

Exploring forms of life in player development pathways-the case of British rugby league

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Exploring *Forms of Life* in Player Development Pathways: The Case of British Rugby League

The development of skilled adaptive performers is an imperative goal for elite sports organisations across the globe, where player advancement pathways are systematised in the quest to foster world-class athletes (Güllich & Emrich, 2006; Coutinho, Mesquita, & Fonseca, 2016). Although commonplace, the effectiveness of these systematised pathways has been questioned (Güllich & Emrich, 2012; Ryan, 2016; Vaeyens, Güllich, Warr, & Philippaerts, 2009), with concerns raised over the impact on athletes' health and well-being (Lloyd et al., 2015), and their ability to produce skilled performance at the highest level due to an over-systematised coaching approach (Pryce, 2018). This problem is exemplified with insights on the athlete development methodologies of English soccer academies (Calvin, 2017):

"The statistics are really sobering. Out of all the boys who enter an academy at the age of 9, less than half of 1% make it. Or make a living from the game either. The most damning statistic of all is only 180 of the 1.5 million players who are playing organised youth football in England at any one time will make it as a Premier League pro. That's a success rate of 0.012%."

These statistics implicate issues which have been associated with player pathways synonymous with rigid, linear optimal performance models in sport (Phillips, Davids, Renshaw, & Portus, 2010). Viewing player development pathways through a lens of complexity sciences (i.e., the study of complex adaptive systems) exposes how the interacting network of subsystems is open to continuous dynamical interactions during athlete development (Hristovski, Balague Serre, & Schöllhorn, 2014). In this model of skill acquisition and talent development, influential constraints at all levels interact to shape the emergence of expertise in athletes (Araújo et al., 2010). This integrated perspective on

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athlete-environment relations sheds insights on how the interacting network of complex subsystems impacts on athlete development i.e., 1, the microsystem (e.g., practice settings and contexts), 2, mesosystem (e.g., significant others who influence practice settings such as parents and caregivers), 3, exosystem (e.g., organisational influences), and 4, macrosystem (e.g., socio-cultural-historical influences) (Bronfenbrenner, 1979). **Bronfenbrenner's (2005) theory of human development suggests that, over time, an individual's development is influenced through proximal processes of regular complex interactions between people, processes, context and time (PPCT) within these subsystems.** In this complexity sciences model, skill and expertise in sport is enhanced over time in the micro-structure of practice (i.e. the daily, weekly and monthly activities in learning environments), by harnessing the spontaneous self-organising tendencies of a learner which are attracted to stable, functional patterns of behaviour during practice to satisfy task and environmental constraints (Balague, Torrents, Hristovski, Davids, & Araújo, 2013).

Task and environmental constraints are boundaries that shape and guide the behaviour of a learner towards a task goal (Newell, 1986). However, little is known about how either category of constraints may influence the views of coaches and athletes during learning, practising, and development (Hassanin, Light, & Macfarlane, 2018). An overlooked aspect of environmental constraints on the design of athlete development programs is socio-cultural-historical influences. This category of constraints is exemplified by the social, cultural, and historical traditions of a nation or region which underpin identifiable performance styles and preferred modes of practice (i.e., backyard cricket in Australia (Cannane, 2010). These constraints are important in shaping the way athletes engage with learning environments in different sports and physical activities, captured in the structured and unstructured activities which shape learning and development in different societies and nations (for example in the case of Brazilian soccer players; see Uehara, Button, Falcous & Davids, 2016). Rothwell,

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51 Davids, and Stone (2018) discussed the powerful role that socio-cultural-historical constraints
52 can have in influencing the way coaches' design and deliver the micro-structure of practice. A
53 key point in Rothwell et al.'s (2018) arguments was that highly systematised player
54 development pathways that fail to underpin practice with a theoretical framework of the
55 learning process may be exposed to the dominating influence of socio-cultural-historical
56 constraints that reproduce traditional practice structures, performance habits, and customs of
57 learning and development (Kiely, 2012; Phillips et al., 2010). This reification process may
58 fail to capture the dynamism required in globalised, modern elite sport where a form of
59 'system capture' may inhibit the adoption of innovative environments for athlete
60 development, informed by advances in empirical and experiential knowledge (Chow, Davids,
61 Araújo, & Shuttleworth, in press).

62 An important influence on conceptualising athlete development under different socio-
63 cultural and historical constraints is a 'form of life', introduced by Wittgenstein (1953) to
64 describe patterns in animal behaviour. In regards to human behavioural contexts, a form of
65 life describes common ways of being that "manifest in the normative behaviours and customs
66 of our communities" (Rietveld & Kiverstein, 2014, p. 328-329). Within the context of an
67 athlete development pathway, a form of life describes the values, beliefs, traditions, customs,
68 and behaviours that influence attitudes towards developing expertise in individuals. A form
69 of life should not aim to constrain coaches into designing rigid and suppressive practice
70 landscapes in the challenging task of athlete development. Rather, a form of life in an elite
71 sports organisation can capture a model of the learner and the learning process to integrate
72 the innovations and ideas of sport practitioners, without inhibiting their work. Thus
73 providing boundaries so all coaches within a pathway can be integrated in a theoretical
74 framework which underpins learning and developing in sport, evoking innovation and
75 creativity, that exposes athletes to practice landscapes rich in information so that they can

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76 interact skilfully with the dynamically evolving ecological constraints of competition (Araújo
77 & Davids, 2011). In this way, a form of life can harness and exploit historical and socio-
78 cultural tendencies which provide a clear identity for modes of expression and performance
79 in sport, underpinned by empirical research advances. A recent example of a form of life
80 positively influencing team performance in sport can be seen by former Queensland Reds and
81 Australian national team rugby union coach Jim McKay. McKay described how he was able to
82 harness a form of life that was influenced by experiential knowledge and the empirical
83 knowledge available in a higher education institution. McKay's work showed how
84 performance analysis data, a theoretical framework of the learner and the learning process,
85 and practice based on experiential and theoretical knowledge, contributed to highly adaptable
86 and effective team play (During this period the Queensland Reds were Super Rugby finalists
87 on three occasions, Australian conference winners twice, and won the 2011 Super Rugby
88 competition [formed of teams from New Zealand, Australia and South Africa]; for details see
89 McKay & O'Connor, 2018).

90 The work of McKay and O'Connor (2018) illustrated how a form of life was exploited
91 to design the micro-structure of practice in rugby union, with clear implications for learning
92 designs in other sports and physical activities. The value of athletes spending time engaged in
93 interactions with practice landscapes rich in information can be understood from the
94 phenomenological concept of a *lived space* (Fuchs, 2007). Using this conceptualisation,
95 athlete-environment interactions provide solicitations (opportunities or invitations) to act
96 (Withagen, de Poel, Araújo, & Pepping, 2012). An important way to understand how athletes
97 should interact with the micro-structure of practice and competitive performance
98 environments, from an ecological dynamics perspective, is to draw on Gibson's theory of
99 affordances. Gibson (1979) introduced the concept of affordances as *possibilities for action*
100 provided by interactions of an individual with the environment. For example, in rugby league

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football a ball offers itself to players for kicking when traveling on the ground or for intercepting with their hands when it is moving through the air; a slow opponent invites a quicker player to run past him/her; a hard pitch offers itself to be sidestepped upon. Recently, Rietveld and Kiverstein (2014) have emphasised the relational account of affordances and abilities available to performers in the variety of socio-cultural practices that are embedded in an ecological niche (e.g., a talent development system). This relational account suggests affordances are broader and more complex than just action possibilities provided by the environment; they are dependent on a form of life in a particular ecological niche. Crucially, a form of life can be "shaped and sculpted by the rich variety of social practices humans engage in" (Rietveld & Kiverstein, 2014, p. 326), which can be influential in how individuals develop a functional relationship with the surrounding environment to utilise relevant affordances (Reed, 1996). In the context of sport performance, an individual is considered skilled when s(he) responds to multiple relevant affordances (solicitations) simultaneously, during practice or in competition (Bruineberg & Rietveld, 2014). Increasing the strength of coupling to specific affordances in a landscape is the basis of skilled performance during athlete development (Withagen, de Poel, & Araújo, 2017). It is important therefore, for learning designers, managers, and coaches in player development pathways to understand the influence of socio-cultural-historical constraints on the developmental trajectories of athletes in a particular ecological niche.

Although environmental constraints can have a powerful influence on learning, developing, and performing in sport, research exploring the relationship between socio-cultural-historical constraints and athlete development is limited (see Araújo et al. (2010) for an exception). The team sport of rugby league football provides an interesting research context to study this relationship. The sport's roots emanate from the industrial north of England where playing regions were built on the key industries of the Victorian era (1837 to

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1901). Industrial workhouses were the backbone of these working class communities (Collins, 2006), where notions of masculinity, cooperation, knowing your place in the hierarchy, and rigid attention to routine were a strong feature of everyday work life. An emphasis on adopting these collective values in sport can provide a clear boundary around how players, strongly influenced by their socio-cultural-historical environment, achieve an identity in the sport.

Therefore, the aim of this study was to explore the form of life in British rugby league football player development contexts to: 1) understand the dominant social, cultural, and historical constraints within the sport; and 2), interpret how the dominant socio-cultural-historical constraints currently influence the design of practice tasks and the development of rugby league players in the UK.

Method

Research design

To explore the socio-cultural-historical constraints that are harnessed to create a form of life, Atkinson (2017, p. 51) has suggested that researchers must first "theorise the connection between actions of people in social settings and the social, economic, and political structures within which those actions occur". With Atkinson's challenge in mind, Smith and Sparkes (2016) have recommended the use of individual semi-structured interviews because they present opportunities for participants to share their experiences about the matter in question, namely the form of life in British rugby league football player development pathways. Here, coaches from across the sport were interviewed due to the important role they play in the development of athletes (Burgess & Naughton, 2010; Christensen & Henriksen, 2012), providing an important perspective to help explore the form of life in the sport.

Participants

Purposeful sampling was employed to recruit participants ($n =$ Twenty-four) for the study (Patton, 2002). All participants were current coaches holding United Kingdom Coaching Certificate (UKCC) rugby league coaching qualifications, had extensive experience of coaching rugby league and, in most cases, played rugby league to professional or amateur levels. To explore forms of life that represented all environments that British rugby league players typically develop in, coaches were interviewed from the professional game ($n = 8$), talent development pathways ($n = 9$), and the community game ($n = 7$). Professional coaches had experience of coaching internationally ($n = 3$), coaching in the British Super League ($n = 5$), and the British Championship ($n = 3$). All professional coaches were qualified under the UKCC qualifications, with 4 coaches achieving the Level-4 qualification (highest level) and 4 coaches achieving the UKCC Level-3 qualification. All talent development coaches were employed full time in their respective positions and had experience of managing and coaching in a Super League Academy, and 4 of the coaches had experience of coaching at international youth level. Eight of the talent development coaches had achieved the Level-4 qualification and 1 coach had achieved the UKCC Level-3 qualification. All the community game coaches held voluntary positions with a community rugby league club and had achieved the UKCC Level-2 qualification. Four of the coaches also had experience of coaching on a talent pathway in a part time voluntary capacity. Institutional ethical approval was granted by a university board with all participants providing informed consent prior to the commencement of the interviews.

Data collection

The semi-structured interview guide was informed by theory (Araújo et al., 2010; Davids & Baker, 2007), and the first author's knowledge of rugby league coaching and professional rugby academy environments. Interviews were conducted face to face on an individual basis with the coaches and lasted an average of forty-one minutes. During data

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collection, all interviews were audio recorded in their entirety and transcribed verbatim, with permission of the participants. Of specific interest were the conversations about the social, cultural, and historical contexts in which rugby league players develop (e.g., "Can you tell me about the culture of coaching and player development practices in rugby league?"/ Why is it like that?; Where do those methods come from?"), the design of practice tasks (e.g., "Can you tell me about the coaching methods you use?"; "What might a coaching session look like when adopting these methods?"). We were also interested in how these factors influence the development of rugby league players (e.g. "How does this coaching culture influence how players develop in rugby league?"). Probe questions were used to explore these areas further.

Data analysis

Thematic analysis was used to identify themes across the dataset. In carrying out the thematic analysis the research team did not adopt an 'either or approach' (i.e., inductive or deductive), rather, a more pragmatic line was followed that included inductive and deductive approaches (Braun, Clarke, & Weate, 2016; Robertson et al., 2013), where a two-staged thematic analysis was employed to analyse the collected data set. The first coding stage followed deductive analysis by using Bronfenbrenner's (1979) bioecological model to organise the dataset into four dimensions (i.e., microsystem, mesosystem, exosystem, & macrosystem). Once the data set were organised into the four areas and accepting that theory-free knowledge cannot be achieved (Guba & Lincoln, 2005), both inductive and deductive analysis was used. For example, during the analysis some experiences expressed by the participants provided very clear and appropriate meaning without the use of a theoretical framework to interpret the findings (inductive). Conversely, other experiences were interpreted from a theoretical position (deductive), due to the findings representing relevant meaning in regards to the performer-environment relationship. During the analysis an

independent critical friend was employed to engage in dialogue with the first author, providing opportunities for reflection and feedback on interpretations.

Results

Results from the interviews with the three coaching cohorts are presented together according to the final themes derived from the analysis, which are: 1, microsystem, 2, mesosystem, 3, exosystem, and 4, macrosystem (Figure 1). This mode of presentation was used to reflect the interconnected nature of the coaching environments and the influence on developing rugby league players.

INSERT FIGURE 1 HERE

Microsystem

The microsystem is the foundation level of Bronfenbrenner's model, and categorises the micro-structure of practice (patterns of activities and performance opportunities) experienced by the developing individual daily, weekly and monthly in their professional experience. Here, the microsystem categorises common approaches to practice task design in rugby league. This was important because it initiated the description of the variety of practice tasks that players experienced during practice.

Practice task design. The analysis revealed similar views on the type of attributes that players should possess to engage skilfully in the game of rugby league, for example, basic skills of catching, passing, tackling, and decision making skills. However the process of developing these skills revealed a range of views, beliefs, and approaches to designing and delivering practice tasks. Participants' responses indicated a continuum of practice task designs with more reported coach-led sessions which were highly dependent on coach instruction and feedback. Less reported were coach-facilitated sessions that placed the emphasis on the players to solve problems during practice. Here, a coach provides insights

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into a coach-facilitated practice task aimed at transferring skills from practice to competition, with physical, psychological, and emotional dimensions:

So like you can just go 6 v 6, this is an offloading game we will referee it, you must get two offloads in the set of 6. You work it out. If it is not a good offload you'll hand it over. How do you create the offload? How do you create the space for the offload? How do you get the support there? Leave that with you". And that is a skill game and then they can transfer that. Not going right this is 6 v 6 you have got to play on A, you have got to play on C, you have got to play out the back and that might create an offload. Go and work it out yourself. We haven't got enough of that (coaching approach). (Talent Development Coach 8 (TDC8))

Other accounts discussed coaching approaches that were more coach-led and drill-orientated, focusing on prescriptive and strict technique training. A coach elaborates:

They are very much you need this many repetitions of this way or we need to get our dummy half passing better. So all we do is we will hammer a static dummy half pass, not to a moving target or anything like that, or tackle technique for example. A tackle technique of what it is needed and that's prescribed and it needs to look like this and that's it. (Community Coach (CC6))

Further insights into coach-led and drill orientated approaches suggested that coaches used progressive teaching methods to support skill learning. This approach was categorised as progressing from high levels of instruction to teach the component parts of a skill, to more game like practice to put the skill under pressure. A coach exemplifies:

We have the very basic technique in terms of actually teaching them the actual skill first. So how do you tackle with your right shoulder, where does your right foot go? Where does your body weight transfer, where does your legs go, where does your hands sit, all that sort of stuff. So doing it at a very basic level is really important. Then

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doing that skill under pressure. Once they have mastered that we start putting that skill under pressure so I think for me skills under pressure is the biggest one moving forward for a person once he has learnt how to do it in a controlled environment then being able to do it and repeat it under a little bit of pressure so that might be in a drill what speeds up, it might be in a small sided game, it could be actually even in a game, but what I am trying to say is that you develop that skill as you go along but you have got to teach me first. (Professional Coach 7 (PC7))

Mesosystem

Bronfenbrenner (2005) defined the mesosystem as the relations between two or more microsystems that the developing individual spends time in. The value of studying the mesosystem is to help us understand how multiple settings may influence views of learning, practising and developing in sport, of practitioners and athletes. Here, we identified interacting microsystems as multiple practice settings experienced by players and coaches simultaneously, and the social influence exerted by parents.

Parents. Within the mesosystem of rugby league, talent development and community coaches identified parents as playing an influential role in the form of life. Talent development coaches reported parents establishing indirect influence on practice design. There were cases of coaches adapting practice sessions to appease parents' perceptions of 'professionalism' in the practice designs for their children through the replication and rehearsal of professional playing styles, known as "shapes" (highly structured sequential patterns of play). A talent development coach explains that working on skills to play the game as opposed to playing styles, although developmentally appropriate, was problematic due to the expectations set from previous practice experiences at community clubs and parents' perceptions and beliefs of professionalism in coaching behaviours:

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I'm going to do a little work on shapes just because that's what they expect. They've had it at community clubs; it's what the parents expect to see. It's really hard to sell this idea at times that you working on catch and pass is really, really important. They think well yeah we can do that anywhere else why aren't you doing that at xxxxxxxxxx (professional club). So that sometimes messes with philosophically where you'd like to get as well you know. (TDC4)

Multiple Practice Settings. The relationship between microsystems in the form of players transitioning between community clubs and talent development environments (mesosystem) presented challenges for talent development coaches. In some instances players would move between coaching environments that valued different pedagogical approaches to providing instructions and feedback, where coaches adopted either facilitative or prescriptive methods to support player learning. For example, players not being able to "interact with the coach" due to the normalised prescriptive approach in their community club presented challenges with autonomy during practice because they "needed to be told what to do" (TDC5). A coach explains challenges with players regularly transitioning between different coaching environments:

You would pull the kids in from clubs and their culture within their coaching environment there has been this questioning challenging (type of) development, these kids have had it. These other kids where there has been this authority and you will do as I tell you sort of mentality didn't say boo to a goose, would not answer a question and at points I had to go right you three shut up, you shut up, right what could we have done better there? (TDC5)

Exosystem

The exosystem explains the relationship between two or more settings that indirectly influence the experiences of individuals in the microsystem (i.e., settings that do not include

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the developing individual) (Gabbard & Kreb, 2012). Our analysis highlighted how coaches' experiences of informal learning and formal learning influenced views and attitudes towards learning, practising and developing in rugby league.

Informal learning. The analysis revealed that coaches valued informal learning experiences (i.e., watching other coaches and online social networks) during their early development phases as a coach. The primary mode of informal learning was reported as peer learning; this method of learning was the main source in constructing coaching and talent development knowledge. Interestingly, this method of learning decreased as coaches became more experienced, and they then assumed a mentorship role supporting less experienced coaches in their development. A coach provides insights into informal learning experiences during the formative years of his coaching career:

The first professional coach was xxxxx xxxxx who had come over from Australia. xxxxx xxxxx was like way, way ahead of his time. Ex-school teacher but an unbelievable Rugby League brain as well so he had the way of being able to educate and teach people properly for us to understand what we wanted but obviously he had a vast knowledge above and beyond what was anything in England at that time. So I was really fortunate, my two first real influences were the major ones was my dad obviously in that field (coach education) and then xxxxx xxxxx so from the very early age that is what I thought coaching was. (PC2)

Formal learning. Formal learning was reported as coach education and higher education. All participants had accessed United Kingdom Coaching Certificate (UKCC) rugby league qualifications during their development as a coach. Although the coaches were supportive of coach education, some were critical about these qualifications in developing appropriate methods to support athlete learning, a coach explains:

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The current coach education process that they (coaches) go through doesn't support any other approach (than a traditional linear approach). I don't think the coach education programme what they go through is fit for purpose and reinforces a lot of traditional methods. One hundred per cent of pass a ball you need to do X, Y and Z and if they don't do that it's wrong. There's no real promotion of games based activity. There's no promotion of different coaching styles it is a kind of one box suits everybody badge.

(CC3)

Coaches who had accessed higher education through taking undergraduate and postgraduate degree courses (whilst coaching), considered these learning experiences beneficial in constructing their epistemological beliefs about effective talent development systems and practice designs. Here the combination of coaching experience, peer interaction (interaction with coaches from other sports during higher education), and the intellectual content of the degree courses served as powerful learning experiences, stimulating them to challenge the status quo within the environments the coaches operated in. However, the reality of transferring newly-learned pedagogical knowledge into practice proved challenging, described here by a coach:

I'd say typically anyone who has got that kind of philosophy and done the Level 4 would struggle to put that into practice in the typical club environment because it goes against what's the norm and people don't recognise or are not willing to engage or buy in or look into a different approach. So you are kind of between a rock and a hard place, having some knowledge around that and wanting to put that into practice but you are not being able to is where I could see myself. (PC5)

Macrosystem

The macrosystem is the outermost layer of Bronfenbrenner's bio-ecological model (Tudge et al., 2016). Although other systems within the model focus on the proximal

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processes between people and context, the macrosystem focuses on the wider culture and its influence on everyday beliefs, values, attitudes, actions and practices (Rosa & Tudge, 2013). The analysis of the macrosystem revealed two dominant ideologies that exist in UK rugby league coaching and player development, which can be understood through the wider socio-cultural-historical backdrop of the sport in that country (Hassanin, Light, & Macfarlane, 2018). These culturally-constructed beliefs were identified as *masculinity* and *replication*. Coaches described how these dominant ideologies impacted upon the coaching and player development practices and the individuals who played the sport at all levels.

Masculinity. The analysis suggested that coaches believed masculinity was synonymous with rugby league football. Coaches raised concerns over the interrelated nature of masculinity and physicality, suggesting that a cultural emphasis on players' physical attributes was reflected in the selection of junior and adolescent players onto player development pathways (i.e., the overrepresentation of physically developed players). The reproduction and entrenchment of masculine socio-cultural values could also mean that players who do not fit the system may fail to access further player development opportunities and not fulfil their potential as an athlete. A coach elaborates on this point:

When we had a talent day a few weeks ago 42 players come. 29 of them were back rowers or middles and every single one was massive. So basically our clubs are picking the biggest kids that are ready to play scholarship rugby now, then they are picking the biggest kids that are ready to play Academy. It is all based around gym, being physical, wrestle, tackle and not many have the guts and foresight to say what I am going to take Martyn as a 15 year old to 19 year old. I want to work on skill development, that's it.

(TDC1)

In addition to the influences of a masculine culture on the selection of players, coaches also discussed how masculine ideals are reflected and reinforced through practice

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environments, where concerns were raised over the type of players a "brutal" environment would produce. A coach explains:

Now I know there are schools of thought out there of make it as brutal as you can. They (players) will end up buying into it by default and then they will have to do it. If they don't do it you will get somebody else in, but I am not sure whether that is going to actually develop the sort of decision making players that are required to kick on and play at a really high level consistently. (CC6)

Replication. Replication characterises the imitative culture within British rugby league and its reproductive playing styles. Coaches believed that one particular reproductive playing style was common across all levels of the game and expressed concerns about the over systematisation of players' behaviours to adopt this movement template, regardless of age or stage of development or individual capacities. A coach discusses the danger in the entrenchment of a one-size-fits-all approach:

There's a lot of different contributing factors to why we don't produce them (highly skilled players) and again you know the way we train them, we don't coach them. We don't allow people to develop expressive skill, we don't allow people to find the solution to situations and decision make enough, we put in structure from an early age. You're a winger, you're halfback, you're a centre, you're a back row, that's what you're doing, this is where you play to, that's a point you get to and this is the line you run. (CC6)

The participants also expressed their concerns about the impact this approach had on developing players' autonomy and independence. A coach offers an explanation in regards to the consequences of a systematised playing style:

We haven't trained them in the ability to solve their own problems, their own challenges, their own issues. There is no self-analysis. Somebody else is going to do

your analysis for you, aren't they? I think that no independent thinking, all regimented, all controlled. (PC4)

While an interacting network of complex subsystems in a player development pathway is to be expected. Here, guided by the framework of Bronfenbrenner's (1979) bioecological model, the aims of this study was to explore the form of life in British rugby league football player development contexts to: 1) understand the dominant social, cultural, and historical constraints within the sport; and 2), interpret how the dominant socio-cultural-historical constraints influence the design of practice tasks and the development of rugby league players in the UK.

As with any cultural phenomenon, sport coaching and player development practices are habituated by wider political and cultural contexts (Day, Carter, and Carpenter, 2013). Industrialisation during the nineteenth century was considered to influence social structures and trends, and rugby league culture was considered "resilient" and "self-replicating" (Collins, 2006, p. 143). Therefore, it is perfectly logical that developments in rugby league football were a cultural response to the synergistic relationship and proximal processes between people, context, and attitudes formed by the historically-situated connection between the workplace practices of the Victorian industrial industries and rugby league communities. These communities were considered to be "shaped and defined by the world of industrial labour, which was intensely physical, often aggressively oppositional to management and, above all, almost absolutely masculine" (Collins, 2006, p. 149). In addition to these masculine working conditions, repetitious daily tasks in industrial workhouses were largely influenced by Frederick Winslow Taylor's 'task system of management' (Taylor, 2008), which aimed to remove manufacturing uncertainty by applying hierarchal systems of control

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through rigid role specification and task repetition (Taylor, 1911). These ways of working in the industrial workhouses are synonymous with traditional coaching practices, where "every workman" was given "600 instructions a day" to ensure that all assigned tasks were carried out (Taylor, 2008, p. 215).

Although *replication* and *masculinity* appear to act as powerful socio-cultural-historical constraints that dominate and organise player development contexts in rugby league football, the analysis highlighted how the complex and multiple forms of life collide, compete and often reroute one another. Consistent with research into holistic ecological approaches to developing athletes in sailing (Henriksen, Stambulova, & Roessler, 2010), these interpretations highlight how, not one, but all interacting subsystems and the proximal processes that occur within these systems (which include, but are not limited to, environments that the developing athlete are active in) can influence player development (e.g., parents, coach education, higher education, multiple practice settings, and wider socio-cultural-historical constraints (Krebs, 2009). Therefore, managers and coaches in player development pathways should look beyond the immediate environment that athletes develop in (i.e., the microsystem of practice), and identify constraints across interacting systems that impinge on the potential and characteristic features of human performance in a specific society and community (Phillips, Davids, Renshaw, & Portus, 2010).

Influences and challenges to practice task design

Consistent with previous research findings, informal learning was reported as the preferred method of coach learning (Stoszkowski & Collins, 2016). Participant reports indicated how this method of learning served as a conduit to indoctrinate and perpetuate the dominant coaching method, where parallels between forms of life in industrial Taylorist practices and traditional coaching methods (i.e. high levels of instruction and direction, rigid practice structure and continuously repetitive practice) (Ford, Yates, & Williams, 2010) are

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apparent. In this informal model of learning, the hierarchy of coaching status and personal characteristics of the 'owners of knowledge' are influential in shaping coaches beliefs and attitudes. The power of these proximal processes between people is influenced by personal resources (i.e., experience, status, and ability) and the demand characteristics that invite or discourage the action of proximal processes (Bronfenbrenner & Morris, 2006).

Although informal learning activities within sport coaching are accepted as a legitimate method of coach development (Jones, Armour, & Potrac, 2004), this method of learning can be problematic because it is often grounded in a naïve epistemology and is, therefore, open to the influence of anti-intellectual forms of life that have deep rooted values, beliefs, traditions, and customs of coach learning (Grecic & Collins, 2013; Abraham, Muir, & Morgan, 2010). Understanding the mechanisms through which these beliefs of learning and the learning process are acquired is important to identify, challenge, or embrace the forms of life that underpin practice task design for better or for worse (Light & Evans, 2013).

Consistent with research into junior rugby league coaches' perceptions of formal learning, participants criticised the content and suitability of the level 1 and 2 coach education curriculum (Seddon & Stoszkowski, 2017). More specifically, these criticisms were aimed at a *one size fits all* approach to teaching basic skills through isolating techniques and drill based practice. A challenge to the rugby league coach education curriculum was the professional and talent development coaches' experiences of higher education (exosystem). A useful example relates to the experiences of Jim McKay (McKay & O'Connor, 2018), where complex and sophisticated ecological views of the learner and the learning process were developed by critical thinking and reflecting on years of practical experience. Here, the combination of coaching experience and the intellectual content of the degree courses served as powerful learning experiences (Gallimore & Trudel, 2009). Interestingly, coaches' accounts of higher education revealed a sense of relief to *break out* of the closed circle of

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rugby league coaching and development (Piggot, 2012), where a fixed body of socio-culturally constructed knowledge was maintained, but rarely challenged, by its occupants. This culture of learning through reproduction, which is also evident in other sports (e.g., Cushion & Jones, 2006), left some coaches feeling tentative about challenging the status quo within the environments they operated in. These concerns were attributed to a fear that the socio-culturally constructed form of life that they are embedded within may resist the introduction of a different methodological framework for developing athletes (Jones, Potrac, Cushion, & Ronglan, 2011).

Development of rugby league players

Consistent with the findings of Coupland (2014), coaches believed a culture of masculinity and valuing physical attributes was apparent in rugby league football, taking performance expectations along a path of over-valuing and over-emphasizing physical size, power, and strength, rather than emphasizing skill, innovation, and dexterity. This emphasis is exemplified by participation and attainment inequalities being influenced by attitudes towards selection and recruitment to scholarships, academies, and professional squads, based on physical and maturational attributes (Till et al., 2010). This bias towards physical attributes demonstrates the reciprocal nature of proximal processes (Bronfenbrenner & Morris, 2006), where influences come not only from the gatekeepers of performance programmes and teams (i.e., coaches, talent scouts and performance managers), but also the developing individuals who value and maintain the strong masculine cultural identity (Pringle, 2008).

Being embedded in a form of life that values physical and maturational characteristics can also impact upon the weekly development practices (micro-structure of practice) that players experience. When aiming to produce masculine bodies, controlling practices consistent with Taylorism, promote de-contextualised coaching methods designed to improve

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human movement and sport performance (Coupland, 2014). To understand how these methods influence the development of players we draw upon Gibson's theory of affordances.

The hierarchical and suppressive view of the workforce applied to sport performance could be considered problematic because in both contexts the practices emphasise the reproduction of actions rather than the *continuous interactions* of workers/athletes with affordances of their work place. The cross-fertilisation of management methods in industry, and coaching in professional sport, may have historically resulted in athletes being prevented from developing autonomy, independence, and exploring the affordance landscape during practice and performance to solve problems and act on emergent decision making opportunities (Renshaw, Davids, & Savelsbergh, 2010). The consequences of over-systematising human behaviour have been well documented (Smith & Davids, 1992; E. Gibson, 1994), where a view is held that it can be analysed and understood in mechanistic terms (Withagen et al., 2017). The problem with this view in a sport performance context is that competition is highly unpredictable and dynamic, and therefore requires athletes to develop adaptable behaviours to negotiate dynamic competitive performance environments (Hristovski, 2017). A form of life that adopts mechanistic frameworks of human behaviour underpins the view that acting in the world is reliant on external agency (i.e., high levels of instruction and feedback (Ford, Yates, & Williams, 2010). Withagen et al. (2017) have criticised this view, and suggested that the concept of agency ("the self in control" (E. Gibson, 1994, p. 71)) is central to the invitational nature of affordances. The implication is that not all affordances solicit behaviour, rather solicitations are dependent on the intentions, behaviour settings, and action capabilities of the individual to utilise affordances (Kaufer & Chemero, 2015; Withagen et al., 2012).

In contrast, a form of life predicated on player exposure to 'affordances as invitations' supports the use of practice task designs to provide opportunities for learners to strengthen

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their couplings with available affordances. The lived spaces (coaching environments) that emerge out of, and are maintained by, the collective behaviours of its occupants (Heft, 2001) (i.e., players' expectations of practice and coaches beliefs), can strongly influence the available affordances that players utilise and are responsive to during practice and competition (Kaufer & Chemero, 2015). Utilising affordances is an individual's primary mode of interacting with the environment (Dreyfus & Kelly, 2007), although suppressive and coach-imposed direction may present a narrow field of affordances (i.e., narrowing an athlete's intentions on a field of action opportunities) that limits a player's relationship with performance under competitive constraints. Sometimes this may be needed in a microsystem, but this pedagogical approach is traditionally considered a dominant, 'default' mode of coaching in sports like rugby league (Chow et al., in press).

Limitations

These results do not mean that we are able to generalise across the rugby league population because interviews alone may lack the "intimate details of human life" (O' Reilly, 2009, p.100). The results can be used, however, as a start point for other research that examines forms of life in sport systems and the socio-cultural-historical constraints that both create and sustain player development practices (Jones, Armour, & Potrac, 2003). We recommend that future research should employ ethnographic methodologies to develop a broader and deeper understanding of the relationship between a form of life and affordances. Situating future studies in the ecology of a player development pathway, may provide insights into how social, cultural and historical influences can be challenged to provide appropriate athlete development environments.

Conclusion

This study highlighted how interacting subsystems in player development pathways collide to create many forms of life in sport, which results in conflicting beliefs and attitudes

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towards coaching and player development. This situation can favour traditions of practice over a theoretical framework of learning and developing, influencing the relationship between an athlete and available affordances in practice and competition. The relationship between a form of life and affordances is a valuable conceptualisation of human behaviour, providing a powerful theoretical framework to understand the influence of socio-cultural-historical constraints on an athlete's interaction with the ecology of competitive sport. These theoretical insights have major implications for coaches and performance managers when designing programmes that aim to enhance performance and develop high performing athletes, where athlete potential may not be fulfilled. Coaches, players, and performance managers should also consider the form of life when transitioning between programmes or moving between clubs or teams (e.g., national to international levels), where the form of life might not fit their views on learning, development or ways of performing in competition. A major issue is the dissonance that may exist at the mesosystem levels where different microsystems (e.g. naïve beliefs or expectations about pedagogical approaches held by parents and sports administrators) may impinge on the capacity of coaches to use evidence- or theory-based pedagogical methods in practice task designs.

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