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1 Preparation, structured deliberate practice and decision 2 making in elite level football. The case study of Gary 3 Neville (Manchester United FC and England).

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15 Abstract

16 Decision making in elite level sporting competition is often regarded as
17 distinguishing success from failure. As an intricate brain-based process it is
18 unlike other physical processes because it is invisible and is typically only
19 evidenced after the event. This case study shows how an individual achieved
20 great success in elite level professional football through consistent positive
21 decision making on and off the field of play. Through prolonged interviewing,
22 Gary Neville, a player from Manchester United Football Club, explored personal
23 behaviours, the structure and activities of deliberate practice and his professional
24 choices in match preparation. His career-long devotion to purposeful organised
25 practice was focused on cognition, physical preparation, context-relative physical
26 action and refined repetition to optimise his mental comfort while enhancing his
27 match day performances. This approach was underpinned by diligent personal
28 and collective organisation and by concerted action. Results provide an insight
29 into the categorical nature of his deliberate practice, sport-specific information
30 processing and match-based decision making. At the operational level his
31 process was mediated by a complex mental representation of on-going and

32 anticipated game situations; these representations were continuously updated
33 during each match. Allowing for the limitations of the design, implications are
34 provided for developmental and educational coaching, match preparation,
35 deliberate practice activity and improved use of performance analysis software
36 packages in professional football.

37 **Key Words**

38 Decision making, preparation, deliberate practice, soccer, elite performance.

39

40 **Introduction**

41 While football is a physical invasion game of technique, strategy, tactics and skill, at the
42 pinnacle of the professional game there is a growing awareness that perceptual cognitive
43 skills account for a significant proportion of variance in performance between elite and non-
44 elite athletes [1]. At the higher levels of football perceptual-cognitive skills are more likely
45 to discriminate between performers than anthropometric and physiological skills [2]. The
46 capacity to make correct decisions in the pressured environment of elite competition may all
47 too often represent the distinction between success and failure. This ‘chatter of a hundred
48 billion nerve cells’ [3] is the invisible phenomena that many professional athletes and
49 coaches seek to understand and control.

50 In a recent interview article in performance magazine [4] elite level practitioner Tony
51 Strudwick, current head of Sports Science for Manchester United and the England National
52 team stated. “Working with elite athletes demands the highest level of attention towards
53 preparation. We are now reaching a plateau in terms of physical fitness and there is a need for
54 players who make quicker decisions in high pressure environments. I expect the next
55 (scientific) developments to be in the areas of vision and cognition and the development of
56 tools (to enhance vision and cognition) to take the game to another level”.

57 Previously decision-making research (e.g., [5]) has primarily been conducted in laboratory
58 environments using controlled tests. Such work has addressed advance cue utilization,
59 pattern recognition, visual search behaviour and the use of situational probability as the basis
60 for decision making [5]. This research typically focuses on whether players extract
61 situational information for decision making from (i) contextual postural appearance, (ii)
62 players’ relative positions on the pitch, (iii) motion between groups of players and (iv)

63 tactical information displayed by each players' positioning. Another direction in this
64 research addresses whether specific players are regarded as more important than others and
65 the extent and purpose of information that is drawn from teammates or opponents when
66 making decisions.

67 Fundamentally, a central tenet of the decision-making process relies on pattern recall ability
68 [6,7]. Pattern recall is important in high level cognitive functionality, providing a base for
69 high level tactical decision making. There is also considerable evidence to suggest that
70 expertise emerges as a result of adaptation to the unique demands of the specific sport [8] and
71 ultimately such pattern recognition is a strong predictor of anticipation skill in sport [9].
72 Further, Ward et al., [10] found that superior performance predictions were best supported by
73 a situation model-type mechanism as proposed by the long-term working memory (LTWM).
74 For experts, LTWM is thought to provide a rich representation of the individual's world that
75 involves encoding of multiple dynamic options. Functionally, LTWM allows immediate
76 access to a range of finely filtered options for given situations [10].

77 Deliberate practice in sport [10] involves training that is specific, goal-oriented and
78 purposeful. Deliberate practice has been defined as "individualised training activities
79 especially designed by a coach or a teacher to improve specific aspects of an individual's
80 performer through repetitive and successive refinement" [11] Ericsson & Lehman, 1996,
81 pp278]. In relation to elite performance, Ericsson, Krampe and Tesch-Tomer [12] proposed a
82 theoretical framework that shows how experts use extended deliberate practice. However, a
83 recent review of practice [13] concluded that practice as a sole variable was insufficient to
84 explain differences in human performance. To date few studies e.g. [15, 16 & 17] have
85 identified the deliberate practice activities that most contribute to the development of
86 perceptual cognitive expertise. Equally, the specific nature of deliberate practice activity in
87 soccer (football) has yet to feature strongly in existing academic commentary [17].

88 A review of decision making literature in sport [5] also cites the need for research that
89 profiles the practice history of exceptional athletes, particularly those demonstrating
90 exceptional and consistently superior perceptual cognitive skills. Further, since so little
91 attention has been paid to the analysis of these skills in elite players from the athlete's
92 perspective, this underlines the need for qualitative approaches [18]. Eliciting in-depth
93 qualitative accounts of the deliberate practice activities used by elite footballers, and how
94 they influence cognition and decision making under pressure in games will add to the

95 understanding of how these skills are developed and as such, contribute towards filling this
96 academic void.

97 **Method**

98 The study adopted a single case design (SCD) based on a retrospective qualitative interview
99 [19]. SCD's have been successfully applied to many research contexts including psychology,
100 medicine, education, rehabilitation, social work, counselling and sport psychology [20].
101 Sport psychologists have been encouraged to use SCD's to develop evidence-based
102 interventions for use in their applied work, while many already use single-case designs to
103 explore intervention impact [21, 22]. Indeed, to advance applied practice, research and
104 theory, there are considerable advantages for sport psychologists to holistically embrace
105 experimental, quasi-experimental, and non-experimental research methods.

106 The data capture and reduction process closely aligned with the requirements of Interpretative
107 Phenomenological Analysis (IPA). Although this is an innovative approach to decision
108 making research, it is based on the long standing work of Husserl, Heidegger, and Merleau-
109 Ponty, this idiographic approach aims to provide in-depth insights into how individuals make
110 sense of their life experiences [23]. The detail that this approach reveals stems from its close
111 examination of experiences and the meaning ascribed as a "self-interpreting being" [24]. A
112 further appeal of this approach was the room it furnishes for interviewees to provide fine-
113 grained accounts of the importance of their domain-specific practices. The project revolved
114 around the questions of "What are their deliberate practice activities?", "How do professional
115 soccer players engage in such activities within match preparation?" and "How does this
116 ultimately affect cognition and decision making under pressure in games?" Where response
117 were unclear, probes such as "Can you say more?" were used.

118 Initial contact with the player was made via a mutual friend. In the early stages, establishing
119 a high level of trust was fundamental since part of the value of the work lies in naming the
120 elite player in the published outputs it generates. Therefore, it was necessary to find common
121 ground; the interviewer was a professional football coach and former youth player and this
122 was emphasised in preliminary discussions about undertaking the study. The shared
123 understanding that this fostered also provided reassurances about the maintenance of
124 confidentiality where appropriate. It also helped to ensure that all contributions were
125 interpreted accurately and as intended.

126 Data capture focussed on an initial interview, followed by a clarification meeting conducted
127 once the interview transcript had been analysed. A key feature of the approach was to
128 encourage free speech, with no suggestion of judgement or interrogation. The interview and
129 the follow-up meeting were extensive and in-depth, lasting over four hours in total. This was
130 a demanding process for the interviewee and the interviewer, but was required to yield
131 accurate insights into the lived experience and to provide an interpretive account of meanings
132 [25].

133 The interview process was designed to generate self-revelation and to identify issues relevant
134 to athletic preparation and match performance. The interview was intended to be an open-
135 ended discussion, threaded with prompts to pursue emerging topics that were felt to be
136 important. Throughout, to guide the interpretations that would follow, there was
137 encouragement to describe the process on a visceral, emotional level around the idea of
138 ‘consistently superior performance’ [11]. IPA interviews are required to be dynamic,
139 allowing the researcher to take an active role in getting close to the participant’s personal
140 world [26]. The analysis that follows aims at ‘sense-making’; this emerged through the
141 efforts of the participant with the researcher and then between the researchers [27].

142 *Transcription*

143 Jeffersonian [28] transcription analysis was used to annotate the recordings. The Jeffersonian
144 method is designed to capture not only what was said but the way in which it was said.
145 Emotion, manner, tone, relativity and reasoning are all captured through this approach.

146 *Confirming the case for eliteness*

147 One definition of eliteness requires the collation of objective performance metrics,
148 independent of cultural forces and subjective factors, and free from biases linked to
149 reputation [29]. This synopsis of Gary Neville's achievements is presented to justify his
150 selection as an elite footballer. Starting as a schoolboy aged 16, Neville went on to
151 accumulate 602 professional appearances over two decades. His playing career became
152 synonymous with unparalleled domestic, European and global success for his team,
153 Manchester United Football Club (MUFC). During his playing career MUFC won more
154 honours than any other professional English club. In total, Neville played in teams that won
155 eight Premier League titles, three FA Cups, one European Champions League, an

156 Intercontinental Cup, a FIFA Club World Cup, and one League Cup. Beyond his success
157 with the MUFC team, Neville was first-choice right-back for his national team for more than
158 ten years, making 85 appearances. Sir Alex Ferguson (MUFC Manager) described him as
159 "the best English right-back of his generation" [30].

160 *Data analysis*

161 Data analysis consisted of a five step process [31]: Getting to know the data; Focusing the
162 analysis; Categorising the information; Identifying patterns and connections within and
163 between categories; Final interpretation. Any data considered to be rich/unique in content was
164 also included in the final analysis. This type of data is likely to appear when a footballer is
165 recalling individual games and scenarios to illustrate his behaviour to an 'outsider' researcher.

166 Emerging themes were then translated into a narrative account and explained further in the
167 results section. Furthermore, an idiographic representation of cognitive processes of decision
168 making, which are context specific to football, was produced (figure 2). This was based on the
169 identified patterns and connections between categories and our prior knowledge of information
170 processing theory [32].

171 **Results**

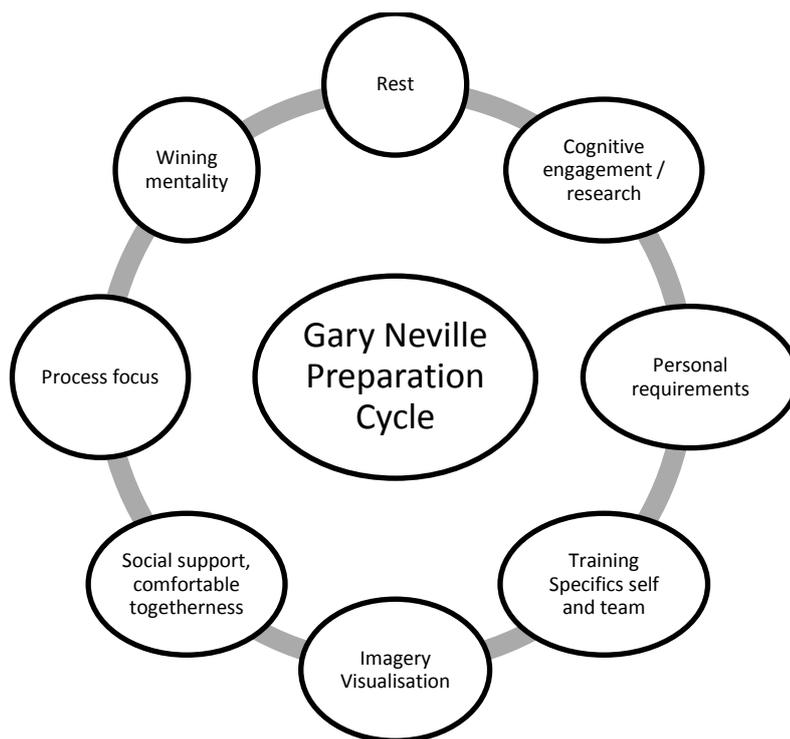
172 Findings are presented in two sections. In the first section football-specific, deliberate practice
173 and the cycle of preparation is addressed. The second section includes an existential model of
174 decision making 'in action', presented from a football-specific, information processing
175 perspective. This model depicts the dynamic real-time cognitive functioning of an elite-level
176 football brain. Focusing on internal psychological phenomena and on-going sport-specific
177 analysis, the findings indicate an analytic ability that facilitates in-game decision making and
178 engagement.

179 *Deliberate practice and preparation cycle*

180 Diligence, as represented by systematic and organised behaviour, underpinned the bulk of the
181 structured deliberate practice behind Gary Neville's career and achievements. Figure 1
182 summarises the nature of this experience of elite level football and how he operated and
183 achieved success within it. Figure 1 includes not only the behaviours of deliberate practice

184 e.g. identify personal requirements and process focus but also the outcomes that were
185 intended, e.g. winning mentality and social support.

186 In line with Jeffersonian transcript analysis quotes are presented using the following
187 annotation key: (.) represents micro pause, a notable pause but of no significant length; (0.1)
188 indicates a timed pause, long enough to show in transcription to express tone, emotion and
189 visceral reality of prose; (0.2) indicates an extended timed pause.



190

191

192 Figure 1. Preparation Cycle

193 In this first quote, GN articulates the importance of preparation at all stages of his career.
194 The quote ends with his account of preparing for any match where he *might* be involved.
195 This avoided the possibility of being unprepared through an unexpected call to play.

196 *I would say preparation for a match has been the key to my career (.) If that's wrong*
197 *(1) any element of it is wrong, I'm in trouble (.) my biggest lesson in life was*
198 *preparation costing me (.) and (0.2) erm I never took that risk ever again (.) I mean it*
199 *just didn't happen in my career (.) to this day (0.2) I just never took the risk that I*
200 *was never going to be involved (0.2) just prepare as if you are playing (.) you just*
201 *don't know what's going to happen.*

202 Drawing on Figure 1, an important initial deliberate action is to *rest* to clear his mind, to
203 regulate his body and be in optimal condition for the workload that the next match will
204 involve. While this represents the absence of physical effort its initiation was cognitively
205 effortful.

206 *yes (.) for me my routine and preparation for matches (.) that was critical to me (0.2)*
207 *if I didn't do that I couldn't play (.) I was like I had a fixed routine and it was always*
208 *(.) Tuesday morning (.) If we played Sunday (.) I would seriously have (.) in my mind*
209 *(.) Monday off (.) night of the game you would come down a little bit (.) the day after*
210 *the game recover (.) but not think too much about what's coming (.) you know*
211 *obviously it's in your mind (.) but you wouldn't think (0.2) I wasn't in game mode*

212 This was followed by cognitive engagement/personal research where he planned his approach
213 for the forthcoming match and how to handle specific opponents or potential situations. This
214 approach was supported by upholding a clear philosophy about personal preparation.

215 *my game mode started Tuesday morning the minute you got to the airport before you*
216 *travelled (.) and then literally the minute you got on that plane (.) every moment is*
217 *thinking about that game for the Wednesday night and Thursday night for a Saturday*
218 *game (.) you are just switching on (0.2) you're thinking (.) who am I playing against*
219 *(.) right (.) what's he do (.) what do I need to do (.) do I need to watch a video of him*
220 *(.) what do I need to practice in training... (0.3)*

221 *people have said to me, 'Did Overmars give you a problem?' (.) no he didn't (.) I*
222 *could mark him quite simply (0.2) if Petit didn't get time on the ball to stand there (.)*
223 *look up (.), Overmars is moving (.) look up again (.) look up again (.) and all of a*
224 *sudden I'm knackered and he's gone (0.2) so for me (.) the key to stopping players is*
225 *not sometimes just your direct opponent (0.2) its understanding who you need to work*
226 *with you to stop it (.)2) and they were just things that I worked out.*

227 Once he established the evidence, he moved to think about what the evidence 'told' him to
228 do. His focus was on his personal requirements in terms of tactics, technique, the physical
229 aspect and/or any psychological or behavioural characteristics that may merit consideration.
230 Importantly, he deployed a refined observational approach, seeking to understand how his
231 opponents play and move, often before they get the ball.

232 *I would understand what I needed to do to defeat an opponent (.) to get the better of*
233 *an opponent (.) I would ask for a video (0.2) I never liked watching picked or*
234 *selected clips of teams by a coach. I have always liked to see half an hour (.) the first*
235 *half an hour of a match (.) cause (0.2) I (.) er (.) for me (.) I (.) you can sort of see a*
236 *player dribbling at somebody three times but I'm not really interested in that to be*
237 *honest (0.2) that's probably the most obvious thing to look at (.) I'm looking at sort of*
238 *erm (0.2) who gives him the ball (.) when do they give him the ball (.) what*
239 *movements does he make to get on the ball (.) what weaknesses does he have (.) is he*
240 *lazy (.) does he follow you back (.) If he was quicker than me I had to stop him in*
241 *another way (.) I knew if had to be aggressive (.) I knew if I had to be nice (.) because*
242 *some players you didn't want to wind up (0.2) they don't show you all these things in*
243 *selected clips.*

244 With the requirements established and confirmed, the plan was then converted into
245 appropriate physical practice. These sessions involved simulations of what his opponents
246 typically did in matches. These practices were persistently repeated until the challenge was
247 clear; clarity came from identifying the scenarios – through markers and cues - that signalled
248 how and when opponents' initiated their trademark moves , confidence then grew from
249 successfully and repeatedly executing the appropriate skills and approaches that offset those
250 opponents.

251 *What do I need to do in this training session tonight? (.) Is he quick and jinky? (.) So*
252 *I'll get somebody to run to me quick and jinky (.) Is he physical? (.) So I practice my*
253 *heading (.) and that's the sort of (0.2) what I call more specific preparation (.) you*
254 *just want repetition in your routine in terms of specific preparation (.) (0.2) it's just*
255 *mimicking that thing that you know (.) that you're feeling as though the movements in*
256 *your body are going to be replicated the day after (.) and then yes (.) I would say that*
257 *(0.2) I'm convinced (.) repetition in training gives you the sort of comfort in the game*
258 *that when it comes into that situation (.) you know you've done it before (0.2) I'm*
259 *absolutely convinced (.) that's just fact (.) that's a given for me (0.2) repetition (.) and*
260 *that feeling that I've been there before is an important feeling.*

261 *... I trained every day in my position (.) I played right back in training cause that's*
262 *where I played (0.2) In small sided games, you should play in your position (.) warm*
263 *up before a game (.) I pass in my position (0.2) and repetition of thought and imagery*

264 *of what (.) you know (.) that's my outside pass (.) that's my inside pass (.) you know*
265 *(.) you're in your area where you are gonna be.*

266 Training was confirmed through visualisation and mental clarification of all these identified
267 and practised behaviours. This enhanced psychological well-being (expressed by him as
268 'comfort'), providing personal belief in, and commitment to, the plan for match day.

269 *I think that having a picture of the match before you play it (.) I think the first person*
270 *that I heard say that was Terry Venables in '96 or '95 when he was England manager*
271 *(.) he said that his job as a coach was to almost (0.2) in our minds have us going into*
272 *the game having felt like we had already played it*

273 All these activities were then affirmed and clarified through the peer and support network.
274 This promoted further psychological wellbeing, generated a 'comfortable togetherness' and
275 reaffirmed the worth and value of the processes that had already been deployed.

276 *yeah (.) talking to people about the game (.) Scholesy (.) people in the changing room*
277 *(.) you confide in people (.) Dad (.) brother (0.2) makes you feel comfortable (.)*
278 *makes you feel more at ease because you get to know what they're thinking (0.2) you*
279 *do get comfort I think out of discussion and sometimes clarity on things (0.1)*
280 *sometimes they can give you a different view and you think (0.2) right okay*

281 Work was then channelled into a solution-orientated, process-focussed match day state of
282 mind with clear set of well-rehearsed actions.

283 *It's vital to understand your individual opponent (.) the tactics of your opponents*
284 *(0.2) and if you've got a manager and coaches who can explain to you how you can*
285 *win that match before you've won (,) before you had to go and play that match (0.2),*
286 *then, to be honest with you, I think you are in a far better state of mind as a player*

287 All actions were then re-emphasised when the team gathered. Focusing solely on this team,
288 what they have to do and what it has done in the past all helped to foster belief, persistence,
289 faith, relentlessness and an expectation that felt limitless. This left no room to envision
290 anything other than positive outcomes.

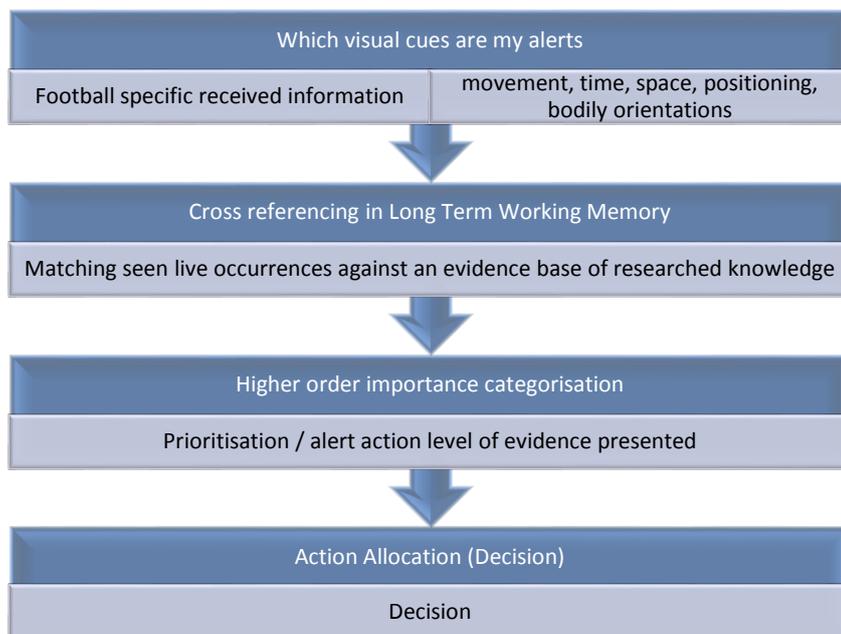
291 *you can't come into Man United's dressing room and talk about another team (.)*
292 *We're Man United (0.2), talk about us (.) even though you respect the other team (.)*
293 *you pay attention to the other team (.) you don't talk about them (0.2) I accept that*

294 *what we are surrounded by is not normality (.) in terms of (.), you know, the level of*
295 *mindset in the changing room (.) mentally unbelievable (.) I think (.) unbelievable*
296 *(0.2) and that's my bias but an unbelievable mindset (.) never ever to give in (.) never*
297 *say die (.) always just think you can win all the time and that shows in the*
298 *performances (.) every game we come back in (.) every game we score in the last*
299 *minute (0.2) that's come from the mindset of a manager who's just instilled it in a*
300 *group of players.*

301 Ultimately Gary Neville's deliberate practice and preparation (Findings 1) improved his mind
302 set, which he believed facilitated better, and quicker, on-pitch decision making and reaction
303 times. This type of preparation forged a perceived advantage for impending high pressure
304 football matches; this may distinguish success from failure where the physical development
305 of most competing players is at, or close to, optimum. This cognitive functionality may be
306 what distinguishes elite level players from serial winning players and is an aspect of training
307 that is increasingly required for success in modern day elite level football (Strudwick, cited in
308 Hancock, 2014, [4]). It is important to acknowledge that some of these practices have also
309 been widely identified in other elite environments such as music [35]; although this paper is
310 football specific.

311 *Decision making processes*

312 This offers a preliminary operational model of the functional brain within a football game.
313 Its originality derives from data from serially successful elite level football. The player
314 perceived that his success was tied to the structured deliberate practice that he deployed in the
315 preparation cycle (outlined in Findings 1).



316

317 Figure 2. Idiographic of cognitive processes for decision making in football.

318

319 Information processing theory [32] proposes that humans process information rather than
 320 merely responding to stimuli. Information is taken in, encoded to give it meaning, compared
 321 to stored information (the players' football knowledge base), then evaluated and acted upon.
 322 Figure 2 represents the conscious decision making process during a football match, as it was
 323 depicted in the accounts of Gary Neville. This has four key points, all drawn from the
 324 idiographic account of the mental processing occurring during elite-level football matches.

- 325 1. Assessing received information
 326 2. Cross referencing against mental images from experience (physically lived or
 327 educated through research)
 328 3. Categorising the information's relevance / threat and allocating meaning
 329 4. Allocating action / (The Decision)

330 Two further quotations detail the visceral experience of personal sense making; these
 331 illustrate decision making in action. They show (a) the prevalence of contingent thinking
 332 about options and (b) how other players were recruited to bring about desired tactical
 333 outcomes. The first quote describes how much information – especially that drawn from
 334 player positions, speeds, distances and players' identity - is assessed and then executed in a
 335 decision.

336 ... level of concentration I don't think should change through time (0.2) I think
337 players speed changes (.) but then you change with that as well (.) that's a decision to
338 make (.) that you give yourself more space if he's quicker than you (.) that's not a
339 case that you have to concentrate more (0.2) the decisions change (.) the distances
340 change (.) you're sort of (0.2) you know (.) you might (0.2) yes, your decision could
341 change based upon the player that you are playing against.

342 This next example highlights that the information being assessed includes (i) ball technique,
343 (ii) positioning of player groups and player relations, (iii) positioning and potential
344 organisation of other Man Utd team members.

345 ... for me (.) my problem with Overmars was Emannual Petit dropping it over my
346 head (.02) it wasn't Overmars because no matter what that lad (0.2) if I dropped off
347 too far he got it into his feet and he ran at me (.) if I got too tight to him (.) he'd spin
348 and go in behind me (.) and it was easy for me to stop Overmars(0.2) I got Keaney to
349 nail Petit and I got Becks to nail (0.2) rather than drop off and say protect me that
350 way (.) get on top of them (.) stop them playing it forward (.) and I know I can get on
351 top of him 'cause he can't get the ball (0.2) so that was the key for me.

352 This information, combined with stored knowledge, resulted in the player being able to make
353 deliberate calculations and real time decisions. Working memory cross references with
354 understanding acquired through the lived, learned and/or possibly simulated practices
355 initiated within the Preparation Cycle (Figure 1.). The quality of this process is then
356 demonstrated in the pressure of performance; the quality of this preparation may be the
357 defining factor in distinguishing success from mediocrity or failure. This case study
358 illustrates the inseparability of cognitive with physical functionality at the highest levels of
359 professional football. With Neville paying so much attention to aligning these factors for
360 each impending contest, the quality, volume and pattern of this deliberate practice may be
361 what separates players – and teams - that may, otherwise, be considered equal.

362 **Discussion**

363 This study set out to discover the nature and activities of deliberate practice and the decision
364 making process in elite level football. The study describes the match preparation activities as
365 well as various cognitive processes employed during a match. Founded on case study data
366 generated within an in-depth qualitative interview with an elite football player, the data

367 represent a rare, first-hand account that is extensive in both quality and quantity. It also
368 provides a detailed insight into the ways in which one elite athlete deployed deliberate
369 practice to speed and refine his decisions in a game. These findings are important because
370 the subtlety of these processes is often beyond the sensitivity of conventional research
371 approaches. Equally, it is rare to find athletes who can do this in close detail and even rarer
372 to find elite level athletes who are prepared to do it.

373

374 An eight stage cycle of preparation emerged. This facilitated the development of an
375 idiographic model of Gary Neville's in-game decision making. We are presenting a lived
376 experience, contextualised to football, which closely overlaps with existing information
377 processing models. The outcomes also support the relevance of existing psychological theory
378 (e.g., self reflection, social support, process focus, visualisation and mental toughness) for
379 elite level soccer, while also offering new information regarding preparation for sustained
380 success in elite level football that might inform practice structure and content. In turn, this
381 may facilitate better coach education and individual preparation for prospective football
382 players of all levels.

383 With regard to football-specific behaviours, Gary Neville deployed an extensive and refined
384 approach to match preparation. Across many hours – both within and beyond physical
385 training and practice - he carefully researched how his direct opponents played, both with and
386 without the ball. This extensive process helped him to identify not only opponents'
387 predictable patterns of movement but also the cues that signalled the start of these patterns;
388 this enhanced his cognitive responsiveness and gave him vital extra time during matches. He
389 then designed a self-oriented and solution-focussed action plan, committing to situation-
390 specific physical practice. This built his psychological clarity and his view of how well he
391 could expect to command the impending match.

392 The level of detailed preparation enhanced sport-specific working and long-term memory
393 capacity for tactical situations. Such an approach to deliberate practice, it is argued, also
394 increased his controlled and attentional focus. Equally, this activity promoted clarity of mind
395 by reducing the likelihood that emotions and/or impulse would drive decision making [36].
396 The account also suggests that existing theory has captured much of what this elite level
397 footballer can articulate about his decision making processes. The phrase 'what is most
398 personal, is most universal' [29], drawn from counselling seems to apply to the relationship
399 between elite level behaviour and current theory, regarding deliberate practice, information

400 processing and decision making; this points to the value of the single case approach deployed
401 intensively with appropriate and willing elite athletes. However, these findings need to be
402 substantiated and confirmed in other elite level football players.

403 Equally, although this study is based on a single case design in football, there is consistency
404 between Gary Neville's approach and established, formalised ways of working. For example,
405 mental contrasting [30] is a positive, solution focussed, planned action, process oriented,
406 activity for behavioural change where expectations of successful outcomes are high.

407 Although he didn't know it, Neville's approach is highly resonant with the practice of mental
408 contrasting. His account also offers extended and compelling evidence that such practice can
409 be used in football to produce positive outcomes.

410 Based on the account from the current study, some of the critical components for good
411 decision making capabilities appears to include (i) prior knowledge developed through
412 careful observation, (ii) accurate identification of an appropriate action sequence, (iii)
413 experience of deploying solutions in practice simulations (iv) feeling reassured that the
414 'needs analysis' was correct and that the required responses had been integrated into the
415 playing repertoire. The player's preparatory cycle was refined, confirmed and supplemented
416 by integrating information provided by coaching staff and the complimentary use of analysis
417 technologies. All this work extended his personal commitment to developing a wide, subtle
418 understanding of opponents' in-match habits and routines.

419 This text provides numerous examples to suggests that Neville's analytical approach, which
420 includes a personalised expertise in using match recordings, is highly distinctive, although the
421 scale of this distinctiveness needs to be confirmed. While this distinctiveness inevitably
422 reflects methodological influences, it still sets him apart in terms of consciously focusing on
423 developing finely tuned anticipatory skills, reactive readiness and clear situation-specific
424 intentions. He is also distinctive for being able to articulate his approach so closely.

425 Clearly then, for this player, information about opponents and elements of match-based
426 'pattern recognition' are key components in his approach to match preparation. Although
427 powerful analysis software is readily available in professional football, few players have
428 learned to optimise the capabilities of this software, meaning that its optimal use in
429 supporting elite level football performance has yet to be achieved. The evidence provided by
430 the current study shows that Gary Neville used video technology in innovative and
431 facilitative ways.

432 His diligence generated an advantageous position regarding potential incidents; this not only
433 built his confidence for oncoming matches but also directly affected his role and performance
434 within the team during such matches. This behavioural nuance was key in securing athletic
435 advantage over opponents. The evidence presented proposes the potential of careful and
436 considered use of video technology in preparing for performance in professional football; for
437 Gary Neville this was mostly self-initiated. Importantly, when video is well used, it enhances
438 the likelihood of players being fully engaged in a highly functional form of deliberate
439 practice. That practice needs to be context relevant, accurate and significant to the player.

440 Yet, this practice also needs to move with the times. Manchester United Head of Sport
441 Science Tony Strudwick recently stated “*The manner in which we communicate data to the*
442 *athletes is key. Generation Y athletes are technologically savvy, so we’re always looking at*
443 *ways in which we can develop how we educate and stimulate them*” [4]. In the way of every
444 virtual circle, linking playing success to previous cycles of preparation will reinforce
445 commitment to the nuances of this approach. Without this, practice risks losing its
446 deliberateness by becoming non-specific, abstract and irrelevant. Neville’s account provides
447 ample lines for enhancing match planning, both for coaches and players.

448 LIMITATIONS AND FUTURE DIRECTIONS

449 While the study provides a unique insight into expert performance – as understood by the
450 expert - it provides isolated, idiographic evidence. Reliance on a single case obviously
451 imposes considerable boundaries on the relevance of our proposed model; all qualitative
452 accounts are limited by the perceptual range of the account maker. This makes it difficult to
453 uphold the principles of qualitative research while also addressing whole theoretical
454 frameworks around decision making. Equally, it will be important to compare this
455 preparation cycle to those of other athletes both within and beyond soccer. It is also important
456 to acknowledge that although this paper suggests a direct link between the preparation cycle
457 and decision making, the way in which qualitative data is revealed makes it difficult to verify
458 cause and effect. Subsequent studies based on longitudinal comparative analysis should be
459 considered.

460 These limitations caution against assuming the relevance of the model to individual sports
461 and/or to sports where (sub) groups of athletes work together more – and possibly better -
462 than in soccer. However, since Gary Neville has detailed his life across a long and sustained
463 career and realised serial winning, his account clearly offers intensive generalizability; this

464 represents the insider's detailed view of what contributed to this success throughout his
465 journey. While the study provides rich data, established through an intensive process; not all
466 expert athletes will be willing or able to do this to the required level. Therefore, and allowing
467 for this being an unusual 'case' based on a demanding approach, replication will be important
468 to establish the credibility of these outcomes.

469 Further, subsequent studies, based on larger samples and longitudinal designs would establish
470 extensive generalizability of issues detailed within this particular piece of work. They would
471 also allow comparisons with other sports and/or performance domains, establish which of the
472 behaviours are imperative elements of deliberate practice - versus those which merely
473 coincide – and which have emerged in sequences of refinement. Given it's prominence in the
474 current study; it may also be pertinent to conduct further studies on how video analysis is
475 optimised by coaches, players and the interactions between these particular groups of people.

476 *Conclusion*

477 Existing academic research has little to say about how serial winners at the elite level achieve
478 their success. This account, based on a serially successful player in professional football,
479 underlines the cycle of preparation he developed, deployed and continued to refine. This
480 cycle represents this players' unwitting realisation of 'deliberate practice'. Importantly the
481 study shows the sequence running into a game, and highlights the nuanced ways in which
482 video analysis was used and reused to fully grasp, and then physically practice, the demands
483 that players in the impending match might impose on him. The study offers a template for
484 coaches, players and performance technology providers to improve current practice to
485 increase the likelihood of more successful outcomes. Gary Neville understood that
486 preparation and due diligence were of paramount importance as the speed of the game
487 increased and the number of incidents rose. His approach to preparation showed football as
488 imposing multi-dimensional demands. These extensive demands are often inseparable in-the-
489 moment of play, involving psychological and physical components that responded to his
490 carefully constructed, experientially-based, version of deliberate practice.

491

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