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Individualising Coaching in Olympic and Paralympic Worlds: An Applied Perspective

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ABSTRACT

This practical advance paper outlines the complexity of simultaneously coaching in Olympic and Paralympic disciplines of canoeing. The paper integrates applied experience from the Tokyo Games, with a critical review of disability literature, to explore the importance of the creation of Shared Mental Models to inform the development of a performance vision in elite sport. The paper first addresses the design and development of complex performance visions, which underpins the delivery of such elite programmes. Secondly, and perhaps more importantly, the paper addresses the fundamental issue, that Paralympic sport is not a microcosm of Olympic sport, and that performance visions and coaching processes created in an able-bodied environment, cannot be cut, copied, and pasted into a Paralympic setting. Offering applied insight, from this unique dual perspective the paper discusses the complexity of designing a well-structured performance vision. We propose that although such performance visions developed in Olympic and Paralympic context share some similarities, the design of Shared Mental Models need to be bespoke to the performance setting. The paper articulates the additional complexities of Shared Mental Models deployed in a paracanoe setting and offers recommendations as to how we can better support the construction of performance visions in Paralympic sport.

Keywords:
Shared Mental Models, Olympic, Paralympic Sport, Coach Education, High-Performance Teams

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Introduction

The operationalisation of a high-performance vision in the context of professional elite sport, in which Shared Mental Models (SMMs) are developed within Paralympic Sport, refutes the claim that Paralympic sport is a microcosm of Olympic performance. Instead, the Paralympic landscape should be viewed and coached in an appropriate manner that integrates the needs of athletes, events, environment, and coaches. Therefore, we should recognise that individual and team performance settings have unique parameters appropriate to that context and which influence the coach's vision or SMMs of athlete performance (Richards et al., 2009). This paper will prompt discussions about SMMs complexity in elite sports and outline how they can facilitate more effective coaching within this complex environment. More specifically, readers should gain insights into the Paralympic performance environment and how the complexity of the coaching process has been navigated.

In helping to set the naturalistic context of this practical advance, it would be helpful to consider the Paralympic landscape in which it is set. The current growing literature on Paralympic populations within elite sport, while useful in providing insight into coach education, is not considered through a contemporary lens and fails to consider the specific context of knowledge sources and the inclusion of parasport coaches (Fairhurst et al., 2017). Crucially, within the context of this practical advance narrative, the dominant discourse within the coaching literature remains misaligned to the effective individualisation of parasport athletes. Such a discourse aligns with assumptions driven through a medical lens of functional limitation of what the athlete can't do (Townsend et al., 2015). Further, historical coaching literature may also be viewed through a non-disability prism that fails to consider the person. Logically, this view would negatively impact the individualisation of the coaching process within Paralympic populations.

48 Consequently, if the concept of SMMs described here is accepted as needing to be
49 unique or individualised to the athlete, these assumptions must be challenged to generate
50 adequate SMMs within a Paralympic context. Supporting this stance, within Parasport
51 populations, Townsend et al., (2015) argue that the reproductive nature of coaching should be
52 critically appraised and unpacked within the context and complexities of real-world settings.
53 Therefore, this paper contends that we cannot apply ‘copy, cut & paste’ SMMs to a
54 Paralympic athlete (or any athlete) within naturalistic settings, as effective SMMs must be
55 appropriate to the context and the individual. The paper outlines the additional complexity
56 surrounding the Paralympic context, rejecting a mirroring of information where knowledge is
57 transferred from an Olympic setting and misapplied directly to the Paralympic context. It is
58 this contextualisation of coaching that remains unappreciated within coaching (Jones &
59 Hemmestad, 2019).

60 In presenting this applied perspective the paper firstly explores how disability may be
61 conceptualised through a theoretical lens, before applying it to sports coaching. The paper
62 then presents SMMs, outlining their relevance to coaching as tools that can structure
63 information, and inform how knowledge is shared with the coaches, athletes, and other
64 specialists working within a high-performance setting, We then describe SMMs and their
65 relevance to individualisation before presenting the paracanoe context in which they are
66 applied. Subsequently, we present exemplars as to the operational use of SMMs, discuss
67 individualisation and personalisation of coaching within the Paralympic context. Finally, we
68 offer five recommendations derived from the applied insight of preparing for the Tokyo
69 Games to support the advancement of coaching within parasport.

70 **Exploring Disability Through A Theoretical Lens: Overview Of Models Of Disability**

71 Within the sporting context, of this paper, the term *Parasport* will be used
72 interchangeably to define both competitive and non-competitive sporting activities for people

73 with a disability (Wareham, et al., 2019). Paralympic athletes are coached and supported by a
74 range of experts, including technical sports coaches and an athlete support team that may
75 include strength and conditioning coaches, physiotherapists, sport medicine doctors,
76 biomechanists, performance analysts and psychologists. However, professional training of
77 support team professionals such as physiotherapy is often delivered through a medical model
78 lens and focussed on textbook ideals which may become a barrier to effective athlete
79 individualisation. Importantly, in helping to overcome these barriers and understand the
80 world wherein this narrative is situated, it is relevant to consider how coaches and those
81 indirectly or directly supporting coaching, such as those within the athlete support teams,
82 conceptualise Paralympic sport.

83 In helping the paracanoe team to navigate the barriers described above, Townsend and
84 colleagues (2015) model of disability has proven useful. In researching coaching and coach
85 education practices within parasport, Townsend et al., (2015) examined and reviewed four
86 theoretical lenses through which disability is viewed. Understanding and utilising Townsends
87 (2015) model has provided the coaching team with an applied tool to deliver a coaching
88 coherence and expose coaching dogma within Paralympic sport. At a practical level
89 understanding models of disability has helped both technical and support team coaches (and
90 those they must collaborate with) consider how they conceptualise and position disability,
91 associated impairments, and how these factors influence their practice, development of coach-
92 athlete relationships (Jowett & Arthur, 2019) and engagement in the coaching process. It is our
93 view that understanding these lenses has greatly helped technical coaches and support team
94 staff transferring into the paracanoe team from Olympic disciplines. In short, it has allowed
95 alignment of the team around a central asset driven philosophy of what the athlete can do,
96 rather than what they can't. Townsend et al., (2015) theoretical lens of disability model is
97 presented below.

98 ***The Medical Model:*** Emerging from clinical practice and perhaps the most pervasive
99 model within disability research (Smith & Perrier, 2014), the medical model defines
100 disability by the functional limitations of an impairment (Swain et al., 2003). Viewed through
101 the medical lens, disability is something that should be fixed or cured and is something
102 abnormal. The lived experience of disability is ignored, and a person with a disability is seen
103 as socially and culturally ‘different’ and disadvantaged (Oliver, 1996). More simply, a person
104 with a disability is treated as someone who must be fixed and is judged by what they cannot
105 do. Thus, giving rise to coaching behaviour that judges a person against a preconceived
106 *normalised* ideal, encouraging a nonethical approach to coaching. Consequently, the medical
107 model ignores the formation of individualised or unique coaching knowledge, focusing
108 instead on the medical functionality of athlete limitations (Denison et al., 2017). Therefore,
109 coaching practice may be based on non-disability ideals, such as overlaying non-disabled
110 running gait patterns and training modalities to an athlete with through-knee unilateral
111 amputation whose impairment makes the overlaid pattern impossible to achieve.

112 ***The Human Rights Model:*** The human rights model was the first model to address
113 the diversity and equality rights of people with disabilities (Townsend et al., 2015). The
114 human rights model shifts the view of people with a disability as passive objects without
115 rights and towards facilitating basic freedoms that are taken for granted, such as access to
116 sport (Rioux, 2011). Therefore, participation in sport is a fundamental human right and
117 people with disabilities are entitled to participate in it. Consequently, the human rights model
118 champions inclusive policies, practices and environments that support people with disabilities
119 in sport (Townsend et al., 2015).

120 ***The Social Model:*** The social model suggests that disability is a social construct,
121 overlaid on top of impairment (Thomas, 2014). The social model argues that disability is a
122 collection of imposed barriers that exclude people with impairments (Thomas, 2014). These

123 barriers permeate all aspects of daily life, such as transport, housing, employment, and
124 accessibility to many buildings. Put more simply, all people could be considered equal until
125 society imposes a barrier on one of us. Social examples in sport include exclusion policies,
126 restricted venue access, inadequate changing facilities, etc. We would argue that the paucity
127 of parasport research and consequent stagnation within academia in associated coach
128 education and development could be attributed to a social model lens. In other words, the
129 dominant research approach within sports coaching is within the non-disabled population,
130 overlaid into disability fields.

131 ***The Social-Relational Model:*** The social-relational model of disability (Thomas,
132 2014) views disability through the social-cultural and historic activities that influence
133 collective activity (Townsend et al., 2015). Therefore, disability is given meaning through
134 relational practices that shape how people interact with each other and experience the world.
135 The social-relational model allows coaches in parasport to utilise a dynamic process built on
136 a coach-athlete relationship that allows both agents to contribute to the coaching process
137 (Townsend et al., 2015). Through this model, the athlete can be viewed as a unique person
138 and is encouraged to contribute to the construction of knowledge, through sharing the
139 embodied experience of disability with the coach, in co-construction of a performance
140 solution (McMaster et al., 2012; Duarte, Culver & Paquette, 2020). More simply, a
141 personalised social-relational lens helps develop an asset-driven paradigm of what an athlete
142 can do, rather than what they cannot (coach the athlete not the disability). In this way, a
143 coach can respond to athletes' ideographic needs and think about creating a unique and
144 individualised SMM, even if underpinned by generic concepts. Consequently, if
145 individualisation is the goal of the coaching process, then an asset-driven philosophy of what
146 a person can do is critical in knowledge construction and practical truths.

147 **The Theoretical Models Of Disability Applied To Coaching:**

148 While a medical model may have some applications in the initial rehabilitation of an
149 acquired impairment, we argue that it is limited and outdated in a Paralympic setting. As
150 described earlier, the medical model focuses on normalised ideals and what the athlete cannot
151 do. The social model has a high application by considering disability through an athlete's
152 perspective and is thus useful in removing imposed barriers to allow participation and in the
153 coaching process. From a coaching perspective and through the generation of individualised
154 coaching, the social-relational model has proven the most useful. It follows an asset-driven
155 philosophy and positions an athlete at the heart of generating solutions and bespoke
156 interventions. However, all models are underpinned by the human rights model that provides
157 equity and equality as a basic right with the consequential policies, practices, and
158 environments provided. While presented and considered individually, all models have
159 limitations, such as a failure to consider athletes' experiences. However, if the concept of
160 disability could be considered as a whole, which is required for the construction of SMM
161 (discussed next), it may represent a theoretical lens fit for 21st Century Paraspport. At an
162 applied level within the paracanoe example, Townsends (2015) model has proven important
163 in providing an agreed philosophical lens through which coaches and the athlete support team
164 can communicate, collaborate, define, and align performance collaboration.

165 For example, consider the Head Coach facilitating a conversation to improve athlete
166 performance with an athlete support team who may have recently transitioned in Paralympic
167 Sport from Olympic disciplines. The perception and lens that each person in the conversation
168 views disability may differ greatly. Some depending on their knowledge and experiences may
169 have a medical lens of what the athlete can't do and focus on the limitations of impairments.
170 Conversely, others may see opportunity and what the athlete could be capable of and focus
171 on unique asset driven individualised coaching solutions that would improve performance.
172 This incongruence may negatively impact collaboration, agreement, and alignment on the

173 direction of coaching interventions. Having explored the key concept of disability and
174 parasport and presented the theoretical models which shape our understanding of these
175 concepts, the paper will next explore the use of the Shared Mental Model (SMM) to
176 operationalise individualism. In doing so the paper will illustrate the importance of
177 individualising SMMs to the athlete and setting.

178 **What Are Shared Mental Models?**

179 The SMM may be defined as a verbal or pictorial cognitive knowledge representation
180 of the desired athlete performance (Richards, Collins & Mascarenhas, 2016; McGarry, 2009)
181 that the coach holds in memory and works from. A shared understanding of the performance
182 vision or task (Richards et al., 2016), allows teams to better explain phenomena, innovate,
183 draw inferences, and identify relationships between concepts (Stadifer & Bluedorn, 2003).
184 Consequently, in developing a shared understanding of the performance task SMMs within
185 this applied example have been used as a tool to unify theories, models and philosophies in
186 defining performance problem statements and considering solutions. Thus, aligning coaches,
187 support teams and athletes in the development of individualised performance interventions.

188 Within sport Richards and colleagues (2012; 2016) suggests the coach's initial SMMs
189 (alpha vision) are made up of two distinct elements, 1) psycho-motor, or *the what*, and 2)
190 psycho-social or *the how* that must be considered to allow SMMs to be operationalised. In
191 this way developing the SMMs has allowed team members to align and integrate their
192 expertise to collaborate and socially construct a shared model (Richards et al., 2016).
193 Accordingly, performance may be considered through the lens of distinct professions, yet
194 critically be understood and a shared situational awareness created within the team to agree
195 (*or not agree*) on a convergent team direction in developing shared athlete-specific SMMs of
196 performance. In effect, this convergence has allowed the coordination of effort and permits
197 each team member to contribute expert knowledge on an agreed area of athlete development.

198 Psycho-motor elements (e.g., performance vision, technical elements) are concerned
199 with the team members valuing, perceiving and interpreting information in the same way
200 (Richards, et al., 2009). Psycho-social elements (e.g., common language, generation of
201 concepts, tactics, SMMs) integrated with reflective practice, enables the content of the SMMs
202 (psycho-motor) to combine to develop alignment of the team collective vision, around
203 performance goals. Nevertheless, what this literature has not yet addressed, are the challenges
204 and processes undertaken when a coach with an already existing and well-established initial
205 or alpha vision for performance (no matter how diverse it is), must adapt outside of these
206 parameters or collaborate to develop a bespoke individualised SMMs (Richards et.al., 2012;
207 2016). For example, when coaching an athlete for the first time, transferring into Paralympic
208 Sport, or joining a new coaching team.

209 In considering this transfer at the applied level, while the role of a coach has been
210 recognised in high-performance sport (Cushion, 2006), the role and influence of a wider
211 athlete support team, integral to the development of an SMMs of athlete performance, has
212 been neglected (Alfano & Collins, 2021). Critically, members of the athlete support team
213 either directly (such as the strength & conditioning coach) or indirectly (such as the
214 physiotherapist) support the delivery of technical and nontechnical coaching interventions.
215 Therefore, coordination of technical coaching and athlete support team expertise is essential
216 for maximising performance. Addressing the challenge of adapting SMMs to the individual
217 from the coach's perspective, this paper offers a unique applied contribution as to how
218 experts in the athlete support team can be empowered to shape SMMs and exchange
219 knowledge. Thus, resulting in an aligned and defined performance vision that enhances an
220 athlete's chance of success. Such insight has within this example helped shape the vision of
221 SMMs through empowering (Kidman, 2001) the relevant expert to lead the coaching process,

222 enhanced collaboration and innovation. Thus, informing coaching efficacy, professional
223 practice, and the development of specialist roles through the exchange of knowledge.

224 Such a collaboration is especially important in helping coaches transitioning into
225 Paralympic sport decipher multiple, inter-related factors they lack familiarity or knowledge
226 of (e.g., disability, impairment, equipment modification, etc) by expanding their education
227 support networks (Duarte 2020). The transitioning coach (at least initially) may be required
228 to move beyond the boundaries of their previous experience to address and solve the novel,
229 inter-related needs of a Paralympic athlete. Logically, the utilisation and integration of
230 experience and knowledge of a range of performance specialists, collaborating under the
231 leadership of the head coach would help to address the coaching impasse caused by the
232 boundaries of expertise. At a practical level, this impasse has been navigated by the head
233 coach within their leadership role, firstly adopting the position of social learning leader
234 (Duarte et.al., 2020). Secondly, empowering others to become social learning leaders.

235 Therefore, within the paracanoe settings, when faced with no definable athlete
236 problem statement, no objectively correct answer, and layers of uncertainty and complexity
237 (Maurer & Thomas, 2014), the solution has been found in developing an understanding of
238 how each team member contributes their expertise to and works from a unified performance
239 vision or SMM of the athlete. Through this contextual critical appraisal, knowledge is
240 exchanged, coaching practice is challenged, context is gained, collaboration facilitated, and
241 athlete experience enhanced.

242 **The Evolution Of SMMs For Paralympic Sport**

243 In common with many coaches working within Paralympic sport, the technical and
244 support staff within this applied perspective are non-disabled, highly experienced coaches, of
245 none parasport performers, who have “transferred” into the Paralympic domain from non-
246 disabled sport (Fairhurst et al., 2015). Consequently, most of these transferring coaches and

247 support staff have established, and sometimes very well established SMMs from non-disabled
248 sport developed through experience. However, although some similarities exist, the transference
249 of previous experience can be a limitation in that it cannot be simply overlaid or passed down
250 onto the unique needs of Paralympic the athlete, (Taylor et al., 2014).

251 This additional layer of complexity in the transfer of coaching knowledge across
252 domains results in information shaped by SMMs in the Olympic world being frequently made
253 redundant when applied to the bespoke Paralympic settings. For example, observational
254 performance cues of leg drive, frequently referred to in the Olympic Kayak forward paddle-
255 stroke context may be limited or redundant in a Paralympic setting owing to impairment
256 limitations. Instead, the effective Paralympic coach will be required to create innovative
257 individualised equipment and technical forward paddle-stroke modifications to address this
258 aspect (Simon et al., 2017). A further example can be highlighted with the use of language. At
259 an applied level within parasport, and particularly within Olympic and Paralympic paddlesport,
260 there are differences within coaching language, definitions and phases (Taylor et al., 2014) that
261 may hinder communication and collaboration within the athlete support team.

262 In addressing the examples above, the transferring coach (technical and support staff)
263 faces a lack of formalised educational resources to aid coaches in creating or identifying, the
264 declarative knowledge in adapting SMMs for the athlete (Taylor et al., 2014; Fairhurst et al.,
265 2015). Equally problematic is a lack of training in the skills that allow the coach to derive that
266 knowledge from their own experience (Taylor, et al., 2014) In addition, gathering and making
267 sense of (Weick, 1995) parasport specific experience can be a long, isolated and lonely
268 experience if the coach lacks a suitable support network (Collins et al., 2019). In practice, the
269 lack of formal or relevant education and the time taken to develop applied experience have
270 generated the need to seek informal experts and mentors as sources of knowledge in creating
271 parasport SMMs. Through a two-way process of collaboration, experimentation and gaining

272 experience, knowledge is generated and transferred into the parasport context, exchanged and
273 made useable. In optimising collaboration, the alignment of the team members behind an agreed
274 and understood conceptual asset driven philosophy (Wareham et al., 2019). Such alignment
275 allows individualised athlete solutions to be considered through a similar lens, whilst retaining
276 the distinct diversity of professional critical thinking in defining and developing SMMs.
277 Consequently, the leadership and decision-making as to the development of SMMs can be
278 empowered to the most suitable expert (Kidman, 2001).

279 Accordingly, it is important that the challenges facing parasport coaches are recognised
280 and that these processes are sufficiently addressed within the coaches (and other performance
281 specialists), coach education, training and professional development. Consequently, this may
282 then assist in the coaches' ability to utilise experience but effectively address performer needs,
283 apply knowledge in context, design SMMs for individuals in a bespoke manner relating the
284 parasport context to improve performance. So, in the applied nature of this paper, it is relevant
285 to provide an exemplar of how the use of the SMMs have been employed in a sports context to
286 operationalise individualised coaching.

287 **Paracanoe: Contextualising The Landscape**

288 In helping to understand the context of this applied perspective, we need to outline
289 unique factors that differentiate Paracanoe and Olympic Canoe Sprint. The first consideration
290 is that the Olympic and Paralympic events have subtle knowledge contextualisation
291 differences in canoeing. Paracanoe and Olympic Canoe Sprint share commonalities in an
292 integrated competition format and environment, racing in lanes from A to B on a flat-water
293 regatta course. Olympic Canoe Sprint events are raced at over 200m, 500m, and 1000m
294 distances in single, double, and four-person kayaks. Paracanoe is raced over the 200m
295 distance exclusively in single Kayaks. Within the shared 200m distance, Paralympic race
296 times compared to Olympic Canoe Sprint events are between four and 24 seconds longer in

297 relative duration, depending on the boat class (explored next). Both Para and Olympic canoe
298 contexts require similar athlete preparation and race plans to support the physical
299 performance and energy system. However, the additional complexity of the impact of
300 impairment and strategic delivery of a race plan (bespoke to the individual and their
301 impairment) may greatly influence, what initially at least may appear a similar task in terms
302 of the application of this strategy and athlete preparation. While both disciplines may share
303 principles, these principles are related to the demands of the sport such as race distance,
304 energy system requirement etc. However, these principles need to be tailored to Para athletes
305 to affect the approach taken within the coaching process, thus shaping SMMs.

306 Secondly, the equipment is different for Olympic and Paralympic canoeists.
307 Paracanoe kayaks, while equivalent in regulatory length, are wider than Olympic Kayaks to
308 provide additional stability and help mitigate the impact of impairment. Consequently, the
309 drag factor (the resistance of water) the athlete must overcome to propel the kayak is greater
310 for a Paralympic athlete. Therefore, to achieve an equivalent boat speed, a Paracanoe athlete
311 must exert a greater force than their Olympic counterparts. Additionally, a Paralympic athlete
312 may need boat modification to be better supported at the seat, footrest, etc. to stabilise the
313 kayak and transfer force to the water through the paddle. Understanding additional Paracanoe
314 equipment demands require a coach to consider how an athlete either modifies or adapts their
315 technical or tactical models, in the context of their impairment to achieve success. For
316 example, providing a high-backed seat and strapping to support a spinal cord injury.

317 The third consideration is related to individuality, as we cannot take a nomothetical
318 approach. Therefore, while individualisation is relevant to athletes, the impact of impairment
319 requires SMMs personalisation. Principles generating a core amount of information within
320 the coaching process are transferable across individuals, with the key technical points
321 delivered generically to all athletes. For example, within kayaking, the placement and

322 sequence of leg drive into the footplate of the kayak, or gait patterns in walking or running to
323 move efficiently (Collins et al., 2019). However, within a Paralympic setting, such core
324 information either does not exist or is difficult to decipher, as athletes' impairment may make
325 information redundant. Therefore, technical points need to be individualised, via an
326 ideographic approach in the form of delivery and considered through an asset driven, social-
327 relational lens of what the athlete can do. Such a process requires designing the technical side
328 of the SMMs according to Paralympic athletes and their impairment needs. Through the
329 personalisation of information and delivery, coaches and specialists within parasport settings
330 can better understand the functional ability, physiology, psychological, and psycho-social
331 components of athletes (what they can do) and support asset-driven SMMs (explored later).
332 Consequently, through personalisation of the SMMs individualisation can be operationalised.

333 **Operationalising Individualisation**

334 Paralympic Sport is prestigious, highly competitive, professional, and elite (Bellini,
335 2015; Wareham et al., 2018). From our applied experiences of working with elite Paralympic
336 athletes, an important aspect of individualising the coach's SMMs is the expert knowledge
337 and insight that the athlete support teams offer. However, professional training of allied
338 professions such as physiotherapy is often delivered through a medical model lens. Thus,
339 neglecting asset driven SMMs and focusing on textbook ideals. Consequently, the lens
340 through which sports specialists frame an athlete or performance may be incongruent within
341 the athlete support team. For example, competing medical and social-relational models of
342 disability. Supporting practitioners and those involved in the creation of the SMM to
343 understand and reframe their expertise to an asset-driven social-relational model is important
344 in developing philosophical alignment to support individualised SMMs in parasport. Through
345 this alignment, allied professionals and athletes can be empowered to engage in, and lead the
346 development of a secondary or *beta* vision of performance (Richards et al., 2016).

347 In helping a transitioning coach to create, adapt, and apply these unique knowledge
348 representations relating to performance into bespoke SMMs, knowledge obtained through
349 collaboration with other specialists and experts is required (Simon et al., 2017). Such a
350 process integrates multiple SMMs into one congruent SMM relating to the specific
351 performance/athlete and context. For example, the agreed athlete support team goal may be to
352 lower an athlete's 200m time by two seconds over a season. The technical coach may
353 interpret this as the athlete needing to rotate their body to place their paddle further forward
354 relative to the torso, to increase stroke length and sets this as the performance vision or
355 SMM. The physiotherapist may contribute their expertise to activate as much trunk
356 musculature as the impairment allows. The strength & conditioning coach may also
357 understand how they can contribute to an aspect of the SMM by identifying an intervention
358 that then allows the athlete to tolerate greater force through an increased joint angle so that
359 the movement pattern does not default under fatigue. Consequently, the technical coach can
360 connect 'dots' through the use of expert knowledge, gain clarity and context and leverage the
361 team's expertise to innovate a bespoke intervention. Therefore, creating an adapted or *beta*
362 SMM (Richards et al., 2016) with clarity on which expert is empowered to lead or own that
363 phase of the coaching intervention. Therefore, we suggest that collaboration is more than the
364 provision of acquisition of knowledge, but collaboration is the alignment of a shared vision of
365 asset-driven philosophies rather than knowledge only. Consequently, the need for support
366 staff and coaches to not only have a shared understanding and vision of SMMs for the event
367 but to tailor this shared vision to meet complex needs of the individual and Paralympic
368 landscape helps drive innovation and the development of beta SMMs (Richards et al., 2016).

369 **Coaching Paralympic Athletes**

370 Coaching a Paralympic athlete is about having a blueprint that is relevant to all, but
371 also having the ability to adapt and personalise it to the person in front of you. Accordingly,

372 individualising coaching practice to the bespoke needs of an athlete (Chow et al., 2016).
373 Therefore, we suggest that individualisation requires alignment of philosophy and integration
374 of interdisciplinary information, principles, and structures of coaching to meet the
375 performance and event demands that create SMMs of performance or blueprint (Richards et
376 al., 2009). Within the technical components of SMMs (psycho-motor; Richards et al., 2017)
377 coaches must understand technical elements of the sport. Expanding on the work of Richards
378 (2012; 2017), in the context of Paralympic sport, the biomechanical templates, kinematic
379 ideas, physiological training zones, and strategic aims can then be *individualised*, and, as
380 such, SMMs can be prescribed to the athlete to help narrow performance gaps.

381 However, in Parasport, coaches need an additional understanding of the nature of an
382 athlete's impairment against the demands of the sport, to generate individual solutions and
383 provide optimised individualisation (Morriën et al., 2017). In discussing athlete impairment,
384 the first author's anecdotal experience suggests the need for psychological safety may be
385 particularly heightened and relevant as a coach, support personnel (or athlete) transfers into a
386 Parasport performance environment. A psychologically safe environment allows personal
387 risk-taking without fear of ridicule or loss of face (Edmondson & Harvey, 2017). For
388 example, the coach acknowledges a lack of technical knowledge or asks for help when the
389 cultural expectation is they must have the answer. Consequently, the quality of the
390 connection between coach and athlete is improved, (Jowett & Arthur, 2019) the two-way
391 discussion of disability enhanced, and the exposure of coaching dogma derived from
392 overlaid able-bodied coach education and societal taboos regarding disability removed.
393 Consequently, a psychologically safe environment (Gosai, et.al., 2021) will aid SMM
394 communication and collaboration through facilitating a greater understanding of the unique
395 nature of the athlete as a person and their disability.

396 Accordingly, individualised SMMs relating to performance must be created for each
397 athlete, and, therefore, a shared understanding of performance is understood and
398 operationalised by the coach, athlete, and support staff. Importantly, while a deviation from
399 an idealised technical psycho-motor norm into a bespoke SMMs might be more obvious
400 within parasport, kinematic and kinetic differences such as height, weight, muscle type, and
401 lever lengths in non-disabled athletes are equally worthy of consideration if individualisation
402 is to be achieved, maximising any athlete's performance. If individualisation is the goal,
403 bespoke SMMs are critical for coaches, athletes, and their support teams. More simply, we
404 are all unique and should be considered that way.

405 **Personalising The Coaching Process: Coaching The Person**

406 Within the sports coaching literature, individualisation or differentiation has a wide
407 range of meanings and definitions. However, there is a consensus that individualisation is a
408 method of working and catering for a wide range of individuals (Bon, 2009). Therefore, we
409 adopt the stance that individualisation means coaching an individual where the principles,
410 organisation, and structures can be applied on a bespoke basis, accounting for the individual's
411 needs, characteristics, and attributes for attaining performance goals. Elements such as
412 physiological training principles or kinematic ideals that create technical frameworks can be
413 prescribed differently based on the bespoke and unique needs of an athlete. However, it
414 should be ensured that athletes are not just doing 'the same thing differently'. Consequently,
415 individualisation of the coaching process could be made unique, or tailored in a bespoke
416 manner, not only technical prescriptions but also psycho-social prescriptions, information
417 sharing and communication (Richards et al., 2016). Such factors include pedagogy, coach-
418 athlete relationships, and psychological and environmental understanding of developing the
419 'what, how, and why' of coaching. Therefore, individualising SMMs through considering

420 athletes' needs from multiple expert perspectives will help support an athlete and coaching
421 team to identify the 'what, why, and how' of the SMMs.

422 Emphasising SMM's individualisation, we suggest the individual expert in terms of the
423 individual Paralympic athlete, is the athlete who has lived experience of their impairment.
424 Logically, the athlete is and should be viewed as an expert on the impact of their impairment
425 and within this narrative, it has proven essential to integrate an athlete's voice in the design
426 and development of individual SMMs in collaboration with experts, as part of finding effective
427 solutions. Therefore, an athlete should be a part of an integrated interdisciplinary approach to
428 address both technical and non-technical elements of a performance. In doing so, the initial or
429 'alpha vision' is remodelled into a unique, individualised, and personalised SMMs referred to
430 as an adapted or 'beta' performance vision (Richards et al., 2016).

431 **A Bespoke Individualisation of Coaching**

432 The following section presents five recommendations derived from the head coaches
433 applied experiences of preparing the team for the Tokyo Olympic and Paralympic games. It is
434 hoped the recommendations be considered as a learning leader (Duarte, 2020) to facilitate
435 discussion within the coaching and research community in supporting the next generation of
436 Paralympic coaches and specialists. The nature, context and opportunity presented above
437 piercingly call for both shared practical advances and research that not only adds to the paucity
438 of Paralympic research but also offers interdisciplinary learning to technical coaches, support
439 teams and coach educators in non-disabled sports.

440 ***Coaching: Transitioning To The Bespoke:*** The first recommendation considers the skill set
441 of a transitioning coach from non-disabled sport to Paraspport. The Paraspport coach
442 transferring from an Olympic discipline faces challenges in accessing formal knowledge
443 sources for creating bespoke SMMs (Collins et al., 2019). Therefore, a transferring coach will
444 be forced to default to their experience of what has worked in non-disabled sport such as

445 generic technical blueprints. Or for example, at a more operational level be unaware of the
446 support an athlete may need to transfer from a wheelchair to a kayak. This specifically (or at
447 least initially) relates to understanding the impact of impairment within the performance
448 setting. Therefore, coaches are reliant on SMMs created from experience and coach
449 education (specialist CPD) established with non-disabled athletes. These generic SMMs are
450 formulated through structured non-disabled coach education (considered to be more generic
451 in the context of this paper, as there is less variation of individual SMMs in non-disabled
452 sport) and are frequently used as a common template in Paralympic settings. The use of
453 generic non-parasport SMMs makes them too rigid for parasport athletes and the context they
454 compete due to the lack of bespoke design. Consequently, an inexperienced coach, found
455 within the Paralympic landscape may be over-reliant on existing non-disabled SMMs. Coach
456 education, therefore, needs to support the transitioning coach, with their refinement of
457 SMMs. This can be achieved by increasing the non-technical (philosophical lens) and
458 technical (impairment and event) understanding of disability. Thus, supporting coaches with
459 meta-cognitive abilities and sharing experience within the Paralympic setting.

460 ***Using Multiple Lenses To Perceive Disability:*** The second recommendation suggests that it
461 is essential to understand the framing of disability. Owing to the focus on the medical aspect
462 of disability and the inclusion of multiple medical specialists, the lens of the medical model is
463 valuable, but perhaps overinflated. We propose that enhancing the understanding of disability
464 models, through coach education (and CPD for specialists), would urge us to view
465 performance vision through a dichotomy of a lens. More simply, philosophical alignment
466 operationalises the ability to consider asset driven individualised SMMs which are holistic in
467 their design and, therefore, more effective.

468 ***Coach Education Resources:*** The third recommendation is related to the development of
469 appropriate learning material and expert knowledge to context, to enhance the effectiveness

470 of individuals working within a Paralympic setting. Hence, developing social learning leaders
471 and making knowledge exchange permeable between professions, (technical coach,
472 physiotherapist etc). The formulation of knowledge structures requires access to not only
473 education resources that are representative of the performance setting, but also experts and
474 mentors that facilitate connections to be made. In doing so, working silos are removed and
475 solutions generated for the individual athlete and context. Using resources from non-disabled
476 coaching materials and overlaying them in a disabled context is not effective. We argue that
477 this slows the developmental journey of a coach, as material should be context-specific to
478 maximise learning. Learning resources and access to learning leaders, experts, and mentors
479 specific to the parasport world would support the coach's transition to the new environment,
480 while simultaneously removing potential barriers due to theoretical models of disability.

481 ***Psychological Safe Environment:*** The fourth recommendation suggests that performance
482 setting requires a psychologically safe setting, where an athlete, coach, and specialist can feel
483 comfortable with asking questions, seeking new knowledge, and sharing expertise, (Gosai et
484 al., 2021). The effect of a disability may heighten sensitivity surrounding the impairment, its
485 effect on the athlete, how this is discussed within the team and the honesty and openness of
486 the conversation to remove taboos. Providing a psychologically safe environment has
487 allowed the athlete, coach, and specialist to support each other in developing a truly
488 understood and individualised SMMs, and hence the performance context more effectively.
489 This takes time and is strongly connected to the final and fifth recommendations below.

490 ***Head Coach Facilitating Distributed Leadership:*** In overcoming these performance
491 problems, coaches experienced in working with Parasport athletes are required to engage in a
492 high level of sensemaking (Klein, 2015; Weick, 1995) to understand 'what's going on' and to
493 start to notice critical information relative to the athlete and frame it in the context of the
494 performance. Therefore, the coach can start to connect dots, run mental simulations, and

495 develop adapted beta SMMs (Richards et al., 2016). For this to occur, the athlete, coaches
496 and support staff should utilise each other's expertise to develop permeable boundaries and a
497 shared understanding of the individual, to develop bespoke SMMs that are truly unique. This
498 approach requires a distributed, transformational leadership (Gosai, 2021) approach and
499 creates social learning leaders, (Duarte, 2020). Consequently, who leads and drives the
500 performance conversation, is driven by the most expert in (or out with) the team that is best
501 positioned to inform the delivery of performance. The ability of the head or technical coach
502 to empower other specialists and hand over the task leadership requires trust and a
503 psychologically safe setting (Gosai, 2021). When for a particular period in time (part of the
504 coaching intervention), the intervention can be led by the most appropriate expert, and not
505 necessarily the technical coach. The construction of SMMs and the facilitation of a
506 psychologically safe environment relating to these enable distributed leadership to occur.
507 However, such a process requires an understanding of these integrated elements which need
508 to become part of the formal coach education processes. More simply, if leadership is a
509 function of managing an integrated support team, so coaches should be supported to develop
510 this skill set.

511 **Conclusion:**

512 Addressing the environment of Olympic and Paralympics the paper provided the
513 reader with an understanding of the complexity of SMMs in shaping the delivery of
514 performance visions in elite sports. Specifically, it outlined how SMMs within the
515 Paralympic landscape are essential in allowing teams to define and align in supporting the
516 development of the 'what, why & how' of performance, and hence athlete. Within a
517 Paralympic setting, the variation in athlete movement may demand a higher level of
518 modification of SMMs than in an Olympic context, owing to the complexity and nature of
519 athlete impairment. It is hoped that the five recommendations offered within the paper

520 encourage discussion within the coach education community as to how best we can support
521 specialists working in parasport.

522

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