

**Understanding key constraints and practice design in  
Rugby Union place kicking: Experiential knowledge of  
professional kickers and experienced coaches**

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# EXPERIENTIAL KNOWLEDGE OF RUGBY PLACE KICKING

1 Running Head: EXPERIENTIAL KNOWLEDGE OF RUGBY PLACE KICKING

2 Understanding Key Constraints and Practice Design in Rugby Union Place Kicking:  
3 Experiential Knowledge of Professional Kickers and Experienced Coaches

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### Abstract

Place kicks present valuable opportunities to score points in Rugby Union, which are typically performed under varying constraints in competitive performance environments. Previous quantitative studies suggest these constraints and contextual factors can influence fluctuations in place kick success. To further the understanding of how fluctuations in place kicking success emerge, our aim was twofold: i) to explore and identify the key constraints and contextual factors that professional place kickers and experienced place kicking coaches perceive to influence the difficulty of a place kick and ii) to understand the level to which current place kicking practice environments represent these key constraints and contextual factors experienced in performance environments. Six professional place kickers and six experienced place kicking coaches were interviewed. Using a deductive thematic analysis, 11 key constraints and contextual factors were identified: individual constraints of expectation for success and fatigue, task constraints of angle and distance to goalposts, environmental constraints of wind, weather, pitch, and crowd, and contextual factors of previous kicking performance, time remaining and current score margin. Place kicking is typically practised individually or with a small number of place kickers in isolation from team sessions. Where possible, coaches should be encouraged to include place kicking in simulated game scenarios during practice to represent key constraints from performance environments. Our study demonstrates how experiential knowledge can enrich the understanding of sport performance and inform the design of practice environments which simulate relevant constraints of competitive performance to enhance skill adaptation of athletes.

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54           Experiential knowledge can be used in combination with quantitative research to  
55 identify the key information that shapes emerging behaviours in competitive performance  
56 environments. Whilst quantitative research has identified fluctuations in success percentage  
57 of skills in competitive environments,<sup>1-3</sup> this type of research is limited for understanding the  
58 contributing factors which interact during performance fluctuations. Recognising these  
59 limitations, there has been a growing tendency in sport science and coaching research to  
60 consider the experiential knowledge of expert sport performers and coaches, which has been  
61 gained through years of practice and performance experiences at various levels of  
62 competition.<sup>4-7</sup> Informed by the theoretical framework of ecological dynamics, rich  
63 experiential knowledge of expert coaches and performers can be analysed to help identify key  
64 task, environmental, and individual constraints<sup>8</sup> to understand *how* performance fluctuations  
65 can occur. Identifying key constraints using experiential knowledge can also provide the  
66 focus for future empirical investigations, support theoretical frameworks, and inform practice  
67 design.<sup>5,9</sup>

68           One of the main challenges facing coaches is to design practice environments that  
69 facilitate the transfer of skills to competitive performance environments.<sup>10</sup> One way to  
70 achieve this aim is by using the theoretical framework of Representative Learning Design,<sup>11</sup>  
71 which proposes that practice designs should include key information sampled from  
72 competitive performance environments. To inform Representative Learning Design, the  
73 insights gained from experiential knowledge can be considered in combination with  
74 experimental and performance analytical approaches to studying sport performance.

75           In international Rugby Union, place kicking performance fluctuates under varying  
76 task constraints (e.g. distance and angle to goalposts) and under specific contextual factors  
77 (e.g. previous kicking performance, current score margin, time remaining).<sup>2-3, 12</sup> For example,

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78 in the 2015 Rugby World Cup, place kicking success was 8% lower in the 10 minutes before  
79 half-time, compared with the mean tournament success percentage, and 7% lower following a  
80 previous unsuccessful attempt, compared with following a successful attempt.<sup>2</sup> These  
81 findings informed suggestions that specific contextual factors may influence individual  
82 constraints such as thoughts, emotions, and fatigue.<sup>2</sup> Furthermore, environmental constraints  
83 (e.g. wind and weather conditions) can vary within and between games, which may influence  
84 perceived affordances for place kickers.<sup>13</sup> Understanding the influence of key constraints, and  
85 their interaction in performance environments, can inform explanations for emerging  
86 behaviours of place kickers.

87 Previous studies using quantitative data in isolation can only inform suggestions based  
88 on observed performance outcomes.<sup>2-3, 12</sup> However, this type of analysis is limited for  
89 providing any clear explanations for *how* performance fluctuations can occur. Moreover,  
90 there may be key constraints and contextual factors, the effects of which are not easily  
91 measurable (if at all) using quantitative analysis methods only. Therefore, tapping into the  
92 experiential knowledge of professional place kickers can help identify key task,  
93 environmental, and individual constraints that influence perceptions of task difficulty and  
94 performance.

95 In addition to experiential knowledge of performers, coaches are perceptively attuned  
96 to relevant constraints and contextual factors within performance environments from their  
97 experiences of observing and coaching specific skills within their sport.<sup>5</sup> Given their  
98 experiences of working closely with place kickers to improve performance, the experiential  
99 knowledge of specialist place kicking coaches is vital to understanding key constraints in  
100 competitive environments. Furthermore, designing effective practice environments to  
101 improve place kicking performance is critical for Rugby Union coaches, especially given the

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102 important contribution of place kicking to the outcome of matches (e.g. 45% of all points  
103 scored in 582 international matches between 2002-2011<sup>3</sup>). Despite the value of place kicking,  
104 and the great responsibility of one player within a team to consistently score points with place  
105 kicks, there is currently a lack of evidence-based recommendations for how to design place  
106 kicking practice environments. Whilst there are previous examples of qualitative studies in  
107 Rugby Union, these have typically used isolated case studies with an individual place kicker  
108 or coach, to understand pre-performance routines<sup>14</sup> or place kicking technique.<sup>15</sup> To provide  
109 recommendations for representative practice environments, there is a need to understand key  
110 constraints in performance environments from the perspectives of place kickers and coaches.

111         Combining the experiential knowledge of place kickers and coaches to understand  
112 their perspectives of key constraints can be aligned to concepts from the theoretical  
113 framework of ecological dynamics. This rich mix of experiential and empirical knowledge  
114 can inform the design of representative practice environments which seek to induce similar  
115 perceptions of pressure and emotions as experienced in competitive environments.<sup>16</sup>  
116 Therefore, our first aim was to explore and identify the key constraints and contextual factors  
117 that professional place kickers and experienced place kicking coaches perceive to influence  
118 the difficulty of a place kick. Our second aim was to understand the level to which current  
119 place kicking practice environments represent key constraints and contextual factors  
120 experienced in competitive performance environments, which can then inform  
121 recommendations for designing representative practice environments.

### 122 Method

#### 123 *Participants*

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124 Six male place kickers and six male place kicking coaches were selected for the study.  
125 Participants were selected using criterion-based purposeful sampling to identify individuals  
126 that were experienced with the skill of interest: place kicking in Rugby Union. All six place  
127 kickers were selected because they satisfied two key criteria: having the role of place kicker  
128 within their team and having experience of place kicking in professional Rugby Union. All  
129 six place kicking coaches were selected as they were all currently responsible for specialist  
130 coaching of Rugby Union place kickers. The coaches satisfied this requirement because they  
131 had specific experiences of observing, analysing, and designing practice environments for  
132 place kicking, which other coaches (e.g. head coach, forwards coach) within Rugby Union  
133 teams may not have.

134 All six place kickers were currently playing in the first team squads of English  
135 Premiership teams at the time of interview (mean  $\pm$  SD age:  $24.8 \pm 4.1$  years; career first  
136 team appearances:  $93 \pm 94$ ; career first team points scored:  $548 \pm 572$ ; international caps:  $9 \pm$   
137  $19$ ; international points scored  $25 \pm 41$ ; Table 1). The six specialist place kicking coaches  
138 (mean  $\pm$  SD age:  $38.8 \pm 9.2$  years; coaching experience:  $11.3 \pm 7.5$  years; Table 2) were all  
139 currently working with Super Rugby, English Premiership, English Championship, or semi-  
140 professional teams at the time of interview. Ethical approval was obtained from the local  
141 University ethics committee and all participants gave written informed consent.

142

143

Table 1. Participant characteristics of the six place kickers interviewed.

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Place Kicker	Age	First Team League Appearances	First Team Points Scored	Senior International Appearances	Senior International Points Scored
1	19	1	0	0	0
2	27	198	1124	5	57
3	27	165	912	0	0
4	21	1	0	0	0
5	25	23	99	0	0
6	30	169	1154	48	95

Table 2. Participant characteristics of the six place kicking coaches interviewed.

Place Kicking Coach	Age	Years of Coaching Experience	Coaching Level
1	50	20	Super Rugby
2	45	12	English Premiership
3	34	13	English Championship
4	37	1	English Championship
5	24	4	English Championship
6	43	18	Semi-Professional



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### 144 *Procedure*

145           A novel semi-structured interview guide was developed, based on: (i) a previous case  
146 study of a place kicking coach<sup>15</sup> and (ii), *a priori* knowledge of the topic area predicated on  
147 key findings from quantitative analyses of place kicking.<sup>2-3, 12</sup> Semi-structured interviews  
148 were used to elicit relevant experiences and facilitate the interview process.<sup>17</sup> As the study  
149 required participants to share their experiences and perspectives on place kicking, it was  
150 deemed appropriate to individually interview each participant.

151           The interview guide was split into five main sections for place kickers: career history,  
152 practice, place kicking success percentages, experience of competitive place kicks, and  
153 overall contribution of place kicking (see Appendix A). The order of the interview guide was  
154 chosen to build rapport by discussing the participants' career (*career history*) and how  
155 participants currently trained for competitive place kicks (*practice*). Following this  
156 introduction to the interview, the questions focused on the first aim of the present study by  
157 discussing the place kicker's kicking success percentages and any factors that could influence  
158 their performance (*success percentages*), and any difficult place kicks in competitive  
159 performance environments (*experience of competitive place kicks*). To conclude, participants  
160 were asked to broadly discuss the importance of place kicking (*overall contribution of place*  
161 *kicking*).

162           When interviewing coaches, the interview guide was adapted slightly to discuss  
163 observing place kicking situations and designing practice environments (see Appendix B).  
164 Both interview guides (place kicker and coach) were pilot tested on a separate sample of  
165 three participants who had experience of either competitive place kicking or coaching place  
166 kicking. The pilot interviews were reflected on and minor modifications were made to the

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167 order of the interview guide to improve the structure of the five sections. Specifically, the  
168 section which discussed current practice environments was moved earlier in the interview  
169 guide to help build rapport before discussing difficult kicks.

170 Participants were asked open-ended questions such as: “what is the most difficult  
171 place kick you/a place kicker could have within your/their kicking range?” to create  
172 discussions around key constraints influencing task difficulty from the perspectives of place  
173 kickers and coaches. By using these open-ended questions, this allowed place kickers the  
174 opportunity to describe their own previous experiences of attempting difficult kicks and  
175 coaches the opportunity to describe their previous experiences of observing players attempt  
176 difficult kicks. To further understand the specific experiences of participants, clarification  
177 and elaboration questions such as “why is that a difficult place kick?” and “why is practice  
178 designed in that way?” were used in the interviews.

179 Mean  $\pm$  SD duration time of the interviews was  $45 \pm 11$  minutes, with 10 interviews  
180 occurring face-to-face (nine at the participants’ training facilities and one at the university  
181 where the lead researcher was based), and two conducted via internet telephony. All  
182 interviews were audio recorded using an mp3 storage device and were transcribed verbatim  
183 for data analysis.

### 184 *Data Analysis*

185 Transcripts were subjected to line-by-line coding using thematic analysis to address  
186 the first aim of the study: to explore and identify the key constraints and contextual factors  
187 that professional place kickers and experienced place kicking coaches perceive to influence  
188 the difficulty of a place kick. The method of thematic analysis chosen was a deductive, theory  
189 driven approach,<sup>18</sup> which was based on the existing theoretical framework of Newell’s<sup>8</sup>

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190 model of constraints. Data extracts were categorised into four higher order themes (Table 3).  
191 These included each of the dimensions (individual, task, environmental) from Newell's<sup>8</sup>  
192 model of constraints, and a fourth higher order theme of contextual factors, based on  
193 quantitative analyses of place kicking.<sup>2-3</sup> Lower order themes were categorised into these four  
194 higher order themes.

Table 3. Definition of higher order themes of key constraints and contextual factors.

Themes	Definition
Individual Constraints	Data extracts relating to the thoughts, emotions, or body of the place kicker.
Task Constraints	Data extracts relating to distance to goalposts and angle to goalposts.
Environmental Constraints	Data extracts relating to the surrounding environment, including wind, weather, pitch, and the size and proximity of the stadium crowd.
Contextual Factors	Data extracts relating to the contextual factors of the place kick, including opposition, status of the game, and previous events that could influence the context of the place kick.

195

196 Data extracts relating to practice environments were analysed using a two-stage  
197 thematic analysis approach to address the second aim of the present study: to understand the  
198 level to which current place kicking practice environments represent key constraints and  
199 contextual factors experienced in competitive performance environments, which can then  
200 inform recommendations for designing representative practice environments. Following the  
201 identification of lower order themes of key constraints and contextual factors in performance

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202 environments, these lower order themes and the same four higher order themes (Table 3)  
203 were used as a framework to categorise data extracts relating to practice environments.  
204 Participant experiential knowledge of practice environments was then compared with key  
205 constraints and contextual factors identified in competitive performance environments.

206

### 207 *Methodological Rigour*

208 To enhance the methodological rigour of the study, three strategies were adopted.  
209 First, criterion-based purposeful sampling of participants was employed, with specific criteria  
210 (current role within team, playing experience; specialist coaching role, coaching experience)  
211 used to ensure that participants had appropriate experiences to discuss for the study.<sup>19</sup>  
212 Second, the co-authors acted as critical friends to the first author throughout the process of  
213 data analysis. This involved the first author presenting his interpretation of the data to the co-  
214 authors on a regular basis, as well as providing written summaries of the findings for  
215 evaluation. The co-authors provided a “sounding board” to encourage reflection on and  
216 exploration of alternative interpretations and explanations of the data. As part of the process  
217 of critical dialogue, the first author was required to make a defensible case that the available  
218 data supported his interpretations. Finally, a sub-sample of six participants were offered the  
219 opportunity for member reflections,<sup>20</sup> by sending copies of transcripts, together with a  
220 summary of the results. Following these member reflections, no changes were made to the  
221 transcripts or data analysis.

222

### 223 Results and Discussion

#### 224 *Key Constraints and Contextual Factors*

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225           Deductive analysis of the data identified 11 lower order themes (Figure 1), which  
226 were categorised into four higher order themes of key constraints and contextual factors in  
227 competitive performance environments (Table 3). The four higher order themes will be  
228 discussed as four separate sub-sections, which include key quotations from place kickers and  
229 coaches to reflect the lower order themes that were identified.

230

231

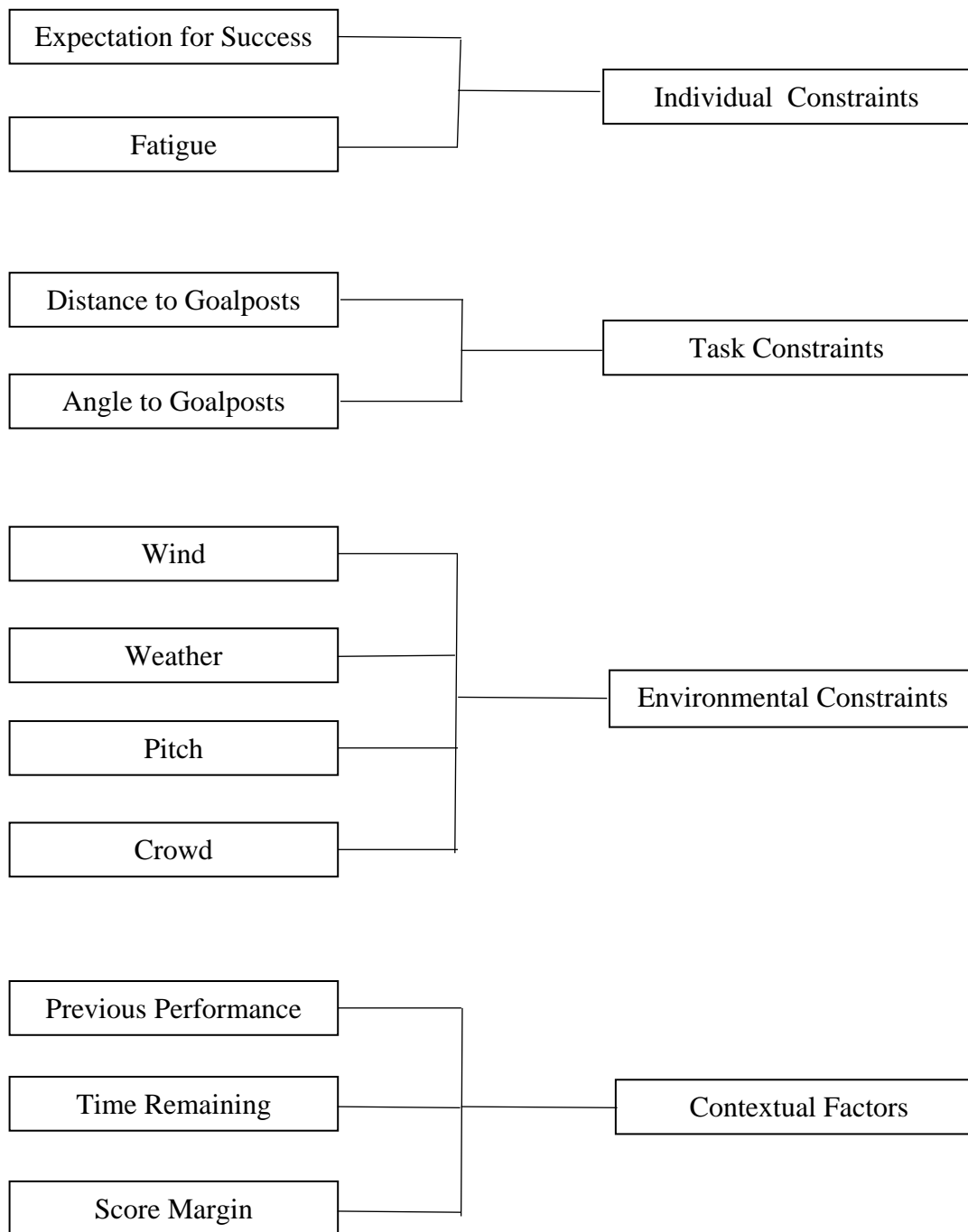


Figure 1. Thematic map of key constraints and contextual factors on place kicking performance, from the perspectives of professional place kickers and experienced coaches.

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### 236 *Individual Constraints*

237 All six place kickers referred to perceived feelings of *expectation for success*, either  
238 from themselves or significant others, when discussing the perceived difficulty of a place  
239 kick. All place kickers identified a specific area on the pitch for their “most difficult kick”,  
240 with five place kickers describing an area between 5 and 15 m inside the touchline,  
241 irrespective of *distance to goalposts*, and the other (Place Kicker 5) describing an area  
242 directly in front of the goalposts. These pitch areas were identified as locations where place  
243 kickers perceived a feeling of *expectation for success* from others, particularly team-mates.  
244 The combination of *expectation for success* and likelihood of a successful kick (shaped by  
245 task constraints of *angle and distance to goalposts*), interacted to create pitch areas where  
246 place kickers perceived varying difficulty of place kicks. Essentially, place kickers perceived  
247 that kicks directly in front of the goalposts have the highest expectation, but the task  
248 constraints presented the highest likelihood of success. Touchline kicks are perceived by  
249 place kickers to be a “challenge”, as the likelihood of success is lower due to increased *angle*  
250 *and distance to goalposts* and the *expectation for success* is perceived to be considerably  
251 lower. However, in between central pitch areas and the touchline is an area bordered by the 5  
252 m and 15 m lines, where the majority of place kickers perceived a high *expectation for*  
253 *success*, even with increased *angle to goalposts* (because of the associated shorter *distance to*  
254 *goalposts*). To exemplify, one place kicker reported his experiences of *expectation for*  
255 *success*:

256 “In terms of some of the hardest kicks, I think are the ones that people  
257 think you should get... The ones that are, the angle’s difficult, but it’s not  
258 touchline, kind of between the 5 and the 15 [m lines, infield from the

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259 touchline] I guess, maybe closer towards the 15 [m line]. One of those  
260 you're expected, as a goal kicker, you're expected to get" (Place Kicker 3).

261 Consistent with the perspectives of place kickers, place kicks on the 15 m line and  
262 directly in front of the goalposts were identified by place kicking coaches as areas with high  
263 *expectation for success*. One place kicking coach reported the high expectation for success in  
264 these pitch areas:

265 "No-one's gonna go at the end of the game "oh we should have got that  
266 one from the touchline", but if you lose by two points and you should have  
267 got one from the 15 [m line] then, it's a little bit more pressure there. I  
268 know that kickers do feel worse there, not worse, but they should be  
269 getting these, it's kind of a lose-lose situation" (Coach 5).

270 Place kicking coaches also identified physical *fatigue*, induced by competitive  
271 performance, as an individual constraint on place kicking performance. Coaches specifically  
272 highlighted the influence of acute *fatigue*, induced by the previous passage of play, which  
273 was perceived to be more influential than *fatigue* accumulated throughout the match. One  
274 place kicking coach reported these observations of acute *fatigue*: "I suppose the biggest thing  
275 really in what I've found is that fatigue level of just how long, not really how long the game's  
276 gone, it's more of how long the passage of play was before" (Coach 3).

277 These expressions of experiential knowledge reveal how perceived *expectation for*  
278 *success* and acute performance *fatigue* provide examples of individual constraints that  
279 influence perceptions of task difficulty during competition. The powerful influence of  
280 *expectation for success* on individual performance has been reported in previous qualitative  
281 investigations of team sports.<sup>21-22</sup> These studies have revealed the effects of individual



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282 responsibility within a team, which can increase perceived pressure, when performing an  
283 individual skill which contributes to the success of a team. Place kicking is a unique example  
284 of an individual player performing a self-paced skill to directly score points in Rugby Union.  
285 Given that place kicking can contribute 45% of all points scored in the professional game,<sup>3</sup>  
286 these insights suggest *expectation for success* and *fatigue* should be recognised by coaches  
287 when designing representative practice environments that seek to mimic performance  
288 environments.

### 289 *Task Constraints*

290 Consistent with previous research,<sup>2-3</sup> place kickers and coaches reported *angle and*  
291 *distance to goalposts* as key task constraints which influence place kicking performance. In  
292 addition to the high *expectation for success* which was perceived when place kicking 15 m in  
293 from the touchline, one place kicker describes why this pitch area is challenging:

294 “I actually find the ones in and around the 15 m channel, 15 m line [infield  
295 from the touchline], the hardest... probably 2 or 3 m outside the 15s. The  
296 kind of ones that should be bread and butter, but you can sometimes get  
297 caught between not kicking it, it’s easy to undercompensate or  
298 overcompensate for either... they’re probably just a bit more difficult  
299 because you get caught in two minds. Sometimes you can just jump out of  
300 the kick thinking you can just chip it over, when you’re better off getting  
301 through it” (Place Kicker 2).

302 Place kicking coaches also identify that the 15 m channel can be a challenge of the  
303 place kicker’s accuracy, and from shorter distances to the goalposts, place kickers can “clip”  
304 the ball, which supports Place Kicker 2’s reflections of “chip it over” compared with “getting

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305 through it". The descriptions of "clipping" or "chipping" the ball imply that place kickers do  
306 not attempt to kick the ball as far as maximally possible, compared with "getting through it"  
307 which implies that place kickers apply maximal effort. These different descriptions of place  
308 kicking imply that place kickers adapt their movement patterns to enhance their functionality,  
309 shaped by task constraints of *angle and distance to the goalposts*.

310 From an ecological dynamics perspective, these insights on uniqueness and  
311 functionality of kicking performance underlies how performers are conceived as dynamical  
312 systems which adapt to the interacting constraints in a specific environment. The observation  
313 that performers switch between different types of kick ("clipping it" vs "getting through it"),  
314 which was revealed by experiential knowledge of place kickers and coaches, could be related  
315 to metastability, which expresses a region where skilled performers can transition between  
316 two different movement patterns.<sup>23</sup> Metastability emerges when a performer is poised  
317 between multiple co-existing states and a number of movement options can be utilised, which  
318 creates an area of functional instability for the performer.<sup>24</sup> These perceived changes in a  
319 place kicker's movement patterns can be explored in practice environments by seeking to  
320 identify metastable regions and adaptive movement patterns.

### 321 *Environmental Constraints*

322 Whilst most place kickers generally stated that performing in front of a large *crowd*  
323 did not influence their thoughts or emotions, the *proximity* of the crowd can influence place  
324 kicks near to the touchline, as one place kicker explains:

325 "Your back is against the crowd, you know, they can heckle you and  
326 you're close to them... it's just one of those kicks you think "ah I've got to

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327 go to the touchline now and kick, in front of all those people” ... because  
328 like I said, they’re [the crowd] right next to you” (Place Kicker 5).

329 The *pitch* condition, *weather* and *wind* were also identified by place kickers as key  
330 environmental constraints that are perceived to increase task difficulty. One place kicker  
331 describes varying environmental constraints: “There’s obviously weather dictating and stuff  
332 like that, if you wake up and it’s [expletive] down with rain and blowing a gale, you know, I  
333 want all kicks as central and as close to the posts as possible” (Place Kicker 2).

334 The potential influence of environmental constraints has been highlighted in previous  
335 research (Quarrie & Hopkins, 2015), with a 10% difference reported between the stadiums  
336 with the highest and lowest success percentages for international level place kicking. Place  
337 kickers indicate a preference for calm conditions and describe how *weather* conditions can  
338 alter perceptions of task difficulty and affordances for place kicking. However, the reality is  
339 that *wind* and *weather* conditions can change within and between competitive matches.  
340 Therefore, when aiming to practice place kicking in representative conditions, the direct  
341 influence of environmental constraints needs to be considered. Place kickers are encouraged  
342 to practice in varying *wind* (e.g. speed and direction) and *weather* (e.g. dry, wet, humid and  
343 cold) conditions.

### 344 *Contextual Factors*

345 The influence of *previous performance* within the same game was identified as a key  
346 contextual factor by place kickers and coaches. One place kicker reports how unsuccessful  
347 *previous performance* can influence perceived *expectation for success* from the *crowd* and  
348 team-mates:

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349            “If you’ve missed a couple, and you’ve not struck them well, that’s when  
350            it’s the hardest because obviously, you have the weight of the crowd, you  
351            know, your team mates are probably, sort of not doubting you, but sort of  
352            ‘umming and arghing’ a little bit over whether you should take the penalty  
353            at goal or not, because you know, you’ve missed two” (Place Kicker 2).

354            Place kicking coaches acknowledge the importance of *previous performance* and how  
355            it can influence decision-making for penalty options and confidence of place kickers for  
356            future kicks. The experiential knowledge of place kickers and coaches contributes important  
357            insights to support findings of quantitative analyses of place kicking. For example,  
358            performance analysis of the 2015 Rugby Union World Cup revealed that success percentages  
359            of place kicks were 7% lower following a previous unsuccessful attempt, compared with  
360            following a successful attempt.<sup>2</sup> Therefore, *previous performance*, and its effect on the place  
361            kicker’s confidence levels, should be considered when deciding whether to place kick when  
362            awarded a penalty.

363            Place kickers reported always being aware of the *score margin* when place kicking,  
364            with the most difficult scenario perceived to be when their team are trailing. More  
365            specifically, a scenario when the outcome of the place kick can change their team’s standing  
366            in the game, as one place kicker reports:

367            “Yeah, it’s probably a kick to take the lead... so that’s a difficult kick  
368            when it’s, when the kick directly affects your standing in the game, when  
369            you go to being 1 point up if it’s a conversion, or to bring you back into  
370            losing bonus point range [losing by 7 points or fewer] or something like

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371 that...yeah there's probably a bit more pressure on that" (Place Kicker  
372 6).

373 This experiential knowledge can potentially explain performance decrements  
374 observed in quantitative analyses<sup>1-3</sup> that have showed drops in performance when there is an  
375 opportunity to take the lead or win the game. For example, in 582 international matches  
376 between 2002-2011, success percentage was 61%, compared to 72% mean success, when the  
377 match outcome hinged on the success of a single place kick for a team trailing by one or two  
378 points, after which no further points were scored.<sup>3</sup>

379 Place kickers reported that situations with little *time remaining* have increased  
380 pressure because of the consequence of little or no further play, therefore, offering few  
381 opportunities to rectify a potential unsuccessful kick in play or with another kick. Critically,  
382 these situations are shaped by an interaction between *time remaining* and *score margin*, with  
383 place kickers only citing an increased pressure with little *time remaining* if the place kick is  
384 an opportunity to change their team's standing in the game. Place Kicker 6 explains the  
385 effects of *time remaining*: "When it gets closer toward the 80 minutes, you know like after  
386 that, your chances to make amends for it is getting smaller and smaller". Coaches are  
387 therefore encouraged to use these insights to design practice tasks which simulate  
388 performance contexts with little *time remaining* (i.e. little opportunity to rectify a potential  
389 error), containing meaningful consequences for successful or unsuccessful performance to  
390 represent game-deciding place kicks as faithfully as possible.

### 391 ***Practice Environments***

392 Current place kicking practice typically takes place after team sessions, either  
393 individually or with a small number of place kickers, due to a perceived lack of time in team

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394 sessions. Therefore, place kicking is not seen as a priority during team practice and is  
395 typically separate from team sessions, as one coach described:

396 “I know [place] kicking only takes you about a minute, so in theory you  
397 could put that in the rest period between blocks of training, but erm, I think  
398 because there’s always a big time limit on training. I think the [place]  
399 kicking will be the last thing to put in, or the first thing to be thrown out”

400 (Coach 4).

401 Following the identification of 11 key constraints and contextual factors in  
402 performance environments earlier in the present study, experiential knowledge of practice  
403 environments will now be presented and discussed in relation to these key constraints and  
404 contextual factors.

### 405 *Individual Constraints*

406 As place kicking practice is typically performed separately from team sessions, this  
407 reduces the perceived *expectation for success* from team-mates. One coach explained the  
408 difference between place kicking practice and competitive environments:

409 “I think it’s an assumption that it’s the same thing, that people just assume  
410 that kicking after [training] is the same as kicking in a game, and well I’m  
411 certainly starting to realise that it’s not, and we could probably do more...  
412 there’s no pressure from team-mates or opposition. Erm, the more I think  
413 about it, the more I think it’s just so different” (Coach 5).

414 Whilst place kicks are not usually incorporated into team sessions, place kickers and  
415 coaches revealed examples of increasing *expectation for success* in practice, such as one

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416 place kick a week in front of all team-mates. To increase *expectation for success*, all players  
417 within the team would have to complete a fitness forfeit if the place kicker was unsuccessful.

418 As place kicking practice is typically organised after team sessions, it is suggested  
419 that place kickers are practising under cumulative *fatigue* from the preceding session.  
420 However, the majority of place kicking practice is completed with no representation of acute  
421 *fatigue*, or phases of play, in between each place kick. One place kicking coach describes the  
422 differences between place kicking in practice and competitive environments:

423 “Not much kicking training is done under *fatigue*. Because they just have a  
424 block of it so you’re walking around in between... You just practice this  
425 technique you don’t actually use in games. This fresh technique where you  
426 use your knee, and then you go out to games and you start using your hip  
427 more, so it’s a different, erm technique” (Coach 1).

428 Place kicking coaches should therefore consider representing acute fatigue between  
429 each place kick in practice, to represent passages of play from competitive performance  
430 environments. For example, place kicking could be integrated during game play situations in  
431 practice to mimic the physical demands of a passage of play preceding a place kick.

### 432 *Task Constraints*

433 In practice environments, place kickers typically represented key task constraints of  
434 *angle and distance to goalposts* by kicking towards full sized goalposts from various pitch  
435 locations. Within a typical place kicking practice session of 12 kicks, place kickers will kick  
436 from several different kicking locations, which can either be determined by personal routine  
437 or random locations. Randomising the *angle and distance to goalposts* of practice place kicks

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438 is designed to represent a penalty, which can be awarded by the referee for an infringement  
439 by the opposition in any pitch location, or a conversion, which varies depending on the  
440 position of the ball being grounded for a try. One place kicking coach describes the varying  
441 task constraints of place kicking and how these should be represented in practice  
442 environments:

443 “Balls could be anywhere, so it’s very difficult to, to know exactly where  
444 those, the right sweet spot is to practice, because in Union it could be  
445 anywhere... you don’t know where you’re going to score, you don’t know  
446 where you’re going to get penalties from, it’s very difficult to be really  
447 focused on where you do the practice, and therefore it has to be a bit more  
448 sporadic and dotted around” (Coach 4).

449

450 Place kickers should consider a random order of place kicking routines to represent  
451 the varying *angle and distance to goalposts* in competition. In this way, place kicking  
452 practice could involve ‘repetition without repetition’ as advocated by Bernstein<sup>25</sup> (p. 134),  
453 which allows place kickers to solve performance problems by adapting movement patterns  
454 under varying task constraints in each practice kick.

### 455 *Environmental Constraints*

456 Whilst kicking towards full sized goalposts in outdoor conditions, place kicking is  
457 always practised in varying *wind and weather* conditions and typically on a *pitch* that is  
458 representative of competitive surfaces. Unlike competitive performance environments, place  
459 kickers typically practice without a watching *crowd* of people due to the logistical difficulties  
460 of faithfully representing any effects of a large *crowd*. One place kicking coach reported



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461 using headphones with *crowd* noise during practice, similar to previous research,<sup>26</sup> which has  
462 played crowd noise over a tannoy: “Some of the boys have done, maybe in private sessions,  
463 things like headphones in and crowd noise” (Coach 3).

### 464 *Contextual Factors*

465 Place kickers typically adopt a practice strategy of taking multiple attempts from each  
466 location in practice, which minimises any effects of *previous performance* on thoughts or  
467 preparation of future kicks. Unlike performance environments, place kickers tend to make  
468 corrections to unsuccessful kicks before moving to a different location in practice. Place  
469 Kicker 4 describes taking multiple attempts to overcome unsuccessful *previous performance*:  
470 “Probably around two [attempts], but if I miss my first one, like if I miss them or I keep  
471 missing from the same spot... I’ll carry on doing that until I get one”.

472 Taking multiple consecutive attempts from the same location in practice is not  
473 representative of the one attempt from each location that place kickers will have in  
474 competition. However, there were some examples of place kickers and coaches applying a  
475 “one repetition focus” in practice to represent competition pressure and demands. Place  
476 Kicker 1 describes this practice strategy: “They’re calling it a “one rep focus” so I’ll kick a  
477 ball from a spot... No matter where it goes, pick it up and we’ll walk to a completely  
478 different spot and we’ll talk about the last kick”.

479 A “one repetition focus” approach to practice aligns with the Representative Learning  
480 Design framework,<sup>11</sup> as this strategy represents the demands of competitive performance  
481 environments, in which a kicker has only one attempt at each kick. This focus also  
482 encourages place kickers to practice in a random order using varying task constraints of *angle*  
483 *and distance to goalposts*, which better represents the pressures of competitive place kicking.

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484           There were only a small number of reported examples of coaches using scenarios of  
485 little *time remaining* with a close *score margin* to represent game context in practice.  
486 However, partly influenced by training loads, coaches and players viewed a limited number  
487 of place kicks in each session as a source of pressure. Limiting practice to a small number of  
488 kicks, typically 10-12 each day, can increase pressure on the place kicker to perform  
489 successfully, similar to the pressure associated with limited *time remaining* in matches.  
490 Coaches can also use scenarios of *time remaining* and *score margin* for place kicking in  
491 practice environments, as one coach explains:

492           “I would set the score, and say “right, so you’ve got 3 minutes left on the  
493 clock until the end of the game”, or just say “until half-time”... and the  
494 score is that you’re 3 points down”... or it could be “you’re 8 points  
495 down”, so it is scenario based in what we’re gonna face on a Saturday”  
496 (Coach 6).

497           Currently, as place kicking practice is typically isolated from simulated game  
498 situations, place kickers regularly use scored competitions with other place kickers. However,  
499 coaches can also consider how to incorporate place kicking into team sessions. One coach  
500 reflects on place kicking practice:

501           “I can’t quite get my head around how we spend so much time around the  
502 pitch working incredibly hard to win penalties at scrum time, or win  
503 lineout penalties, or march our way up the field to get points, and then  
504 spend so little time actually executing that skill that gets you the points.  
505 There’s no point getting a penalty because you don’t get anything for it,

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506           you have to then kick the ball through the posts [to score points]” (Coach  
507           5).

### 508 Recommendations for Practice Design

509           Using an ecological dynamics framework, and recommendations from Representative  
510 Learning Design,<sup>11</sup> coaches are encouraged to incorporate the key constraints and contextual  
511 factors from performance environments identified in this study into practice environments.  
512 Focusing on one attempt per kicking location can represent the random and unpredictable  
513 task constraints of penalties and conversions. Place kicking coaches are encouraged to break  
514 up routines of moving to set pitch locations in sequential orders at walking pace, and to  
515 prioritise putting place kickers into areas of uncertainty by using randomised pitch locations  
516 which are integrated into game-related activities.<sup>27-28</sup> Using varying pitch locations in practice  
517 can also promote learning in metastable regions, where place kickers can develop adaptive  
518 movement solutions. Coaches could also challenge place kickers following previous  
519 unsuccessful performance in practice, by putting the following place kick in difficult pitch  
520 areas (e.g. 15 m line).

521           One way which place kicking coaches could mimic individual constraints of acute  
522 *fatigue* and *expectation for success* is to incorporate place kicking into game situations in  
523 training, such as following a try, or as a penalty option. Traditionally, coaches will design  
524 dynamic practice environments which include interactions between attacking and defending  
525 players to shape representative affordances to pass, carry the ball, and score a try.<sup>28</sup> However,  
526 typical team sessions do not include place kicking due to a perceived lack of time and the  
527 focus on scoring tries. Given the importance of place kicking to the outcome of matches, and

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528 the experiential knowledge identified in this study, this provides a strong rationale for  
529 including place kicking in team practice sessions.

530         Using the framework of Affective Learning Design,<sup>16</sup> coaches are encouraged to use  
531 vignettes which represent *expectation for success* (i.e. meaningful consequences for a  
532 successful or unsuccessful kick) which could induce emotions during practice. Potential  
533 methods for representing expectation for success include a team forfeit (e.g. fitness related  
534 forfeit) following unsuccessful place kicking performance in practice, and place kicking for  
535 points in gameplay situations where the winning team is rewarded. Therefore, coaches are  
536 encouraged to design place kicking practice environments with clear purposes and  
537 consequences to avoid the dangers of athletes performing below competition intensity in  
538 practice, which creates different thoughts, emotions and emerging perception-action  
539 couplings.<sup>13</sup>

### 540 Conclusion

541         This study has explored and identified the key constraints and contextual factors that  
542 professional place kickers and experienced place kicking coaches perceive to influence the  
543 difficulty of a place kick. Through experiential knowledge, this study has also increased  
544 understanding of how current place kicking practice environments represent these key  
545 constraints and contextual factors and makes recommendations for representative practice  
546 design. Professional place kickers perceived individual constraints, such as feelings of  
547 *expectation for success*, to influence their perceptions of task difficulty in specific pitch  
548 locations (e.g. 15 m in from touchline). Place kickers revealed experiences of unsuccessful  
549 *previous performance*, little *time remaining* and close *score margins*, as contextual factors  
550 which influence perceptions of task difficulty when preparing to place kick. Place kicking

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551 coaches and place kickers reported observations of individual constraints (e.g. *fatigue*) and  
552 task constraints (*angle and distance to goalposts*) influencing place kicking movement  
553 patterns. The novel insights gained from experiential knowledge of professional place kickers  
554 and experienced place kicking coaches enrich current understanding of key constraints on  
555 place kicking, which have only previously been speculated about using statistical data from  
556 performance analyses.<sup>2-3, 12</sup>

557         The findings of this study clarify the multiple interacting constraints and contextual  
558 factors that can influence a place kicker, such as task constraints (e.g. *distance and angle to*  
559 *goalposts*), environmental constraints (e.g. *wind, weather, pitch, and crowd*), individual  
560 constraints (e.g. *expectation for success* and *fatigue*), and contextual factors (e.g. *previous*  
561 *performance, score margin, and time remaining*). The multiple interacting constraints  
562 highlighted in this study should be considered when designing practice environments.  
563 Coaches are encouraged to include place kicking in team sessions with relevant scenarios to  
564 represent the pressures and demands of place kicking in competitive performance  
565 environments.

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References

1. Cao Z, Price J and Stone DF. Performance under pressure in the NBA. *J Sports Econ* 2011; 12: 231-252.
2. Pocock C, Bezodis NE, Davids K, et al. Hot hands, cold feet? Investigating effects of interacting constraints on place kicking performance at the 2015 Rugby Union World Cup. *Eur J Sports Sci* 2018; 18: 1309-1316.
3. Quarrie KL and Hopkins WG. Evaluation of goal kicking performance in international rugby union matches. *J Sci Med Sport* 2015; 18: 195-198.
4. Burnie L, Barratt P, Davids K, et al. Coaches' philosophies on the transfer of strength training to elite sports performance. *Int J Sport Sci Coach* 2018; 13: 729-736.
5. Greenwood D, Davids K and Renshaw I. Experiential knowledge of expert coaches can help identify informational constraints on performance of dynamic interceptive actions. *J Sports Sci* 2014; 32: 328-335.
6. Millar SK, Oldham AR and Renshaw I. Interpersonal, intrapersonal, extrapersonal? Qualitatively investigating coordinative couplings between rowers in Olympic sculling. *Nonlinear Dyn. Psychol. Life Sci* 2013; 17: 425-443.
7. Phillips E, Davids K, Renshaw I, et al. Acquisition of expertise in cricket fast bowling: Perceptions of expert players and coaches. *J Sci Med Sport* 2014; 17: 85-90.

## EXPERIENTIAL KNOWLEDGE OF RUGBY PLACE KICKING

- 600 8. Newell KM. Constraints on the development of co-ordination. In: Wade MG and  
601 Whiting HTA (eds) *Motor development in children: aspects of co-ordination and*  
602 *control*. Dordrecht: Martinus Nijhoff, 1986, pp. 341–360.
- 603 9. Renshaw I and Gorman A. Challenges to capturing expertise in field settings. In:  
604 Baker J and Farrow D (eds) *Handbook of sports expertise*. London: Routledge, 2015,  
605 pp. 282–295.
- 606 10. Maloney MA, Renshaw I, Headrick J, et al. Taekwondo fighting in training does not  
607 simulate the affective and cognitive demands of competition: Implications for  
608 behavior and transfer. *Front Psychol* 2018; 9: 25.
- 609 11. Pinder RA, Davids K, Renshaw I, et al. Representative learning design and  
610 functionality of research and practice in sport. *J Sport Exerc Psychol* 2011; 33: 146–  
611 155
- 612 12. Nel J. Estimating success probability of a rugby goal kick and developing a measure  
613 for ranking rugby union goal kickers. *S Afr J Res Sport Phys Educ Recreation* 2013;  
614 35: 133-142.
- 615 13. Renshaw I and Chow JY. A constraint-led approach to sport and physical education  
616 pedagogy. *Phys Educ Sport Pedag* 2019; 24: 103-116.
- 617 14. Jackson RC and Baker JS. Routines, rituals, and rugby: Case study of a world class  
618 goal kicker. *Sport Psychol* 2001; 15: 48-65.
- 619 15. Bezodis NE, Atack A and Winter S. The biomechanics of place kicking in Rugby  
620 Union. In: Nunome H, Hennig E and Smith N (eds) *Football Biomechanics*. London:  
621 Routledge, 2018, pp. 24-35.
- 622 16. Headrick J, Renshaw I, Davids K, et al. The dynamics of expertise acquisition in  
623 sport: The role of affective learning design. *Psychol Sport Exerc* 2015; 16: 83-90.
- 624 17. Sparkes AC and Smith B. *Qualitative research methods in sport, exercise, and health:*

## EXPERIENTIAL KNOWLEDGE OF RUGBY PLACE KICKING

- 625            *From process to product*. London: Routledge, 2014.
- 626            18. Braun V and Clarke V. Using thematic analysis in psychology. *Qual Res Psychol*  
627            2006; 3: 77-101.
- 628            19. Patton MQ. Two decades of developments in qualitative inquiry: A personal,  
629            experiential perspective. *Qual Social Work* 2002; 1: 261-283.
- 630            20. Tracy SJ. Qualitative quality: Eight “big-tent” criteria for excellent qualitative  
631            research. *Qual Inq* 2010; 16: 837-851.
- 632            21. Hill DM and Shaw G. A qualitative examination of choking under pressure in team  
633            sport. *Psychol Sport Exerc* 2013; 14: 103-110.
- 634            22. Hodge K and Smith W. Public expectation, pressure, and avoiding the choke: A case  
635            study from elite sport. *Sport Psychol* 2014; 28: 375-389.
- 636            23. Hristovski R, Davids K, Araújo D, et al. How boxers decide to punch a target:  
637            Emergent behaviour in nonlinear dynamical movement systems. *J Sports Sci Med*  
638            2006; 5: 60-73.
- 639            24. Pinder RA, Davids K and Renshaw I. Metastability and emergent performance of  
640            dynamic interceptive actions. *J Sci Med Sport* 2012; 15: 437-443.
- 641            25. Bernstein NA. *The co-ordination and regulation of movements*. Oxford: Pergamon  
642            Press, 1967.
- 643            26. Hanton S, Wade R and Mellalieu SD. Advanced psychological strategies and anxiety  
644            responses in sport. *Sport Psychol* 2008; 22: 472-490.
- 645            27. Correia V, Carvalho J, Araújo D, et al. Principles of nonlinear pedagogy in sport  
646            practice. *Phys Educ Sport Pedag* 2019; 24: 117-132.
- 647            28. Passos P, Araújo D, Davids K, et al. Manipulating constraints to train decision  
648            making in rugby union. *Int J Sport Sci Coach* 2008; 3: 125-140.



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Appendix A: Interview Guide for Place Kickers

653 **1. Career History**

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QUESTION	PROBE	AIM
<p><b>Could you tell me a little about your rugby career?</b></p> <p><b>Could you tell me a little about your place kicking career?</b></p> <p><b>What is your role within your current team?</b></p>	<ul style="list-style-type: none"> <li>• How many years have you been playing Rugby Union and how much of this has been as a professional?</li> <li>• How many years have you been kicking penalties and conversions?</li> <li>• Could you give an overview of your main responsibilities in the team?</li> </ul>	<ul style="list-style-type: none"> <li>• How much experience does the individual have of place kicking?</li> </ul>

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656 **2. Practice**

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<p><b>Could you describe your current training, specifically for place kicking?</b></p> <p><b>How have your preparations for kicks developed since you first started kicking?</b></p>	<ul style="list-style-type: none"> <li>• Could you describe your current pre-match preparations for place kicking?</li> <li>• Have your pre-match preparations changed over the years?</li> <li>• How many hours a week do you practice place kicking?</li> <li>• How (and when) do you practice in training sessions?</li> <li>• Why do you prepare for place kicking situations using your current techniques?</li> <li>• How does your current training differ from your training in the past?</li> <li>• What are your memories of your first</li> </ul>	<ul style="list-style-type: none"> <li>• How do kickers currently practice place kicking, and how was this shaped by developmental experiences?</li> </ul>
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	experiences of kicking?	
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662 **3. Place Kicking Success Percentages**

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<p><b>On average, do you know how many kicks you tend to take per match?</b></p>	<ul style="list-style-type: none"> <li>• Do you know your kicking success percentage this season?</li> <li>• How does this compare to your kicking success percentage in previous season(s)?</li> <li>• Do you consciously keep score of your kicks during the match?</li> <li>• Have you had experiences of being on a run of successful kicks?</li> <li>• Could you describe how it feels when you have successfully kicked several kicks in a row?</li> <li>• Does your approach to a kick change when you have been kicking successfully?</li> <li>• On the other hand, have you had experiences of missing consecutive kicks?</li> <li>• Does your approach to a kick change when you have missed your previous kick(s)?</li> <li>• Do you reflect or think about missed kicks during matches?</li> </ul>	<ul style="list-style-type: none"> <li>• What impact does the outcome of a previous kick have on the preparation for a subsequent kick?</li> </ul>
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665 **4. Experience of Competitive Place Kicks**

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EXPERIENTIAL KNOWLEDGE OF RUGBY PLACE KICKING

<p><b>From your experience of place kicking, could you describe the most difficult kick/kicks possible within your kicking range?</b></p> <p><b>Are there specific situations in which you feel kicks are more important?</b></p>	<ul style="list-style-type: none"> <li>• What are the key features that make these kicks difficult?</li> <li>• Could you describe your own experiences of approaching difficult kicks?</li> <li>• Do you approach every kick with the same routine?</li> <li>• Do you prefer kicking in certain situations?</li> <li>• From your experiences, could you recall a situation in which you felt under elevated pressure to successfully convert a kick?</li> <li>• Are there any experiences in which you have been distracted from your routine?</li> <li>• Before preparing for each kick, do you think about the current score of the match?</li> <li>• When preparing for a kick, do you think about your responsibility to the team to score points?</li> </ul>	<ul style="list-style-type: none"> <li>• What are the key variables that influence the difficulty of a place kick?</li> </ul>
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669 **5. Overall Contribution of Place Kicking**

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<p><b>How important do you think place kicking is to the outcome of matches?</b></p>	<ul style="list-style-type: none"> <li>• Has the importance of place kicking in Rugby Union changed in recent years?</li> </ul>	<ul style="list-style-type: none"> <li>• How important does the kicker feel place kicking is to the match outcome?</li> </ul>
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Appendix B: Interview Guide for Place Kicking Coaches

**1. Career History**

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QUESTION	PROBE	AIM
<p><b>Could you tell me a little about your rugby coaching career?</b></p> <p><b>What is your current role at the club?</b></p>	<ul style="list-style-type: none"> <li>• Were you playing rugby prior to becoming a coach, and at what level?</li> <li>• Could you tell me a little bit about how you first got into coaching?</li> <li>• What experiences and qualifications do you have in coaching rugby?</li> <li>• Do you have any specific training or qualifications in coaching kicking?</li> <li>• Could you explain what the main roles of your job as a coach are?</li> </ul>	<ul style="list-style-type: none"> <li>• How much and what experience does the coach have?</li> </ul>

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**2. Practice**

<p><b>In your own words, could you describe the most</b></p>	<ul style="list-style-type: none"> <li>• How do you develop these aspects in your practice sessions?</li> <li>• Why is practice designed in this way?</li> </ul>	<ul style="list-style-type: none"> <li>• How do coaches currently train</li> </ul>
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<p><b>important aspects for coaching place kicking?</b></p>	<ul style="list-style-type: none"> <li>• How do you practice for difficult kicks in training?</li> <li>• Could you give an overview of your instructions for a pre-match preparation?</li> <li>• Which technical aspects of a kick typically contribute to an unsuccessful kick?</li> <li>• How do you provide feedback to your kickers following unsuccessful kick(s)?</li> </ul>	<p>place kicking?</p> <ul style="list-style-type: none"> <li>• How do coaches prepare their kickers for difficult kicks?</li> </ul>
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### 702 3. Place Kicking Success Percentages

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<p><b>On average, do you know how many place kicks your team tends to have per match?</b></p>	<ul style="list-style-type: none"> <li>• Do you consciously keep score of your place kicker's performance during the match?</li> <li>• Have you had experiences of a place kicker missing several kicks in a row?</li> <li>• How have you previously dealt with a kicker experiencing a poor run of form?</li> <li>• Have you observed a difference in approach and/or technique for kickers when on a good run of form compared to a poor run of form?</li> <li>• Do you reflect on or discuss place kicking performance with your kicker?</li> <li>• How important is the recent place kicking form in selecting a place kicker for the team?</li> </ul>	<ul style="list-style-type: none"> <li>• How important is the recent form of the kicker to place kicking performance?</li> </ul>
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### 704 4. Experience of Competitive Place Kicking

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<p><b>From your experience of coaching place kicking, could you describe the most difficult kick possible (within range) for a place</b></p>	<ul style="list-style-type: none"> <li>• What are the key features that make this kick difficult?</li> <li>• Do you encourage kickers to approach every kick with the same routine?</li> <li>• What are the key features of these situations that make them more important to the match?</li> </ul>	<ul style="list-style-type: none"> <li>• What are the key variables that the coach perceives to influence the difficulty of a place kick?</li> </ul>
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EXPERIENTIAL KNOWLEDGE OF RUGBY PLACE KICKING

<p><b>kicker?</b></p> <p><b>Are there specific situations which you feel are more important for your kicker to score points?</b></p>	<ul style="list-style-type: none"> <li>• How do you feel when watching place kicks for your team from the side line?</li> <li>• Could you describe your emotions when watching place kicks?</li> <li>• Are there specific situations in which you feel more nervous when watching a place kick?</li> <li>• Before a place kick, do you think about the current score of the match?</li> </ul>	
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706 **5. Overall Contribution of Place Kicking**

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<p><b>How important do you think place kicking is to the outcome of matches?</b></p>	<ul style="list-style-type: none"> <li>• Has the importance of place kicking in Rugby Union changed in recent years?</li> </ul>	<p>How important does the coach feel place kicking is to the match outcome?</p>
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