and emotionally connected unit, whose relationship strength are characterized
19 by dynamic boundaries, existing along a continuum ranging from enmeshed (i.e., low
20 influence from outside the relationship) to permeable (i.e., high influence from outside the
21 relationship). FST suggests an interactive relationship between individuals' thoughts,
22 feelings, and actions across any given time course of events. Accordingly, for coaches,
23 understanding an individual, what they bring to the TD pathway, and how they develop
24 within it, should also consider the dynamic of their closest social group, the family. From a
25 TD perspective, providing individualized support is well accepted as the most optimal

26 coaching approach to achieving success along a pathway (Phillips et al., 2010). However, in
27 acknowledging the propositions of FST, developments within the formal Talent Development
28 Environment (TDE) should ideally be considered by coaches alongside other
29 informal/supplementary TDEs (e.g., the home). With this in mind, understanding if and how
30 progress along the TD pathway can be positively—and perhaps uniquely in contrast to the
31 input of coaches—impacted on when not “seen” to be training, offers a different but
32 potentially useful resource for future developments in this area. In short, should the coach
33 make best use of interactions (cf. Bailey et al., 2010) through the emotionally-bound relations
34 present within the family?

35 **Siblings in Sport**

36 In light of retrospective research, siblings have been found to be important for
37 achieving elite success (cf. Collins et al., 2016). For example, Nelson and Strachan (2017)
38 explored how siblings influence elite youth sport participation. Athletes participating in the
39 same sport as their sibling(s) developed a much deeper understanding of each other and
40 experiences endured which were both positive (e.g., relationship growth and understanding)
41 and negative (e.g., sibling competition and emotional response). Furthermore, siblings
42 offered emotional support, guidance, and, in relation to the older sibling, a role model for
43 participation and development. Moreover, Davis and Meyer (2008) explored the
44 psychological impact of elite, on-field, and same-sex sibling competition. Their findings also
45 presented concurrent positive (i.e., closeness and positive regard) and negative (i.e., dropout
46 due to rivalry and disregard) characteristics within the relationship. Finally, Taylor et al.’s
47 (2018) longitudinal study of four sibling dyads where both were in a TDE, revealed the
48 interactional context (e.g., training and play), emotional interpersonal skills (e.g., closeness
49 and support), skill development (e.g., mentoring and co-operation), communication (e.g.,
50 instruction and discussion), rivalry (e.g., competition and performance), and resilience (e.g.,

51 development and test) to be perceived as positive processes to TD. In support of the need for
52 individual consideration, the longitudinal nature exposed variations in frequency and
53 importance of characteristics within and across the sibling relationships during TD. In
54 summary, siblings seem to offer a much more diverse influence on TD, certainly when
55 compared to the heavily considered role of parents (cf. Knight, 2017) and, therefore, should
56 be considered by coaches, alongside parental involvement. However, the emergent and
57 exploratory state of evidence in this area still leaves important questions unanswered and
58 factors needing to be accounted for, such as sibling type (e.g., twins).

59 **Why Twins? An Overview of Research**

60 Contemporary accounts consider the active role of twins in shaping their social
61 environments and how they negotiate the process of being a twin through interactions with
62 each other (Bacon, 2010). Interestingly, study has revealed differential impacts of twin type,
63 with MZ more likely to be content with their similar identity views (not only physiological)
64 than DZ twins, who seek to differentiate themselves both through behavior and personality
65 (Felson, 2014). Furthermore, Fortuna et al. (2010) suggest that variables other than genetic
66 similarity may play a role in differentiating twins from age-gapped siblings, emphasizing the
67 unique twin bond. For example, twins are required to interact with a sibling who has similar
68 developmental markers; increasing the likelihood of common interests at each development
69 stage, leading to a more intimate bond, and/or heightening competition between twins in
70 comparison to age-gapped siblings. Notably, in either case, there is greater opportunity for a
71 more meaningful relationship, be it positive or negative (Lytton, 1980). As such, this suggests
72 that twin relationships can serve a nurturing function uncommon among non-twins (Ainslie,
73 1997; Tancredy & Fraley, 2006), which suggests the need to consider this specific sibling
74 type alongside age-gapped siblings within coaching practice.

75 Occurring approximately once in every 65 births (ONS, 2016), twins are often
76 assumed to have a relationship which is generally close, co-operative, and harmonious
77 (Segal, 2000). Indeed, Noble et al. (2017, p. 345) suggested that being a twin is “one of the
78 most unique and transformative developmental sibling relationships an individual can
79 experience”. These points suggest that twin relationships during TD *might* offer a subtle, but
80 meaningful, difference to previous research with age-gapped siblings which serves to
81 increase the complexity within TD. However, as yet, there is little twin research related to
82 “excellence” in achievement and none within the context of sporting TD (Baker & Horton,
83 2004). Considering the impact of the twin relationship on potential mechanisms for TD and
84 exploring how such a relationship impacts on its permeability, would, therefore, contribute to
85 the emergent coaching literature. Therefore, exploring this relationship within, and away
86 from, the formal TDE was seen as a beneficial next step to informing effective coach decision
87 making when applicable.

88 **Coach Decision Making to Support Optimal Talent Development**

89 So far, we have introduced the notion of family and, more specifically, siblings as
90 being important agents within TD. Explicitly, we have identified these relationships as being
91 complex and individualized in nature. Considering our aim of informing coaches’ knowledge
92 on TD, it is, therefore, also important to recognize the holistic and individualized needs of
93 athletes in general within TD. Indeed, understanding how literature on the sibling relationship
94 can be contextualized within TD more broadly, can better support coaches when planning for
95 and/or evaluating the use of training and resources on a sport-by-sport and athlete-by-athlete
96 basis (cf. Ackerman, 2014).

97 While a rare minority of athletes might have a seamless journey to the top of their
98 sport, research has revealed that for the majority, the journey along a TD pathway is
99 characteristically nonlinear, often unpredictable, and notably challenging (Abbott et al., 2005;

100 Davids & Baker, 2007). Furthermore, some TD researchers have explained such naturally
101 occurring or designed challenges as necessary means (at an age and stage appropriate level)
102 to demonstrate and learn a range of characteristics that are useful to future inevitable setbacks
103 (of varying degrees; cf. Collins & MacNamara, 2012). A phrase commonly used to describe
104 this type of TD pathway is a “rocky road”, which reflects inevitable changes in the rate of
105 progress at times, transitory periods, and the need to be equipped with and know how to
106 demonstrate different physical, psychological, and social skills to navigate the many barriers
107 ahead (Bailey et al., 2010). Not only do challenges present across these domains, they are
108 more accurately presented as interactive factors, which has led Bailey et al. to characterize
109 TD by complex bio(physical)-psycho-social interactions. Consequently, expert coaching
110 practice is now more commonly understood as being largely underpinned by a nuanced,
111 epistemologically sophisticated, and contextually-derived decision making process as
112 opposed to the application of a “one-size fits all” approach (Cruickshank & Collins, 2016).

113 Therefore, to make best use of any findings emanating from twin, as opposed to age-
114 gapped sibling, research, it is necessary to equip coaches with an approach or perspective that
115 is coherent with the appreciation and understanding of complex interactions. One approach is
116 the Professional judgement and decision making (PJDM) approach which emphasizes, above
117 everything else, the importance of coaches considering why they are taking actions at that
118 time, and any alternatives they might consider (cf. Collins & Collins, 2015). Therefore, this
119 approach caters for the inevitable nonlinearity of TD. An example of this can be seen in
120 growth spurts in young athletes. Consider that growth spurt timing can be different across
121 athletes, which can impact psychologically (e.g., self-efficacy), and also socially (e.g., team
122 position or perceived status). Within the context of the sibling relationship, such an event
123 might change the interaction through formal (e.g., training) and informal (e.g., in the garden)
124 settings, which constitutes a large proportion of time during TD. If growth spurts occurred

125 simultaneously, the relationship may become more enmeshed by the siblings assisting and
126 supporting each other through the transition. If not, however, this could foster a more
127 permeable and unhealthily competitive relationship. Therefore, such consideration is not
128 simplistic and requires coaches to have an understanding of the complex nature of TD and the
129 individual sibling relationships under consideration, over and above the other essentials of
130 pedagogy and the sport itself (Abraham et al., 2006). In short, an underpinning knowledge of
131 the individual, sport, and situational demands enables the coach to better anticipate, plan for,
132 deliver, and revise practice as a hallmark of expert coaching.

133 **Methodological Considerations**

134 The need to examine cases intra-individually is not novel within sport (Kinugasa,
135 2013), but does challenge the notion of generalization and, therefore, the robustness of impact
136 on TD. However, such design *is* consistent with the nonlinear and individualized nature of
137 TD, where variability between individuals can reveal important complexities needing careful
138 consideration by coaches within the applied context (Collins et al., 2015). Furthermore,
139 within the social sciences, it is argued that more discoveries have arisen from intense
140 observation than from statistics applied to large groups (Normand, 2016). Therefore, with the
141 aim to bridge the gap between formal and informal TDEs, we drew upon research by Winter
142 and Collins (2015) who highlighted that practice-derived knowledge can support and direct
143 coaches in a contextually fitting manner. So far, studies of siblings and TD have yet to
144 incorporate such an approach; instead solely focusing on interviews for data collection.
145 Therefore, the purpose of this paper was to compare findings from the TD sibling literature
146 with those of twins within the same TDE by employing practice-based inquiry as a novel
147 approach to how coaches can explore the potential role of siblings in TD.

148 **Method**

149 Reflecting the aims outlined above, the present study employed a pragmatic approach.
150 Unlike other philosophical research approaches, pragmatism does not prioritize ontological or
151 epistemological issues (Bryant, 2009). Instead, focusing on the extent to which shared
152 knowledge can be generated in order to produce useful applied implications that can make a
153 meaningful difference to practice (Bryant, 2009; Morgan, 2007). As such, pragmatism shapes
154 all aspects of the research process, with a key focus on uncovering practical solutions and
155 using theory to support applied discoveries (Giacobbi et al., 2005). Here, the role of the
156 corresponding author was to become a co-constructor of knowledge with the participant(s)
157 (Giacobbi et al., 2005); a process facilitated by being a head coach within the TDE examined
158 in this study. This was beneficial to the quality of findings, since it is important that the
159 researcher has credibility within, and understands, the environment (May, 2011). Without
160 such insight there is the potential for weakened theoretical sensitivity and reduced quality of
161 findings (May, 2011). Again, reflecting a pragmatic approach to this investigation, a mixed-
162 methods procedure was adopted considering the scarce evidence on twins in TDEs.
163 Accordingly, examinations of twin sets took place through an in-depth case-study approach
164 using both observations and interviews, to afford a nuanced view of reality (Flyvbjerg, 2006).

165 **Participants**

166 Two male twin sets (DZ and MZ) and their parents were purposively sampled from
167 the corresponding author's regional hockey performance centre (as Head Coach) which is the
168 fourth of six tiers in the National Governing Body (NGB) player pathway to junior national
169 representation status. At the start of the study, the DZ twins were 15-years old, part of an
170 intact family of five (with an older brother). Dizygotic twin 1 (DT1) was first-born. The MZ
171 twins were 14-years old, part of an intact family of five (with an older sister). Monozygotic
172 twin1 was first-born. Both sets were part of the U15 age group and trained together once
173 every 2 weeks. Parents were full-time guardians with both sets of twins and all immediate

174 family members lived together. Ethical approval was obtained by the university's ethics
175 committee and signed informed consent/assent was provided by parents and athletes prior to
176 data collection. Procedural approval was also obtained from the NGB.

177 **Procedure**

178 Due to the limited practical knowledge of siblings in TD, and the nature of the
179 informal TD environment often obscured from view, qualitative observation (i.e., in depth
180 information on a small number of individuals) allowed for the understanding of groups in
181 their natural sporting environment, encouraging freely occurring behaviour to be maximized
182 (Smith, 2018). As the primary researcher was a native of the environment (as Head Coach) it
183 was possible for complete participation (Smith, 2018) observations to take place over 7
184 months, totalling 54 hr of observation across training, classroom sessions, lunch periods, and
185 competition days. This allowed for a more natural occurrence of behaviours to take place, and
186 a true insiders' perspective as the researcher did not unnaturally alter the flow of interaction
187 (Smith, 2018): importantly, such observation was a normal and accepted part of the training
188 process, which was typically designed and overseen by the Head Coach. Therefore, the
189 researcher participated within the context, recording the setting that was observed, the
190 activities that took place and the people that participated on a reporting template (Smith,
191 2018). The recording template was then used to inform elements of the interview process
192 with parents and siblings, as participants were provided with observed scenarios and asked to
193 interpret them. In support of this perspective, Holder and Winter (2017) found that
194 observations were adjunct to other assessment tools, such as interviews (i.e., for triangulation
195 purposes), with Whyte (1984) suggesting observations can inform interviews, increase
196 relevance, and allow participants to interpret events. Observations were collated from three
197 coaches (the corresponding author, an advanced practitioner coach, and an ex-international
198 coach) who regularly worked together as a team at the centre. The corresponding author has 4

199 years of experience coaching at this level and a UKCC Level 2 qualification in hockey
200 coaching. The remaining coaches had at least 10 years' experience and both hold a UKCC
201 Level 3 qualification in hockey coaching. All coaches recorded observations at the end of
202 each session. Observations took place during elements of the sessions when coaches were not
203 actively coaching (e.g., warm-up, games, during tasks).

204 In light of these suggestions, single individual semi-structured interviews ($n = 4$) then
205 took place with each athlete ($M_{\text{duration}} = 37$ min) and parent ($M_{\text{duration}} = 41$ min); recorded
206 using a Dictaphone and stored electronically. These were conducted by the corresponding
207 author and took place at a time and location identified by each family. Individual interviews
208 took place privately, and all family members were interviewed consecutively. Three, over-
209 arching themes were used as a structure for the interview guides; exploring the relationship
210 away from the pitch, interpretation of the observations and reference to previous studies (e.g.,
211 Blazo et al., 2014; Côté, 1999; Taylor et al., 2018). Individual interviews provided depth of
212 questioning and personal information pertaining to the lived and observed experiences
213 (Kaplowitz & Hoehn, 2001), allowing the participant and researcher to co-construct research
214 “truths” (Jones et al., 2006).

215 **Data Analysis**

216 Utilizing a codebook thematic analysis approach, potential themes were initially
217 derived from previous studies exploring the sibling impact on TD (e.g., emotional
218 interpersonal skills, separation, and skill development; Taylor et al., 2017), as well as
219 inductively creating new categories in light of novel observations. This was deemed as the
220 most appropriate approach to thematic analysis due to the novel and evolving understanding
221 around siblings and TD (cf. Braun et al., 2019). This also allowed for the conceptualization of
222 themes as domain summaries (Braun et al., 2019). During this process, connections between
223 categories were explored, alongside application of a “revise, retest, revise” approach

224 reflecting a pragmatic approach to handling data against what the literature highlights (Glaser
225 & Strauss, 2017). Such analysis helped inform the subsequent semi-structured interview
226 questions. Interviews were transcribed verbatim prior to conducting a codebook thematic
227 analysis (Braun & Clarke, 2006). Transcripts for parents and siblings within each family were
228 converged for a more complete understanding of each case study (Baxter & Jack, 2008).
229 Codebook thematic analysis consisted of six stages using a qualitative software package
230 (QSR NVIVO 10). Familiarization took place by the researchers immersing themselves in the
231 content by reading and re-reading the data. Descriptive coding assigned initial raw data
232 codes, before searching for subthemes through examination of these codes based on similar
233 patterns of meaning. Next, subthemes were reviewed to determine an accurate picture of
234 these data, illuminating the impact of twins on TD. Subthemes were grouped into distinct
235 overarching themes that represent the impact of the relationship on TD (Braun & Clarke,
236 2006). To assess the trustworthiness of the analysis, member reflection took place with each
237 family member to validate the credibility of the data (Smith & McGannon, 2017). This
238 consisted of returning the results (i.e., themes and interpretations) of the interviews to
239 participants, asking how accurate these were in terms of the interpretation presented, and
240 requesting and noting any additional thoughts on the perceptions reported. Such an approach
241 allowed for the controlling, and correcting, of subjective bias from the researcher, ensuring an
242 accurate interpretation of knowledge (Smith & McGannon, 2017).

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Results

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Following the data collection using observation and interview techniques described
above, our codebook thematic analysis supported further development of themes from
previous studies that focussed on age-gapped siblings; namely, interactional context,
emotional interpersonal skills, rivalry, skill development, communication, and type of

248 separation (Taylor et al., 2018; Taylor et al., 2017). Additionally, conflict and identity were
249 novel higher-order themes (see Table 1). We now present these data by theme.

250 ***Table 1 here***

251 **Interactional Context**

252 Participants acknowledged interactions within two main contexts; *sport* and *other*
253 *activities*. Notably, the extent to which the twins interacted varied across the two cases, with
254 the MZ twins revealing a greater desire to interact than the DZ twins. Exemplifying this
255 typical interaction, monozygotic twin 2 (MT2) said: “We do a lot of things together, just in
256 general really. So, we normally play a lot of sport outside together, many different sports, and
257 we do some other activities together”.

258 In the *sport* context, monozygotic twin 1 (MT1) explained that they “enjoy playing
259 sports together”, with the monozygotic father (MF) supporting this statement, adding: “The
260 first one says, ‘will you come with me onto the astro at school’, and they’ll do something
261 together”. MT2 highlighted that this provided further opportunity to practice: “It’s useful to
262 have him there because you can do certain things that someone on their own can’t do”. MF
263 said that their interaction would not just be one-to-one: “As they grow into the group, they
264 tend to move away from each other, then move back together”. Coach observations appeared
265 to support this tendency to move back together; for instance, during small group tactical
266 discussions they would sit next to each other.

267 This interaction was less prominent in the DZ twins, as the dizygotic mother (DM)
268 reflected: “Hockey is about the only thing they go and do together. They have an AstroTurf at
269 their old primary school, and they did go down there and play together in that sport”.
270 Dizygotic twin 2 (DT2) provided a little more breadth of sporting interaction; however, it was
271 not portrayed as being a particularly sought-after choice: “We go swimming together,
272 because there’s no one else. So, we’re alright together when we do things on holiday”.

273 When considering interaction through *other activities*, the monozygotic mother (MM)
274 said that they “generally spend a lot of time together, they do school work together”, with MF
275 describing how their wider social spheres were also well connected by having “a lot of
276 friends outside of sport, and they tended to share a number of those friends”.

277 For the DZ twins, however, DM highlighted that interactions were more frequent
278 during periods of ‘family time’, such as “on holiday, when they don’t have much choice, they
279 will play together, and do things together”. Furthermore, DT2 supported how organized
280 family interactions brought them together: “We do things a lot with the family together”.

281 **Emotional Interpersonal Skills**

282 This theme comprised of four subthemes; *closeness*, *comfort*, *empathy*, and *support*.
283 Again, the expression of this varied across the two case studies, with the MZ twins presenting
284 a much more emotionally connected relationship than the DZ twins. MZ participants
285 emphasized the *closeness* of the twin relationship, for example: “there’s a very strong link
286 there and that as individuals that relationship informs them, more than a non-twin” (MF).
287 MM reiterated that the twins have “quite a special relationship”. Reflecting this connection
288 through sport, MT2 revealed their shared reactions to game results: “We normally feel the
289 same things after a game or something, we both react to something the same”. Behaviourally,
290 it was observed that the twins warmed up together, MT1 interpreted this: “I would first go to
291 [MT2] and that would settle me, and then I would build relationships with others”. MM
292 reinforced this behaviour: “You just grab your brother next to you, so yes I’d say that was a
293 regular thing”.

294 In the DZ twins, this closeness was far less evident; as summarized by one dizygotic
295 twin (DT1): “We’re not that close, no, but of course we’re brothers so we like each other, but
296 then we can get sick of each other”. DT2 provided an insight into where the relationship sat

297 within the family: “I’ve not got like a special connection with him just because we’re twins. I
298 don’t think it’s more important or don’t value it as much as anyone else in the family”.

299 These opinions notwithstanding, evidence of the subtheme *comfort* came from all four
300 MZ participants. MT1 explained how this factor influenced his decision to select a warm-up
301 partner, when saying: “I would probably go with him because I know him. I am most
302 comfortable with him”. MT2 expanded on this notion: “I prefer feeling like a twin because it
303 is always there. Someone there to help you, and someone there you can talk to. You just have
304 that security”. MM supported this by emphasizing the established nature of this bond:
305 “They’ll come back together quite quickly, back to being comfortable together”.

306 Comfort was less prominent in the DZ twins, with DM interpreting a coach
307 observation around the twins alternating between being on the same team or playing against
308 each other at training: “I think if they were on the same team then they would be more
309 comfortable because they can trust each other”. When talking about how they designed a
310 session together in the classroom, DT1 suggested it worked as it was “something that was
311 comfortable so you both sort of flow”.

312 *Empathy* was revealed by MF and MT2. MF explained how “they want to do better
313 than each other, but they don’t want to see the other one sink, and they feel better when
314 they’re both doing well”. MF gave an example of this:

315 If the focus is too much on one of them, the other one will notice. If we say, ‘OK what
316 do you do’ and [MT2] was like ‘oh I scored two goals’, there will then be a pause, and
317 then, ‘but [MT1] did this really great pass or [MT1] did this other thing’.

318 MT2 described how he would feel if his twin did not do as well: “I would still feel for [MT1]
319 and I wouldn’t just go off and take that glory. I would try and help him”. Empathy was not
320 identified in the DZ twins.

321 Interpretations of the observations highlighted several examples of *support* within the
322 MZ twins. For example, during a small-sided game, one of the twins became frustrated with
323 their own performance and this appeared to also impact on the other twin. MT1 provided the
324 following interpretation: “I always would want him to perform well and be the best he can be,
325 and always doing the best he can”. Further observations included the appreciation of good
326 passes to each other through clapping, verbal communication, and eye contact. MT1
327 suggested: “You are always trying to pick each other up”. When asked about the perceived
328 desire to look for each other with the ball, MT1 suggested: “I have a responsibility to always
329 offer that option for him”. Finally, MT2 explained how they would support each other: “If he
330 is better at something, he wouldn’t just keep on going himself, he would probably help me,
331 and I would do the same thing”. However, seeking support was not exclusive between the
332 twins, as MT2 also highlighted how they might go outside of their relationship for support:

333 We would probably start talking to each other and then our dad would come in to the
334 conversation and say, ‘yes that is true’, but if sometimes we were a bit worried, he
335 would come in and say, ‘don’t be ... just play your best’.

336 In contrast, both DZ twins mentioned only occasional aspects of support. In the
337 sporting context however, DT1 suggested that they did support their twin in some ways: “I
338 would like him to succeed, but it doesn’t bother me that much how he would do”. DT2 also
339 described how this support might appear: “Just maybe help him evaluate himself a bit better
340 because a lot of people find it difficult to find the positives and negatives in themselves”.
341 DT1 highlighted that support was more often found outside of the twin relationship: “I’d say
342 the coaches are probably the main people; and friends”.

343 **Rivalry**

344 This theme was divided into two subthemes; *competition* and *motivation*. Across the
345 two case studies it appeared that rivalry played a different role. Within the MZ twins,
346 *competition* was frequently discussed. MT1 emphasized this:

347 The aim is to have a better game than the other one, as it gives you bragging rights.

348 Other people will go [MT1], [MT2] has got one up on you here, but I suppose we set
349 ourselves a task, like trying to score more goals or get more assists.

350 MT2 agreed, explaining that: “I want to be better than him”. During sessions the twins would
351 often look over to each other when they were at different ends of the pitch. MT2 said: “If it’s
352 different ends of the pitch and we are doing the same drill I would try and beat what he is
353 doing”. MF stated in support of the competitive relationship between the twins: “That’s
354 probably the defining thing of their relationship, that competitive edge, in everything”.

355 For the DZ twins this competition appeared one-sided in the sporting context. DT1
356 said of a coach observation working together to design an aspect of the training session: “He
357 is probably trying to think of something better than it. Yeah course he is, and I think he’ll be
358 more competitive than me to do better than me”. However, outside of sport it was felt this
359 competition was more consistent. DM believed that: “Being a twin adds that sense of
360 competition at school”. DT2 highlighted that this has always been the case: “Even in primary
361 school we tried to get better grades than each other”.

362 For the MZ twins, MT1 exemplified how their rivalry often *motivated* them:

363 If I see him having a good session and I am maybe not having a good session, then I
364 focus on the second half, really trying to put it in so I could get to like what he was
365 like in the first half.

366 MM also thought the rivalry was positive: “Not from a negative point of view, from a
367 spurring each other on view”. MT2 highlighted how various environments influenced this
368 motivation:

369 If we are at school and we are just with our mates and stuff it is not as serious, so we
370 won't push each other as much. But if we are at a tournament and he is doing well I
371 will definitely go out of my way to try and do something just as good.

372 The role of motivation in the DZ twins was different. DT2 summarized this in sport:
373 "I don't know why but I just want to be a bit better than him, even though I already am. I just
374 want to be even better than him". However, when considering schoolwork, DT2 suggested
375 that this motivation appeared equally: "If I start doing some revision he'll immediately go to
376 his room and start doing some revision and vice-versa".

377 **Skill Development**

378 Analysis revealed that this appeared in the MZ twins as; *mentoring* and *co-operation*,
379 but as *co-operation* and *observation* in the DZ twins. When considering the role of *mentoring*
380 in the MZ relationship, MT1 gave the following account:

381 If I have done something wrong and I think he has done it quite well that session then
382 I go, and I would ask him how did you do that? If they have performed a particular
383 skill, how do you do that? And he would just help me with some points.

384 Although this was reciprocal, MT2 did not express an even balance of mentoring between the
385 twins: "I feel like sometimes he mentors me a bit more, and I probably don't as much with
386 him".

387 When considering *co-operation*, MT2 provided specific examples of how they would
388 use their school pitch outside of training: "If he feels like he is not posting up very well then I
389 will just hit balls at him or if I am not deflecting very well or hitting very well he will try and
390 help me with that". They further emphasized how their co-operation tended to be positive:
391 "Most of the time probably together and like working together. I think we work well together
392 and we see that a couple of times in a few games we have played".

393 Fewer links to co-operation appeared in the DZ twins. The dizygotic father (DF) gave
394 an example of how purchasing a training aid to use at home developed some co-operation:
395 “He did once do that and [DT1] sort of went out. I think they were trying to do some
396 tackling”. According to DM, co-operation appeared more in the school context: “They are co-
397 operative when it comes to revision and schoolwork. They’ll help each other by sharing”.

398 Within the DZ twins, DT1 suggested that they did get ideas from *observing* their twin
399 during training sessions: “Say he’s doing some ball work or dribbling I might try that or
400 follow what he’s doing”. This observation did not require conversations: “I might just try it. I
401 wouldn’t talk to him about it”. Observation was not expressed as apparent in the MZ twins.

402 **Communication**

403 This consisted of three subthemes; *instruction*, *discussion* and *feedback*. The role of
404 these varied across the case studies. MZ twins reported more positively than the DZ twins.

405 MT2 was the only participant to highlight the role which *instruction* played during
406 practice: “If he sees I am doing something wrong he will say”. Acknowledgement of this
407 aspect of their relationship came when talking about whether his twin was the first person he
408 would go to for help with his game: “Because he is playing in the same game, he is playing
409 the same environment as me, and if he was doing better, then I definitely would ask him ...
410 he would tell me how to get better and that”.

411 Within the DZ twins, this instruction was a one-way process, from DT2 to DT1. This
412 was exemplified by a coach observation where the twins were defending together in a
413 training session and DT2 was very vocal: “I just put him in a position where he could do the
414 best he could”. DT1 suggested he was fine with this: “I feel better because I don’t have to
415 make the decision on my own, and I’ve got someone there telling me what to do”. DF
416 explained why this might happen: “He [DT1] is less confident ... and in that situation
417 [DT2]’s confidence trumps [DT1]’s lack of confidence, and therefore he responds”.

418 *Discussion* was acknowledged by all participants in the MZ case with MF
419 highlighting: “They want to discuss something, they want to talk about something, they want
420 to see what the other one feels about that”. MT2 provided a general view of how this might
421 appear: “It is more like both sides, going from both sides and helping each other instead of
422 the other one telling the other one what to do”. MT1 gave an example of how this discussion
423 could take place during car journeys after competition: “If they had gone well, we would just
424 be talking about the games”. MM reinforced this: “The journey home was an analysis of how
425 they played”. MT1 specifically mentioned: “We wouldn’t normally talk if it had gone well ...
426 but if it had gone negatively then we talk to each other, but it doesn’t get negative”.

427 In the DZ twins there was evidence of discussion around how they played. DT2
428 commented on observations made by the coach that the twins did not seem too concerned
429 with how the other was doing when on the pitch: “I’d ask him [afterwards] how did you get
430 on with that, he’ll respond, and we’ll have a chat about it”. On the way home from
431 competition DT1 said such discussion would rarely be in detail: “We were talking about the
432 game. I don’t think we talked much about how we played and improvement”.

433 *Feedback* was identified in the MZ case. MF talked about how the twins validated
434 each other: “Part of that validation is internally. I think as they learn it’s not just we won the
435 game. They validate each other”. During the classroom session on a training day the players
436 were given a self-evaluation and goal setting task, with the twins doing this together:

437 That would probably be a common question between us and I would say do you think
438 I am a 7, what do you think of that? And you’re probably a 7 and say ‘oh yes no that
439 is what I was thinking along those lines’ but normally we are quite in the same mind-
440 set. It is like that would just help us with getting an accurate interpretation. (MT1)

441 MT1 acknowledged that feedback also came from outside of the twin relationship during and
442 after training and competition: “If anyone wants to say something it would probably be mum
443 or dad, or a coach or another player”.

444 In the DZ twins, feedback had limited use. During a classroom session the coach
445 observed them sat together doing some performance evaluation. When asked about this DT2
446 shared: “We just like check, just say what are you writing, and criticize it or say how I could
447 get better maybe”. DF also suggested this might be negative if they had done something good
448 during a game: “[DT1] would normally have a sting in the tail, like ‘oh there was a deflection
449 there, that is why it went in””.

450 **Conflict**

451 Conflict appeared to be more prevalent in the DZ twins than the MZ twins. This was
452 represented by the subthemes of *arguments* and *frustration* in the MZ twins, and *arguments*,
453 *frustration*, and *criticism* in the DZ twins. MT2 and MF highlighted how *arguments* might
454 occur, across contexts, between the MZ twins. MT2 declared: “We obviously do fight
455 sometimes”. MF gave an example of how this might appear in the wider context of their
456 interaction: “The schoolwork they do together. They fallout about the nature of how they are
457 going to do it”. MT2 outlined their feelings around falling out: “I would never want to have
458 an argument, but then if we do have one that would happen”.

459 There was also some evidence of arguments between the DZ twins. When asked if
460 arguments do occur, DT2 answered: “Yes, quite a bit, but we just deal with it really”. DF
461 provided some further insight into why such arguments might occur: “The way it is delivered
462 means that it is not well received, so [DT1] might say ‘you are a bit bossy on the field, can
463 you stop shouting orders’ and [DT2] says ‘you are always out of position you””.

464 Both MZ twins identified the *frustration* that may appear. MT1 gave an example of
465 how this might happen in the sporting context:

466 I was like I will give you the ball, and he is thinking he was running in to the space
467 for me to throw it down the line but I wasn't and sometimes we expect more ... and
468 not that he doesn't deliver it but we just are expecting different things in a similar
469 situation and then it becomes negative like why did you do this?

470 MT2 emphasized the impact this frustration can have on their interactions: "One of us
471 becomes annoyed by that, and then we just split up and do our own things".

472 Frustration was mentioned by both DZ twins. DT2 was frustrated with the way DT1
473 approached sport: "I just don't think it's the right way. I just don't see the point in training to
474 not compete. That's just something I don't think is worth it". When summarizing their
475 relationship DT1 suggested that because they do quite a lot together across different contexts
476 that they can get frustrated: "That can mean like we get a bit fed up with each other".

477 In contrast, *Criticism* was a subtheme that emerged only with the DZ twins. DT2 was
478 honest with the assessment of DT1's sporting ability: "He knows I don't think he's that good.
479 I put him down a bit sometimes". When asked how this might appear, DT2 suggested: "Just
480 through my actions, I sometimes say it at home". DT1 gave further detail about how this might
481 happen in the car on the way home from competition: "In the car going back I said how that
482 game was, did you enjoy it? And [DT1] might say, 'oh [DT2] was shocking in defending
483 situations, he let the ball go through', and then [DT2] would counter that".

484 **Type of Separation**

485 Separation is explored across both cases through the subthemes of *sport specific* and
486 *general types*. *Sport specific* separation was mentioned by both MZ twins, with MT2
487 suggesting that their training environment would impact on this: "If it is different ends of the
488 pitch and we are doing different drills I probably wouldn't think about him, I would focus on
489 my own play". This supported MT2's interpretation of a coach observation where they
490 focussed on their own skill execution during an activity: "I probably focus a bit more on my

491 own game”. MT2 also suggested that they were starting to deliberately separate, when
492 discussing their approach to fitness training at the start of a session: “Last night we didn’t run
493 together because I thought that might help a bit more to try and run with someone else”.

494 When practising for hockey at home DT2 provided the following example in relation
495 to sport specific separation:

496 I get [DT1] to try and help me, but he’s very reluctant to do it. So, I’d say because I
497 want to practice my passing really close a few metres apart, he’s a bit reluctant to do
498 it. He wants to go and do something else. Not hockey related.

499 During sessions it was observed that they would not always warm up together. DM provided
500 the following possible explanation: “They are more individuals; they don’t see each other as a
501 unit together. It would be perfectly normal for them to do their own thing”. DT1 supported
502 this: “In training we would go with people that are around our level”.

503 In relation to *general separation*, in the MZ case, MT2 emphasized at times their
504 interactions, when it came to homework, “would start off well and it would sometimes just
505 break up, and we would stop working together”. MF provided some thought around the
506 longevity of such separation:

507 There’s a catharsis and there’s a resistance to separating completely and going off and
508 doing it on their own. We can say separate and work on your own. They’ll do that for
509 a short period of time before suddenly they’re back together and we say come on you
510 were arguing why don’t you stay separated. No, we’re alright now we’ve figured it
511 out.

512 In the DZ case, the emphasis on general separation was similarly to that of sport
513 specific separation. DF summarized this: “They have their own little spaces of influence;
514 friendship groups, they get invited to different parties or people’s houses ... They seem to be

515 happy enough with that”. When discussing this DT1 said: “We don’t see each other at school,
516 and then when we come back home we’re doing our own stuff with work”.

517 **Identity**

518 The theme identity was only apparent with the DZ twins; producing the subthemes of
519 *acceptance* and *characteristics*. *Acceptance* was identified by DT1 who perceived their twin
520 to be better at sport: “I used to think I was a similar standard at hockey to him or maybe a bit
521 better because we picked that up late. He did badminton before I did, so I knew he was better
522 from the beginning”. Further evidence of this came from DM who interpreted the coach
523 observation of DT2 instructing DT1 through an activity: “That’s not unusual, that’s a normal
524 role for them. I think [DT1] is accepting that he bows to [DT2]”. Further acceptance of
525 identity was linked to their rivalry: “He’s more competitive, so his hockey is going to a
526 higher level, and in badminton he’s getting to a higher level” (DT1).

527 All alluded to the twins having different *characteristics*, with DF summarizing this:

528 They are definitely not inseparable, and they are different people ... They are not
529 identical in any way. [DT2] would be much more openly driven and happy to talk
530 about that fact ... [DT1] is more reserved, he is more relaxed as well.

531 DT2 provided insight into these differences in a school context: “At school we wanted to be
532 separated. We want to be different people and have different groups of friends, and not be
533 like the same person, just because we’re twins, and we like to have different birthdays”.

534 **Discussion**

535 This study aimed to extend research addressing the nature of sibling interactions
536 during TD, by observing a set of MZ and DZ twins within the same TD environment across
537 an extended duration. Identified themes support evidence for the wider sibling relationship’s
538 impact on TD, through interactional context, emotional interpersonal skills, rivalry, skill
539 development, communication, and type of separation (Blazo et al., 2014; Davis & Meyer,

540 2008; Nelson & Strachan, 2017; Taylor et al., 2018; Taylor et al., 2017; Trussell, 2014). In
541 addition, conflict was apparent in both twin sets, and identity in the DZ twins, highlighting
542 the difference between sibling types more broadly, and twin types more specifically; at least
543 in these specific pairs. These findings add support to the validity of themes in the sibling
544 literature and, therefore, continue to reaffirm our understanding of the possible role that
545 siblings may play in TD.

546 Of course, as research into different types of sibling relationship within TD
547 environments increases, it is unsurprising that data will emerge to support a complex and
548 highly individualized perspective (cf. Taylor et al., 2018). As such, the focus of this
549 discussion section will aim to explain the pertinence of our findings as an exemplar for
550 coaches when addressing athlete case studies. Consider identity, a theme only evident for the
551 DZ twins. There was an acceptance that they were different and that they had different
552 characteristics (see Table 1.). This would suggest the DZ twins are going through a process of
553 deidentification, where siblings look to establish a unique identity (McHale et al., 2012).
554 Feinberg and Hetherington (2000) highlight that siblings who are similar in age and gender
555 (i.e., male twin set) are more likely to differentiate from each other. Such a dynamic, leads to
556 siblings choosing to participate in different activities which, increases separation.
557 Furthermore, Whiteman et al. (2007) recognize that deidentifying with your sibling can be a
558 mechanism to reduce competition and minimize comparison and rivalry, as well as reducing
559 levels of closeness .

560 From a coaching perspective, as this process takes place over time, it is reasonable to
561 suggest that there are benefits within the TDE. Part of the deidentification process is learning
562 from your sibling with the aim of developing individual athletic identities (e.g., they slow
563 down at the end of a run, so I'm going to speed up; Whiteman et al., 2007). Take the
564 statement made by DT2 regarding rivalry; "I just want to be even better than him". Athletes,

565 in a TDE, who self-regulate may improve performance faster and perform more successfully
566 which increases their chance of selection (Toering et al., 2009). Self-regulated learners are
567 metacognitively, behaviourally and motivationally proactive when it comes to their own
568 learning process, leading to high levels of effort and persistence during learning opportunities
569 (Zimmerman, 2006). Using metacognitive strategies such as planning (e.g., setting goals),
570 self-monitoring (during the task), evaluation (i.e., mentally evaluate against their goals
571 considering process *and* outcome), and reflection across the process, self-regulated learners
572 are more effective at acquiring skills and knowledge over time than athletes that are not
573 (Toering et al., 2009). Such individuals know how to improve and select appropriate
574 regulatory strategies when they identify a gap in their skillset which increases the chance of
575 optimizing practice into competition (Toering et al., 2009). Notably, the development of self-
576 regulated learners requires the support of significant others as the athlete develops the skills
577 required (Collins & MacNamara, 2018). In this case, due to the increased permeability of the
578 DZ twin subsystem boundaries (Minuchin, 1974) it is likely that such support will come from
579 a coach, with Toering et al. (2009) suggesting that coaches can emphasize the skills required
580 (e.g., reflection) in practice and competition by encouraging players to reflect on their
581 performance in order to improve, instead of telling athletes what they need to work on.

582 In contrast, the MZ data reveals a process of modelling taking place (e.g.,
583 Interactional Context: see Table 1.). Whiteman et al. (2013) describe modelling as a social
584 mechanism driving observed similarity in sibling outcomes, leading to siblings following a
585 similar life course while using each other as a progressive reference point. Siblings who
586 engage in the modelling process often have a warmer relationship, and imitate behaviour by
587 practicing and receiving feedback (Bandura, 1977). Bandura (1977) highlights that
588 modelling is more likely to take place when siblings are more similar (i.e., they are a fraternal

589 twin set), with Watzlawik (2009) recognizing that MZ twins derive more self-esteem and
590 self-confidence from their sibling relationship than DZ and age-gapped siblings.

591 Referring to our earlier discussion around self-regulated learning, it is important to
592 note the role of motivation in helping learners transform their mental skills into performance
593 skills through self-directed processes (Toering et al., 2011). Zimmerman (2006) identified
594 that motivational beliefs (e.g., self-efficacy; Bandura, 1977) and outcome variables (e.g.,
595 effort) were positively associated with self-regulation. Consequently, there is a relationship
596 between self-regulation and intrinsic (i.e., activity is meaningful) versus extrinsic (i.e., a
597 means to an end) motivation, with an athlete's desire to achieve being dependent on their
598 perception of competence and control (cf. Toering et al., 2011). With the MZ twins having an
599 enmeshed subsystem (Minuchin, 1974) there are possible benefits for coaches when
600 considering the role of each MZ twin in developing self-regulation. For example, siblings can
601 drive self-regulation through giving their twin greater responsibility for aspects of training
602 and encourage feedback and reflection on performance (Collins & MacNamara, 2018). This
603 process of support and co-operation can help an athlete move from dependence to
604 interdependence and encourage them to seek support from others when needed. Furthermore,
605 in order to maintain appropriate intrinsic motivation, it is important that an athlete has many
606 opportunities to experience and practice with capable peers, in this case their twin, as
607 modelling (e.g., appropriate behaviours) and scaffolding (e.g., support to develop
608 competence) can take place (Collins & MacNamara, 2018). These are crucial skillsets as
609 athletes navigate the usually nonlinear TD pathway (Collins & MacNamara, 2012).

610 Of course, early stage research such as this study is not without its limitations. Smith
611 (2018) suggests that the way the researcher may or may not interact with participants can
612 have significant implications to the research. Due to the changing nature of the coaches' role
613 to coach–researcher in the environment, it was not always possible to interact and observe the

614 twin sets without a risk that this would influence their behavior as a result of the latter.

615 Furthermore, we highlighted earlier the importance and significance of adopting an approach
616 that illuminates smaller cases in detail (cf. Normand, 2016), however, future work should
617 look to test these ideas, and those revealed within other sibling research, with a larger sample
618 size (Crouch & McKenzie, 2006).

619 **Implications for Coaching Practice**

620 Such discussion highlights the need for coaches to adopt an “it depends” view when
621 considering the use of siblings in TD. This may contradict the desire of some to be provided
622 with a generalized approach within TD. Importantly, however, reducing the use of siblings to
623 a simplistic/formulaic level is at epistemological odds with the complex dynamics of the
624 sibling relationship *and* TD environment (Cruickshank & Collins, 2016). Consequently, the
625 use of PJDM, considering the context (i.e., TD environment) and the available options for
626 taking action (i.e., the specific characteristics of the individual sibling relationship) is
627 essential in identifying if a sibling may be able to support TD. Importantly, Cruickshank and
628 Collins explain that this should involve reflective questioning from coaches concerning the
629 following; when and when not to use the relationship to support TD (e.g., pre-season or mid-
630 season), which sibling relationships would or would not add value, where (and where not) to
631 use the relationship (e.g., formally or informally), and crucially (cf. Martindale & Collins,
632 2012), why (and why not). As Cruickshank and Collins (2016, p. 1201) suggest, looking for
633 “neat and tidy” competencies (e.g., all siblings are competitive), over harder to define
634 cognitive skills that underpin expertise (e.g., I have identified that sibling Set A are highly
635 competitive, but sibling Set B are co-operative), will not allow us to optimally understand,
636 explain, and support effective TD.

637 In light of these considerations, it is important that coaches consider how they can
638 acquire the appropriate knowledge and understanding of an individual sibling relationship in

639 order to ascertain its benefit to TD. Therefore, we support and advocate an extension of
640 practice-based inquiry (e.g., observations; Holder & Winter, 2017) when combined with
641 athlete–coach/parent–coach conversations to reduce the limitations that the coaching
642 environment places on the use of observations (e.g., time with individual players at the
643 expense of the whole team). Observational methods allow the coach to gain a holistic
644 perspective of those under study (i.e., observing all aspects of the sibling relationship; Smith,
645 2018) increasing the opportunity for insight into the interdisciplinarity that may take place.
646 Such an approach reflects the bio-psycho-social requirements of TD due to its complexity
647 (Collins et al., 2012) and supports further exploration of the bio-psycho-social impact siblings
648 can have on TD (Taylor et al., 2018). Furthermore, and in accordance with Taylor et al.’s
649 (2018), consideration of the individualized and complex nature of the sibling relationships
650 (i.e., differences between siblings across families), observations allow freely occurring
651 behaviour to take place within a less manipulated environment, creating opportunities for
652 relationship dynamics that truly exist to appear (cf. Smith, 2018) allowing coaches to gain a
653 clearer understanding of the individual sibling dyad. With such observations more
654 meaningfully guiding and informing athlete–coach/parent–coach conversations. Finally,
655 consideration of interactions between coaches and other specialist staff (e.g., sport
656 psychologists, player liaison officers) can support the development of knowledge, thereby
657 increasing the opportunity to develop and/or support interventions with optimal benefits to
658 TD. Moving forwards, further testing and tracking of possible interventions informed by such
659 a pragmatic approach would continue to advance knowledge of the role of siblings in TD.

660 **Conclusion**

661 This study has continued to build insight around the impact of siblings on TD in sport,
662 through the exploration of twins within a talent pathway. While previously identified themes
663 were verified as present in this context (i.e., each case study), new ones have added to this

664 growing body of research. The practice-based approach has illuminated a plausible method
665 for coaches considering the use of this relationship within their practice, and further
666 illuminated the accuracy of parent knowledge and observation.

667 Overall, this study continues to advocate the complexity and individualized nature of
668 the sibling subsystem, alongside the influence of twin type on their relationship when
669 considering the impact on TD. Further examples of FST highlighted the variation in twin type
670 relationship, demonstrating the boundary dynamics that can impact upon the outcomes of TD
671 within, and outside of the subsystem. Findings from this study would also be beneficial to
672 wider family units as many families have siblings that are close in age, are constantly
673 compared, or look similar (Noble et al., 2017). Finally, we suggest that addressing the
674 practical consideration of the impact these themes have on TD would allow for the
675 opportunity to explore the effectiveness of their use in TDEs.

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Table 1. *Case-based representation of potential mechanisms that support TD.*

Monozygotic twins (M) – Exemplar raw data codes M = Mother/F = Father/T = Twin	Overarching themes <i>Subthemes</i>	Dizygotic twins (D) – Exemplar raw data codes M = Mother/F = Father/T = Twin
<p>“Then mostly we just play sport with each other” (MT2) “We enjoy playing sports together” (MT1)</p> <p>“We do a lot of things together just in general” (MT2) “They tended to share a number of those friends” (MF)</p> <p>“We both react to something the same” (MT2) “Day to day they are incredibly close” (MF)</p> <p>“Probably first go to him, and that would probably settle me” (MT1) “They’ll come back together quickly” (MM)</p> <p>“I would still feel for him” (MT2) “They don’t try and rub the others one’s nose in it” (MF)</p> <p>“When we’re on good terms we’ll help each other” (MT2) “I would always want him to perform well and be the best” (MT1)</p> <p>“I want to do as well as he is doing” (MT2) “They’re just very competitive about everything” (MF)</p> <p>“Just pushing each other” (MT2) “Wanting to learn is driven by each other” (MF)</p> <p>“Feel like he mentors me a bit more” (MT2) “He’d just help me with some points” (MT1)</p> <p>“We go on the astro and try and resolve it” (MT2) “There’s competition going on, yet they are doing it together” (MF)</p>	<p>Interactional context</p> <p><i>Sport</i></p> <p><i>Other activities</i></p> <p>Emotional interpersonal skills</p> <p><i>Closeness</i></p> <p><i>Comfort</i></p> <p><i>Empathy</i></p> <p><i>Support</i></p> <p>Rivalry</p> <p><i>Competition</i></p> <p><i>Motivation</i></p> <p>Skill development</p> <p><i>Mentoring</i></p> <p><i>Co-operation</i></p>	<p>“We go swimming together, because there is no one else” (DT2) “We do tennis and badminton” (DT1)</p> <p>“We do a lot of things together like more school work” (DT2) “We go on the PlayStation, do that kind of stuff” (DT1)</p> <p>“We get on well when we’re not with other people” (DT1) “Yeah we get on all right” (DT2)</p> <p>“I think there is a comfort in the fact that they are both always around” (DF) “Comfortable so you both flow” (DT1)</p> <p>“I would like him to succeed but it doesn’t bother me that much” (DT1) “It’s just about me really. Shouldn’t really be worrying about him” (DT2)</p> <p>“There seems to be a little bit of sibling rivalry in the social sense” (DF) “We would be competitive” (DT1)</p> <p>“A higher standard and that probably motivates him” (DM) “I think it definitely pushes them” (DM)</p> <p>“I think he did once do that. I think they were trying to do some tackling” (DF) “We’ve been doing hockey a bit, but not that often” (DT1)</p>

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	<i>Observation</i>	<p>“Say he’s doing some ball work or some dribbling I might try that or follow what he is doing” (DT1)</p> <p>“I wouldn’t really look at what he is doing; I wouldn’t be that bothered. Might take ideas from him” (DT1)</p>
	Communication	
<p>“I would ask him and he’d tell me how to get better (MT2)</p> <p>“In the game it’s quite instructive, he will definitely tell me what to do” (MT2)</p>	<i>Instruction</i>	<p>“Yeah I would listen to him and listen to anyone that is better than me, so I’d just follow them” (DT1)</p> <p>“I’ll give him some advice and he just won’t really take it into account” (DT2)</p>
<p>“After a game we talk about that” (MT2)</p> <p>“Discuss how they played, what the selectors were perhaps looking for” (MM)</p>	<i>Discussion</i>	<p>“If there is any discussion it doesn’t take very long” (DF)</p> <p>“Maybe talk about the game with” (DT2)</p>
<p>“Go up to him and give him the praise he deserves” (MT2)</p> <p>“More likely to talk about what the other one did” (MF)</p>	<i>Feedback</i>	<p>“I’d say you did this well you might have done this badly” (DT2)</p> <p>“Occasionally he might say oh [T2] scored a good goal” (DF)</p>
	Conflict	
<p>“If I say something he disagrees with then that will cause an argument” (MT2)</p> <p>“Sometimes it’s the fact it’s their favourite person to argue with” (MF)</p>	<i>Arguments</i>	<p>“I’ll just say you’re not that great, and he’ll just say I don’t really care” (DT2)</p> <p>“Quite a bit, but we just tend to deal with it” (DT2)</p>
<p>“Maybe I was playing well and it brought me down” (MT1)</p> <p>“Frustration, anger towards him. Annoyance that he’s not seeing what I see” (MT2)</p>	<i>Frustration</i>	<p>“It’s annoying, but I don’t mind because I accept that we’re different” (DT1)</p> <p>“I was just annoyed really, because I was just trying to help him” (DT2)</p>
	<i>Criticism</i>	<p>“[T2] would then suggest something [T1] hadn’t done well” (DF)</p> <p>“I don’t really have much faith” (DT2)</p>
	Type of separation	
<p>“Just be like, I don’t need you” (MT2)</p> <p>“I would always try and separate myself if we are doing the same drills (MT1)</p>	<i>Sport specific</i>	<p>“I’d rather not play with him” (DT2)</p> <p>“We wouldn’t enjoy just hitting with each other, or playing together” (DT1)</p>
<p>“We just split up, do our own thing” (MT2)</p> <p>“Been spending too much time together and just need to split up” (MM)</p>	<i>General</i>	<p>“Very different groups of people that they will do things with” (DM)</p> <p>“But I like being separate as well” (DT1)</p>
	Identity	
	<i>Acceptance</i>	<p>“He knows I am a lot more competitive and he’s not” (DT2)</p> <p>“We used to be more competitive, but then I realized he’s better” (DT1)</p>
	<i>Characteristics</i>	<p>“Very individual personalities” (DM)</p> <p>“We are contrasting characters” (DT2)</p> <p>“Just shows how different we are” (DT1)</p>

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