EXPLORING THE PRINCIPLES AND MECHANISMS OF COHERENT COACHING ON TALENT PATHWAYS

by

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I declare that while registered as a candidate for the research degree, I have not been a registered candidate or enrolled student for another award of the University or other academic or professional institution.

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ABSTRACT

Although our understanding of psychological and social factors in talent development continues to expand, knowledge of the broader system that underpins entire talent pathways is relatively limited. Indeed, little work has moved beyond the recognition that coherence in this system is important to consider *how* this may be achieved; particularly in relation to coherent coaching. Accordingly, this thesis sought to explore levels of coherence or incoherence, through an entire set of coaches in the British Cycling (BC) talent pathway to understand how they can best deliver desired outputs (e.g., adaptable, independent and resilient senior performers). Therefore, to advance practice in my own domain, this thesis firstly presents several key, theoretically-based principles and mechanisms of coherent coaching in the context of British Cycling's and other sport organisations' talent pathways. Secondly, after defining and contextualising coherence in whole talent pathways, including barriers to attainment, the thesis discusses how an understanding of coach epistemology can provide a basis for integrating collective coach coherence and, consequently, a coherent performer experience. From this foundation, the principles and mechanisms presented were used to explore the coherence of the BC talent pathway, both vertically (i.e., coherence up and down age groups), and horizontally (i.e., across three Olympic disciplines: Road, Track, and MTB) as measured through coach perceptions. More specifically, the first study reviewed the available literature and determined a number of key principles and mechanisms of coherent pathways that informed study two and three. Both these studies explored coherence and incoherence through a qualitative approach, utilising a self-report questionnaire that enabled the studies to reach a large pool of cycling coaches. Results from these studies found that the coaches had a level of coherence but also unexpected incoherence in a number of areas. Findings suggest the coaches'

epistemological positions are influencing their delivery and, in turn, are heavily influenced by the NGB and their social milieu.

Given that the coaches' perceptions suggested a level of coherence, and indeed incoherence in the pathway, the final study of this thesis explored key stakeholder perceptions of the coaching pathway and potential models for coach education that could further align the talent pathway in BC. More specifically, this study used a qualitative approach through semi-structured interviews to generate a useful breadth and depth of opinions from active stakeholders. This study revealed that a level of coherence was present across key stakeholders that suggests a remodelling of the coach education provision is required to further align the talent pathway in BC.

Overall this work has contributed to a clearer understanding of what is required to align the talent pathway in BC in regard to coherent coaching; indeed, the findings have prompted a review and re-design of the whole coaching pathway; a summary of which is presented in the closing stages of this thesis. Finally, this work has also contributed to research on talent development in that it has explored an area that has had little, if any attention and, furthermore, it offers principles, mechanisms and methods by which other sports can investigate and optimise the levels of coherence on their own pathway.

Keywords: *talent development, coherence, epistemology, coach development, rider-development.*

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ACKNOWLEDGEMENTS

Throughout this thesis, life has thrown up many challenges, sickness, two restructures at work, currently at risk of losing my current job, sickness of a long-time friend, and then ultimately her death at the age of 33 yrs. Arvy was a beautiful person and was driven to complete her own PhD, unfortunately death took its toll before she completed her second year. Arvy was the person who suggested I undertake this Professional Doctorate and she was there to support and encourage me with "reading and discussion breakfasts" at McDonalds at 6:30am before work until her death two years ago!

The period of study has traversed seven years with a year out due to the above mental and physical distractions. However, 6 years' part-time study whilst continuing at work, trying to balance home life and trying to ride my bike for pleasure at weekends is nearing a new chapter. This thesis would not have been possible without the huge support from my wife Angela, my daughter Rebecca and latterly our new dog Belle, who is a Cavapoo. Indeed, without the regular cups of coffee and dog walks, I am not sure how far I would have got. Angela is a very special wife who has reminded me frequently when things were tough that "you're nearly there". This support from Angela and Becci has inspired me to complete this thesis whilst neglecting the DIY and my fitness!

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LIST OF ABBREVIATIONS

AFF	Affiliate
APEL	Accredited Prior Experiential Leaning
APL	Accredited Prior Learning
BC	British Cycling
BCF	British Cycling Federation
CGS	Centimetre Grams Seconds
CoP	Community of Practice
CPD	Continuous Professional Development
DSU	Discipline Specific Unit
EC	Epistemological Chain
EIS	English Institute of Sport
GBCT	Great Britain Cycling Team
IND	Independent
KPI	Key Performance Indicator
LTRD	Long Term Rider Development
LTRDM	Long Term Rider Development Model
NCC	National Cycling Centre
NGB	National Governing Body
RFL	Rugby Football League
RSR	Regional School of Racing
SE	Sport England
TDE	Talent Development Environment
UCI	Union Cycliste Internationale
UKCC	United Kingdom Coaching Certificate
UK	United Kingdom

CHAPTER 1

INTRODUCTION

1.1. Overview

Understanding and improving talent development remains a critical area for a large and diverse range of sporting stakeholders that are seeking to optimize the efficiency of the development pathway (e.g., Henriksen, Stambulova, & Roessler, 2011; MacNamara & Collins, 2015; Sam, 2012; Sotiriadou, Brouwers, De Bosscher, & Cuskelly, 2017; Sotiriadou & Shilbury, 2009; De Bosscher, De Knop,Van Bottenburg, & Shibli, 2006;). As the importance of talent development continues to be stressed, an expanding network of factors has been explored (e.g., Collins, MacNamara, & McCarthy, 2016; Cushion,Ford &Williams, 2012; Larsen, Alfermann, Henriksen, & Christensen, 2013; Savage, Collins, & Cruickshank, 2017). The unit of analysis in most work to date has, logically, been the individual performer; in doing so, improving our understanding of a range of relevant attributes, skills and coaching needs (e.g., Collins & MacNamara, 2012; Durand-Bush & Salmela, 2001; MacNamara, Button, & Collins, 2010a, 2010b). Conversely, however, our understanding of the broader system that underpins most talent pathways is still limited. Indeed, while *coherence* is a characteristic of effective talent pathways (Martindale, Collins, & Abraham, 2007), represented by inputs that are structured, complementary, and framed against long-term agendas, our knowledge on *how* this may be achieved is underdeveloped, particularly with regard to the coaching goals, methods and styles that performers are progressively exposed to. Furthermore, little work has explored *how* each of these factors can be optimised; including that on coherent support networks and messages from first contact to senior performance. For system builders such as myself, the lack of an evidence base regarding the identified factors and the co-ordination of deliverers (i.e., coaches) on the

talent pathways within an organisation, has been a significant challenge in creating resources or programmes for the development of coaches on the talent pathways.

Consequently, to further understand the factors and how they impact, (positively or negatively) on the pathway, I have focussed on attempting to align the talent pathways of the two sports (British Cycling and Rugby League) that I have worked with over the duration of my studies (2012-2019). Indeed, my prior experience over the last 30 years or more (as an engineer, player, coach, coach educator, coach developer, coaching manager, head of coach development and head of education) has led me to still question the lack of evidence on how the factors can be optimised from a theoretical and applied point of view. Therefore, to advance my professional practice for my current domain and contribute to the body of evidence around talent development, this thesis "plugs" a number of the gaps in the talent development and coaching literature. Accordingly, this thesis critically explores the principles and mechanisms of coherent coaching in the context of sport organisations' talent pathways.

To further set the context for this work and my position as researcher within this study, the following information provides additional details on my background and current role, the guiding research philosophy that drove this thesis, and the specific objectives and structure of the thesis (Patton, 2002).

1.2. My Background and Current Role

I was born in the sixties, going to primary school through the ages of five to 11 years was a major challenge for myself, and my parents, with trouble following me were ever I went. My school teachers could not keep me occupied or stimulated by the lessons they were delivering, with the exception of physical education. This lack of engagement followed into my secondary education, with teachers (in my mind) delivering boring lessons(lectures) where they told you what to do and when to do it without explanation (i.e., why) or relevance. Rote learning did not suit my inquisitive

and ever active mind, which led me to dismantling and challenging everything and anything to see if it could be done differently, how it worked, if it would float, would it break and after all that, could I fix it or put it back together (or where to hide it)!

After leaving secondary education at the age of 16, the next stage for me was straight into a job to earn some money. My first role was as an engineering apprentice, I did not have to take this job, I was offered a place in sixth form, and however, I just did not want to continue in school after my experiences. The apprentice role and subsequent method of learning really suited me. I had on the job training, with the support of a "Mentor" who assisted me in the practical consolidation and contextualisation of the five years of theoretical knowledge at college as a day release student. At twenty-one years of age, I eventually achieved a City and Guilds Advanced Level 4 Certificate after five great years of leaning and some money in my pocket. On reflection, those times were the best in terms of learning, the master engineer "Mentor" supported me and questioned me when I was practicing my craft allowing me to explore and make mistakes, which in hindsight supported my learning journey.

This period coincided with taking up Rugby League on a more serious level and professional clubs were constantly knocking on the door for me to sign 'forms' at the age of nineteen. However, signing professional did not come about until my 28th birthday with all previous clubs stating I need some more coaching to make it at that level! I thought that is what they (coaches) did, coach! Clearly, I was mistaken. This message was the same as my England schoolboy coach had given me when I was 16 years old. So it became apparent, coaches who I came into contact with up to the age of 28 years obviously were not improving me and therefore arguably not helping me develop or improve my performance, in other words, "not coaching". Since that point, coaching and coach development has been my life's work and underpins my philosophy of supporting athletes to achieve their goals whilst allowing them to experience a

learning environment that allows freedom of expression, self-development and a safe environment in which to make mistakes that can support learning.

The next step in my journey was to complete my coaching "badges" from level one to four at the age of twenty-nine in a matter of six years, whilst undertaking a player-coach role and training to become a "coach educator"/developer. I then progressed to the position of Senior Coach Educator working for the Rugby Football League (RFL). This position was offered based on my experience in the sport and with no formal education in teaching adult volunteers/learners. Consequently, I signed on for a teacher training qualification in adult learning to understand more about how and why adults engage in further learning and various approaches to deliver learning.

My initial training and experience set the scene for my future practice in coaching and coach development. I have now amassed over thirty years of learning and practice where I have dedicated my time to delivering and engaging in numerous coaching and coach development opportunities. My experience ranges from working with children, 16 and under, Youths (17 – 19-years-old) and adult participant's, all in a variety of pathway environments, (e.g., International, National County, Academy, Scholarship and Club). These coaching opportunities have taken place in many different countries where I have also prepared players and squads to represent the following countries; Great Britain, Georgia, England, Russia, Holland, and Serbia.

However, having worked extensively from 1989 - 2003 as a full-time engineer and part-time coach, coach developer and coach tutor in National Governing Bodies (NGB) pathway environments, it always felt that I (and others) had to deliver to the curriculum (and not the needs of the athlete or context). We were expected to develop "model" coaches that conformed to the expectations of the system controller (e.g., performance director or pathway manager). This personal epistemological challenge led me to reflect on how I thought I could make the biggest impact to enable athletes to

reach their goals. The resultant step was to “move” into “Governance” where I engaged in part-time senior executive roles (e.g., elected member of the UK Coaching Advisory Group, Chair and Board Member, Performance Director, Director of Coaching, and Director of Player Development) to try to influence the implementation of a successful Talent Development Environment(TDE) in the NGB from the “top”.

Ultimately, in early 2003, I had to concede that trying to influence people from the top was not working due to the lack of understanding and engagement in what I was trying to do (develop a coherent pathway). Therefore, I decided that I needed to free myself from the monotony of working as a full-time engineer to transition into working fulltime in coach education and development. It became clear after a period of reflection, that I was always hankering for a job working with people (coaches and athletes) in sport full-time, to support their development, and to build a system combining my engineering knowledge (e.g., systems, processes) and prior experience of the coaching and coach development field.

The “dream” full-time opportunity arose in 2004, when I was appointed as Coaching Manger for the Rugby Football League (RFL) to design the sports “new” coaching pathway and subsequent coach education programme. The programme was to be based on the new United Kingdom Coaching Certificate (UKCC) that was driven by the Department of Culture, Sport and Media through the Coaching Task Force Report (2002), in attempt to standardise coaching cross all NGB in sport. Now I had the opportunity to influence the what (content) and how of learning (pedagogy). In 2007, after 3 years of developing qualifications from Level 1 - 4 as per the UKCC guidance, I was promoted to Head of Coach Development to focus of the implementation of the coaching pathway. I held this position for 6 years with some success, albeit, my quest of aligning the pathway was incomplete due to internal politics, lack of funding and a lack of understanding of what factors contribute to an effective talent pathway.

In 2013, and a year into the Professional Doctorate I was "head hunted" for a similar role to my job at the RFL. If the truth be known the RFL were cutting back on funding for coach development and my job was at risk, therefore, the fantastic opportunity to work at BC as a Coaching and Education Manager was too good to be true. I do not believe in chance or luck, however, my quest for developing coaches and aligning talent pathways and subsequent coaching interventions continued. Given the success of BC over a number of Olympiads, I firmly believed the coach and rider pathway would be truly aligned. It was not. However, the opportunity to study the pathway within my work and Professional Doctorate was a fantastic opportunity to determine the balance of coherence that produces riders' year on year to the top level. However, my first job was to understand the differences in cycling opposed to Rugby League!

My current role is Head of Education for BC, which I was promoted to in 2017 during a re-structure. The role covers all workforce roles that require training, development and education across the entire volunteer and professional workforce (e.g. Coaches, Officials, Road and MTB Leaders and Cycle Training Instructors).

1.3. The Context of Organised Cycling in Britain

Cyclin**g** could be perceived as an unsophisticated physical activity, that can be engaged in independently from "cradle to grave" requiring little interaction with the sporting system (NGB, Club, Coach, and Competition) and is could be considered a life skill comparable to swimming. As such, 44% of the UK population own or have owned a cycle, with 22.5 million taking part in cycling activity on a regular basis. This activity predominately falls into three areas, (e.g., utility, recreation and sport) some of which are governed by BC as the recognised National Governing Body (NGB).

The story behind British Cycling Federation (BCF) formation in 1959, (The Story, n.d.), suggests BCF was born out of the politics in the sport in Britain and the

insistence of the world governing body, the “Union Cycliste Internationale” (UCI) who were founded in 1900. At the time of the BCF formation, there were two bodies involved in running the sport. They were the first official NGB, the National Cyclists' Union (formed in 1883) and the British League of Racing Cyclists. These bodies were often at loggerheads, with “underground” racing taking place due to the ban on racing in the UK on open roads (1890 – 1950’s) and a potential ban in the countryside. Cycling (utility) and racing in the UK was a concern for many, especially the “upper” wealthy ruling classes who were concerned about their countryside being invaded by the “working” classes. In contrast, cycling on the continent was thriving; therefore, the UCI insisted on the formation of one NGB, now known as the BCF. Further infighting was rife within the BCF in the mid-nineties until the Sports Councils stepped in to the resolve issues.

Cycling through the years in the UK has traditionally been run by likeminded individuals who may (or may not) form cycling clubs or organisations. The activity generally centres around schools, public house car parks and other suitable venues or facilities throughout the country. The cyclists in the ‘70s, ‘80s and ‘90s who wished to race had to find sponsors and “trainers” (later to be known as coaches) who could help them prepare for races. One coach who worked with the national team riders who were still based at their own homes, was Peter Keen, a professional coach with a sports science background. He became the part-time national track coach in 1989 and worked with Chris Boardman in the early ‘90s, but in his own words, stated; “Chris’s success was a one off, there was no system, so there was no legacy” (The Story, n.d.).

To link the above information and to provide further context, I enlisted the support from a previous National Coach, Marshall Thomas, who currently works for me as a Coach Developer.

He gave permission for the conversation to be recorded, and included in the context section and his name to be included. The following are Marshall's reflections.

The late '80s and early '90s saw a number of developments that "kick started" performance cycling in the UK. These developments were initiated in 1994 and centred on the new National Cycling Centre (NCC) that was built for the failed Manchester Olympic Bid. However, the venue was the first indoor cycling track and was utilised in the Commonwealth Games in 2002. The venue was built in partnership with Sport England (SE), Manchester City Council and BC.

Further exchequer funding was granted to BC in 1995, which supported the appointment of the first fulltime National Coach called Doug Dailey and saw the BCF move its operations into the NCC. The total staffing structure at that time was 13 office staff and 1 performance coach. An additional National coach was appointed in 1995(Marshall) who had a specific focus of track coaching with riders who were considered elite and to focus on riding smarter and training "deeper" than any squad had before, (Slater, 2008). Marshall worked with Peter Keen with male and female riders that were considered enthusiastic amateurs at that time with a budget from SE for the "performance programme", suggested to be £67,000. The team comprised of volunteer mechanics, masseurs and kit personnel who had to ensure the riders returned their racing kit after the event! The riders were based at home with regular journeys to the NCC for training with the squad. The squad "membership" criteria was developed by Peter Keen and was based on his work as a part-time coach and the data he collected. From this point, the riders had to meet the minimum standards set or be relegated from the squad if they could not reach them or indeed show the potential to demonstrate a 1% improvement every year for eight years. This number of years training was based on Peter's data at that time and his understanding of what it took to race at World and Olympic level.

Marshall then moved to coach youth and juniors that were selected from the Talent Identification programme in 2003. This was the initial start of the rider pathway.

The watershed moment(s) for BC saw the appointment of Peter Keen as BCF Chief Executive in 1996 and the appointment of Peter as BCF's first Performance Director in 1997. This position was part of the government's investment approach to achieve success on the elite stage and increase participation numbers in the United Kingdom, Green (2007). BC received an interim investment of £900,000, which commenced in May 1997 and was aligned to the UK Sport World Class Performance Programme for the Olympic disciplines (Road, Track and MTB) within cycling at that time. With this investment, Peter Keen set about writing an eight-year performance plan that would include the implementation of a radical programme of coaching, coach education and support for the initial one hundred riders and coaches on the pathway, Slater (2008). The plan which was heavily focussed on the Track disciplines, (where the majority of medals were), was signed off with an investment of £2.5 million for the first year. A significant part of the plan was the successful introduction of the Talent Team programme in 2003 that aimed to identify talented riders in schools to provide a "pipeline" for the sport. Further pathway additions saw the Olympic Academy squad introduced with Rod Ellingworth leading the programme. These riders trained overseas and in the UK.

Peter Keen's reign lasted until 2003, when the BCF appointed David Brailsford as Director of the World Class Performance Programme, who then subsequently left the role in 2014 after unparalleled success in Beijing and London, (Table 1.1). The lottery funding and BC strategy clearly created a two-tier system, with funding for the rider pathway, go-ride clubs and coach development across the UK, with limited funding for affiliated or non-affiliated clubs due to the focus on Olympic disciplines.

Table. 1.1. British Cycling success and UK Sport funding over Seven Olympics. Source UK Sport.

Date	Place	Olympic Games			UK Sport Funding	Para-Olympic Games			UK Sport Funding
		Gold	Sliver	Bronze		Gold	Sliver	Bronze	
1992	Barcelona	1	0	0	n/a	0	0	0	n/a
1996	Atlanta	0	0	2	n/a	0	0	0	n/a
2000	Sydney	1	1	2	£5,400,000	0	2	0	n/a
2004	Athens	2	1	1	£8,600,000	3	3	2	£516,000
2008	Beijing	8	4	2	£22,151,000	17	3	0	£1,761,400
2012	London	8	2	2	£26,032,000	8	9	5	£4,198,000
2016	Rio	6	4	2	£30,267,816	8	2	2	£6,833,000

What is evident in the sport of cycling is the difference in the sport's six disciplines, of which four are currently recognised as Olympic disciplines (e.g., Road, Track, MTB and BMX), of which, all attract UK Sport Funding. However, the remaining two disciplines of Cycle Speedway and Cyclo-Cross are supported by club and race subscriptions distributed by the NGB. This further supports the two-tier system within the sport cycling and amplifies the sub-cultures that exist within the main culture of the sport (cf. Schouten & McAlexander, 1995).

1.4. The World Class Performance Programme and Talent Pathway in British Cycling: An Overview of Current Systems and Processes

The BC Talent pathway follows a NGB pyramid metaphor, (De Bosscher, Sotiriadou, & Van Bottenburg, 2013; Eady,1993; Houlihan, 2000; Hylton, Bramham, Jackson, & Nesti, 2013; Rowe, Shilbury, Ferkins, & Hinckson, 2016), as shown in Figure 1.1, which illustrates a wide base of participants that leads to the elite.

The World Class Performance Programme is predominately based in the National Cycling Centre in Manchester. Seventy fulltime staff support the Podium riders, of which there are one hundred and twenty seven. These staff are predominately based in Manchester and includes; Performance Director, Programme Director, Head of Performance Support, Head of Medical Services, Head of Para Cycling, Pathway Manager, coaches at different stages, and sport science support provided by the English

Institute of Sport (EIS), but led by a Great Britain Cycling Team (GBCT). The majority of the riders enter the podium squad from the fulltime Senior Academy squad that is also based in Manchester, and supported by the GBCT fulltime staffing structure. These riders also have a base in Italy as part of their development programme.

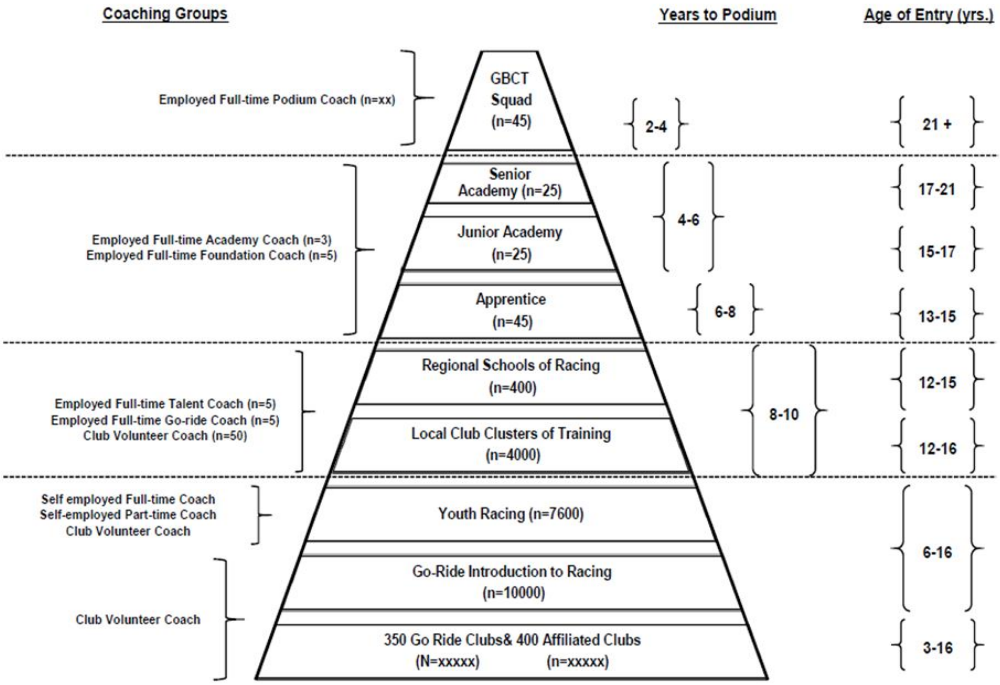

Figure 1.1. A Model of the British Cycling Talent Pathway.

Further supporting detail can be seen in Appendix G and Appendix H that accompanies Figure 1.1 and which outlines the goals of each pathway environment (stage/level); the competition level available; how the rider enters the stage; and, the type of coaching delivery at each stage.

The base of the pathway and the first stage is the Go-Ride club structure. The clubs are recognised by Sport England (SE) and BC as the first stage on the BC rider pathway. Subsequently they have a dedicated localised professional coach and officer support, working with community volunteers. These clubs also aim to achieve the SE quality kite mark (Club Mark) to ensure a safe and quality environment for riders to practice. To date (March 2019), 85% of the medallists over the last three Olympic

cycles have come from the Go-Ride clubs, with the remainder coming from Talent transfer programmes. However, very few, if any riders, have been selected onto the rider pathway from an affiliated or non-affiliated clubs.

Riders from Go-Ride clubs who wish to develop their cycling race craft are able to attend multiple open development sessions (Club Clusters of Training) for 4000 riders across the 10 English regions and 2 other centres in Scotland and Wales. The professional BC coaching staff supported by the volunteer coaches deliver these sessions. From these sessions some riders take part in youth and junior racing to develop and amass enough placing points and hopefully to be spotted by the GBCT pathway coaches.

The most successful (or potential) riders then enter the first selective environment of the pathway where they are then invited or nominated by their club coach as a potential pathway rider and to be considered for the next stage, the Regional Schools of Racing. The GBCT pathway coaches then undertake a selection protocol to determine the 400 invited riders across the Olympic disciplines. At this point in the pathway, there is an additional and complementary programme called the Apprentice programme for the "best" 45 riders (from the 400 at RSR) who undertake additional development alongside their RSR programme as potential Junior Academy riders. The Junior Academy is the next stage for around 25 riders per year who are the most promising and who can potentially make the Senior Academy and on to the Podium Squad within two –four years.

1.5. My Current Role and Responsibilities: A More Detailed Consideration

Having provided a brief introduction into my role at BC in section 1.2, the following provides some specific detail to further set the context for this study.

I have been coaching lead in BC for the last 6 years with a responsibility of developing coaches through coach education and coach development opportunities.

The role covers all coaches that deliver in a variety of cycling domains (e.g., participation, talent, academy and performance) and across the range of cycling disciplines with a specific emphasis on the Olympic disciplines of Track, Road, BMX and MTB. Specifically, my day-to-day interaction is with the fulltime pathway coaches to support their development, either through formal or non-formal development opportunities. The fulltime regional coaches support the participation coaches and through coach education initiative's that I lead on.

One of the many challenges in the role is that the NGB (like many others) requires a *quantity* of coaches to keep driving participation upwards (or at least sustaining the number). Additionally, the NGB also want *the right quality* of coach to ensure a progression of riders for the talent system and importantly to reduce dropout through poor coaching behaviour. This is somewhat of a dichotomy as the limited investment in coach development in my current role, (and in other NGB) is potentially limiting its impact and the achievement of these dual objectives.

One of the frustrations I have is driven by the system controllers of the talent pathway (same in my previous role), and indeed coaches at varying stages. That is they do not understand, (or appear not to), that coaches in each domain and indeed within domains do not conform to a stereotypical coach that looks like them and delivers like them. Indeed, every coach suggests the coach below or above them on the pathway is doing it wrong. This point is clearly the case in cycling as it was in Rugby League, with the performance coaches (elite, foundation, and talent), suggesting the "athlete" is not reaching them in a "condition" they require to progress on *their* pathway.

To overcome the challenges identified above, i.e., *the right quality of coach* and the development of the "type" of rider required at each stage, I embarked on a development and information campaign with those coaches and managers that I work

with on a day-today basis. This challenge in my day-day work has been undertaken concurrent with my Professional Doctorate studies.

1.6. Adopting a Pragmatic Research Philosophy

In addressing these challenges, it was important that my research should yield usable answers – hence my decision to employ pragmatism. Morgan (2014) argues that pragmatism has a value as a philosophical system in understanding social research, and that it offers a level of practicality for issues of research design. He also states, that pragmatism as a new paradigm can replace the "older" philosophy of knowledge approach which considers the social researcher to have firstly considered their ontological (the nature of reality) and epistemological (theories of knowledge) positions, (cf. Crotty, 1998; Giacobbi, Poczwardowski, & Hager, 2005).

More specifically, instead of considering the researcher's ontology and epistemology as the first step, a fundamental principle of a pragmatic philosophy places the research question as the central focus to determine the research framework, (Bryant, 2009; Wahyuni, 2012). For clarity, the pragmatist argues that a continuum exists between objective and subjective viewpoints. More specifically, epistemological positions such as positivism lie at the more objective end of the continuum with the notion that observable social reality and generalizable "truths" are value-free with no provisions for human interests, (Crowther & Lancaster, 2008; Ritchie & Lewis, 2003). Whereas, interpretivism "sits" at the subjective end of the continuum and is located in reality, is constructed by social actors and people's perceptions of that reality, with facts and values inseparable, (Ritchie & Lewis, 2003; Saunders, Lewis & Thornhill, 2009; Wahyuni, 2012).

As such, the position that a researcher adopts in a given study depends on the nature of the research question being asked and the particular point in the research process (Creswell, 2003; Tashakkori & Teddlie, 1998). In this vein, a pragmatic

researcher will choose methods, data collection and analysis tools to enable insights to be derived on a practical level (concurrently guided by their own practical experience), rather than truths about the nature of reality (Creswell, 2003; Giacobbi, et.al., 2005; Robson, 2011).

Given the above comments and the fact that coaching is considered an applied social endeavour, Jones (2000), and pragmatism favours understanding the nature of social reality, (Teddlie, 2005; Wahyuni, 2012), it was deemed appropriate to adopt a pragmatic research philosophy for this thesis. In that, it is compatible with the area of study and its desired outcomes (e.g., answers to practical problems and action over philosophising), Johnson and Onwegbuzie, 2004. Furthermore, and importantly, the focussed area of work covered in this thesis (cf. Teddlie, 2005) was designed to "make a difference" for individuals and groups (Bryant, 2009; Corbin & Strauss, 2008; Giacobbi, et. al., 2005; Glasgow, 2013), through the generation of practical solutions and meaningful knowledge that is applied (cf. Carson, Collins, & MacNamara, 2013; Cassidy, Jones, & Potrac, 2015; Collins & Kamin, 2012). Specifically, the pragmatic philosophy adopted will support key stakeholder understanding of what really works *for* cycling coaches on the BC talent pathway (not multiple sports coaches), and will, importantly "disarm" the "so what" comments that are frequently heard by practicing coaches regarding research.

As well as being a compatible with the intentions of this thesis, a pragmatic philosophy is also compatible with recent recommendations for research in talent pathways more broadly. Indeed, in an attempt to bridge the continued "gap" and "lag" in research and actual practice (Bishop, Burnett, Farrow, Gabbett, & Newton, 2006; Ford, Yates, & Williams, 2010; Hutchins, & Burke 2007), this study's pragmatic philosophy aims to support an applied study that addresses some of the common shortcoming in talent development-related research to date. More specifically, this

research aims to be translational. That is; the study has been undertaken within the sport of cycling (in context), with active coaches who practice for that sport (in the present day) with the findings evidenced based providing recommendations for the sport, through the dissemination of practically meaningful recommendations that the coaches and stakeholders can use (cf. Collins, MacNamara, & Cruickshank,2018).

Importantly, to achieve the research objectives (listed below in Section 1.7) and a number of the shortcomings identified above, it was critical to consider what the pragmatic philosophy means for the type of questions posed by the researchers. Specifically, in terms of the implications of adopting a pragmatic philosophy in this thesis, I was therefore drawn to identifying questions and objectives that would shed light on – and ultimately support advances – on current coaching practice in the BC talent pathway.

As such, the research objectives centred on coach perceptions of themselves and other stakeholders on the coaching pathway (i.e., to acquire real-life, contextual understanding from multiple perspectives and considering socio-cultural influences). More specifically, and to enable meaningful practical insights to be developed, the coaches' actual practice, their perceptions of the 'what' and 'how' of this practice, and, crucially from an applied perspective, the 'why' of this practice (through exploring their epistemologies) were considered. With regards to meeting these objectives, pragmatic scholars also propose that, within the same study (or thesis in this case), different methods can and should be used in appropriate ways to fully understand a research problem (Bloomberg & Volpe, 2008). Therefore, different data collection methods can and are used (Scott, 2016), with their justification based on their fit with the questions posed and goals targeted (Cherryholmes, 1992; Glasgow, 2013). Given the contextual nature of this enquiry and the quest to find practical solutions for practical problems, a pragmatic research philosophy also enabled me to embrace the history and culture of

cycling and take into account the political influences of the environment of which I was aware (Corbin & Strauss, 2008; Giacobbi, et. al., 2005). In this vein, the pragmatic approach in this study encouraged me to use my own experience, knowledge, and perceptions to support novel and practically meaningful insights for the context in which I work (cf. Bryant, 2009; Giacobbi et al., 2005; Morgan, 2007; Sparkes, 2015). Indeed, rather than being removed or avoided, these aspects, as well as my biases and prejudices, were considered as features to be managed and positively exploited.

Finally, the pragmatist philosophy engaged in has allowed myself to evaluate research findings based upon their practical, social, and moral consequences, identifying that they are not value-free. This approach also allowed for the research findings in this thesis to be translated into a language that is relevant for the specific stakeholders (Creswell, & Plano Clark, 2007, Glasgow & Chambers, 2012) and other sports bodies. Additionally, the findings provided useful tools (theories or concepts) for the particular task of, and practical application to, the BC talent pathway community (cf. Grecic & Grundy, 2016) alleviating the "so what" principle to make a difference to the coaches practice (Bryant, 2009). Finally, the pragmatic philosophy adopted for this thesis enabled the results to inform future observations and experiences, through the creation of new knowledge to the domain, (Cherryholmes, 1992; Talisse, & Aikin, 2008), thus providing a practical framework to move forward on the pathway.

1.7. Objectives and Structure of the Thesis

The purpose of this thesis was to explore the principles and mechanisms of coherent coaching in the British Cycling talent pathway.

More specifically, the objectives of this work were as follows:

1) To identify some key, theoretically-based principles and mechanisms of coherent coaching in the context of sport organisations' talent pathways

2) To critically explore the extent of *vertical* coherence within the British Cycling talent pathway against these principles and mechanisms (i.e., coherence up and down age-groups), as measured through coach perceptions
3) To critically explore the levels of *horizontal* coherence across BC's three Olympic disciplines (Road, Track, and MTB) against these principles and mechanisms, as measured through coach perceptions
4) To critically explore key stakeholder perceptions of the coaching pathway and potential models for coach education that could further align the talent pathway in British Cycling
5) To provide broader recommendations on further aligning BC's talent pathway moving forwards as well as potential insights for other TDE system builders.

To achieve these objectives, the thesis is structured by four studies. In Chapter 2, the first objective was addressed through a desktop study. More specifically, the study included a review of relevant literature and utilised reflections from my applied experience to firstly present some key markers of coherent talent pathways as an overview of what coherent talent pathways "look like", whilst also considering coaching specific markers of coherence and common challenges of coaching coherence. To address the second objective, Chapter 3's study utilised a qualitative descriptive questionnaire to determine coaches' perspectives on the pathway (up and down age groups). More specifically, to identify the extent of coherence amongst coaches on: a) the overall goals and design of the pathway; (b) the goals at specific stages/phases and (c) coaching delivery at specific stages/phases of the pathway as measured through coach perceptions. Whilst the approach used in Chapter 3 focussed on coherence in the pathway form a vertical perspective, (i.e., coherence up and down age-groups) it was

also important to understand the level of coherence in the sports three Olympic disciplines of Road, Track and MTB. Therefore, the study for objective three was met by utilising a qualitative descriptive questionnaire to determine coaches' perspectives on the pathway (horizontal across the 3 disciplines). Specifically, the focus was on the extent of coherence amongst coaches on: (a) the overall goals and design of the BC pathway; (b) the focus and goals of their coaching; and (c) the content and methods of their coaching delivery.

The qualitative data from Chapter 3 and Chapter 4 provided many insights into the balance of coherence/incoherence on the BC pathway. A significant finding emerged that, whilst it is suggested that the NGB coach education programme influences the coaches, it appears not to cater for the coach's needs, or to be aligned to the rider's developmental needs at different levels of the pathway. Reflecting on this and the subsequent need to evaluate the coach education pathway, Chapter 5 addresses objective 4 of this research. In this study, qualitative interviews were conducted with key stakeholders on the coaching pathway to explore their perceptions in three specific areas: 1) areas of agreement with regards to better aligning the coaching pathway moving forwards; and 2) areas of disagreement with regards to better aligning the coaching pathway moving forwards; and finally 3) opinions on a potential structure for better aligning the coaching pathway moving forwards. The studies presented in Chapter 2, 3, 4 and 5 provide important insight that highlights positive and negative coherence/incoherence on the pathway which the NGB can utilise to further align the talent pathway. To meet objective 5 of this thesis, Chapter 6 presents broader recommendations on further aligning BC's talent pathway grounded in the findings of the studies in this thesis. The chapter also offers potential insights for other TDE system builders.

CHAPTER 2

ALIGNING THE TALENT PATHWAY: EXPLORING THE ROLE AND MECHANISMS OF COHERENCE IN DEVELOPMENT

2.1. Introduction

It is now widely accepted that talent development is a non-linear, dynamic and complex process (Abbott, Button, Pepping & Collins, 2005; Phillips, Davids, Renshaw & Portus, 2010; Simonton, 2001). As such, a growing body of work now exists on the individual characteristics and skills that help performers to negotiate the "rocky road" to senior performance (Collins & MacNamara, 2012; Crust & Clough, 2011; Petitpas, Champagne, Chartrand, Danish, & Murphy, 1997). In addition to performer-oriented features, researchers have also emphasised a number of relevant external factors (e.g., family and social support: Côté, 1999; Stambulova, Franck, & Weibull, 2012). Supported by recent research (Morris, Tod, & Oliver, 2015), one of the most influential of these external factors is the organisational and coaching environment where development occurs.

In this regard, Martindale et al. (2007) identified five general principles of effective talent development environments. Specifically, these were: long term aims and methods that are systematically planned and implemented; coherent support networks and messages; emphasis on appropriate development over early success; individualised and on-going development; and an integrated, holistic and systematic overall approach (that covers the previous four factors). As the group who primarily "deliver" talent pathways, a logical progression would see attention turn to surrounding coaching systems.

Unfortunately, however, little is known (at least empirically) on how an entire set of coaches in one organisation can best deliver desired outputs (e.g., adaptable, independent and resilient senior performers), outcomes (e.g., medals or participation)

and process markers (e.g., coherent athlete experience) through complementary action. Indeed, I am not aware of any work that has specifically considered this important issue to date.

Given the aforementioned gaps in talent development and coaching literature, the aim of this chapter was to critically explore principles and mechanisms of coherent coaching in the context of sport organisations' talent pathways. Given *general* similarities in the talent development process in different settings, as well as my aim to explore *general* principles and mechanisms of talent pathways in this opening foray, I do not refer to one type of sport or organisation in particular (e.g., team or individual sport; Olympic or professional sport). Additionally, by "talent pathways" I refer to programmes that are designed to select and support performers with potential to reach senior level. While performers clearly enter (and re-enter) pathways at different ages and stages, for purposes of clarity in this chapter, I considered pathway coherence from the earliest possible point of entry all the way to senior-level transition. For similar reasons, broader issues such as sampling and specialisation are also not addressed; however, I ask the reader to keep in mind that performers may be on multiple pathways at the same time, or sampling other sports on a recreational level (this added complexity, I suggest, requires specific consideration in other work).

Returning to the specific aim of this chapter (to critically explore principles and mechanisms of coherent coaching in talent pathways), the discussion is presented in three main parts.

First, I consider some key markers of coherent talent pathways, including coaching-specific markers and common "derailers" of coherent coach action (and thus coherent talent pathways). Secondly, and building on this foundation, I then discuss how an understanding of personal epistemology may help coach managers to optimise the coherence of their coaching system and, ultimately, performer experience.

To conclude, I offer some initial advice for such managers as they aim to align the coaching system and support their organisation's desired outcomes and outputs.

2.2. Coherent Talent Pathways: What Do They Look Like?

To counter the common complaint from senior performance leaders and coaches that performers are often "not ready" for the top level when they arrive at the end of the junior/transition program (Larsen, Alfermann, Henriksen, & Christiansen, 2013), coherent pathways should be underpinned by a clear definition and understanding of the "typical" performer that the sport aims to produce. Moreover, they should also be underpinned by a clear definition and understanding of the "typical" performer that should be developing at each specific phase of their pathway. These specific phases or transitions will have a balance of vertical coherence (i.e., up, and down age groups / levels) or a balance of horizontal coherence (i.e., across roles or disciplines within the same age group / level) to support the development of the performer in a coherent and consistent manner. Of course, the desired "end product" will clearly vary across different environments; as shaped by the nature of typical progression (e.g., the typical number of development years to reach senior level), the sport's stability (e.g., the rate of rule changes), the organisation's internal consistency (e.g., the extent to which strategic/performance directions change) and its' wider socio-political and financial challenges (e.g., balance of performance/development/participation agendas; reliability of funding). Regardless, however, the main point is that optimal systems will be locked into (and proactively use) their surrounding contexts (Henriksen, Stambulova, & Roessler, 2010a, 2010b, 2011). For example, when peak performance tends to arrive at a young age (e.g., gymnastics), or in a team with a deep-rooted culture and playing style, it *might* make sense to develop individuals through a highly focused program that helps them to perform in a specific manner. In such a system, performers may therefore face *similar* types of coaches, take part in *similar* types of training environments, be

exposed to *similar* types of coaching methods and sports medicine/science support and face *similar* types of structured challenge as they progress up the pathway. Performers who reach the end of such a route will have tended to advance quickly and be able to perform in a very specific or "the team X" way, but, I suggest, be somewhat fragile and struggle to cope and adjust when the "goal posts shift" or novel challenges are faced; for example, adapting to a new style of performing in response to opponents or injury (cf. Collins & MacNamara, 2012; Debois, Ledon, & Wyellman, 2015; Henriksen & Mortensen, 2014). This pathway is depicted in Figure 2.1.

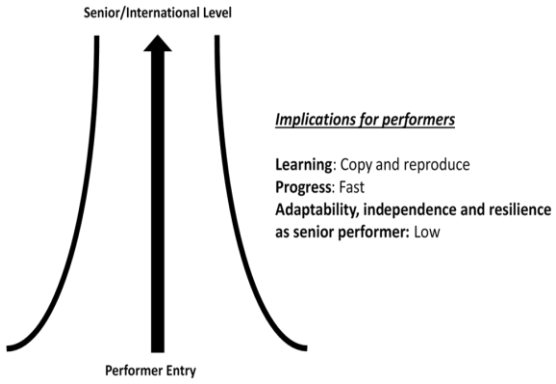

Figure 2.1. The straight and narrow pathway

Alternatively, when peak performance tends to be achieved relatively later (e.g., rugby) or in organisations where management structures regularly change (e.g., football) then it *might* be sensible to develop individuals who are more adaptable and resilient to dynamic contexts. Here, performers will engage with noticeably *different* coaches, participate in *different* types of training centres/environments and be exposed to lots of *different* coaching methods and sports medicine/science support.

In contrast to those on *the straight and narrow* pathway (Figure 2.1), performers will have to almost propel themselves upwards while they are "ping-ponged" by the high levels of variation and unpredictability. To be clear, this ability to self-propel will not just be based on resilience (Sarkar, Fletcher, & Brown, 2015) but rather a host of

psychological characteristics of developing excellence (MacNamara et al., 2010a, 2010b). Indeed, the performer's rate of progress may be somewhat limited unless the individual is particularly determined *and* adept at skills such as goal setting, commitment, coping and reflection (Bruner, Munroe-Chandler, & Spink, 2008; Finn & McKenna, 2010; MacNamara et al., 2010a, 2010b; Pummell, Harwood, & Lavallee, 2008; Stambulova,2009). This pathway is depicted in Figure 2.2.

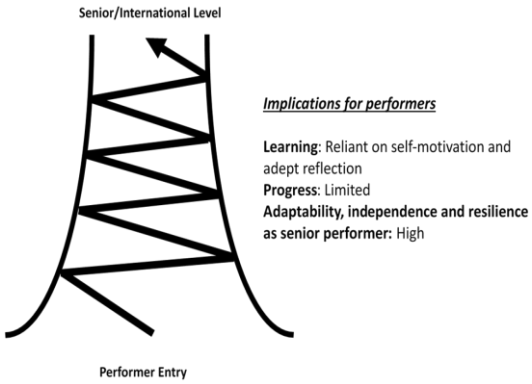

Figure 2.2. The long and winding pathway.

Given the limits of the pathways in Figures 2.1 and 2.2 (i.e., the speed at which performers can be developed for senior competition against their ultimate level of adaptability, independence and resilience), as well as the unlikely need for either extreme, an optimal blend *may* be one where performers reach senior level in a sport-specific timely fashion *but* with the required levels of independence, adaptability and resilience. In such a "goldilocks" system, performers will engage with different types of coaches *but not too different*, participate in different training centre's/environments *but not too different*, be exposed to different coaching methods and sports medicine/science support *but not too different* and face different challenges *but not too different*. Accordingly, performers will not ping-pong too much (and run a higher risk of progressing slowly) or fail to ping-pong at all (and run a higher risk of developing

insufficient independence, adaptability, or resilience); in short, things will be "just right"! This pathway is depicted in Figure 2.3.

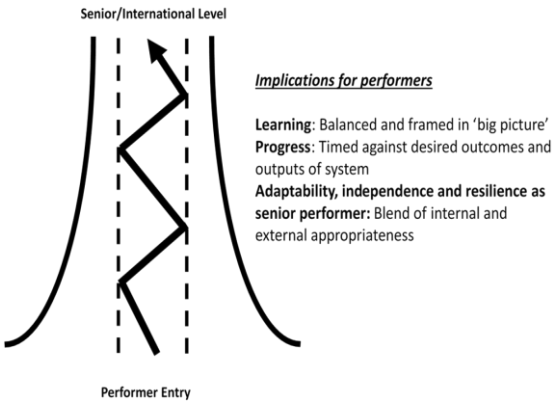

Figure 2.3. The goldilocks pathway.

To be clear, the point is not that every sport should work to the same parameters; rather, that variability throughout the pathway should be tailored to the exact nature of the organisation, its surrounding contexts and the challenge faced. A coherent system will therefore be based upon a clearly defined and well-planned "bandwidth" of variability that fits the organisation's contexts and long-term objectives (see the dashed vertical lines running through the pathway in Figure 2.3). Moreover, it will also be reflected by the provision of variability (e.g., different coach methods or challenges) at the most apt time. Performers will therefore be *coherently* "pinged" or "ponged" (i.e., provided the most suitable focus or challenge) at general phases of their development and also at specific points within these phases. Importantly, this focus or challenge will be tailored to the individual's characteristics, needs, and long-term development plan for optimal impact (Martindale et al., 2007).

2.3. Coaching-Specific Markers of Coherence

Regardless of the necessary level of "just right-ness", coherence in talent pathways will be characterised by logical, intentional, progressive and (where appropriate) consistently applied coaching methods. These methods will be

complimentary (rather than identical), adaptive (rather than resistant) to changing demands/challenges and specifically designed and combined in an age and stage-appropriate manner (cf. Bailey, Collins, Ford, MacNamara, Toms, & Pearce, 2010). Accordingly, all work in the training environment will align with the system's objectives for a specific development phase and "lock into" what has come before (e.g., the previous age-group/level) and what will come next for the performer (e.g., the next age-group/level).

At the micro level, coherent pathways will also be characterised by consistency in the perceptions and behaviours of the coach and performer; in short, both will understand *what* goals they are working towards, *how* and *why* they are doing what they are doing to achieve these. This does not necessarily mean that coaches and performers (or coaches and coaches) must "like" each other; rather, a shared mental model of what is to be done and achieved at each relevant age and phase is prioritised. Additionally, this coherence will inevitably be reliant, at least to some degree, on the coherence between coaches and parents/guardians; especially during earlier phases of performer development. Indeed, Smoll, Cumming and Smith (2011) suggest that this "triad" behave and interact in complex ways and, as such, can create contrasting views on what are appropriate, rewarding and progressive activities (cf. Harwood & Knight 2009; Hein & Jõesarr, 2014; Pankhurst, Collins, & MacNamara, 2013); which can of course have serious implications on the development of the confused performer.

2.4. If It Were Only That Easy: Common Challenges to (and Derailers of) Coaching Coherence

While I have identified some key features of coherent pathways, achieving these are much (much!) easier said than done. Certainly, a plethora of factors can challenge and derail coherence, including that across the organisation's body of coaches (please note that the features that follow are also relevant to other support staff groups).

At the macro level, organisations that do not have a clear definition of the goals that they want to achieve and the type of performers that they need to produce will provide arguably irreversible issues for coach coherence (Larsen et al., 2013). Mismatches between the philosophies and objectives of management agencies (e.g., Boards of Directors vs. funding groups) will also pose major issues (cf. Cruickshank, Collins, & Minten, 2014, 2015). For example, the ability of coaches to work on significant and innovative long-term plans in many Olympic sports is constrained by funders' results-based (i.e., medals and participation) allocation and a strong encouragement to follow other sports' "apparently proven" best practice (Sam, 2012).

At the micro-level, the extent of coherence can be compromised by coaches not having a clear understanding (or perhaps a desire to understand) their general and specific role in the "big picture" (cf. Nash, Sproule, & Horton, 2008). Problems may also be faced if the overall skill-set of coaches is not sufficiently complimentary, balanced, or able to provide necessary learning opportunities and challenges (i.e., those which can deliver the right ping or pong at the right time) (Martindale & Mortimer, 2011; Persson, 2011). Similarly, issues may also be likely to arise when individuals do not have the adaptability to handle the incessant variation in their environment, or the insight and professionalism to engage with critical debate around performer ping-ponging (Collins, Abraham, & Collins, 2012; Kahneman & Klein, 2009). Personal motivations and self-interest can also pose a major problem.

Certainly, the threat and impact of coach/staff politics on collective action has been well documented (e.g., Cruickshank et al., 2014, 2015; Potrac & Jones, 2009; Thompson, Potrac, & Jones, 2013). Although a positive feature if appropriately harnessed, the consequent potential for a "my athlete/team, my success" approach will, in most cases, be a major barrier to coach and system coherence (cf. Cruickshank et al., 2014).

All in all, the challenges listed here, which are indicative rather than extensive, are more likely to lead to pathways that provide a performer experience like the example shown in Figure 2.4.

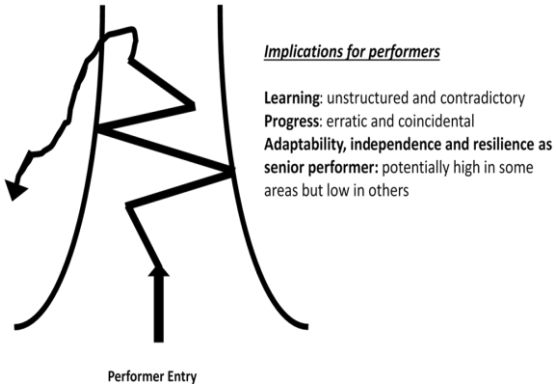

Figure 2.4. The incoherent pathway.

2.5. Promoting and Protecting Coach Coherence: Using Personal Epistemology as a Mechanism for Goldilocks Pathways

Based on the preceding section, it would seem crucial that talent pathways establish and work with a shared ideology of coaching practice. This does not mean that all coaches share the same fundamental approach; rather, coherence will be reflected in a "philosophical bandwidth" that: a) facilitates the desired levels of adaptability, independence and resilience in performers; b) offers resistance to damaging rhetoric, politics, or personal agendas; and c) is understood and followed by all coaches (see the dashed lines in Figure 2.3 for reference). Achieving this outcome clearly requires a management system that continually defines the general and specific aims of coaching throughout the pathway.

Equally, success will also depend on coaches having a deep awareness of their guiding (or desired) values and beliefs and how these align with/complement their peers and goals of the pathway. It is this latter area – defined as *personal epistemology* – which I will consider in this section. Indeed, beyond enabling internal coherence (i.e., the alignment of one's philosophy with actual practice), it also appears to provide the

basis for a lingua franca that could aid coherence and integration *across* individuals, groups and entire talent pathways (cf. Grecic & Collins, 2012, 2013).

2.5.1. Personal Epistemology.

Epistemology is the branch of philosophy that is concerned with the nature and scope of knowledge and the processes of knowing and learning. Shaping our view on what knowledge is and how it can be acquired, our epistemology is thereby fundamental to how we perceive, think, make decisions and act. Maturing to varying levels based on age, life experiences, education and sociocultural influences, epistemology is a multidimensional construct (cf. Chan & Elliot, 2000; Schommer, 1990, 1994; Youn, Yang, & Choi, 2001). Specifically, Schommer (1990, 2002) argued for four types of epistemological beliefs. These are one's belief about: *the stability of knowledge* (ranging from knowledge being certain to tentative); *the structure of knowledge* (ranging from knowledge being organised as isolated facts to integrated concepts); *the control of learning* (ranging from learning being genetically determined to enhanced via education and experience); and *the speed of learning* (ranging from learning being quick, as based on inherent abilities, to gradual). As each belief is more complex than these dichotomies may suggest (e.g., certain vs. uncertain knowledge), Schommer (1994) later argued that they should be viewed as an overall distribution and not on one continuum (i.e., all four types of belief do not have to be at the same level of sophistication and can be at various stages of transition).

Applying epistemology in sport, Grecic and Collins (2013) recently argued for the use of this construct in researching and developing coaches. More specifically, these authors outlined how personal epistemology could be used as a lens for coaches to explore and assess the philosophical underpinnings of their decisions and actions, including the type of environment they create, the relationships they build, the goals that are set, their methods and assessments of performer development and the future

directions that they pursue with these performers. Such links between core beliefs and all aspects of "live" practice have been termed the *epistemological chain* (hereafter EC). With work demonstrating its presence and relevance in coaching practice, the EC has therefore emerged as an evidence-based tool that can link coaching philosophy to the interrelated decisions, behaviours and performance of individual and collective coaches (Grecic & Collins, 2012). To further assess the value of an epistemological lens for aligning whole talent pathways, I now provide an overview of two broad types of personal epistemology.

2.5.2. Sophisticated Epistemologies.

Based on the work of Schommer (1994) and Grecic and Collins (2013), a coach with a sophisticated epistemology will consider knowledge as complex, uncertain, tentative, learned gradually through reasoning and self-constructed by the learner. Such a coach will therefore blend their experience and knowledge (declarative and procedural) to provide individualised support to performers in an autonomy-supportive manner (Mageau & Vallerand, 2003). Such coaches help to address *performer* needs (in relation to the needs of the system) and support their development in an age-/stage-specific fashion. As such, coaching methods will be systematic, integrated and tailored to the performer's history/trajectory with particular emphasis on the balance, coherence and progression of practice. These methods will also be intentionally designed against relevant challenges – whether natural or manufactured – thus working to the "big picture" and preparing individuals for evolving demands. Performers will be actively involved in the coaching process and, for example, input/lead on goal setting and evaluation activities. Coaches with sophisticated epistemologies will also be more likely to collaborate and constructively argue with their peers; especially when evaluating the credibility and value of knowledge developed, held and shared by others (e.g., established authorities, popular/media-supported authorities and peers).

Finally, effectiveness will be gauged against a host of process, performance and outcome measures that link back to the coach's evidence-based (and constantly monitored/adjusted) intentions and the needs of the performer/pathway.

2.5.3. Naïve Epistemologies.

In contrast, a coach with a naïve epistemology will generally believe that knowledge is simple, clear, certain, specific and unchanging. As such, knowledge resides elsewhere (e.g., established authorities, popular/media-supported authorities and respected peers) and is handed down rather than developed via reason. It is unlikely that these coaches will have engaged in an extensive "knowledge journey" and critical reflection process; as a result, limiting their declarative and, to perhaps a lesser extent, procedural knowledge (i.e., they may know lots of drills but not much on the "why, when, how, where and who with" of their application). Similarly, naïve coaches may also be less likely to consider the "bigger picture" of performer development, including their own general and specific role within it. Typically, such coaches will convey a thirst for "gold standard" physical, technical and tactical measures with supporting methods that can be "copied and pasted". They are also likely to be coach centred, driven by work with "successful" performers, use their authority and control to dictate performer programs and deliver sessions as an instructor rather than facilitator with prescriptive and directive behaviours. Performer progress will be often modelled against the progression of those who have previously achieved higher-level success, with the coach limiting athlete and parental input to sustain control. Peer debate will also usually be avoided or dismissed, especially if it does not support the coach's current beliefs/practices and there will also be little evaluation of the coaching process beyond crude outcome-based measurements (i.e., did the performer win/go faster/etc.).

2.5.4. Applying Coach Epistemology to the Bandwidth Principle.

As implied above, coaches at either epistemological extreme (i.e., entirely sophisticated or entirely naïve) will generate fundamentally different environments and apply fundamentally different practices. From the systemic perspective offered in this chapter, however, a sophisticated epistemology is not necessarily "better" than its naïve equivalent. Indeed, a more naïve coach *may* be more useful at particular moments during performer development than a sophisticated coach, especially if the sophisticated coach fails to acknowledge and accurately cater for the immediate context. For example, when a performer would benefit from more direct instruction, rapid learning and clear reinforcement of a new technique or behaviour, apparently simplistic approach may be optimum. Similarly, a sophisticated coach with a more hands-off/experimental approach may struggle to engage with performers who prefer a "do it this way *only*" type approach or who "just want to be told"! Although research and my experience suggest that most sports will benefit from having more "sophisticated-end" coaches (cf. Larsen, Alfermann, & Christensen, 2012), my point is that coherence across the *entire* talent pathway will be supported by a consistently applied philosophical bandwidth; not coaches who are all equally sophisticated or naïve. In line with the earlier points, and as shown in Figure 3, this bandwidth determines the *limits of variation* that performers will experience; something that is enabled by a detailed appreciation of when, where, how and why coaches and their environments, methods and processes will be *different but not too different*. Clearly, this bandwidth will differ from sport to sport but, as all gain from *some* degree of variation, it makes sense for this to be intentionally defined, exploited and sustained if development is to be timely and optimal; including even the earliest of early specialisation sports!

In sum, a focus on personal epistemology appears to hold notable potential to inform the alignment of pathway coaches. Through greater understanding, articulation

and development of one's beliefs about knowledge and learning, coaches can be more internally consistent (i.e., they think and act in a way that reliably reflects their values and beliefs). Crucially, it also provides a route to present an intentional and productive mixture of philosophies across the different stages of performer development. In short, a pathway in which coach philosophies and motivations are not necessarily "right or wrong" or "better or worse" but rather, clear, consistent and congruent with the sport's and performers' ultimate objectives.

2.6. Setting the Bandwidth and Managing the Ping-Pongs: Defining, Aligning and Integrating Coach Epistemologies

Having presented the case for the use of coach epistemology, I now offer some initial advice for those aiming to create coherent coaching systems. Of course, these recommendations are by no means extensive and many other processes will play an inevitable role. As highlighted earlier, for example, role clarity, motivation to deliver on coaching potential and the distribution of resources by top management will clearly impact on pathway coherence. Based upon my applied experience, I have therefore chosen to focus on some actions that would seem to lie at the heart of successful change management in this area.

2.6.1. Strategic Recruitment and Placement of Coaches.

Arguably, one of the first steps for pathway/coach managers is to consider the recruitment and placement of coaches through an epistemological lens. Indeed, appreciation of each coach's naivety or sophistication can help to match coach beliefs and methods with the precise ping or pong that is required for a specific performer (or group of performers) to develop against desired outcomes (Grecic & Collins, 2013).

For example, when the goal is to help performers to take ownership of their development, experiment, solve problems and extend their decision-making skills, then it would be wise to check that these individuals are working with coaches that are more sophisticated. Equally, if the goal is to instil rules, repeat skills and make quick improvements on narrow competencies, then it may be wise to use coaches with more naïve epistemologies *or* sophisticated but adaptable practitioners. For example, consider Figure 2.5 and Figure 2.6 that show how general groups of coaches plus specific allocation within these groups can generate different bandwidths and challenges. Such strategic recruitment and deployment of coaches therefore raises the idea of "specialist challenge/support" coaches on top of "specialist age-group" coaches.

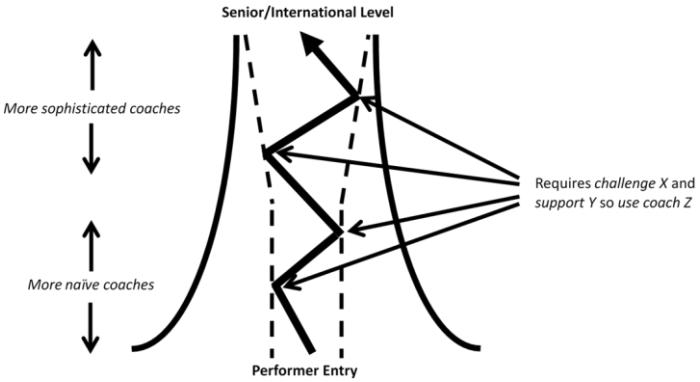

Figure 2.5. Strategic deployment of coaches throughout the pathway – example 1.

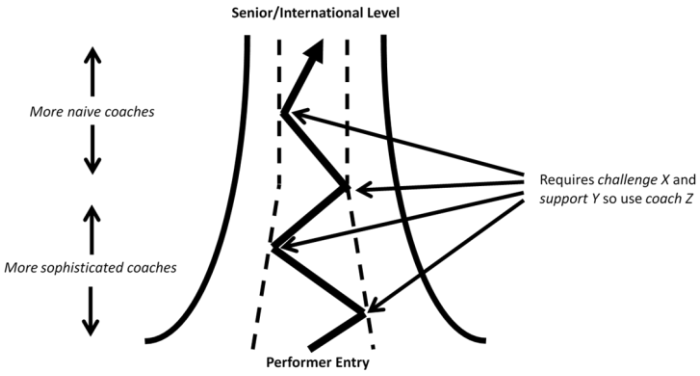

Figure 2.6. Strategic deployment of coaches throughout the pathway – example 2.

2.6.2. Coach Education and Development.

Against the pressures of outcome-based funding, which often fosters a mechanistic view of performers, the pursuit of coherent coaching across entire talent pathways will clearly require a "step change" in the education and development channels currently provided by many sports. More specifically, coaches will need to be provided with programs and resources that help them to explicitly explore, understand, articulate and develop their epistemology; including how it links and contrasts with peers, management and goals of the pathway (Grecic & Collins, 2013). Importantly, coaches should not be encouraged to behaviourally mimic others with more desirable epistemologies but rather, aim to comprehend, reflect on and develop their *own* epistemology; thus, supporting a self-directed and system-relevant journey of learning and progression. The development of coaches with a professional judgment and decision making approach (Abraham & Collins, 2011), irrespective of epistemological stance, should help to facilitate this.

2.6.3. Agents of Change.

As long-term change usually needs multidimensional and systematic action (e.g., Prochaska, DiClemente, & Norcross, 1992), the use of change agents to increase the volume and quality of coach engagement with their epistemology would seem to be particularly vital. Operating in a tutor or "meta coach" type role, these agents can be tasked to instigate and sustain change through a number of possible routes; three of which are considered here.

2.6.4. Working Through the Social Milieu.

As a coach's preference for knowledge and learning is strongly influenced by their "Community of Practice" (hereafter CoP: Culver & Trudel, 2006; Stoszkowski & Collins, 2014), either formal or informal, change agents would be wise to integrate formal coach education within coaches' social networks. Such an approach would

acknowledge that the social milieu surrounding a coach can shape (or, at times, indoctrinate) individuals to conform to knowledge and behaviours accepted by the group/sub-culture in which they operate (Cushion, Armour, & Jones, 2003); something that clearly has an impact on one's behaviour, if not also philosophy. Operationally, agent-led CoP's could emphasise and reinforce coherence through regular epistemology-focused group forums, case conferences and observations of other coaches.

By grouping CoP's based on the coaches' location in the pathway and the nature of the ping or pong that the sport wishes them to provide, these experiences will also likely help individuals to understand their precise role and why they need to coach in a way that might be independent of peers, respected "seniors" and popular misconceptions of talent development. Ensuring that these agents have an acute awareness of group dynamics is therefore vital, including the ability to establish certain coaches as beacons/cultural architects (Railo, 1986) via action that is overt/direct (e.g., positive public appraisal) and covert/indirect (e.g., exposing arrogant and stubborn coaches with undesirable epistemologies).

2.6.5. Cross-Level Communication.

To help coaches to see the "big picture" and adopt an "our" (not "my") performer approach, change agents could also usefully foster broad understanding of each individual's requirements at particular phases in the pathway and particular points within these phases (cf. Collins & Collins, 2011). To achieve this outcome, facilitation of open and persistent communication within and across phases of performer development would clearly be beneficial. Therefore, the transition of performers from one level to the next can be appropriately planned and exploited, rather than left to chance or reliant on performer initiative. Such on-going discussion on what performers

need to be capable of physically, technically and mentally to survive and thrive at the next "station" on their journey can therefore be supported.

2.6.6. Epistemology-Focused Reflections and Evaluations.

As another way of helping coaches to consistently engage with their epistemology, change agents can use the EC as a framework for coach reflection and evaluation (Grecic & Collins, 2013). Indeed, as reflection is often limited by one's knowledge and understanding (Knowles, Gilbourne, Borrie, & Nevill, 2001), an expansion of self-awareness – as facilitated by an epistemological focus – may go some way in addressing this challenge. More specifically, the EC could be used to guide "meaning making", support understanding of self and ultimately increase coach coherence and consistency with the goals of the pathway. An appreciation of epistemology may also help individuals to critically explore the "whys" and "why nots" of their practice on a deeply personal level and therefore support development of a declarative knowledge base that supports truly expert coaching (Nash, Martindale, Collins, & Martindale, 2012). Finally, epistemology-oriented assessments could prove another impactful route for aligning coaches through more traditional conditioning channels (i.e., those who engage at/develop on an epistemological level are recognised with progression and reward by pathway and coach managers).

2.7. Summary, and The Next Steps

Importantly given the gaps in the talent development literature, this chapter has identified several *general* principles and mechanisms of coherent coaching in the context of *general* sport organisations' talent pathways. A key aspect discussed in this chapter was that coherent systems should have an understanding of the "typical" performer the sport aims to produce. This point is also pertinent in the various transition stages of the performer's development journey as the performer can be influenced by a balance of vertical coherence (i.e., up, and down age groups / levels) or

a balance of horizontal coherence (i.e., across roles or disciplines within the same age group / level). Critically, it was suggested that the balance of coherence can vary across differing environments and can be affected by the systems required outputs, and indeed, the wider socio-political and financial landscape of the sport. Building on this point, the chapter identified a number of potential pathways (i.e., straight and narrow; long and winding; and the goldilocks pathway) that performers may/could be engaged in dependent on when peak performance is required in their sport, and importantly, what type of performer is required. Importantly, the key message outlined was that sports should not "copy" each other to develop a coherent pathway. Rather, they should customise the variability (or similarity) in the pathway to meet the sports contexts and long-term objectives. This point was operationalised as the "bandwidth" of variability that coherently "pings or pongs" the performer at various stages (general/specific) of their development based on a long-term plan.

The chapter also identified a number of factors that could challenge or derail coherence on the pathway. Specifically, and as identified at the start of this section, the sport does not have a clear definition of its goals and the type of performer required to meet those goals. Furthermore, mismatches in philosophy of all pathway stakeholders (e.g., funders, boards, and parents) can and do cause issues for pathway coherence, alongside the coaches themselves who may not understand their role in the big picture (if there is one). Another essential point covered in this chapter was the coaches' overall skill set that would be required to provide the necessary learning opportunities and challenges, and the coaches' ability to adapt to the required variation. The chapter suggested that the points outlined above and in the body of the text could potentially affect pathway coherence leading to an incoherent pathway that does not deliver the right "ping or pong" at the right time, as shown in Figure 2.4.

The chapter also explored personal epistemology as a potential to inform the alignment of pathway coaches through greater understanding, articulation and development of one's beliefs about knowledge and learning.

This point could support the coaches to be more internally consistent (i.e., they think and act in a way that reliably reflects their values and beliefs). Importantly, the chapter did not suggest that coaches at either epistemological extreme (i.e., entirely sophisticated or entirely naïve) would be preferred. It did however suggest these coaches will generate fundamentally different environments and apply fundamentally different practices that could be strategically utilised along the pathway creating the required variation within a philosophical bandwidth. This strategic placement of coaches (Figure 2.5 and 2.6) will be based on the coaches' beliefs and methods to match the required "ping or pong" for performers against the desired outcomes planned.

Clearly, a challenge on any pathway is the training and development of the coaching workforce. To achieve the desired coherent coaching across the entire talent pathway will clearly require a "step change" in the design of coaching programmes and in those that deliver (tutors), or support (change agents) the coaches training and development. This undertaking will require the coaches, tutors and change agents to explore and develop their own epistemology to be able to articulate how it links or contrasts with peers on the pathway and to stop the mimicking of other coaching practice. Further suggestions in the chapter were that the change agent works within the coaches' social milieu to influence the CoP through cross-level communication to understand the coaches' role at particular phases across and within the pathway. These discussions will be based on the epistemological positions of the coaches, and can utilise the EC framework for reflection that will reinforce coherence.

This chapter critically explored principles and mechanisms of coherent coaching in the context of sport organisations' talent pathways. Subsequently, the chapter

identified the significance of pathway coherence as a factor for optimisation of performer development, coach development and system effectiveness. Specifically, talent pathways were characterised by; 1) a clear definition of the goals to be achieved (as understood by the system, athlete, coach, parent, etc.); 2) role clarity (e.g., across coaches and stakeholders); and 3) the type of performer the sport requires at general and specific phases of development. Another key message in this chapter was coherence on the pathway can be vertical (i.e., up and down age groups / levels) or horizontal (i.e., across disciplines within the same age group / level).

Given Chapter 2 explored *general* principles and mechanisms of coherent coaching in general pathway settings and did not focus on one type of sport or organisation in particular (e.g., team or individual sport; Olympic or professional sport), the next step in Chapter 3 was to critically explore the extent of vertical (i.e., 'up and down') coherence utilising the principles and mechanisms identified in Chapter 2 in the BC talent pathway. The study has a performer age group focus and sought to measure the perceptions of an entire set of cycling coaches who currently deliver on the pathway.

CHAPTER 3

EXPLORING VERTICAL COHERENCE IN THE BRITISH CYCLING PATHWAY

3.1. Introduction

In Chapter 2 the significance of pathway coherence was highlighted as a factor for the optimisation of performer development, coach development and system effectiveness. The chapter also suggested a shift in focus, for both research and practice, towards the interface between pathway management, coach management and talent development.

Specifically, Chapter 2 identified several conceptual principles and mechanisms of coherent talent pathways present in clearly defined systems that meet the variability of the organisation's context and their long-term objectives. Indeed, coherent talent pathways were characterised by a clear definition of the goals to be achieved (as understood by the system, athlete, coach, parent, etc.), role clarity (e.g., across coaches and stakeholders) and the type of performer the sport requires at general and specific phases of development. More specifically still, the "goldilocks" pathway presented in Chapter 2 reflects a balanced and considered level of variability. This enables the pathway to coherently "ping" or "pong" the athlete through general and specific phases where coaching methods, styles and challenges will be complementary, adaptive and age and stage appropriate against the system's ultimate goals for the team/organisation and the performer. The training environment will also align to system objectives, ensuring connectivity to what has come before and what comes next for the performer.

Following on from this, a crucial point in Chapter 2 was that coherent talent pathways should establish a shared ideology of coaching practice through a "philosophical bandwidth". This would require system leaders, as well as the coaches themselves, to have a deep awareness of their guiding values and beliefs, and how these align/complement their peers and the goals of the pathway. This area was termed

personal epistemology; a construct that underpins coaches' decisions and actions, the type of environment they create, the relationships they build, the goals set, their methods and the assessments of performers. Given the multiple coach-athlete relationships that are usually present along the pathway for a single athlete (Samuel & Tenenbaum, 2011; Sandström, Linnér, & Stambulova, 2016; Stambulova, 1999), the importance of focusing on a coach's personal epistemology is amplified and should be managed through the correct recruitment and placement of coaches (vertically and horizontally). This positioning will offer the appropriate balance of challenge that needs to be presented to specific performers throughout their careers.

Certainly, another key message from Chapter 2 was that coherence on the pathway can be vertical (i.e., up, and down age groups / levels) or horizontal (i.e., across disciplines within the same age group / level). With regards to vertical coherence, as the focus of this chapter, the fundamental challenge relates to helping performers to transition from one age/level to the next in a coherent and consistent manner. In effective pathways, these normative and predictable transitions (e.g., from junior to senior level) as well as non-normative and less predictable types of transitions (e.g., injury, change of coach or a team), should be catered for within the development programme by identifying what has been and what is planned to come at different ages and stages (Sandström et al., 2016). More specifically, vertical coherence is reflected by systematic and 'joined up' coaching, whereby the coaching at each level sets performers up to survive and thrive at the next and all subsequent levels. As such, vertical coherence can provide the necessary challenge and variation that supports athletic transitions in a more planned fashion (Alfermann & Stambulova, 2007; Webb, Collins, & Cruickshank, 2016) and develop the athlete through a pre-defined and optimal pathway "bandwidth".

To support clarity on the subsequent purpose of this chapter, Table 3.1 summarises three markers of vertical coherence and the relevant evidence that can support coherence (as per the messages in Chapter 2).

Table 3.1. *Markers of Vertical Coherence in Talent Pathways*

Marker of Vertical Coherence	**Coherence Evidenced By;**
Coherent coach perceptions on the overall goals and design of the pathway	• Shared view on the desired senior / adult performer • Shared view on the level of variation required by developing athletes throughout the pathway
Coherent coach perceptions of the focus and goals at specific stages of the pathway	• Shared view of the purposes of coaching for development of the individual at each stage • Shared view of the coaching focus for the development of the individual at each stage
Coherent coach perceptions of the required coaching delivery at specific stages of the pathway	• Shared view on the appropriate coaching delivery that meets the need of the individual's age/stage • Shared view on the appropriate teaching and coaching methods to meet the needs of the individual's age/stage

Of course, the markers and sources of evidence presented in Table 3.1 are clearly generic. As such, and to further set the focus for this chapter, it is important to also consider the sources of evidence that apply specifically to BC's talent pathway. Firstly, and as a broad overview, I have provided the actual "Rider Route" (Figure 3.1) that all pathway stakeholders can access. This route is a high-level overview of a complex sporting pathway. Further specific markers that BC have targeted are summarised in the accompanying text.

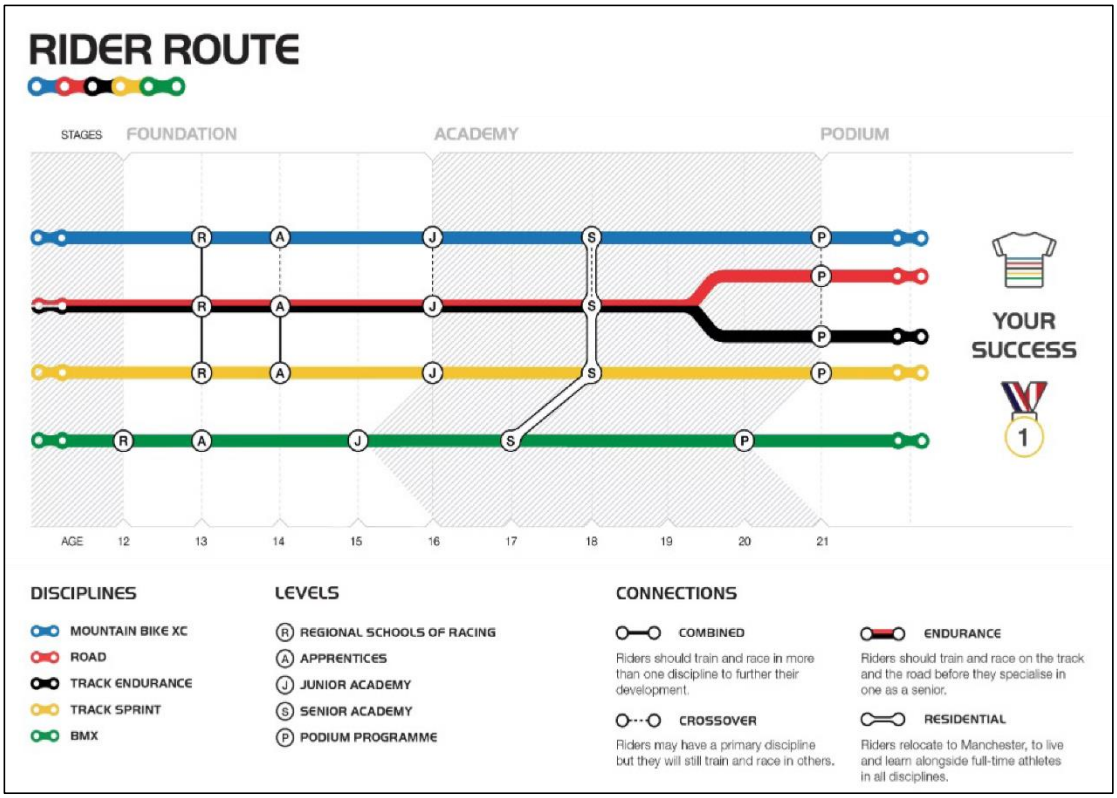

Figure 3.1 British Cycling Rider Route.

The "Rider Route" depicted in Figure 3.1, presented as a "Tube Map", is intended to support the rider, their parents, and the coach to plan the journey through the pathway to their desired end goal in cycling; it also clearly highlights where coherence needs to occur in terms of coaching. Given the multiple disciplines in cycling (coloured lines in Figure 3.1), the riders can start their "route" potentially at different ages (e.g., BMX at 12 years old). However, the pathway depicted above does share three general stages (i.e., Foundation, Academy and Podium), and includes five levels (e.g., Apprentices, Junior Academy) that allows for late entry from riders outside the GBCT system and includes exit and re-entry processes. Within the BC programme the riders (excluding BMX) diversify within cycling and combine and crossover more than one discipline in their training and racing development (see Figure 3.1) up to 18 years (e.g., Road, Track – Endurance and Sprint and MTB). However, that stated, the Junior Academy Track sprinters start to specialize at 16-17 years of age and not combine or

crossover disciplines. Once in the Senior Academy residential programme, at the age of 18 years, the riders start to focus for four years on their chosen discipline.

In short, the BC pathway must cater for multiple disciplines, riders who will commonly switch or engage with multiple disciplines, and multiple 'routes to the top'. Nonetheless, BC has established markers of vertical coherence as per Table 3.1. More specifically, Table 3.2 outlines the three identified markers of vertical coherence from Chapter 2 and the coach perceptions / actions desired by BC to support coherence.

Table 3.2. Markers of Vertical Coherence in the British Cycling Pathway.

Marker of Coherence	**Coach Perceptions / Actions Desired by British Cycling**
Coherent coach perceptions on the overall goal and design of the talent pathway	• To deliver sustained Olympic success • To identify, confirm, and develop young talent to be the best they can be "on and off the bike"
Coherent coach perceptions on the focus and goals at specific stages of the pathway	Club: • To provide the development of young people in cycling Talent: • To support riders to "bridge" the gap from club and "entry-level cycle racing" to the next level/stage (first stage of talent pathway). Foundation: • To prepare riders for the next level/stage of the "Rider Route" and the specific event demands for racing. Academy: • To prepare riders for the podium stage of the "Rider Route" and the specific event demands for racing.
Coherent coach perceptions on coaching delivery at specific stages of the pathway	Club: • Training content: core cycling technical skills • Training methods: planned and progressive fun activities Talent: • Training content: specific conditioning, core technical, tactics, psychosocial, • Training methods: scenario-based race technical/tactical Foundation: • Training content: individualized specific, conditioning, core technical, tactics, psychosocial, • Training methods: scenario-based race technical/tactical Academy: • Training content: individualized specific, conditioning, core technical, tactics, psychosocial, racing overseas • Training methods: scenario-based race technical/tactical,

3.2. Purpose of Study

As summarized above, Chapter 2 sought to critically explore general principles and mechanisms of coherent coaching in talent pathways. More specifically, and as conveyed in Tables 3.1 and 3.2, effective pathways will be characterised by coherent coach views on: 1) the overall goals and design of the pathway; 2) the goals of coaching at specific stages of the pathway; and 3) coaching delivery at specific stages of the pathway.

Reflecting my current role and responsibilities (as per Chapter 1), the purpose of this study was to therefore critically explore the extent of vertical (i.e., 'up and down') coherence within the BC talent pathway, as measured through coach perceptions. More specifically, my focus was on the extent of coherence amongst coaches on: (a) the overall goals and design of the pathway; (b) the goals at specific stages/phases and (c) coaching delivery at specific stages/phases of the pathway. To achieve this focus, the coaches in the study were aligned to the pathway age groups (Appendix G) and the three general pathway phases (i.e., Foundation, Academy and Podium) and the five levels (e.g., Apprentices, Junior Academy) as in Figure 3.1, (p10). The study also combined the six cycling disciplines into age group categories for the riders that they coach most to provide a general age group focus rather than a discipline focus, (e.g., < 12 Years Old, 12 to 16 Years, 17 to 21 Years and > 22 Years).

Additionally, and secondly, the study considered the levels of vertical coherence discovered through an epistemological lens (i.e., the pathway works like X because coaches have epistemologies Y or Z). Overall, this study was intended to shed light on the current levels of coherence in the BC talent pathway, provide a stimulus for my continued professional practice, and suggest a methodology by which other sports could assess coherence in their own pathways.

3.3. Methodology

3.3.1. Design.

Given the purposes stated above and the practicalities of acquiring perceptions from a large pool of coaches, a descriptive questionnaire was determined an appropriate approach to gain initial understanding of coaches' perspectives on the pathway. More specifically, this approach built on previous work that I have undertaken on coach development for BC, where ease of access to BC coaches across the whole sport provided sufficient response rate to inform future practice.

In further support of the specific research strategy used in this study, Saunders, et al., (2009), identified descriptive questionnaires as a method that seeks to ascertain respondents' perspectives or experiences on a specified subject or phenomena in the moment. Additionally, Saunders, et al., (2009) and Robson (2011) identified descriptive research as portraying an accurate profile of persons, events or situations. Furthermore, this is supported by Cooper and Schindler (2003) and Kelley, Clark, Brown, and Sitzia (2003) who suggest that the survey design is useful because it is can answer questions across the who, how, what, which, when spectrum (as this study harnesses).

Other approaches considered for this study were secondary analysis (i.e. the secondary analysis of qualitative data collected by other researchers or institutes). However, I was not aware of any similar study in this area (perceptions of a single sport coaching group, or specific cycling subjects) and the likely absence of key variables to meet my specific research question/purpose for my study was high (Bryman, 2016; Richie & Lewis, 2003). Ethnography and participant observation were also considered to develop a perhaps richer and deeper understanding of the study purposes. However, due to the sheer number of coaches involved, and a required period of attachment in the coaches' environments (including the building of relationships), the logistical, financial and time constraints would have been too overwhelming.

Furthermore, semi-structured interviews and focus groups were also considered given that these methods can provide the opportunity to 'probe' answers, enabling interviewees to explain or build on their responses, thereby providing potentially richer and more detailed data (Easterby-Smith, Thorpe, & Jackson, 2008; Jankowicz, 2005). However, given the study purposes (i.e., to look at the *entire* pathway to unearth *general* patterns), a descriptive questionnaire was deemed more suitable over interview-based approaches. In sum, after considering data collection and quality issues, the level of competence required, logistical and resource challenges, it proved to be disadvantageous to proceed with interview-based methods at this stage of the thesis.

3.3.2. Participants.

The participants (n=422) were BC coaches from across all six cycling disciplines. At the time of the study all the coaches were considered active, qualified (or trained) and engaged in a variety of coaching roles and environments on the pathway with developing athletes (covering age ranges <12 years, 12 to 16 years, 17 to 21 years and >22 years). Taken together, the participants had the following profile:

- 82% male (n=346) and 18% female (n=76), split across the following 7 age group categories: under 20yrs (n=11), 20 to 29yrs (n=18), 30 to 39yrs (n=48), 40 to 49 (n=165), 50 to 59 (n=144), 60 to 69 (n=25) and 70yrs or older (n=10).
- Main coaching roles were reported by the coaches as volunteer (76.9%), employed full-time (2.9%), employed part-time (3.4%), self-employed part-time (13%) and self-employed full-time (3.9%).
- The breakdown of coaching qualifications as reported by the coaches was, 1.4% not qualified, 11.8% at Level 1, 68.3% at Level 2, 11% at Level 3 with 7.4% holding a legacy Club Coach award.

- The coaches reported being at their highest level of qualification for less than 1 year (22%), 1 to 2 years (29.6%), 3 to 5 years (31.3%), 6 to 10 years 8.8% and 11 or more years (6.9%).

Further background information on the participants in relation to the age of rider they coached most, the cycling discipline they coached most, and the environment (i.e., stage/level) which they coached most in, and (as per the screening question outlined in Section 3.3.3. p51) is provided in Tables 3.3, 3.4 and 3.5.

Table 3.3. Age of Rider Coached Most.

Age of Riders	
< 12 Years Old	40.20%
12 to 16 Years	35.20%
17 to 21 Years	5.60%
> 22 Years	18.90%

Table 3.4. Age of Rider and Discipline Coached Most.

Age of Riders and All Disciplines						
	Road	**Track**	**MTB**	**BMX**	**Speedway**	**Cyclo X**
< 12 Years Old	44.40%	4.50%	20.30%	6.00%	3.80%	21.10%
12 to 16 Years	38.60%	18.40%	18.40%	6.10%	1.80%	16.70%
17 to 21 Years	68.40%	21.10%	10.50%	0.00%	0.00%	0.00%
> 22 Years	63.50%	19.00%	14.30%	0.00%	1.60%	1.60%

Table 3.5. Age of Rider and Environment Coached Most In.

Age of Riders and Environment							
	Go Ride Club	Club AFF to BC	Club not AFF	School	Foundation	Academy	IND
< 12 Years Old	67.40%	23.00%	1.50%	4.40%	0.70%	0.70%	2.20%
12 to 16 Years	55.60%	23.10%	2.60%	6.00%	6.00%	0.00%	6.80%
17 to 21 Years	5.30%	52.60%	0.00%	0.00%	5.30%	5.30%	31.60%
> 22 Years	6.30%	36.50%	7.90%	1.60%	0.00%	0.00%	47.60%

3.3.3. Questionnaire.

The questionnaire design used in this study was supported by the work of Comley (2000), who identified three factors that affect response rates in online questionnaires. They are: (1) style of the first page of the survey (i.e., suggesting a need to make it cycling specific), (2) relationship with the website/brand (all participants would be members of BC) and (3) respondent interest or relevance of the survey (on which, all participants in this study would be coaches of riders within cycling). Building on the work of Comley (2000), specifically point 3 above, and importantly the study's purpose, consideration was given to age groupings used in the questionnaire to ensure that they aligned to the three general pathway phases (i.e., Foundation, Academy and Podium) and the five levels (e.g., Apprentices, Junior Academy).

From this base, an online self-report questionnaire (Survey Monkey ©) was developed that included a mixture of multiple choice, matrix rating scale, ranking and open-ended questions and included three sections with a total of 33 questions. As per the purposes of this chapter, these questions focused on the coaches' perceptions of: (a) the overall goals and design of the pathway; (b) the goals at specific stages of the pathway; (c) the coaching delivery at specific stages of the pathway; and (d) their epistemological beliefs.

It should be noted that after completing section 1 and 2 (which focused on demographic and general cycling questions; the influences on the coaches' practice in their social milieu; the coaches' epistemological position and the general focus of the rider triad), participants were asked to read and answer a screening question (number 14) prior to completing section 3 (questions 15-33). More, specifically, this screening question asked participants to confirm their understanding that they should answer all remaining questions in relation to the *age of rider you coach most, the environment (i.e., stage/level) which you coach most in, and cycling discipline you coach most*, with a

focus on riders that they believe have the potential to make the Great Britain Cycling Team (GBCT).

This question was necessary given that some coaches can work across disciplines and ages/stages rather than being located or specialists in one discipline / age group / stage. It also helped to optimise the accuracy of the results (i.e., it was designed to prevent coaches answering some questions in relation to one discipline that they coached then other questions in relation to other disciplines that they coached). Of course, a limitation of this approach was that the number of coaches completing the survey was reduced by 22%, (n=93); however, the final number of coaches (n=329) is representative within the three general pathway phases age groups and disciplines across the five levels.

Following on from the design phase and supporting my pragmatic approach (as per Chapter 1), a purposively selected expert panel (who were not involved in the main study) piloted the draft self-report questionnaire. This panel had a combination of applied experience, understood the pertinent literature related to this inquiry, and worked in a variety of roles on a day-to-day basis within the sporting and research sector. The panel included a Lecturer in Sports Coaching (qualified as a Doctor of Physiology), who had spent eight years working as a coach developer/educator; a PhD Research Practitioner who had worked in the coach development and education field for over 10 years; an experienced educator in sports coaching and a further four cycling coach developers who had a range of experience covering three to ten years. All the developers held cycling and other NGB coaching awards and professional qualifications in teaching at Further and Higher Education.

The panel were asked to review the self-report questionnaire in line with suggestions from Bell (2005), Fink (2003b), Manfreda, Batageli and Vehovar (2002), and Sue and Ritter (2012). More specifically, how long the questionnaire took to

complete; the clarity of instructions; which, if any, questions were unclear or ambiguous; which, if any, questions the respondent felt uneasy about answering; whether in their opinion there were any major topic omissions; and whether the layout was clear and attractive.

After reviewing the feedback from the panel, the questionnaire was revised to include a clearer purpose and introduction page with the BC logo to engage participants in the study. Furthermore, to support ease of readability and general use, the self-report questionnaire was fully edited to remove overuse of capitalization and overly technical terms and jargon. The study purpose was also edited to convey that the questionnaire was for all levels of coach. Additionally, the question sequencing and flow were adjusted by including Survey Monkeys 'question skip logic' which meant coaches only answered for their relevant age group and discipline, therefore reducing the number of questions per page, (Dillman & Bowker, 2001), length and presentation of the self-report questionnaire, (Couper, Traugott, & Lamias, 2001). Another revision included the removal of "YES/NO" answers for a small number of questions with the inclusion of Likert scales instead to measure degrees of opinion, Krosnick and Fabrigar (1997). The draft self-report questionnaire was returned for a further review by the panel and all panel members were satisfied with the revisions to the questionnaire. The final self-report questionnaire is provided at Appendix B.

3.3.4. Procedure.

Following ethical approval from the university's ethics board, coaches on BC's database received an email inviting them to participate in this study, as distributed through BC communications (Dotmailer ©).

Participants were informed before starting the self-report questionnaire of the purpose of the study, the procedure, and given assurances on confidentiality.

Clarification was also provided to participants to ensure they understood that undertaking the self-report questionnaire denoted informed consent.

Overall, 422 participants undertook the self-report questionnaire. Termination point was decided when the pattern of responses reached stable levels (i.e., results remained similar despite further completions) in conjunction with a sudden reduction of completions after four weeks (cf. Carson, Collins, & MacNamara, 2013).

3.3.5. Data Analysis.

Of the 422 participants who started the questionnaire, the full set of questions (i.e., all of those after the screening question) were answered by a total of 78% of coaches (n=329). As such, the analysis only included responses from these (n=329) coaches. In terms of this analysis, Survey Monkey automatically produced all the descriptive statistics on which the Results and Commentary section that follows is based. From here, these descriptive statistics were converted into graphs that portrayed the spread of responses across the focal age groups for each question.

In this respect, a visual inspection strategy (Barton, Lloyd, Spriggs, & Gast, 2018; Baer & Parsonson, 2015; Gast, & Spriggs, 2010; Parsonson & Baer, 1978, 1986, 2015; Parsonson, Baer, Kratochwill, & Levin, 1992), was chosen to interpret the findings rather than any further statistical analyses, as my aim was to explore *practically*-meaningful differences in *overall* data *patterns* rather than *statistically*-meaningful differences in *parts of the picture* (i.e., a lack of statistical difference between data points would not necessarily mean that any visual difference was not meaningful; such as a response rate plateauing when it might have been expected to have risen). This approach was deemed the best fit for the study to enable the harnessing of my understanding of the group(s) perceptions and the environment; and for the viewers to *see* the big picture rather than standalone numbers (including both readers from a research perspective, but also key stakeholders in my environment who I

will be reporting back to). Supporting this point, Baer and Parsonson, (2015), suggest this approach also allows the viewers to "draw a conclusion or make a reasonable hypothesis about any relationships or lack of them among the sets(data) as the viewer can see, and see quickly the relationship or its absence" (Chapter 2, p15).

To identify any potential rater reliability or inference issues (DeProspero, & Cohen, 1979; Johnson, Onwuegbuzie, & Turner, 2007; Ottenbacher, 1990) a purposively selected expert panel (who were not involved in the main study and piloted the questionnaire) undertook a visual inspection moderation to ascertain any rater differences in the results (Appendix I). In line with the work of House, House, and Campbell (1981), the panel reported a mean agreement of around 80%, which is suggested as being adequate for this type of analysis. Whilst visual inspection has no formal rules to guide inferences, and reliability has been questioned (Danov, & Symons, 2008; Gast, & Spriggs, 2010), it does provide a meaningful tool to gain insight of the participants' current perceptions of their applied practice and will clearly be a useful and accessible guide for all NGB stakeholders with different levels of training and experience, Parsonson and Baer, (2015).

3.4. Results

The purpose of this study was to critically explore the extent of vertical (i.e., 'up and down the age groups') coherence within the BC talent pathway. More specifically, my focus was on the extent of coherence amongst coaches on: (a) the overall goals and design of the pathway; (b) the goals at specific stages/phases and (c) coaching delivery at specific stages/phases of the pathway.

To offer a potential explanation for the levels of coherence found, the study also explored the nature and spread of the coaches' epistemologies. Additionally, to provide structure to the results, these are presented in four specific subsections that match the study purposes. Given the scale of this study, the results are also primarily presented in

graphical and tabular form with the surrounding commentary used to highlight particularly notable aspects of higher or lower coherence (as informed by the visual inspection approach to my analysis). Thus, the figures and tables contain 'the patterns' and 'the detail', while the commentaries contain the overall message.

3.4.1. Perceptions on the Overall Goals and Design of the Full Pathway

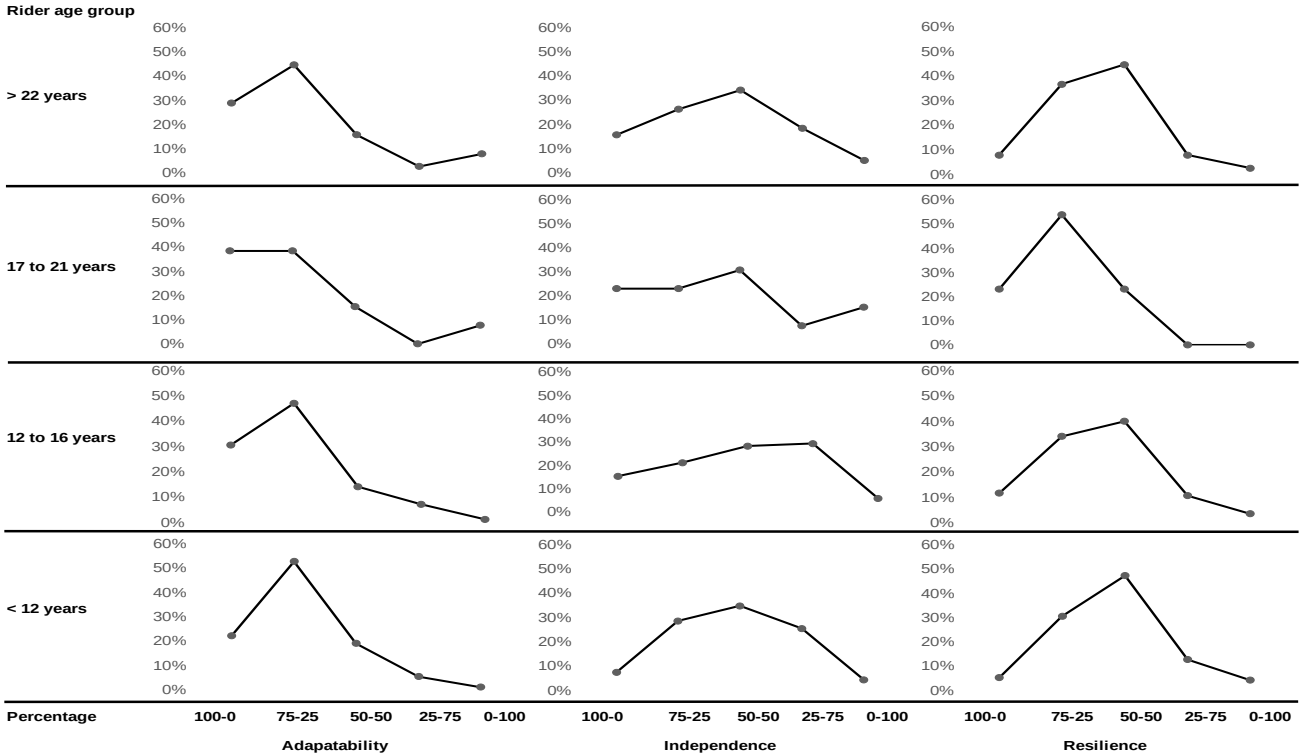

Figure 3.2. Coaches' perceptions on the balance of independence, adaptability, and resilience desired by British Cycling in senior riders (Q27-29)

Legend. Vertical axis's – rider age groups and percentage of responses per age group relating to Adaptability, Independence, and Resilience. Horizontal axis presents the answer choices regarding the balance in percentage terms that coaches believe GBCT require in senior riders.

Note: Three survey questions asked coaches to select the balance in percentage terms (i.e., 100 - 0, 75 - 25, 50 - 50, 25 - 75 and 0 -100) between scenario (a) or (b), covering: (1) ***Adaptability***, (a) senior cyclists who can call upon a host of race tactics/styles and respond to a range of challenges or (b) senior cyclists who can rely upon a trademark tactic/style and can get the most out of training consistently the same way. (2) ***Independence,*** (a) senior cyclists who can follow programmes, sessions and evaluations that are given to them or (b) senior cyclists who can lead on their own programmes, sessions, and evaluations. (3) ***Resilience***, (a) senior cyclists who use themselves to bounce back from setbacks and persist when things are difficult or (b) senior cyclists who use the support of others to bounce back from setbacks and persist when things are difficult.

Overall, the results presented in Figure 3.2, show that the majority of coaches of all age groups are relatively coherent and aligned in their perceptions of the type of senior rider the pathway aims to develop for GBCT regarding adaptability. Specifically, patterns and corresponding percentages within all age groups (column 1 in Figure 3.2) revealed that coaches generally believed that the goal of the pathway was to develop senior riders who were more capable to call upon a host of race tactics and styles, and respond to a range of different challenges (as per the higher percentage of responses to the left of the 50/50 split line; with this more evident in those who coached 17-21 riders). With regards to levels of independence, patterns and corresponding percentages (column 2 in Figure 3.2) also appears to show similarities throughout the age groups; with a considerable number of coaches believing that the GBCT generally desired riders who could both lead and follow aspects of their programme (as per number of responses on the 50/50 split line). Interestingly, however, it was notable that a sizable number of those who coached 12-21-year olds generally believed that the GBCT preferred riders who could follow to a greater extent than lead (as per the higher percentage of responses to the left of the 50/50 split line. Of final note, the coaches again reported similar views (column 3 in Figure 3.2) across the age groups regarding the GBCT's preference for riders with a balance of resilience. More specifically, a considerable number of coaches believed that GBCT require senior riders that can bounce back from setbacks themselves to a greater extent than using the support from others to bounce back (as per the number of responses to the left of the 50/50 split line in all age groups), with this most evident in in those who coached 17-21 riders.

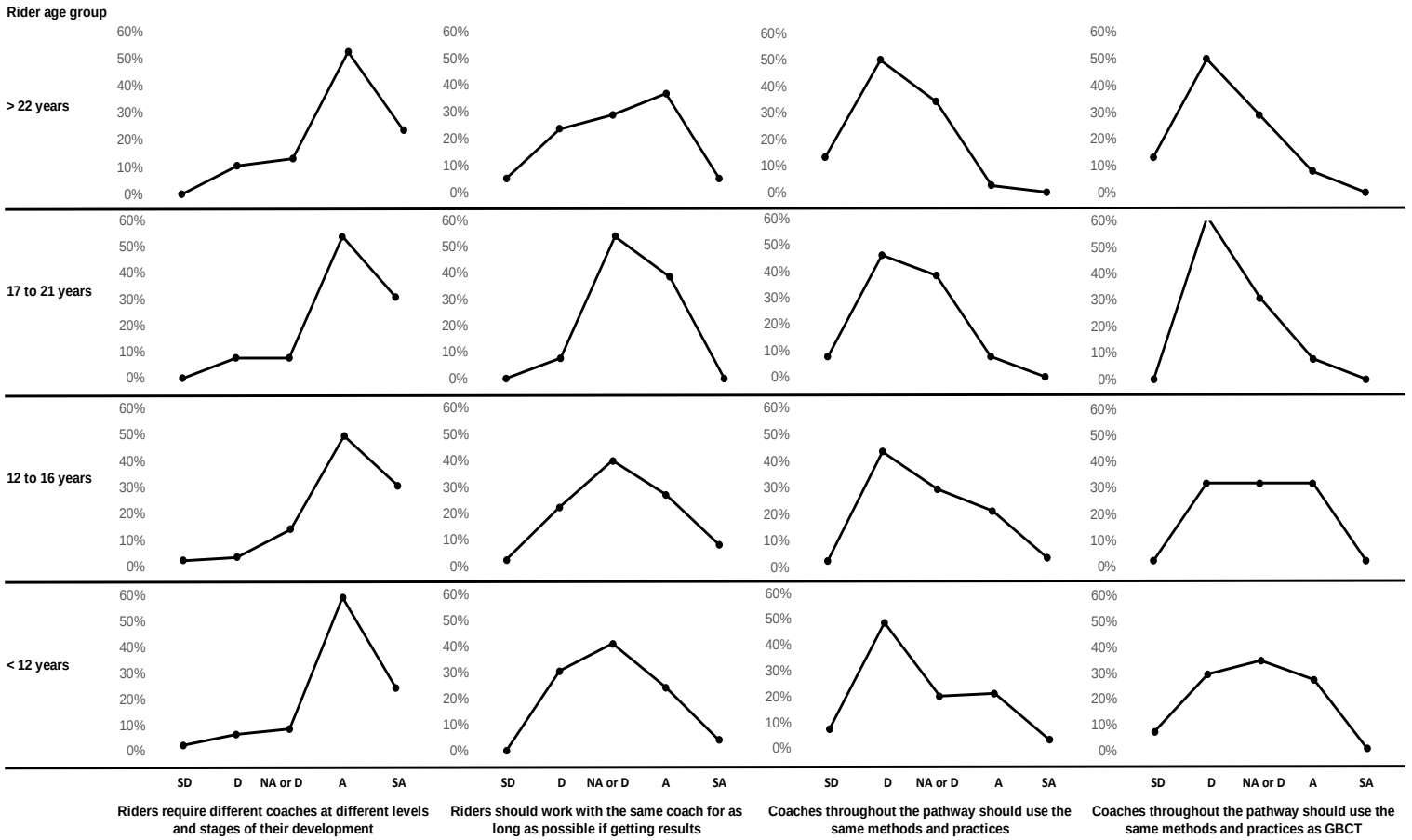

Figure 3.3. Coaches perceptions on the extent of similarity or variation required throughout the pathway (Q30).

Legend: Vertical axis – rider age groups and percentage of responses per age group relating to the four statements in the questionnaire. Horizontal axis presents the answer choices regarding level of agreement or disagreement, i.e., Strongly Disagree (SD), Disagree (D), Neither Agree or Disagree (NA or D), Agree (A) and Strongly Agree (SA) relating to these four statements.

Note: The survey question asked coaches, "how much do you agree or disagree with the following four statements": (1) riders require different coaches at different level and stages of their development, (2) a rider should work with the same coach for as long as possible if they are getting results, (3) coaches throughout the pathway should use the same methods and practices, (4) coaches throughout the pathway should use the same methods and practices as those in the GBCT.

Figure 3.3, column 1 appears to show that the majority of coaches through the age groups agree or strongly agree that there should be variation on the pathway with regards to riders requiring different coaches at different levels and stages of their development (as per the number of responses to the right of the NA or D split line). Conversely, column 2, Figure 3.3 appears to show that a considerable percentage of coaches neither agree nor disagree with the statement that suggests riders should work with the same coach for as long as possible if getting results (as per the number of responses on the NA or D split line in all age groups). Whereas, and interestingly, a sizable percentage of coaches in the 17 to 21 and >22 rider's groups concur with this statement (as per the number of responses to the right of the NA or D split line). Furthermore, column 3, Figure 3.3 appears to show that the majority of coaches through the age groups disagree (as per the higher percentage of responses to the left of the NA or D split line in all age groups) with the statement that coaches throughout the pathway should use the same methods and practices; however, there was a sizable percentage of coaches within all the age groups who neither agree nor disagree with this statement. Interestingly, and in comparison, a sizable number of coaches from the <12 - 16 rider groups agree to the statement (as per the percentage of responses on the right of the NA or D split line). Figure. 3.3, column 4, appears to show the responses from coaches on whether they should use the same methods and practices as GBCT throughout the pathway with the younger age groups (< 12 and 12 to 16) split (as per the percentage of responses on the NA or D line), whereas, a sizable percentage of the 17 to 21 and the >22 rider's coaches disagree with use this approach (as per the higher percentage of responses to the left of the NA or D split line).

3.4.2. Perceptions on the Focus and Goals at Specific Stages of the Pathway

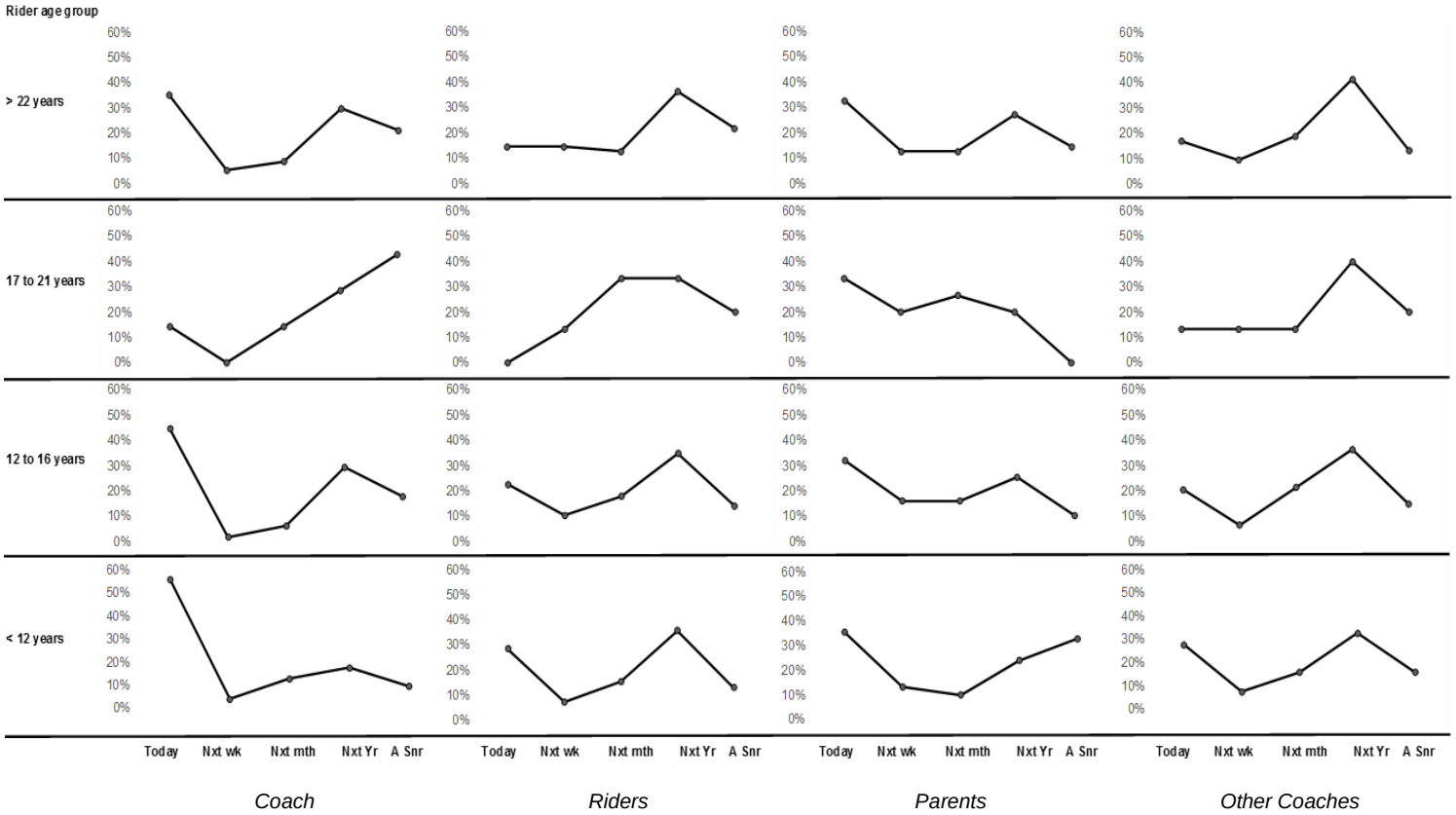

Figure 3.4. Coaches perceptions of theirs and stakeholders focus for development of the individual (Q13)

Legend: Vertical axis – rider age groups and percentage of responses per age group relating to the five statements in the questionnaire. Horizontal axis presents the answer for the stakeholder groups of coach, their riders, parents, and other coaches.

Note: The survey question asked coaches, what do you feel is the general focus of, (1) you, (2) your riders who have potential to make GBCT, (3) the parents/guardians of riders who have the potential to make GBCT, and (4) other coaches at your level who have riders with the potential to make GBCT. The answer choices were: the rider performing well in the session today (Today), next week (Nxt wk), next month (Nxt mth) next year (Nxt Yr.) and performing well as a senior (A Snr).

Figure 3.4, column 1, suggests a considerable number of the < 12, 12 to 16 and > 22 riders' coaches focus is for the short term, i.e., today, or next week (as per the percentage of responses on the left of the Nxt mth split line). However, and in contrast, a sizable percentage of the 12 to 16-year, 17 to 21 and >22 group coaches focus on the longer term, i.e., next year or as a senior (as per the percentage of responses on the right of the Nxt mth split line), with this most evident in the 17 to 21 group. Figure 3.4, column 2, appears to show that the coaches' perceptions of their riders focus often does not align to their own in the younger age groups (< 12 and 12 to 16), with the belief that riders focus should be on the longer-term. Interestingly, coaches of the older age groups (17 to 21and >22) perceive their riders to be focussed similarly to themselves on the longer term. Furthermore, Figure 3.4, column 3, appears to show some alignment in terms of the coaches' perceptions of parents' focus, with a considerable percentage of coaches responding in favour of a short-term focus, i.e., today, or next week (as per the percentage of responses on the left of the Nxt mth split line). Interestingly, the coach's perception of some parents in the youngest age group (<12 and 12 to 16) is that they believe the focus to be for the next year or as a senior. Finally, of note in Figure 3.4, column 4, is the percentage of "other coaches" in the <12 and 12 to 16 groups who are perceived to have a different focus (e.g., long-term) to the coaches who responded. Interestingly, coaches in the older age groups mostly align in their perceptions of "other coaches" focusing on the longer-term.

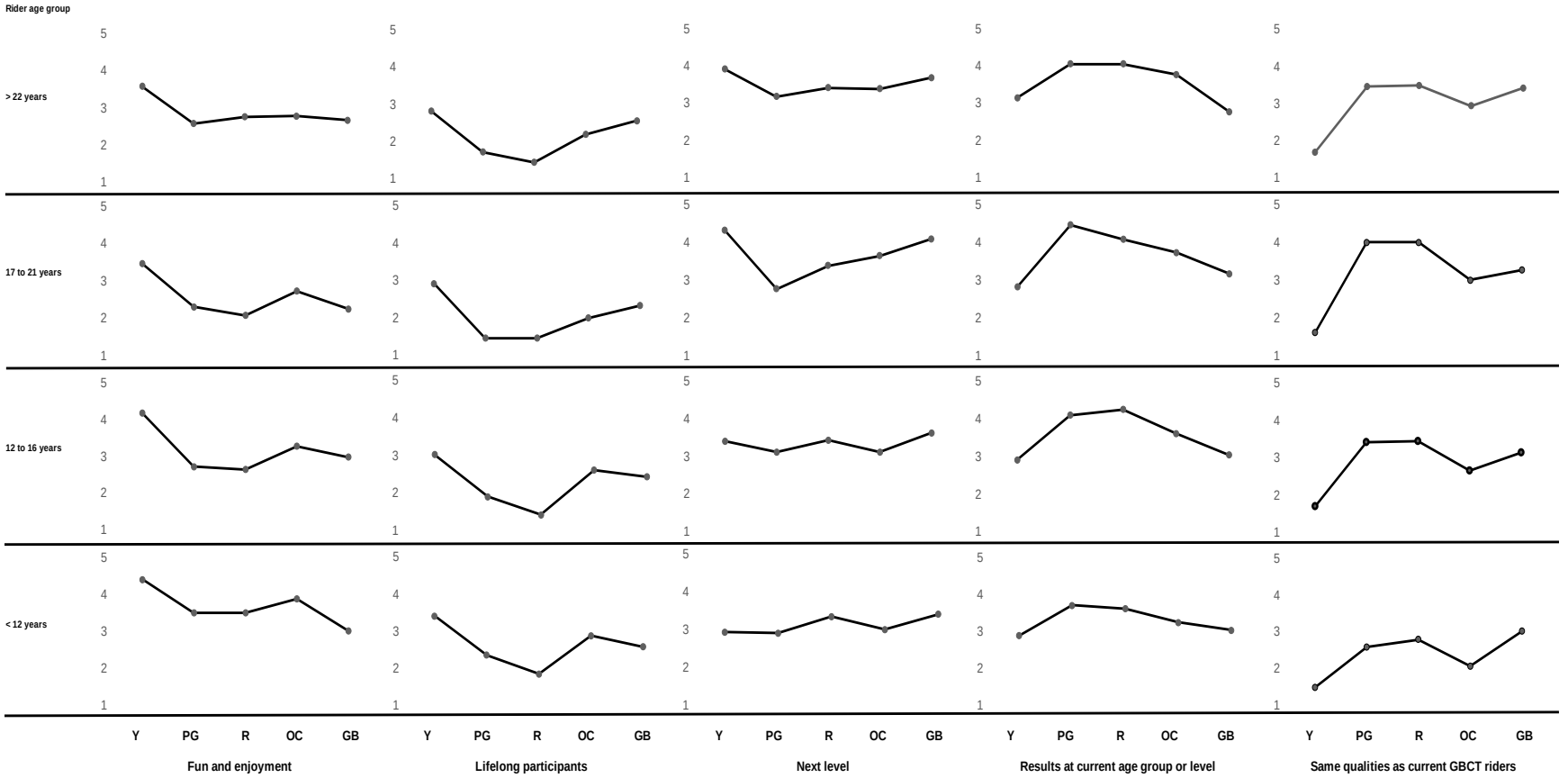

Figure 3.5. Coaches perceptions of the most important goals for themselves and other stakeholders for development of the individual (Q22-26).

Legend: Vertical axis – rider age groups and weighted average score (1-5) relating to the five goal statements in the questionnaire. Horizontal axis presents the coaches perceptions as ranking scores of individual stakeholders i.e., Y-You (coach), PG –Parents/Guardians, R – Rider, OC – Other coach, GB – Great Britain Cycling Team and the five goal statements.

Note: The survey question asked coaches to rank in order (1-5), "what they believe are the most important goals in coaching riders with the potential to make the GBCT at your level and discipline", additionally, the coaches were asked to answer what they believed the goals were for other stakeholders, (parents/guardian, rider, other coach at same level, and GBCT). The five goal statements were: (1) to enable the riders to have fun and enjoyment, (2) to prepare riders to be lifelong participants, (3) to prepare the riders physically, technically, tactically, and mentally for the next level, (4) to support riders to achieve results at their current age-group/level and (5) to develop riders with the same qualities of current GBCT riders.

Figure 3.5, column 1, appears to show that the majority of coaches of all age groups ranked enabling riders to have fun and enjoyment as a primary or secondary coaching goal for the individual's development (as per the ranking value on vertical axis). Interestingly, the ranking value for fun and enjoyment as a goal was highest in the <12-year age group; this was closely followed by the 12 to 16 rider's coaches. Additionally, Figure 3.5, column 2, appears to show coaches in the youngest group (< 12 years) ranked the goal of preparing the riders to be a lifelong participant as a secondary focus (after fun and enjoyment) and more important than the other goals (next level, results at current age group/level). Whilst the other age groups ranked preparing the riders to be a lifelong participant fairly highly, it was a lower priority than the goal of preparing the riders physically, technically, tactically and mentally for the next level (Figure 3.5, column 3). This goal was highest ranked overall by the 17 to 21-year group coaches, and the >22-year group, followed by the 12 to 16, and <12-year groups respectively. Figure 3.5, column 4, appears to show coaches of all age groups ranking the goal, to support riders to achieve results at their current age-group/level as being low on their list of goals from those presented. Similarly, the coaches of all age groups ranked the goal, developing riders with the same qualities of current GBCT riders (Figure 3.5, column 5) as last on their list of goals. Finally, based on a sizable number of responses through all the age groups, (Figure 3.5) coaches ranked all stakeholders' perceptions differently to their own in four out of five goals, which may suggest a notable level of incoherence across all stakeholders. For example, coaches of all age groups ranked enabling riders to have fun and enjoyment (column 1) and preparing the riders to be a lifelong participant (column 2) *higher* than all stakeholders (as shown by the relative shape of the line).

3.4.3. Perceptions on the Coaching Delivery at Specific Stages of the Pathway

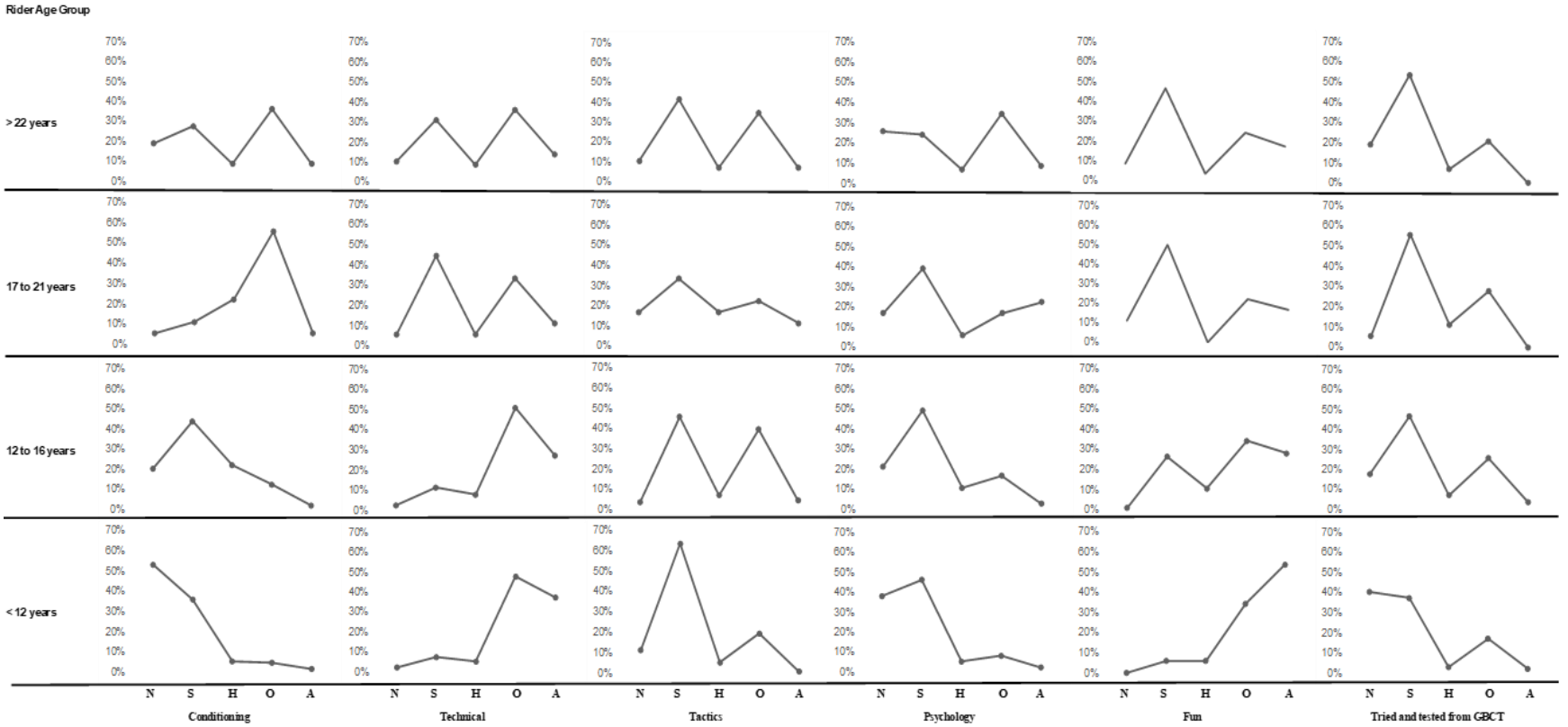

Figure 3.6. The extent coaches use different training content throughout the pathway (Q16 -20)

Legend: Vertical axis – rider age groups and percentage of responses per age group relating to the six coaching practice statements in the questionnaire. Horizontal axis presents answer choices of, Never(N), Sometimes(S), About half the time(H), Often(O) and Always(A) for the frequency of use for the six coaching practices presented, which were Conditioning, Technical, Tactical, Psychological, Fun, and Tried and tested from GBCT.

Note: The survey question asked coaches, "how often do you use the following practices with riders who have the potential to make the GBCT" from, (1) conditioning-focused (e.g., getting miles in the rider's legs), (2) technical-focused practices (e.g., drills from the BC Gears book), (3) tactics-focused practices (e.g., race management), (4) psychology-focused practices (e.g., distraction control, goal setting, responding to setbacks), (5) fun-focused practices (i.e., those for enjoyment purposes first and foremost) and (6) tried and tested practices from the GBCT.

Figure 3.6, column 1, appears to show that over half of the youngest age group (<12 years) coaches reported never using conditioning focused practices, whilst a sizable percentage of coaches in the <12 and 12 to 16 use this practice sometimes (as per the percentage of responses on the left of the "half the time" split line). Interestingly, and of note, most of the older age group coaches (17 to 21, >22) use conditioning often or half the time respectively (as per the percentage of responses on the right of the "half the time" split line). Figure 3.6, column 2, appears to show that the majority of coaches in the youngest age groups <12 and 12 to 16 reported using technical focused practices often or always (as per the percentage of responses on the right of the "half the time" split line). Contrastingly, a considerable percentage of the older age groups (17 to 21 and <22) coaches use this type of practice sometimes or often (as per the percentage of responses on the left and right of the "half the time" split line). Figure 3.6, column 3, appears to show that the majority of coaches through all the age groups deliver tactics focused practices sometimes or often (as per the percentage of responses on the left and right of the "half the time" split line). However, the results show varying levels of contrast within age groups. For example, a high percentage of the <12-year group coaches deliver sometimes (as per the percentage of responses on the left of the "half the time" split line) and a notable percentage deliver often. Additionally, Figure 3.6, column 4, appears to show that the majority of coaches through the age groups deliver psychology focused practice sometimes, with a considerable percentage of coaches never delivering any practice of this type (as per the percentage of responses on the left of the "half the time" split line). Again the results show varying levels of contrast within and through the age groups with this type of practice. For example, the older age group coaches (17 to 21 and >22) suggest they deliver often or always (as per the percentage of responses on the right of the "half the time" split line).

Penultimately, Figure 3.6, column 5, appears to show that the majority of coaches in the youngest age group and indeed a considerable percentage of all age group coaches use fun focused practices often or always (as per the percentage of responses on the right of the "half the time" split line), however, the results show a marked contrast with this practice within and through the age groups (as per the percentage of responses on the left and right of the "half the time".

Of final note from Figure 3.6, column 6, is the contrast within and through the age groups regarding coaches using practices that are tried and tested from GBCT. For example, a considerable percentage of coaches use these types of practices sometimes, with a further sizable percentage of coaches delivering this type of practice often (as per the percentage of responses on the left and right of the "half the time"). Interestingly, a sizable percentage of coaches in the < 12-year group responded as never using practices that are tried and tested from GBCT.

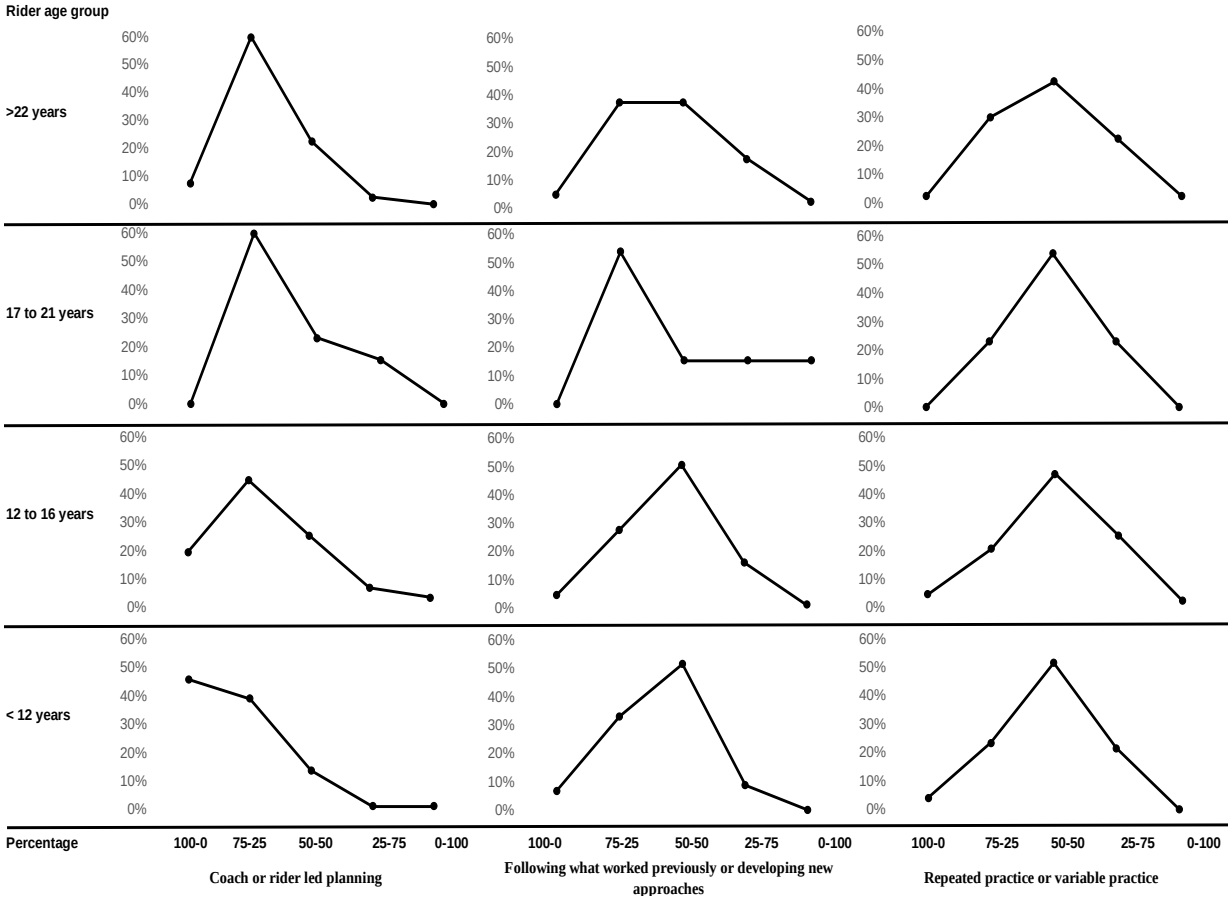

Figure 3.7. The balance of coaching and teaching methods employed throughout the pathway, part one. (Q21)

Legend: Vertical axis – rider age groups and percentage of responses per age group relating to three coaching and teaching methods statements in the questionnaire. Horizontal axis presents the answer choices regarding the balance of usage in percentage terms, (i.e., 100 - 0, 75 - 25, 50 - 50, 25 - 75 and 0 -100)

Note: The survey question asked coaches, “to select the balance of coaching methods you generally use with riders who have the potential to make GBCT answering in percentage terms, (i.e., 100 - 0, 75 - 25, 50 - 50, 25 - 75 and 0 -100) between option (a or b), covering: (a) coach-led planning or (b) rider-led planning; (a) following what has worked previously or (b) developing new approaches; and (a) repeated practice or (b) variable practice.

Figure 3.7, column 1, demonstrates a similarity of response from the majority of coaches through the age groups concerning coach or rider led planning, suggesting the balance to be mainly 75/25 in favour of coach led planning over rider led planning (as per the percentage of responses on the left of the 50/50 split line). This finding is emphasized further in the youngest age groups, specifically the <12 and the 12 to 16 years, where a sizable percentage of the coaches believe the balance of planning should be 100% their role (as per the percentage of responses on the left of the 50/50 split line). Figure 3.7, column 2, identifies, that some similarity exists with regard to coaches following what worked previously or developing new approaches through three of the age groups (<12, 12 to 16 and >22). For example, a considerable number of coaches believe the balance to be 50/50, however, within these age groups a sizable number of coaches and specifically the 17 to 21-year group coaches believe the balance to be 75/25 with the coaches favouring what worked previously (as per the percentage of responses on the left of the 50/50 split line). Figure 3.7, column 3, appears to show similarity in coach perception regarding the use of repeated or variable practice with the majority of coaches through all age groups believing the balance of these types of practice to be largely 50/50. Interestingly a sizable proportion of coaches in the >22-year group believe the balance to be more in line with 75/25 in favour of the use of repeated over the use of variable practice.

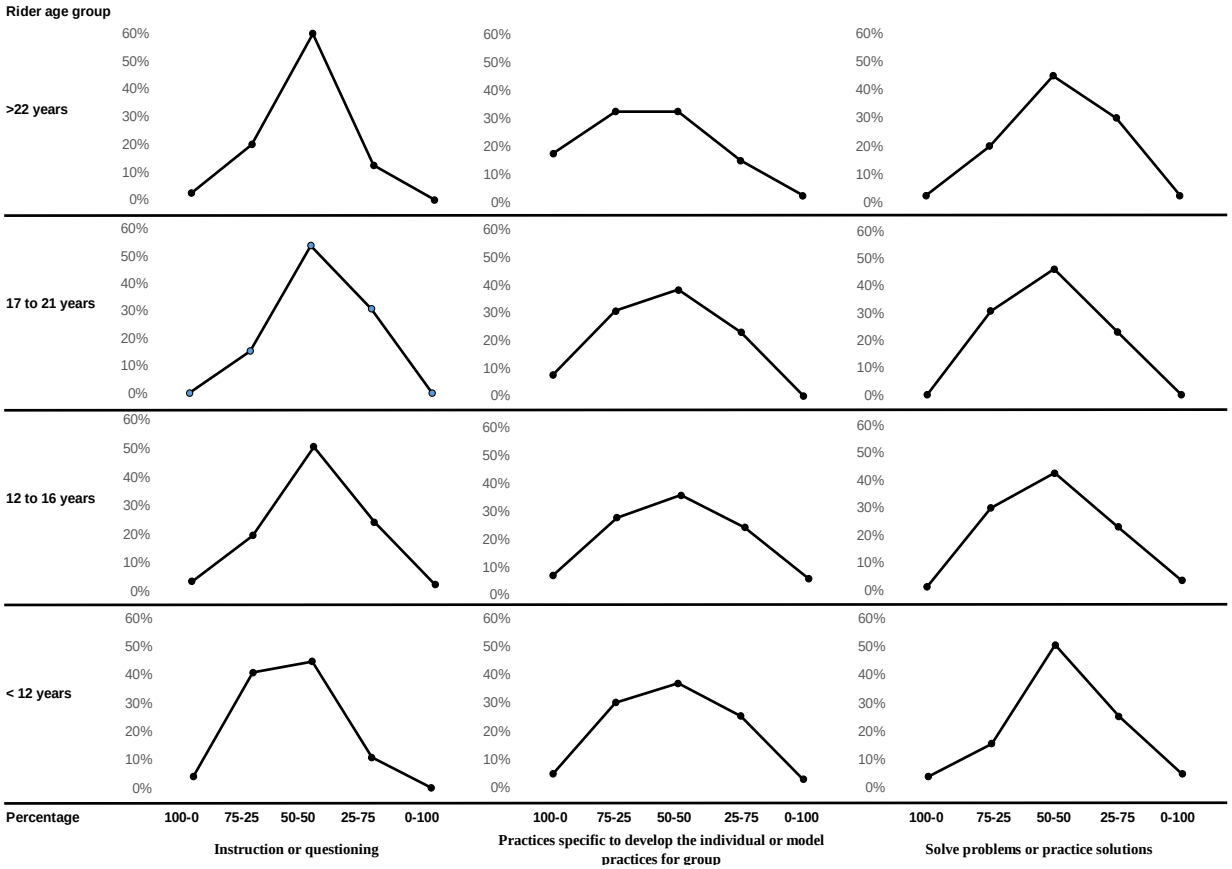

Figure 3.8. The balance of coaching methods employed throughout the pathway, part two. (Q21).

Legend: Vertical axis – rider age groups and percentage of responses per age group relating to three coaching and teaching methods statements in the questionnaire. Horizontal axis presents the answer choices regarding the balance of usage in percentage terms (i.e., 100 - 0, 75 - 25, 50 - 50, 25 - 75 and 0 -100).

Note: The survey question asked coaches, “to select the balance of coaching methods you generally use with riders who have the potential to make GBCT answering in percentage terms (i.e., 100 - 0, 75 - 25, 50 - 50, 25 - 75 and 0 -100) between option (a or b), covering: (a) instruction or (b) questioning; (a) practices that develop qualities specific to the individual or (b) practices that develop model qualities across a group; and (a) getting riders to solve problems or (b) getting riders to practice solutions.

Figure 3.8, column 1, appears to show that the majority of coaches through all ages have a similar balance of 50/50 when using instruction or question in their practice. However, there are two age groups that contrast that view, the first of which is the <12-year group, where a sizable percentage of coaches believe the balance to be more weighted to 75/25 in favour of instruction in their coaching (as per the percentage of responses on the left of the 50/50 split line). Whereas, a significant percentage of the 17 to 21 age group coaches suggest a balance of 25/75 in favour of a questioning approach (as per the percentage of responses on the right of the 50/50 split line). Figure 3.8, column 2, identifies similarity across age groups in regard to specific practices for the individual or model practices for the group. The results show a majority of coaches believe the balance to be 50/50, however, a sizable percentage of coaches in all age groups stated a balance of 75/25 in favour of specific practice for the individual (as per the percentage of responses on the left of the 50/50 split line). Of final note in Figure 3.8, column 3, regarding coaches using problem solving or practicing solutions in their coaching suggests the majority of coaches through the age groups believe the balance of this method to be 50/50 in their practice. Contrastingly, a considerable percentage of coaches in the <12 and >22-year groups stated a balance of 25/75 in favour of practicing solutions (as per the percentage of responses on the right of the 50/50 split line), whereas a significant percentage of the 12 to 16 and 17 to 21-year groups believe the balance to be 75 -25 in favour of solving problems (as per the percentage of responses on the left of the 50/50 split line).

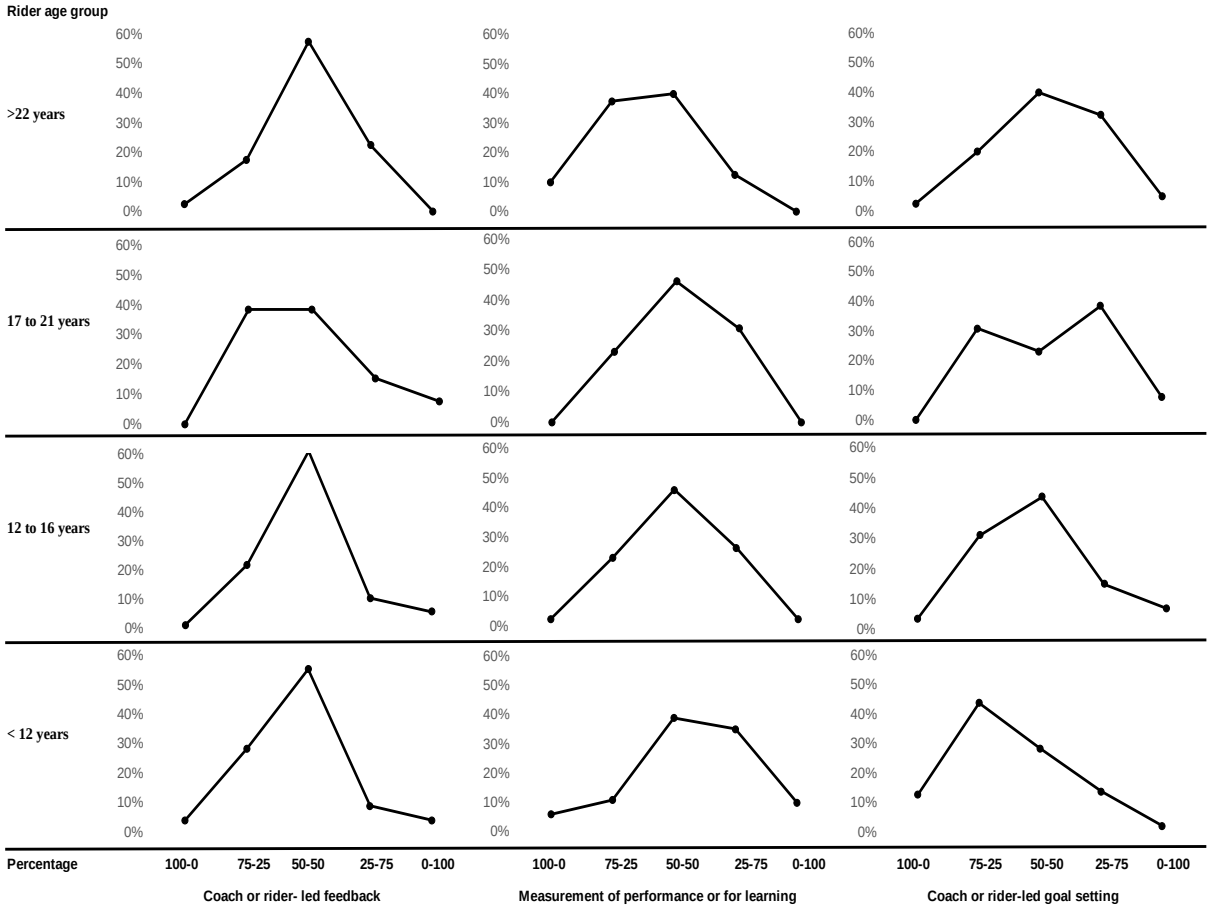

Figure 3.9. The balance of coaching methods employed throughout the pathway, part three. (Q21).

Legend: Vertical axis – rider age groups and percentage of responses per age group relating to three coaching and teaching methods statements in the questionnaire. Horizontal axis presents the answer choices regarding the balance of usage in percentage terms (i.e., 100 - 0, 75 - 25, 50 - 50, 25 - 75 and 0 -100),

Note: The survey question asked coaches, “to select the balance of coaching methods you generally use with riders who have the potential to make GBCT answering in percentage terms, i.e., 100 - 0, 75 - 25, 50 - 50, 25 - 75 and 0 -100 between option (a or b), covering: (a) coach-led feedback or (b) rider-led feedback; (a) measurement of performance or (b) measurement for learning; and (a) coach-led goal setting or (b) rider-led goal setting.

Figure 3.9, column 1, indicates similar views from the coaches through the age groups on their delivery methods regarding coach or rider led feedback, with the majority of coaches reporting a balance of 50/50 in their practice. Interestingly, a considerable percentage of coaches in the <12, 12 to 16 and the 17 to 21-year groups do not align with this view, stating the balance to be more in line with 75/25 in favour of coach led feedback (as per the percentage of responses on the left of the 50/50 split line). Contrastingly, a sizable number of the >22-year group coaches stated the balance to be 25/75 favouring rider led feedback (as per the percentage of responses on the right of the 50/50 split line). Another area of interest in Figure 3.9, column 2, is the similarity in the coaches reporting of the balance of measurement (performance or for leaning). The majority of coaches across all age groups believe the balance to be 50/50, however, a considerable number of coaches in the <12, 12 to 16 and the 17 to 21-year group believe the balance to be more in line with 25/75, favouring measurement for learning (as per the percentage of responses on the right of the 50/50 split line). However, and interestingly, the oldest age group (>22) coaches favour measurement of performance (as per the percentage of responses on the left of the 50/50 split line). Finally, Figure 3.9, column 3, suggests that a considerable percentage of coaches through the age groups believe the balance to be 50/50 regarding coach or rider-led goal setting. However, in the youngest age groups (<12, 12 to 16) a sizable number of coaches state a balance of 75/25 in favour of coach led goal setting (as per the percentage of responses on the left of the 50/50 split line), whilst the oldest age groups (17 to 21, >22) report a balance of 25/75 in favour of rider led goal setting (as per the percentage of responses on the right of the 50/50 split line).

3.4.4. The Nature and Spread of Coaches' Epistemologies.

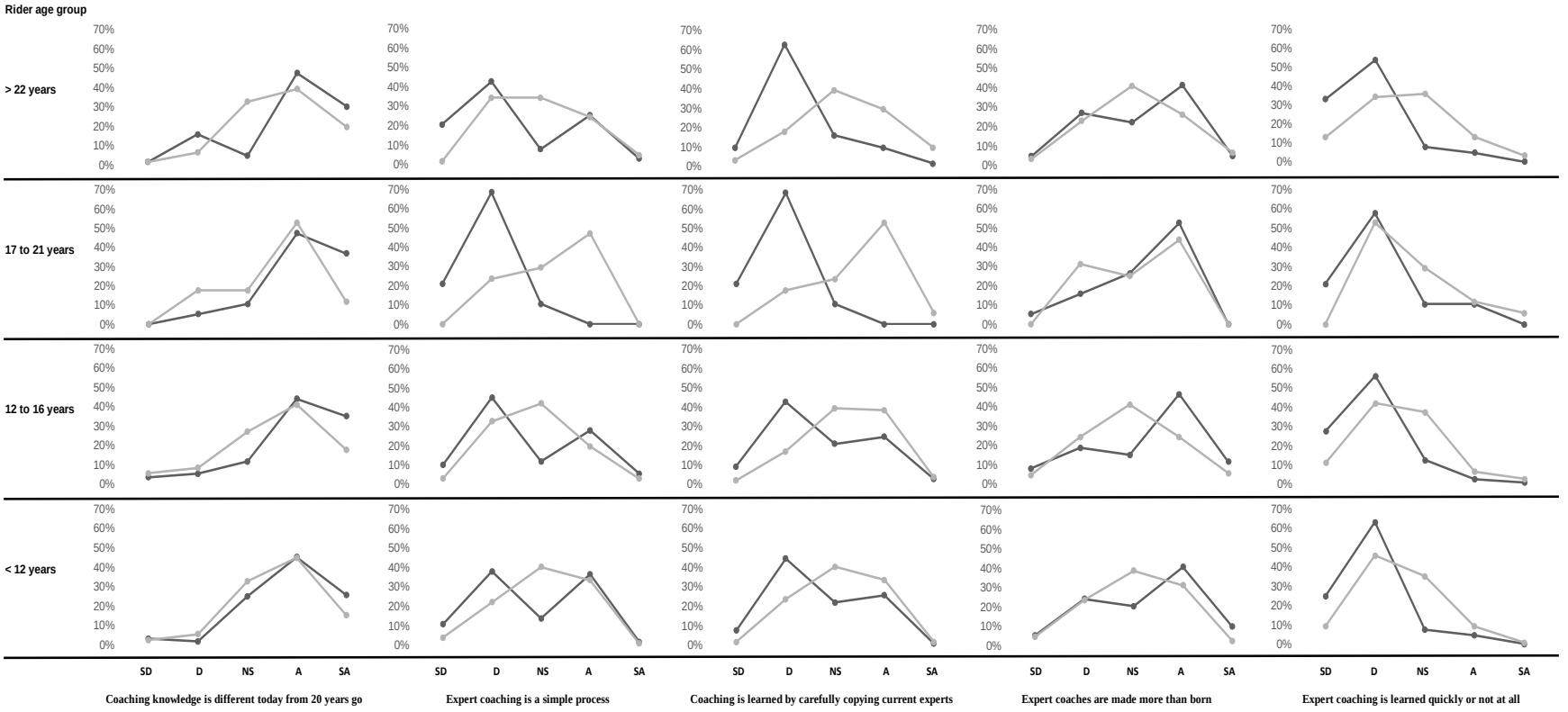

Figure 3.10. The nature and spread of coaches epistemological positions. (Q11 -12)

Key: Dark line represents actual coaches responding to question. Light line represents actual coach's perceptions of other coach's responses at the same level.

Legend: Vertical axis's – rider age groups and percentage of responses per age group relating to the five statements in the questionnaire and outlined above. Horizontal axis presents the answer choices regarding level of agreement or disagreement, i.e., Strongly Disagree (SD), Disagree (D), Not Sure(NS), Agree (A) and Strongly Agree (SA) relating to the five statement labels.

Note: The survey question asked coaches, "how much do you agree or disagree with the following five statements": (1) the knowledge that underpins expert coaching today is different to what it was 20 years ago, (2) expert coaching is a simple process based on basic facts, (3) expert coaching is learned by carefully copying current experts, (4) expert coaches are made more than born, and (5) expert coaching is learned quickly or not at all. The coaches were then asked what do other coaches generally think about the same statements.

3.4.4.1. Coaches Responses and Beliefs.

The coaches' response to the first statement, Figure 3.10, column 1, appears to show that the majority of coaches at all age groups agree or strongly agree that the knowledge that underpins expert coaching today is different to what it was 20 years ago (as per the percentage of responses on the right of the NS split line). Interestingly, a small percentage of coaches working with riders in the >22-year group contrast this view point believing that coaching knowledge is not different today compared with 20 years ago (as per the percentage of responses on the left of the NS split line). An equally important result within column 1, is the overall percentage of coaches who responded, "not sure" to the statement, with a sizable percentage of coaches in the <12-year group being the largest responders, with the percentages reducing through to the < 22-year group coaches (as per the percentage of responses on the NS split line). Figure 3.10, column 2, results for the statement, "expert coaching is a simple process based on clear facts", saw the majority of coaches through the age groups disagree or strongly disagree, with the highest clear percentage being in the 17-21-year group (as per the percentage of responses to the left of the NS split line). Whereas, a considerable percentage of coaches of three age groups (<12, 12 to 16 and >22) agreed or strongly agreed with the statement, demonstrating a broader spread of beliefs and contrasts within those age groups (as per the percentage of responses to the right of the NS split line). Figure 3.10, column 3, results show similarity through the age groups with a considerable percentage of coaches disagreeing or strongly disagreeing in regard to the statement "coaching is learned by carefully copying current experts", most noticeably the 17 to 21 years and > 22-year group, where the coaches overwhelmingly responded disagree /strongly disagree (as per the percentage of responses to the left of the NS split line). Furthermore, and contrastingly, a sizable percentage of the younger age groups (<12, 12 to 16) coaches agreed and strongly agreed to the statement (as per the

percentage of responses to the right of the NS split line) with a further sizable percentage of coaches in these age groups responding not sure. Figure 3.10, column 4, also demonstrates similarity and a narrower spread of beliefs through the age groups with a considerable percentage of coaches agreeing or strongly agreeing with the statement, “expert coaches are made more than born”, (as per the percentage of responses to the right of the NS split line). Whereas, a sizable percentage of coaches in three age groups (<12, 12 to 16 and >22) disagree or strongly disagree with the statement, suggesting a broader spread of beliefs within those age groups (as per the percentage of responses to the left of the NS split line). Noticeably, through all the age groups a sizable percentage of coaches responded, “not sure” with the 17-21-year group recording the highest percentage, followed by the >22-year group. Finally, of note in Figure 3.10, column 5, are the responses to the statement “expert coaching is learned quickly or not at all”, where the majority of coaches through the age groups disagreed or strongly disagreed suggesting a narrower spread of beliefs across the pathway and within the age groups (as per the percentage of responses to the left of the NS split line).

3.4.4.2. Coaches Responses and Beliefs Regarding Other Coaches.

Figure 3.10 also reports the coaches’ responses to what they believe “other” peer coaches would think regarding the same statements. The coaches’ responses are to some extent similar for column 1, where they agree or strongly agree that the knowledge that underpins expert coaching today is different to what it was 20 years ago (as per the percentage of responses on the right of the NS split line). However, and interestingly, a significant number of coaches through the age groups reported not sure for this statement (as per the percentage of responses on the NS split line). This “not sure” pattern is seen across all the statements in Figure 3.10, and might suggest a lack of knowledge of what other coaches think or do at a practical level, and an epistemological level within the same level of the pathway. Whilst there is some similarity across the

patterns and shapes for a proportion of the columns in Figure 3.10, there is a notable difference in the pattern and shape for the 17 to 21-year group in column 2 (as per the percentage of responses to the right of the NS split line). This result has the possibility to suggest a considerable number of responding coaches think coaches at their level agree with the statement and therefore believe "expert coaching is a simple process". The results in Figure 3.10, column 3, appear to suggest that a proportion of all age group coaches perceive their coaching peers to believe, "coaching is learned by carefully copying current experts", (as per the percentage of responses to the right of the NS split line).

3.5. Discussion

The purpose of this study was to critically explore the extent of vertical (i.e., age group focus) coherence within the BC talent pathway as measured through a set of practicing coaches' perceptions. More specifically, my particular focus was on the extent of coherence amongst coaches on: (a) the overall goals and design of the pathway; (b) the goals at specific stages/phases and (c) coaching delivery at specific stages/phases of the pathway. Additionally, to offer a potential explanation for the levels of vertical coherence/incoherence found, the study also explored the nature and spread of the coaches' epistemologies. To provide structure to the discussion of the main results, this section first presents the 'take homes' from the Results section and, secondly, the possible reasons for these findings; including those from the perspective of coaching epistemology. Pulling in relevant literature, I then consider what these messages may mean for developing riders, as well as for the BC pathway and coach development system. Importantly, the discussion and interpretation of the results will also be considered and potentially reinforced by my day-day professional practice. Specifically, I have commissioned three further studies running in parallel to my Professional Doctorate, two of which I hold a supervisory role. The studies were

commissioned based on the identification of the key principles and mechanisms for coherent pathways in Chapter 2. More specifically, Study 1 seeks to further 'Understanding BC's Coach Education Pathway' in regard to washout and its "fit-for purpose" status; Study 2 explores the balance of alignment and role clarity of the athlete triad on the pathway; and finally, Study 3 explores the 'Learning and Education of Coach Developers' within BC, to gain further valuable insight into the BC tutor workforce, and to determine the balance of coherence/incoherence.

Chapter 6 of this thesis will explore the initial results of the three commissioned studies, against the overall findings of the three empirical studies in this thesis. Further information can be found in section 6.3. p190 and 6.3.1, p191, specifically sub-sections: 6.3.1.1, p191; 6.3.1.2, p192 and 6.3.1.3 p164.

3.5.1. The 'Take Homes'

The results overall identified variable levels of coherence in perceptions related to: (a) the overall goals and design of the pathway; (b) the goals at specific stages/phases; and (c) coaching delivery at specific stages/phases of the pathway. Specifically, the results suggest that there is a relative balance of perceptions throughout the age groups across these three aspects; however, there were also elements of incoherence within and across some of the specific factors explored and the specific age groups. The following tables outline some notable aspects of coherence and incoherence from the results covering: (a) the overall goals and design of the pathway; (b) the goals at specific stages/phases; and (c) coaching delivery at specific stages/phases of the pathway.

Table. 3.6. The Overall Goals and Design of the Full Pathway.

Marker of coherence	Notable aspects of coherence	Notable aspects of incoherence
Shared view on the desired senior / adult performer.	• Coaches generally agree on the balance that GBCT require in terms of adaptability (i.e., call upon a host of race tactics and styles and respond to a range of different challenges).	• Coaches are more mixed in their views on what balance GBCT require in terms of independence. • Coaches are more mixed in their views on what balance GBCT require in terms of resilience.
Shared view on the level of variation or similarity required by developing athletes throughout the pathway	• Coaches generally agree that coaches should not use the same methods and practices as their peers through the pathway.	• Coaches are more mixed in their views on whether riders require different coaches at stages/levels and whether the rider should work with same coach for as long as possible, if getting results. • Coaches are more mixed in their views on whether coaches throughout the pathway should use the same methods and practices as GBCT.

Table. 3.7. The Goals at Specific Stages of the Pathway.

Marker of coherence	Notable aspects of coherence	Notable aspects of incoherence
Shared view of the focus (purposes) of coaching for development of the individual at each stage	• Coaches generally agree on the purposes of coaching.	• Coaches are more mixed in their views on their perceptions of stakeholder's (riders, parents, other coaches) views of the purposes of coaching.
Shared view of the coaching goals for the development of the individual at each stage	• Coaches generally agree on their goals at specific stages of the pathway	• Coaches are more mixed in their perceptions of other stakeholders (rider, parents, other coaches, GBCT) goals that do not align to their own goals.

Table. 3.8. The Coaching Delivery at Specific Stages of the Pathway.

Marker of coherence	Notable aspects of coherence	Notable aspects of incoherence
Shared view on the appropriate coaching delivery that meets the need of the individual's age/stage		• Coaches focus, and type of practice are more mixed in their views and this varies through the age groups, type of practice and stage of development
Shared view on the appropriate teaching and coaching methods to meet the needs of the individual's age/stage	• Coaches generally agree on the balance of coach led or rider led planning through age groups	• Coaches are more mixed in their views on the balance of old or new approaches through the age groups • Coaches are more mixed in their views on the balance of repeated or variable practice through the age groups • Coaches are more mixed in their views on the balance of instruction or questioning through the age groups • Coaches are more mixed in their views on the balance of individual or group practices through the age groups • Coaches are more mixed in their views on the balance of problem solving or practicing solutions through the age groups • Coaches are more mixed in their views on the balance in coach or rider feedback through the age groups • Coaches are more mixed in their views on the balance of measurement of performance or for learning through the age groups • Coaches are more mixed in their views on the balance of coach or rider-led goal setting through the age groups

Overall, the results suggest the coaches have a level of coherence in regard to the overall goal and design of the talent pathway. However, given that there are no published requirements for the desired senior performer by GBCT, in terms of adaptability, independence and resilience, the coaches appear to be developing the rider based on their existing knowledge or from information provided by their peers.

Specifically, the coaches were coherent in regards to the balance of adaptability, and were incoherent in regard to independence and resilience. Therefore, the riders' typical journey will clearly be defined by coaches in the system who "think" they know what GBCT desire as a senior performer, however, this method clearly lacks clarity, coherence, application, and consistency of approach through the system.

Similarly, the coaches have a level of coherence in regard to the level of variation or similarity required to develop riders throughout the pathway, agreeing coaches should not use the same methods and practices as their peers. However, once again there are no differences in the coach educational content provided by the NGB other than discipline content. This point suggests the coaches believe in delivering differently, but clearly have no, or limited "tools" to do so. Additionally, the coaches were incoherent in regard to whether riders require different coaches at stages/levels and in their views whether they should use the same method and practices as GBCT. Clearly, the coaches are not being guided in the practice by the NGB and are potentially relying on their prior knowledge, knowledge from the social milieu and the NGB.

The focus and goals of the coaches are also coherent. However, the coaches reported focus is mainly on the short-term with their primary goal of fun and enjoyment. Whilst the coaches are coherent in these two areas that meet the club level focus and goals, they potentially could fail to prepare the riders for the next stages of the pathway (e.g., talent, foundation). Additionally, the coaches were incoherent in their own views and the perception of those of the stakeholders in this area, suggesting a lack of communication and engagement with all stakeholders.

Previously it was stated that the coaches generally agreed that they should not use the same practice as their peers. This point is supported in the coaches' perceptions of the coaching delivery and the teaching/coaching methods to use. For example, the coaches were incoherent within age groups, type of practice and stage of development

delivering a variety of content in many different ways. Finally, the coaches were incoherent across all areas of the plan, do and review cycle whilst using a variety of teaching and coaching methods, with the exclusion of coach or rider-led planning, where the coaches clearly though this was their job.

The lack of coherence in the results appears not to offer riders a system wide approach to their development, leading to a relatively incoherent pathway and reduced opportunity to succeed with a degree of "ping-ponging" in the rider's journey.

3.5.2. Why I Might Have Found What I Found

To support the potential reasons for the findings within the data, I next provide cycling coach demographic data as background information to provide context and aid clarity to the discussion. Although there is no such thing as a typical coach, it is fair to say that the demographic data from this survey and previous surveys (e.g., British Cycling and Sports Coach UK Coach Survey, 2014) undertaken suggests a cycling coach is more likely to be a volunteer (e.g., 85% against national average of 67%), predominately white male, aged 40 - 59 from higher-socio economic backgrounds, married with children and well educated (e.g., 30% attaining a 1st degree, 21% a Postgraduate Degree and 4% with Doctorates). The coaches' main motivations for taking up coaching are to give something back to the sport and to provide fun and enjoyment for the rider(s) primarily through group coaching. Over half of coaches took up coaching after experiencing competitive cycling and they hold a Level 2 coaching award having coached on average for 3 -5 years.

To provide structure to the next part of the discussion on why I might have found what I found, I present four specific subsections that outline some of the potentially influencing factors on the pathway that leads to the incoherence/coherence demonstrated in the results. These factors are: 1) epistemological; 2) structural and or environmental; 3) coach education; and 4) socio-cultural.

3.5.3. Epistemological Reasons for the Results

The results present several interesting points that can be potentially explained by the coaches' personal epistemological positions (cf. Grecic & Collins, 2012, 2013). More specifically, the balance of coherence/incoherence in several areas within the coaches' responses appears to be based on a spread of epistemologies that range from naïve to sophisticated.

Given that epistemology is a multidimensional construct that matures to varying levels based on age, life experiences, education, and sociocultural influences, (Chan & Elliot, 2000; Schommer, 1990, 1994; and Youn, Yang & Choi, 2001) it is unsurprising to find a broad spread given the spread of coaches on the pathway, with their personal backgrounds and experiences. However, what appears to be apparent from the study is the coaches varying levels of maturity (e.g., novice or expert coach, motivations for coaching) regarding their epistemology and the apparent lack internal coherence (i.e., the alignment of one's philosophy with actual practice).

For example, the coaches disagree that "coaches throughout the pathway should use the same methods and practices, clearly demonstrating a more sophisticated epistemology in identifying a need for individualised and context specific methods and practices. However, the results appear to suggest otherwise, with a proportion of coaches leading group practice thorough coach led-planning, goal setting, feedback, and hand me down gold standard practices, favouring traditional instruction in their coaching delivery over education, Raelin (2007). Accordingly, this point may suggest that a fraction of coaches (novice and/or experienced) believe coaching knowledge is (and always has been) passed down from coach to coach and expert rider as the coaching experts. This dichotomy is further challenged with some the coaches believing learning is enhanced via education and learning, and that knowledge is learned gradually through reasoning and is self-constructed.

However, whilst a number of coaches say one thing, “expert coaching is not learned by carefully copying current experts” the results may indicate that they are practicing the same as their peers and are heavily influenced by the culture and the system (e.g., coach-led planning across all age groups).

3.5.4. Structural / Environmental Reasons for the Results

The level of coherence/incoherence found in the results has the potential to emanate from the BC pathway design which has two-main cycling eco-systems that cover development, participation and performance (Lyle, 2002), and are relatively immature given its time from conception (2003).

The first two stages of the eco-system cover young riders from 5 years to 16 years that cycle in BC Go-Ride and BC Affiliated Clubs where the two clubs generally differ in goals for their riders, with the Affiliated club focussed on fun and racing and the Go-Ride club focussed on fun and engagement, these clubs have vastly different resources and support from the NGB (e.g., Go-Ride club - Go -Ride coaches, NGB Development Officers, Regional Development Managers, and Affiliated club – phone support). Given the pathway design and current total numbers of riders, only 30% of riders in these settings enter formalized racing, structured competition, or leagues. Therefore, it is suggested that the remaining 70% of young people and their families are looking to engage in cycling for personal and social development. This motivational objective aligns with the coaches (<12 and 12 to 16) reported short-term goals of supporting the rider to perform well in the session “today” and have fun and enjoyment.

These findings are also supported in the British Cycling & Sports Coach UK, 2014, coach survey, that identified cycling coaching as being based more towards development of the individual over readiness for competition. However, that stated, the results in the current study do demonstrate an appropriate increase in focus for the riders

who wish to “race” with a notable number of the coaches in the 12 to 21-year group focus on longer-term planning, goal setting and performing well next year.

Given BC have two-main cycling eco-systems that have differing objectives (e.g., fun/social or fun/race), it is no surprise that within these systems the riders appear to be coached by a body of coaches (e.g., BC professional pathway, Go-Ride, GB Talent, Foundation, Academy, Volunteer club, and independent professional), who seem to have mixed epistemologies (naïve to sophisticated), and appear not to have been strategically placed by the system controller as outline by Webb et al., 2016, in Chapter 2. The potential lack of strategic placement of coaches could be considered to have contributed to the incoherency identified regarding their perceptions of what the “typical” performer the sport aims to produce regarding adaptability, independence, and resilience. Furthermore, the differing environments (e.g., group v individual), specific goals of each stage of the pathway, social milieu, coaching roles, and the lack of a “Long Term Rider Development Model” (LTRDM), (cf. Holland, Woodcock, Cumming & Duda, 2010; Martindale et al., (2007); Martindale & Mortimer, 2011), has the possibility of not giving clarity to all stakeholders of the “big picture” i.e., GBCT/BC long-term vision and might be impacting the coaches practice (Larsen et al.,2013).

Furthermore, coaching practice appears to be heavily coach-led in cycling; therefore, it is unsurprising that the pathway stakeholders (i.e., riders, parents, and other coaches) may lack clarity and coherence regarding the purposes of coaching given they are not involved with the process (Pankhurst & Collins, 2013) and do not receive any specific communications from the system controller or pathway/club coach. Moreover, parents appear to lack knowledge and understanding of their role in supporting their off

spring, (Knight, 2018, Appendix L) as they might have never been engaged due to requests of "leave it to the coach".

3.5.5. Coach Education Reasons for the Results

Given the structure and compliance requirements of the BC coaching system (e.g., role, remit, qualification level and environment) and rider pathway (e.g., age group, stage and discipline), coupled with the overt outcomes at the age/stage (see Appendix G and H), it is no surprise that the majority of coaches up and down the pathway are relatively coherent in that there should be variation on the pathway in regard to riders requiring different coaches at different levels and stage of their development.

The coaches are to some extent influenced by their social milieu, with the main factor overall suggested by the coaches is the NGB coach education programme (supplementary result from survey question 10; Appendix J). Interestingly, the coaches current coaching "curriculum" provided by the NGB is lacking knowledge of Long Term Rider Development (LTRD), as currently, Level 1 and 2 coaching courses and CPD, only prescribe generic cycling skills (e.g., fun technical/tactical practices,). This reliance on technical and tactical practices could be accounted for due to the demands of cycling as a centimetre, grams, and seconds (CGS) sport and has its roots in the culture of cycling, and indeed the development of education content provided to date for the coaches. Therefore, it could be argued that the coaches' knowledge is passed down from coach (or expert rider) to coach (and always has been).

3.5.6. Socio-Cultural Reasons for the Results.

It could be argued that any coherence or incoherence in coaching delivery identified in the results could be linked the philosophy of the club in the BC eco-system. Here there is likely to be a CoP (Culver, & Trudel, 2006; Stoszkowski, & Collins, 2014a; Wenger, 1999), which sets the coaching agenda and the delivery environment

irrespective of, or at least in addition to, the coaches' personal epistemology. The coaches are possibly influenced by their peers and the NGB (supplementary result from survey question 10; Appendix J) with further socialisation and observation of cyclists in their environment, (Cushion, Armour & Jones, 2003; Lemyre, Trudel, & Durand-Bush, 2007). These coaches are already immersed in the culture of cycling (technical and coaching methods) and the social milieu they operate in (e.g., learn to cycle and have fun, or learn to race and have fun). Given 51% of coaches on the pathway took up coaching after being a competitive cyclist (e.g. Regional, National or International), and were motivated "to give something back" (British Cycling & Sports Coach UK, 2014), it is unsurprising the coaches of the 12 – 16 and 17 – 21yrs, report being influenced "most" by "coaches who have worked with senior elite riders" and "coaches who have developed successful riders at their stage of the pathway", (supplementary result from survey question 10, age group filters, Appendix J). Interestingly, and maybe of concern is that the youngest groups (<12yrs) coaches are influenced "most" by the NGB course and tutors, and also within their own level of the pathway (e.g., experienced coaches who have not necessarily developed successful riders at their stage of the pathway and coaches who have similar coaching ability to themselves), (supplementary result from survey question 10, age group filters, Appendix J).

Furthermore, the influence of social-cultural factors identified by the coaches appears to see them copying the practice of others, whether or not there has been a consideration of any practice variation to meet any age and stage requirements of the rider. However, there are some coaches who emphasise appropriate development over early success (cf. Abbott, Collins, Martindale, & Sowerby, 2002) in their coaching, (e.g., coaches in the <12-year group include fun often and always, whilst coaches in the 17 to 21-year group deliver conditioning often to half of the time).

Additionally, a proportion of all age group coaches supports the social development focus. These coaches ranked fun and enjoyment and lifelong participation as the most/or second most important goal within the development (<12 years) and participatory (12 to 16 years) domains. The findings are supported by the work of Gould, Lauer, Rolo, Jannes, and Pennisi, (2008), who identified fun and enjoyment as a factor to maintain motivation levels and continued engagement in sport. Whilst some coaches appear to deliver age/stage appropriate practices they are still delivering through an "instructor" centric approach that is underpinned by the relatively immature BC coaching system (developed in 2003) and the long-standing culture of cycling.

Indeed, the results suggest coaching in cycling seems to follow a recipe or formulaic pattern in many respects (e.g., hand me down practices or copy and paste), which is clearly apparent in the results of the older age group coaches (17 to 21, >22), where they deliver "tried and tested" approaches in their practice over developing new approaches that meet the needs of the individual.

The absence of explicit stakeholder engagement can also be seen in the results across most areas and could be considered to be the result of the long-standing culture in cycling and indeed sport where the coach leads the sessions and everybody else is a bystander. This approach lends itself to a lack of coherence across all stakeholders (i.e., riders, parents, other coaches and GBCT) due to the coach perceiving the stakeholders not to know, be interested in, or agree ,with what coaching skills and focus is required at different stages of the pathway, (Pankhurst, Collins & MacNamara, 2013).

3.6. Summary and the Next Steps.

Several influencing factors that lead to incoherence/coherence on the pathway have been identified in this study and align to the principles and mechanisms identified in Chapter 2. These factors have the potential to lead to the balance of coherence that is demonstrated in the results. However, what is possibly apparent from the study is the

coaches' balance of internal coherence (i.e., the alignment of one's philosophy with actual practice). This point is supported by the findings on similarity or variation (Figure 3.3), where a majority of coaches *disagree* that they should use the same methods and practices throughout the pathway. On the other hand, the coaches balance of coaching methods employed throughout the pathway (Figure 3.7), suggests limited variation through the age groups. In essence, the coaches appear to be talking a better game than actually walking it with their belief system not as sophisticated as they might suggest leading to their coaching practice being heavily coach-led with limited engagement with pathway stakeholders (i.e., riders, parents, and other coaches). This approach is potentially leading to a lack of clarity and coherence regarding the purposes of coaching given all stakeholders are not involved with the process (Pankhurst & Collins, 2013)

The balance of coherence/incoherence in the pathway and indeed the subsequent level of clarity can be potentially explained by the coaches' responses which appear to be based on a spread of epistemologies positions that range from naïve to sophisticated (Grecic & Collins, 2012, 2013). These coaches have not been strategically placed by the system controller as outline by Webb et al., 2016, in Chapter 2, but practice and socialise in two-main cycling eco-systems. One of the systems (BC Go-Ride) is relatively immature in terms of years 'in existence, however, both are steeped in the culture and the history of cycling (see Chapter 1) and comprise of generic development, participation, and performance stages (Lyle, 2002). The absence of an explicit LTRDM is potentially impacting the coaches practice, Larsen et al., 2013, (e.g., coach-led planning, goal-setting, instructional delivery and feedback), however, that stated, the coaches practice overall appears to be developmental and links to the philosophy of the club(s). The practice is heavily influenced by the NGB, club coaching agenda and social milieu irrespective of the coaches' personal epistemology.

Finally, it could be argued that the current BC pathway produces two types of rider, one developed from "the straight and narrow pathway" as depicted in Figure 1 in Chapter 2. Here the rider starts their journey in a BC Go-Ride Club with coaches and stakeholders preferring to focus on the "moment" (over long-term) with a notable emphasis on fun and enjoyment and helping the riders be a lifelong cyclist. These riders copy and reproduce their learnt skills from a plethora of similar types of novice coaches, in similar environments with similar coaching methods learnt from the NGB, and ones that mimic those of their coaches' peers. For riders who progress through "the straight and narrow pathway" depicted above, they may progress faster through the system, however, adaptability, independence, and resilience may be low as a senior performer, leading to potential challenges if something is not "just right" as prepared for (e.g., change of bike, different track).

The second "type" of rider developed is from the BC Affiliated Clubs where coaches rely more on what Collinson, (1996), termed professional knowledge of the sport (e.g., technical and C.G.S KPI) merged with the craft knowledge(Cassidy & Rossi, 2006) that coaches have accumulated through experience(e.g., racing) and their social milieu. This rider may undertake learning that is unstructured and contradictory, i.e., through a focus of racing, and their progress to the next level could be erratic and coincidental. Additionally, as a senior performer their adaptability, independence and resilience could be potentially high in some areas and low in others (as depicted in Figure 2.4 in Chapter 2).

This chapter critically explored the extent of vertical (i.e., 'up and down') coherence within the BC talent pathway, as measured through coach perceptions. Subsequently, the chapter identified a balance of coherence/incoherence amongst the coaches on: (a) the overall goals and design of the pathway; (b) the goals at specific stages/phases and (c) coaching delivery at specific stages/phases of the pathway.

The coaches in the study were aligned to the pathway age groups (Appendix G) and the three general pathway phases (i.e., Foundation, Academy and Podium) and the five levels (e.g., Apprentices, Junior Academy) as in Figure 3.1, (p10). The study also combined the six cycling disciplines into age group categories for the riders that they coach most to provide a general age group focus rather than a discipline focus, (e.g., < 12 Years Old, 12 to 16 Years, 17 to 21 Years and > 22 Years).

Given Chapter 3 explored the vertical (i.e., 'up and down') coherence in the pathway with an age group focus, the next step in Chapter 4 was to critically explore the extent of horizontal coherence (i.e., across three Olympic disciplines, Road, Track, and MTB) within the BC talent pathway, as measured through coach perception.

CHAPTER 4

EXPLORING HORIZONTAL COHERENCE IN THE BRITISH CYCLING PATHWAY

4.1. Introduction

In Chapter 3, the British Cycling talent pathway was critically explored against the conceptual principles and mechanisms of coherence outlined in Chapter 2. The study aimed to determine notable aspects of vertical (i.e., age group focus) coherence/incoherence, specifically, in the areas of: (a) the overall goals and design of the pathway; (b) the goals at specific stages/phases and (c) coaching delivery at specific stages/phases of the pathway. With this focus, the study in Chapter 3 subsequently identified that an interesting balance of coherence/incoherence exists across the key age groups. More specifically, coaches were found to be more coherent in terms of their shared view: 1) that GBCT desire senior riders that are adaptable; 2) that coaches should not use the same methods and practices as their peers through the pathway (levels or disciplines); 3) that coaches should have clear purposes and goals at specific stages of the pathway; and finally; 4) that the coaches favour a balance of coach-led planning over rider-led planning. In contrast, the coaches were less coherent in terms of their shared view: 1) on the balance of independence and resilience desired by GBCT; 2) on whether riders require different coaches at various stages/levels; 3) on whether the rider should work with the coach for as long as possible if getting results; 4) whether they should use the same methods and practices as GBCT; 5) on what stakeholder (rider, parents, other coaches, GBCT) goals and focus are, compared to their own; 6) on the appropriate coaching delivery to use that meets the need of the individuals age/stage, and finally, 7) on the appropriate teaching and coaching methods to use to meet the needs of the individuals age/stage.

More broadly, the study in Chapter 3 hypothesised that influencing factors of the coaches' epistemological position, the structure/environment, coach education and the

socio-cultural context might be affecting the coaches' beliefs and perceptions and therefore the balance of coherence/incoherence demonstrated.

Specifically, the study identified that the coaches' personal epistemological positions (cf. Grecic & Collins, 2012, 2013), appear to range from naïve to sophisticated, with a spread of epistemologies that could be impacting the level of coherence/incoherence found in the results. However, and interestingly, the coaches appear to lack internal coherence (i.e., the alignment of one's philosophy with actual practice), in other words saying one thing and practicing another. What is apparent in the study is the potential effect of the pathway design and the two main cycling eco-systems that exist in which the coaches practice. These systems are still relatively immature, being established in 2003, to support clubs and cyclists achieve two differing objectives. That is, some clubs focus solely on fun and social development of the riders, whilst, others focus is clearly racing.

Furthermore, the coaches are predominately volunteers who have opted to do the role and have not had the necessary training (i.e., the "typical" performer the sport aims to produce) to enable them to coach in a variety of contexts or environments. Additionally, it was identified that the coaches on the pathway are not strategically placed by the system controller as outline by Webb et al., 2016, in Chapter 2, potentially contributing to the incoherence found.

A fundamental point in the study that could be impacting the coaches' practice, and, therefore, any incoherence identified may well be due to the absence of an explicit LTRDM. In comparison, the coherence demonstrated in the study could have its roots in the NGB coach education programme, as the coaches appear to be influenced by this curriculum. Indeed, the culture of the sport and the social milieu potentially impact the coaches as can be seen through their short-term coach centric approach.

Overall, therefore, Chapter 3 highlighted some important factors with regards to vertical coherence in the BC pathway. However, it is important to recall that another key message from Chapter 2 was that coherence in the talent pathway can also be horizontal in nature (i.e., across disciplines); which seems particularly relevant to consider in a sport like cycling, where there are a number of disciplines that riders can switch between and, therefore, different types of participants for BC to deliver a central message. In other words, it is important to explore the extent to which riders might be 'ping-ponged' when they switch or jointly participate in different disciplines (see the "Rider Route" in Figure 3.1, which appears to show the opportunities for crossover). Additionally, it is important for the sport as a whole to consider the consistency of its' message across these various disciplines to gauge the extent to which guiding (if any) principles are relayed across its various streams (in pursuit of common participation, development, and performance goals).

On this basis, the overall purpose of this study was to explore the levels of horizontal coherence between coaching across BC's three Olympic disciplines: Road, Track, and MTB. The three disciplines were chosen based on their Olympic status (i.e., heavily funded and resourced due to the no-compromise funding for medals by UK Sport) and the fact that these disciplines have been the major focus for BC since the inception of Lottery funding, as identified in Chapter 1. Therefore, given this focus, Road, Track and MTB are further developed in terms of the understanding the sport "demands" of the disciplines and education resources to support coaches' development. Additionally, the three disciplines are the largest segments within BC overall participation opportunities that cover recreation and sport.

More specifically, this study aimed to explore how similar or different coaches are across each of these disciplines with regards to their views on: (a) the overall goals and design of the BC pathway; (b) the focus and goals of their coaching; and (c) the

content and methods of their coaching delivery. Similar to Chapter 3, an additional aim was to explore the extent to which the epistemologies of coaches across each of these disciplines were similar or different (as a potential explanation for the results found).

To aid the later interpretation of my findings, I now proceed to outline what was "known" and recorded before data were collected for the study presented in this chapter. More specifically, Table 4.1 summarises the three focal markers of horizontal coherence and the relevant evidence that might suggest that coaching across road, track and MTB is appropriately coherent (i.e., similar and different in expected / desired ways by BC).

Table 4.1. Markers of Horizontal Coherence in the British Cycling Pathway.

Marker of Coherence	**Expected Similarities and Differences across Road, Track and MTB**

Coach perceptions on the overall goal and design of the BC talent pathway	**Views on the desired senior rider**:
	• Expected similarities/differences across the disciplines:
	  ○ Unknown: currently there are no "measures" for Adaptability, Independence, Resilience outlined by BC to guide coaches across the three disciplines.
	
	Views on the levels of coaching variation:
	• Expected similarities across the disciplines:
	  ○ Similar coaching methods through the disciplines based on the coaches training, which typically involves / focuses on fun activities, technical and tactical.
	• Expected differences across the disciplines:
	  ○ Different focus and balance on practice through the disciplines based on the coaches training, which typically involves / focuses on conditioning, technical and tactical

Coach perceptions on the focus and goals of their coaching	**Views on the focus of coaching**:
	• Expected similarities across the disciplines:
	  ○ Short term goals set based on coaches training, which typically involves / focuses on short term planning (e.g., session plan or 6-week plan)
	• Expected differences across the disciplines:
	  ○ Unknown: currently there are no "measures" for differing focus outlined by BC to guide coaches across the three disciplines.
	
	View on the goals of coaching:
	• Expected similarities across the disciplines:
	  ○ Unknown: currently there are no "guidelines" for goal setting outlined by BC to guide coaches across the three disciplines.
	• Expected differences across the disciplines:
	  ○ Unknown: currently there are no "guidelines" for goal setting outlined by BC to guide coaches across the three disciplines.

Coach perceptions on the content and methods of their coaching delivery	**View on coaching content:**
	• Expected similarities across the disciplines:
	  ○ Coaching content based on coaches training, which typically involves / focuses on cycling technique, tactics and conditioning practices,
	• Expected differences across the disciplines:
	  ○ The balance of content based on coaches training, which typically involves / focuses on cycling technique, tactics and conditioning practices,
	
	Views on coaching methods:
	• Expected similarities across the disciplines:
	  ○ Unknown: currently there is no "pedagogical" content outlined by BC to guide coaches across the three disciplines.
	• Expected differences across the disciplines:
	  ○ Unknown: currently there is no "pedagogical" content outlined by BC to guide coaches across the three disciplines.

4.2. Purpose of Study

As summarized above, Chapter 3 was an explicit study on the levels of vertical coherence throughout the BC pathway. More specifically, the study aimed to determine notable aspects of vertical (i.e., age group focus) coherence/incoherence, specifically, in the areas of: (a) the overall goals and design of the pathway; (b) the goals at specific stages/phases and (c) coaching delivery at specific stages/phases of the pathway. Subsequently, and as outlined in Table 4.1, effective pathways will be characterised by coherent coach views on: 1) the overall goals and design of the pathway; 2) the focus and goals of their coaching; and (c) the content and methods of their coaching delivery.

Building on Chapter 3, my current role (as per Chapter 1), and to further extend my professional knowledge, the purpose of this study was to critically explore the extent of horizontal coherence (i.e., across three Olympic disciplines, Road, Track, and MTB) within the BC talent pathway, as measured through coach perception. More specifically, my focus was on the extent of coherence amongst coaches on: (a) the overall goals and design of the BC pathway; (b) the focus and goals of their coaching; and (c) the content and methods of their coaching delivery. Similar to Chapter 3, an additional aim was to explore the extent to which the epistemologies of coaches across each of these disciplines were similar or different (as a potential explanation for the results found).

4.3. Methodology

4.3.1. Design, Questionnaire, Procedure and Data Analysis

Given the purposes stated above, the design, questionnaire, procedure and data analysis for this study were as those described in section 3.3.1 in Chapter 3. For clarity, the questionnaire and procedure were exactly the same as stated in section 3.3.1. The only difference to the study presented in Chapter 3 was that my focus and analysis in this chapter involved a comparison of coaches *across different disciplines* rather than

across different age groups. The analysis therefore involved comparison of the collective views of all 156-road coaches against the collective views of all 43 track coaches and the collective views of all 59 MTB coaches.

As noted above, the different number of coaches in each discipline was reflective of BC's actual coaching pool (i.e., where there are roughly three times as many road coaches as track and MTB). Additionally, the spread of coaches within these disciplines (in terms of the age group that they coached most: see Table 4.2) was also reflective of the current reality in the sport (i.e., the spread of coaches across the age groups in each discipline mirrors the overall participation / opportunities in each of these disciplines). To reiterate, the differences in the spread of coaches in each discipline was both reflective of reality and, importantly, not detrimental to my focus on the extent to which each discipline *as a collective* is spreading the *central messages* (not age group-specific messages) desired by BC. These differences also did not interfere with my analysis given that my chosen approach was based on visual inspection rather than statistical analyses.

4.3.2. Participants.

The total number of participants considered in this study was (n=258), or 78.4% of participants completing study number 2 in Chapter 3. The total number of participants were comprised of; Road coaches (n=156), Track coaches (n= 43) and MTB coaches (n = 59), detail provided in Table 4.2.

Table 4.2. Age of Riders and Spread of Coaches within Disciplines.

Age of Riders and Spread of Coaches Within and Across Disiplines							
			< 12 Years Old	12 to 16 Years	17 to 21 Years	> 22 Years	Total
Disipline Coach	Road	Count	59	44	13	40	156
		% within	37.8%	28.2%	8.3%	25.6%	100.0%
	Track	Count	6	21	4	12	43
		% within	14.0%	48.8%	9.3%	27.9%	100.0%
	MTB	Count	27	21	2	9	59
		% within	45.8%	35.6%	3.4%	15.3%	100.0%

4.4. Results

The purpose of this study was to critically explore the extent of horizontal (i.e., discipline group focus) coherence within the BC talent pathway. More specifically, and following the study in Chapter 3, my particular focus was on the extent of horizontal coherence across coaches of three specific disciplines (i.e., Road, Track and MTB) within cycling on: (a) the overall goals and design of the BC pathway; (b) the focus and goals of their coaching; and (c) the content and methods of their coaching delivery. To offer a potential explanation for the levels of coherence found, the study also explored the nature and spread of the coaches' epistemologies.

To provide structure to the results, these are presented through a "discipline" group lens and detail four specific subsections that match the study purposes. Given the scale of this study, and akin to Chapter 3, the results are primarily presented in graphical and tabular form with the surrounding commentary used to highlight particularly notable aspects of higher or lower coherence. Thus, the Figures and tables again contain 'the detail' and the commentaries contain the overall message.

4.4.1. Perceptions on the Overall Goals and Design of the Full Pathway.

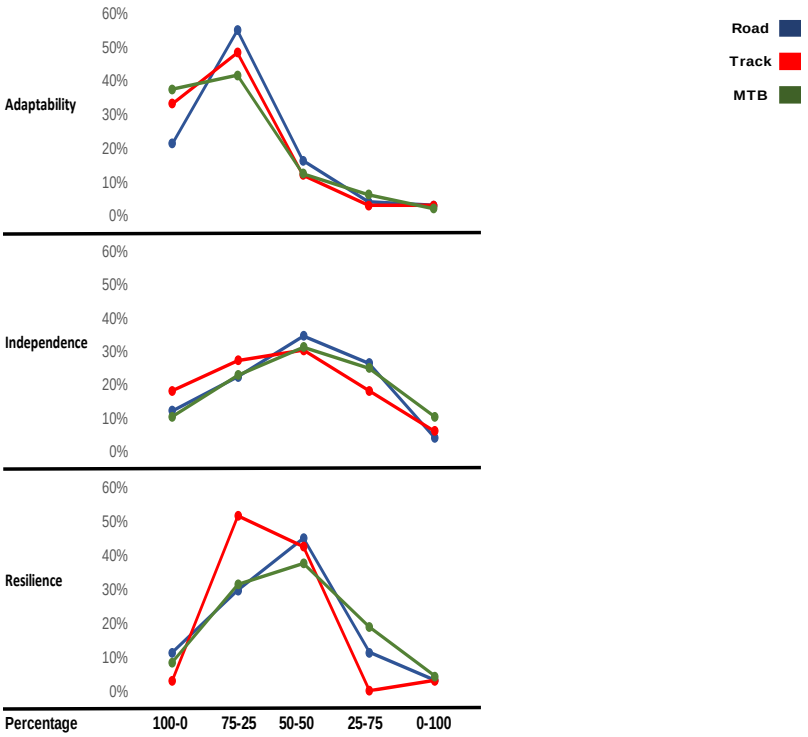

Figure 4.1. Coaches perceptions on the balance of independence, adaptability, and resilience desired by British Cycling in senior riders (Q27-29).

Legend. Vertical axis – percentage of responses per discipline group relating to Adaptability, Independence, and Resilience. Horizontal axis presents the answer choices regarding the balance in percentage terms coaches believe GBCT require in senior riders.

Note: Three survey questions asked coaches to select the balance in percentage terms, i.e., 100 - 0, 75 - 25, 50 - 50, 25 - 75 and 0 -100 between scenario A or B, covering: (1) ***Adaptability***, (a) senior cyclists who can call upon a host of race tactics/styles and respond to a range of challenges or (b) senior cyclists who can rely upon a trademark tactic/style and can get the most out of training consistently the same way. (2) ***Independence,*** (a) senior cyclists who can follow programmes, sessions and evaluations that are given to them or (b) senior cyclists who can lead on their own programmes, sessions, and evaluations. (3) ***Resilience***, (a) senior cyclists who use themselves to bounce back from setbacks and persist when things are difficult or (b) senior cyclists who use the support of others to bounce back from setbacks and persist when things are difficult.

Figure 4.1, (top) appears to show that the coaches across all three disciplines reported similar views on what they thought GBCT desired in terms of adaptability. In fact, the patterns and percentages for adaptability within the three disciplines appear to show the participants largely believe that the goal of the pathway was to develop senior riders who can call upon a host of race tactics/styles and respond to a range of different challenges (as per the higher percentage of responses to the left of the 50/50 split line in all discipline groups), as opposed to developing riders for GBCT that rely on a trademark tactic/style and riders that consistently train the same way.

The results for independence Figure 4.1, (middle) suggests the coaches within each discipline are potentially incoherent, however, reporting little agreement with their

views on the balance required for a senior cyclist (i.e., one who can follow programmes, sessions and evaluations that are given to them or a senior cyclist who can lead on their own programmes, sessions, and evaluations: based on the general '20%-30%-20%' pattern across the middle three response options). However, there is similarity in patterns and percentages across disciplines; suggesting that coaches across the three disciplines are coherent in their perceptions.

Additionally, the results for resilience in Figure 4.1, (bottom) indicate that most coaches believe GBCT desire riders that are generally able to bounce back themselves as much as, or often more than, relying on support from others (as per the higher percentage of responses to the left of the 50/50 split line in all three disciplines; with this most evident within the Track coaching group).

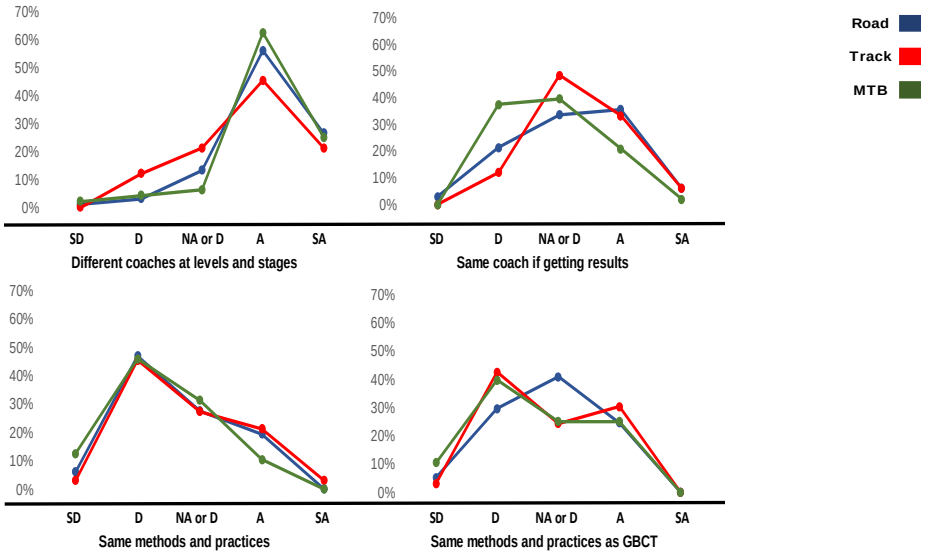

Figure 4.2. Coaches perceptions on the extent of similarity or variation required throughout the pathway (Q30).

Legend. Vertical axis – percentage of responses per discipline group relating to the four statements in the questionnaire and outlined above. Horizontal axis presents the answer choices regarding level of agreement or disagreement, i.e., Strongly Disagree (SD), Disagree (D), Neither Agree or Disagree (NA or D), Agree (A) and Strongly Agree (SA) relating to the four statements.

Note: The survey question asked coaches, "how much do you agree or disagree with the following four statements": (1) riders require different coaches at different level and stages of their development, (2) a rider should work with the same coach for as long as possible if they are getting results, (3) coaches throughout the pathway should use the same methods and practices, (4) coaches throughout the pathway should use the same methods and practices as those in the GBCT.

Figure 4.2, (top left) shows that the majority of participants through the disciplines appear to believe that there should be variation on the pathway with regards to riders requiring different coaches at different levels and stages of their development (as per the percentage responses for agree/strongly agree). The second statement, Figure 4.2, (top right) "a rider should work with the same coach for as long as possible if they are getting results", suggests the coaches within and across the disciplines are incoherent with little agreement with their views based on the patterns and percentages in the figure. What is evident within the results for this statement is the extent of variation across the disciplines with a notable percentage of MTB coaches disagreeing (left of centre line- NA or D) and a similar number of coaches in the Road and Track disciplines agreeing (right of centre line- NA or D) that a rider should work with the same coach for as long as possible if they are getting results. In addition, Figure 4.2, (bottom left) appears to show that a considerable number of coaches across all three disciplines reported disagreement regarding the statement, "should coaches throughout

the pathway use the same methods and practices". Specific results show similar patterns and percentage across the disciplines where a sizable percentage of coaches disagree with the statement suggesting variation of methods and practices on the pathway is required. Interestingly, this statement saw a high percentage of all coaches within the disciplines reporting as neither agreeing nor disagreeing (NA or D).

Of final note from Figure 4.2, (bottom right), is the significant contrasting beliefs reported by the coaches within the three disciplines regarding the statement "coaches throughout the pathway should use the same methods and practices as those in GBCT". Interestingly, the patterns and percentages are somewhat similar (three disciplines generally disagreeing or agreeing with the statement) except for the Road discipline coaches who have the largest percentage of coaches reporting as neither agreeing nor disagreeing (NA or D).

4.4.2. Perceptions on the Focus and Goals at Specific Stages of the Pathway.

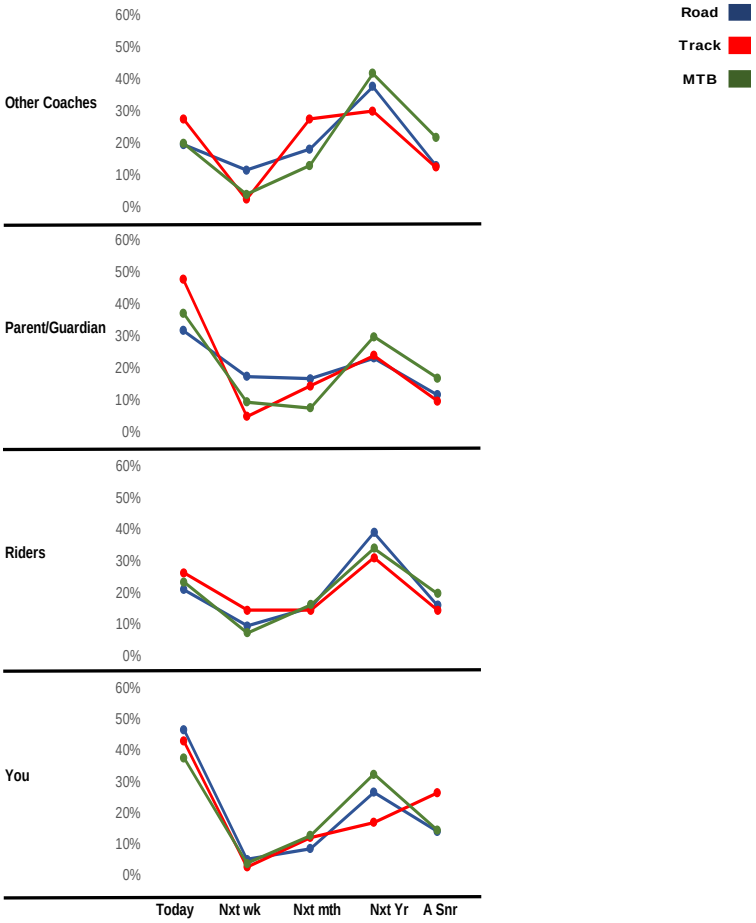

Figure 4.3. Coaches perceptions of theirs and stakeholders focus for development of the individual (Q13)

Legend. Vertical axis – percentage of responses per discipline group relating to the five statements in the questionnaire for the stakeholders (coach, their riders, parents, and other coaches). Horizontal axis presents the answer for the stakeholder groups from today (Today), next week (Nxt wk), next month (Nxt mth) next year (Nxt Yr) and performing well as a senior (A Snr).

Note: The survey question asked coaches, what do you feel is the general focus of, (1) you, (2) your riders who have potential to make GBCT, (3) the parents/guardians of riders who have the potential to make GBCT, and (4) other coaches at your level who have riders with the potential to make GBCT, when looking at the answer choices i.e., the rider performing well in the session today (Today), next week (Nxt wk), next month (Nxt mth) next year (Nxt Yr) and performing well as a senior (A Snr).

Figure 4.3, (bottom figure), suggests that whilst it appears there is a lack of coherence within the coaching groups, a considerable number of coaches of all three disciplines reported similar views regards to the purposes of coaching, that is, the coaches focus is for the short term, i.e., today, or next week (as per the percentage of responses on the left of the Nxt mth split line). In addition, and in contrast, a notable percentage of the discipline coaches appear to focus on the longer term, i.e., next year or as a senior (as per the percentage of responses on the right of the Nxt mth split line). However, there is similarity in patterns and percentages across disciplines; suggesting

that coaches across the three disciplines are mostly coherent in their perceptions. Additionally, Figure 4.3, (2nd from bottom figure), appears to show that the coaches' perceptions are not coherent *within* the disciplines, but *are* coherent across disciplines regarding their riders' focus. The results clearly do not align to their own focus, with a proportion of coaches believing the riders focus is on the longer term, i.e., next month, next year and as a senior, whilst the remainder of coaches' focus is for the short term, i.e., today, or next week (as per the percentage of responses on the left of the Nxt mth split line). These results suggest that coaches across the three disciplines are mostly coherent in their perceptions.

The results in Figure 4.3, (3rd from bottom), appears to show comparable patterns and percentages across the disciplines that suggests some alignment in terms of the coaches' perceptions of parents' focus with a considerable percentage of coaches responding in favour of a short-term focus for parents, i.e., today or next week (as per the percentage of responses on the left of the Nxt mth split line). However, what is evident from the shapes and percentages, is the potential incoherence within the disciplines demonstrated by shift in the number of coaches who perceive parents focus to be to on the next year or as a senior (as per the percentage of responses on the right of the Nxt mth split line). Finally, Figure 4.3, (top), appears to show that the coaches within the disciplines are not generally aligned with their own peers as the focus suggests to being on the longer term (next month, next year and as a senior). However, the results are relatively comparable for the coaches across the three disciplines, potentially suggesting a balance of coherence in their perceptions.

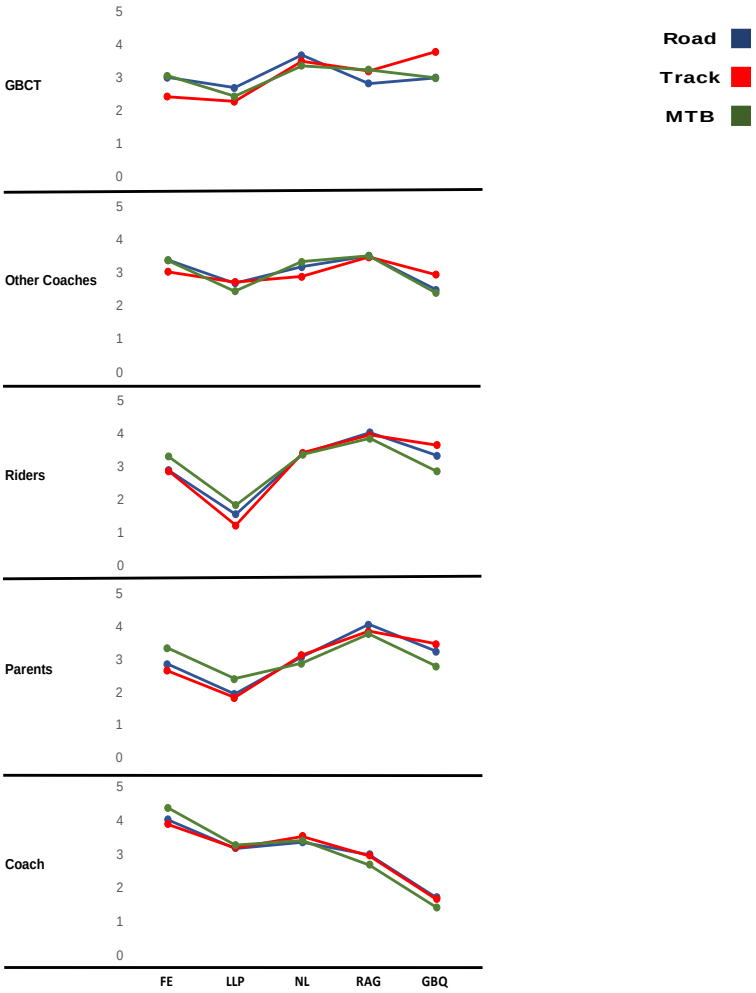

Figure 4.4. Coaches perceptions of the most important goals for themselves and other stakeholders for the development of the individual

Legend: Vertical axis – Rank value (0 – 5), and stakeholders – Coach, Parents/Guardians, Rider, Other coach, and Great Britain Cycling Team. Horizontal axis relating to the five goal statements in the questionnaire, FE - fun and enjoyment, LLP - lifelong participants, NL - next level, RAG - results at their current age-group/level, GBQ - same qualities of current GBCT riders.

Note: The survey question asked coaches to rank in order (0-5), "what they believe are the most important goals in coaching riders with the potential to make the GBCT at your level and discipline", additionally, the coaches were asked to answer what they believed the goals were for other stakeholders, (parents/guardian, rider, other coach at same level, and GBCT). The five goal statements were: (1) to enable the riders to have fun and enjoyment, (2) to prepare riders to be lifelong participants, (3) to prepare the riders physically, technically, tactically, and mentally for the next level, (4) to support riders to achieve results at their current age-group/level and (5) to develop riders with the same qualities of current GBCT riders.

Figure 4.4, appears to show there is similarity in patterns and percentages across and within disciplines; suggesting that coaches across the three disciplines are coherent in their perceptions regarding focus and goals for the development of the individual. However, this potential coherence is challenged by the incoherence of the stakeholder focus where there are several contrasts within the "other coach" and stakeholders that appear to be shown.

Specifically, Figure 4.4 results suggest that the coaches' own focus across and within the three disciplines is clearly prioritized in the following order: 1) fun and enjoyment (FE); 2) preparing riders physically, technically, tactically and mentally for the next level (NL); 3) preparing riders to be lifelong participants of cycling (LLP); 4) supporting riders to achieve results at their current age group/level (RAG), and finally, 5) developing riders with the same qualities of current GBCT riders (GBQ).

However, whilst fun and enjoyment is a constant in the results to varying degrees for stakeholders, the coaches perceive that parents, riders and other coaches prioritise supporting the riders to achieve results at their current age group/level (RAG). The coaches also suggest that the parents' other foci are to develop riders with the same qualities of current GBCT riders (GBQ) and prepare riders physically, technically, tactically and mentally for the next level (NL). Interestingly, the coaches believe GBCT foci is on developing riders for the NL with the same qualities of GBCT (GBQ) and also to achieve results at their current age group/level (RAG).

4.4.3. Perceptions on the Coaching Delivery at Specific Stages of the Pathway.

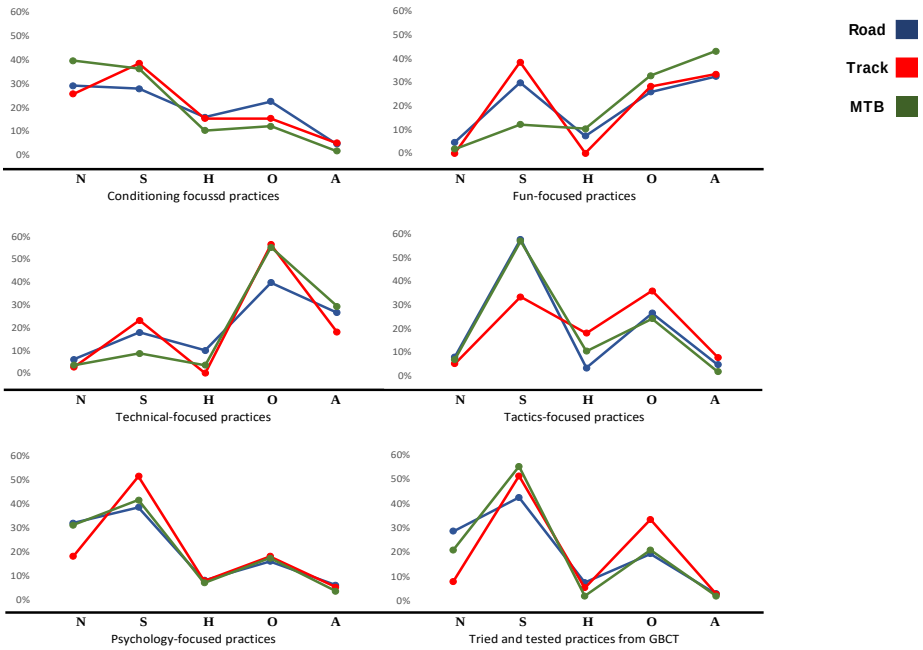

Figure 4.5. The extent coaches use different training content throughout the pathway (Q16 -20)

Legend. Vertical axis – percentage of responses per discipline group relating to the six coaching practice statements in the questionnaire. Horizontal axis presents answer choices of, never (N), sometimes (S), about half the time (H), often (O) and always (A) for the frequency of use for the six coaching practices presented, conditioning, technical, tactical, psychological, fun, and tried and tested from GBCT.

Note: The survey question asked coaches, "how often do you use the following practices with riders who have the potential to make the GBCT" from, (1) conditioning-focused (e.g., getting miles in the rider's legs), (2) technical-focused practices (e.g., drills from the BC Gears book), (3) tactics-focused practices (e.g., race management), (4) psychology-focused practices (e.g., distraction control, goal setting, responding to setbacks), (5) fun-focused practices (i.e., those for enjoyment purposes first and foremost) and (6) tried and tested practices from the GBCT.

As shown in Figure 4.5, (top left) the coaches' responses show similar patterns and percentages regarding using conditioning focused practices sometimes and often within and across the three disciplines. That stated, however, there appears to be contrast within and across the disciplines and coaching groups with a notable percentage of all coaches never using this method of training in their practice, with the highest percentage of coaches coming from the MTB group. The next area reported on in Figure 4.5, (top right) was fun-focused practices. Here the patterns and percentages show a bigger percentage swing towards coaches delivering this type of practice often and always, versus coaches delivering fun-focused practices sometimes. Interestingly, the patterns and shapes show a similar focus across the disciplines with only a very small percentage of all discipline coaches never deliver this type of practice.

In contrast, the MTB group appear to be the biggest "users" of fun-focused practices with the highest responses within the discipline group for often and always. Additionally, Figure 4.5, (middle left) results suggests a notable percentage of coaches across all disciplines include technical-focused content within their practice sometimes and often, however, the variation in percentages suggests bigger contrasts in the coaches' practice within the disciplines themselves. This contrast within the disciplines is continued in perception of tactics-focused practices used by coaches. Figure 4.5, (middle right), results suggest a high percentage of coaches use this practice sometimes and often, with Road and MTB showing similar shapes and percentages.

Figure 4.5, (bottom left) results identify the use of psychology-focused practice across and within the disciplines. The results show similar shapes and percentages across the disciplines with a high contrast within discipline coaching groups. Of note in the figure, is the large percentage swing towards delivery of this type of practice sometimes and often across the disciplines. Interestingly, it appears that a notable percentage of coaches across and within disciplines report never using psychology-focused practices. Finally, in Figure 4.5, (bottom right), the coaches' results demonstrate a large contrast within the discipline groups, but similar across the disciplines for the use of tried and tested practices from GBCT. The shapes and percentages are similar for the use of this practice sometimes and often across the disciplines, whilst, interestingly, the results show a large percentage of coaches in the Road and MTB disciplines never use these practices.

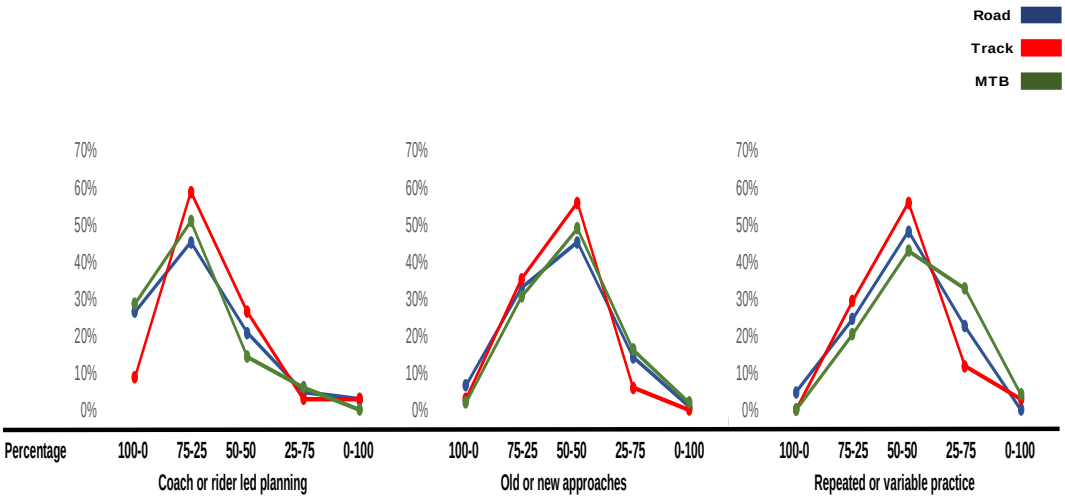

Figure 4.6. The balance of coaching methods employed throughout the pathway, part one. (Q21).

Legend: Vertical axis – percentage of responses per discipline group relating to three coaching and teaching methods statements in the questionnaire. Horizontal axis presents the answer choices regarding the balance of usage in percentage terms, i.e., 100 - 0, 75 - 25, 50 - 50, 25 - 75 and 0 -100.

Note: The survey question asked coaches, "to select the balance of coaching methods you generally use with riders who have the potential to make GBCT answering in percentage terms, i.e., 100 - 0, 75 - 25, 50 - 50, 25 - 75 and 0 -100 between scenario A or B, covering: (a) coach-led planning or (b) rider-led planning; (a) following what has worked previously or (b) developing new approaches; and (a) repeated practice or (b) variable practice.

The coaching methods used in Figure 4.6, (left), regarding coach-led or rider-led planning, demonstrate similarity in shape and in broad percentage terms with the majority of coaches through the three disciplines suggesting the balance to be in favour of coach-led planning over rider-led planning. Interestingly, nearly a third of coaches in the disciplines of MTB and Road reported the balance to be 100% coach-led. Regarding coaches following what worked previously or developing new ideas, Figure 4.6, (middle) appears to show similarity exists with shapes and percentage responses with a balance of 50/50 (what worked previously or developing new ideas) through and within the three disciplines groups. However, looking more closely, it is apparent that the MTB and Road results suggest a percentage of these groups coaches favour new approaches with a balance of 25/75 over what worked previously. Additionally, Figure 4.6, (right) appears to show similarity in coach perception regarding the use of repeated or variable practice as seen through the similar shape and percentages in the figure with the majority of coaches through the three disciplines reporting a balance of 50/50 in the use of these practices. Interestingly a notable percentage of coaches in MTB responded strongly for a balance of 25/75, favouring variable practice.

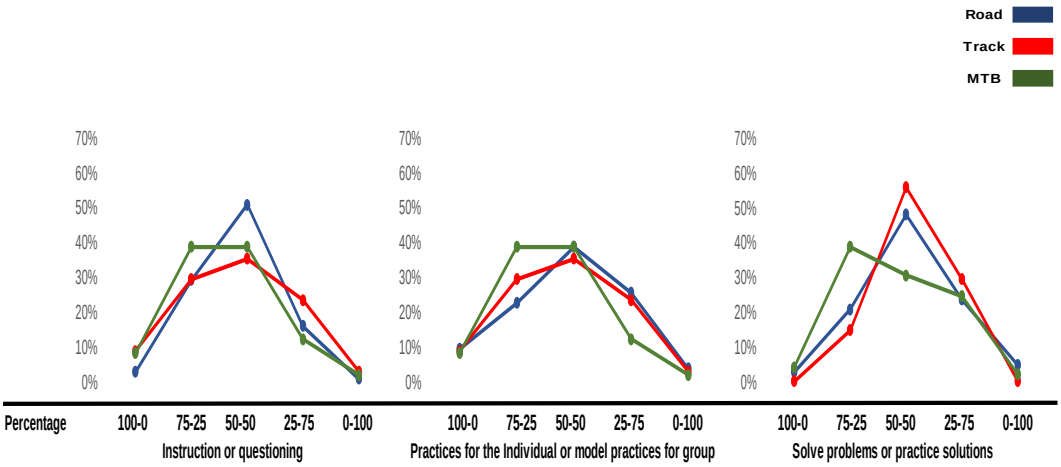

Figure 4.7. The balance of coaching methods employed throughout the pathway, part two. (Q21).

Legend. Vertical axis – percentage of responses per discipline group relating to three coaching and teaching methods statements in the questionnaire. Horizontal axis presents the answer choices regarding the balance of usage in percentage terms, i.e., 100 - 0, 75 - 25, 50 - 50, 25 - 75 and 0 -100.

Note: The survey question asked coaches, "to select the balance of coaching methods you generally use with riders who have the potential to make GBCT answering in percentage terms, i.e., 100 - 0, 75 - 25, 50 - 50, 25 - 75 and 0 -100 between scenario A or B, covering: (a) instruction or (b) questioning; (a) practices that develop qualities specific to the individual or (b) practices that develop model qualities across a group; and (a) getting riders to solve problems or (b) getting riders to practice solutions.

Figure 4.7, (left) demonstrates similarity in shape and percentages with the majority of coaches through the three disciplines reporting a similar balance of 50/50 when using instruction or question in their coaching practice. In addition, and contrastingly, the results in this figure could suggest coaching in cycling is heavily instructional with a high percentage of coaches from the three disciplines suggesting the balance to be 75/25 in favour of instruction over questioning, with MTB coaches responding highest in this area. Figure 4.7, (middle) also identifies similarity across the shape and percentages with a significant number of coaches in the three discipline groups stating a balance of 50/50 in regard to specific practices for the individual or model practices for the group. However, there are a number of contrasting methods employed, with a high percentage of coaches in MTB and Track stating a balance of 75/25 in favour of specific practice for the individual, with a similar number of Road coaches stated a preference for model practices for the group with a balance of 25/75. Of final note in Figure 4.7, (right) is the similarity in shape and percentages for Track and Road disciplines where the majority of these coaches reported the balance of 50/50 for using problem solving or practicing solutions in their practice. Interestingly, and

potentially demonstrating a large contrast, a number of MTB coaches reported the balance to be 75/25 favouring solving problems in their practice.

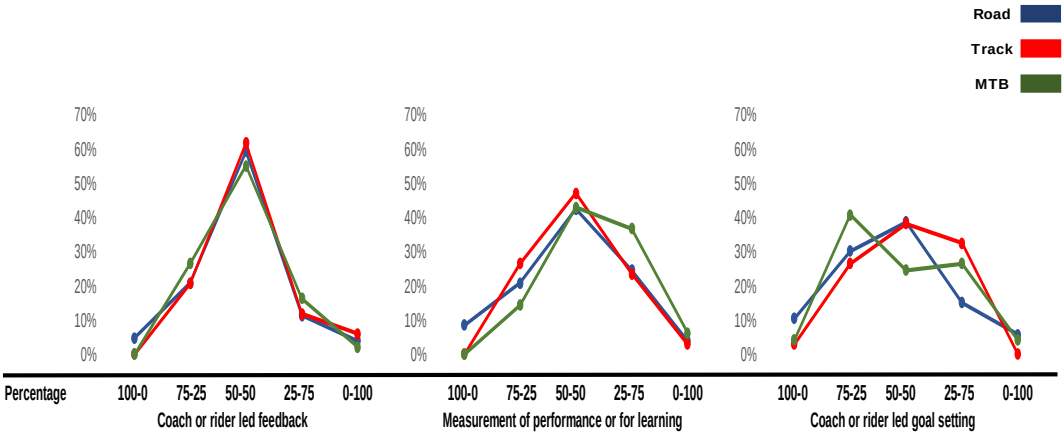

Figure 4.8. The balance of coaching methods employed throughout the pathway, part three. (Q21).

Legend. Vertical axis – percentage of responses per discipline group relating to three coaching and teaching methods statements in the questionnaire. Horizontal axis presents the answer choices regarding the balance of usage in percentage terms, i.e., 100 - 0, 75 - 25, 50 - 50, 25 - 75 and 0 -100.

Note: The survey question asked coaches, "to select the balance of coaching methods you generally use with riders who have the potential to make GBCT answering in percentage terms, i.e., 100 - 0, 75 - 25, 50 - 50, 25 - 75 and 0 -100 between scenario A or B, covering: (a) coach-led feedback or (b) rider-led feedback; (a) measurement of performance or (b)measurement for learning; and (a) coach-led goal setting or (b) rider-led goal setting.

Figure 4.8, (left) appears to show similar shapes and percentages reporting the views from the coaches of the three disciplines in their delivery methods regarding coach or rider led feedback, with the majority of all coaches reporting a balance of 50/50 in their practice. Interestingly and contrastingly, a large percentage of coaches in the three disciplines do not align with this view, stating the balance to be more in line with 75/25 in favour of coach-led feedback. This contrast within the coaching groups and disciplines is further supported with an additional group of coaches suggesting the balance to be 25/75 favouring rider led feedback. Another area of interest in Figure 4.8, (middle) is the similarity and contrast in the coaches reporting of the balance of measurement (performance or for leaning). The majority of coaches across the three disciplines groups believe the balance to be 50/50, however, a significant number of coaches in the three disciplines report the balance to be more in line with 25/75, favouring measurement of learning, with the MTB coaches reporting the highest percentage in this area.

Interestingly, a large percentage of coaches of Track and Road disciplines report a balance of 75/25 favouring measurement of performance. Finally, Figure 4.8, (right) also suggests some similarity in shapes and percentages, in that, a significant percentage of coaches within the three disciplines report the balance of coach-led or rider-led goal setting to be 50/50. Additionally, and in contrast, a large percentage of coaches in the three disciplines report the balance to be 75/25 in favour of coach-led goal setting with MTB coaches the largest percentage in the group. Furthermore, an additional contrast is the results from a number of coaches who report the balance to be 25/75 in favour of rider-led goal setting, with Track coaches having highest percentage.

4.4.4. The Nature and Spread of Coaches' Epistemologies.

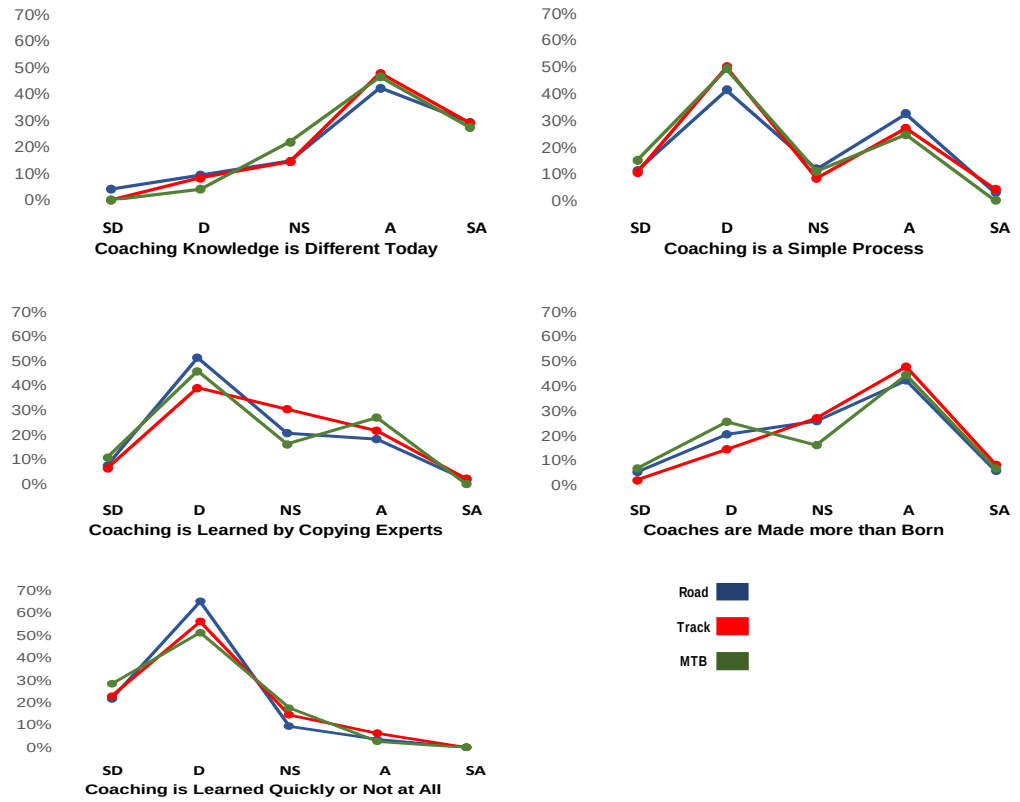

Figure 4.9. The nature and spread of coaches epistemological positions. (Q11 -12)

Legend. Vertical axis – percentage of responses per discipline group relating to the five statements in the questionnaire and outlined above. Horizontal axis presents the answer choices regarding level of agreement or disagreement, i.e., strongly disagree (SD), disagree (D), not sure(NS), agree (A) and strongly agree (SA) relating to the five statement labels.

Note: The survey question asked coaches, "how much do you agree or disagree with the following five statements": (1) the knowledge that underpins expert coaching today is different to what it was 20 years ago, (2) expert coaching is a simple process based on basic facts, (3) expert coaching is learned by carefully copying current experts, (4) expert coaches are made more than born, and (5) expert coaching is learned quickly or not at all.

Figure 4.9, overall potentially reveals a similarity and a reasonably narrow spread in beliefs across the several statements posed and across the disciplines of Road, Track and MTB as viewed through similar shapes and percentages. However, it is worthy to note that a relatively high percentage of coaches responded not sure for all statements. Interestingly, Figure 4.9, (top left) appears to show that the majority of coaches across and within the three disciplines agree or strongly agree that the "knowledge that underpins expert coaching today is different to what it was 20 years ago".

Whilst, Figure 4.9, (top right) results for the statement, “expert coaching is a simple process based on clear facts” saw a large contrast with the majority of coaches across and within the disciplines either disagreeing or strongly disagreeing, and a notable percentage of coaches agreeing with the statement. This point potentially demonstrates a broader spread of beliefs within the discipline coaching groups. Figure 4.9, (middle left) posed the statement “coaching is learned by carefully copying current experts”. The coaches’ results show a similarity across disciplines and contrast through the disciplines for this statement with a significant percentage of coaches either disagreeing or strongly disagreeing. Interestingly, a sizable number of all discipline coaches agreed that “coaching is learned by carefully copying current experts”, whilst a number of coaches were not sure.

Figure 4.9, (middle right) also identified that a significant number of coaches in the three disciplines agreed or strongly agreed with the statement “expert coaches are made more than born”. However, and contrastingly, a large percentage of all coaches disagree or strongly disagree with the statement. Finally, in answer to the statement “expert coaching is learned quickly or not at all”, Figure 4.9, (bottom left) a large majority of coaches within and across the disciplines disagreed or strongly disagreed with the statement.

4.5. Discussion

The purpose of this study was to critically explore the extent of horizontal (i.e., age group focus) coherence within the BC talent pathway as measured through a set of practicing coaches’ perceptions within three cycling disciplines, i.e., Road, Track and MTB. More specifically, my particular focus was on the extent of coherence amongst coaches on: (a) the overall goals and design of the BC pathway; (b) the focus and goals of their coaching; and (c) the content and methods of their coaching delivery. Additionally, to offer a potential explanation for the levels of horizontal

coherence/incoherence found, the study also explored the nature and spread of the coaches' epistemologies. To provide structure to the discussion of the main results, this section first presents the 'take homes' from the Results section and, secondly, the possible reasons for these findings; including those from the perspective of coaching epistemology. Considering and utilising relevant literature, I then reflect what these messages may mean for developing riders, as well as for the BC pathway and coach development system.

4.5.1. The 'Take Homes'

The results identified variable levels of coherence in perceptions related to: (a) the overall goals and design of the BC pathway; (b) the focus and goals of their coaching; and (c) the content and methods of their coaching delivery. Specifically, the results suggest that there is coherence in the coaches' perceptions across the disciplines of Road, Track and MTB within these three aforementioned aspects; however, there were also elements of incoherence across and within the disciplines.

The following Tables (4.3; 4.4; 4.5) outline some notable aspects of similarity and difference from the results covering: (a) the overall goals and design of the BC pathway; (b) the focus and goals of their coaching; and (c) the content and methods of their coaching delivery.

Table 4.3. The Overall Goals and Design of the Full Pathway.

Marker of Coherence	Reported Similarities and Differences across Road, Track and MTB
Coach perceptions on the overall goal and design of the BC talent pathway	**Views on the desired senior rider:** • Reported similarities across the disciplines: o Coaches across the three disciplines generally agree on the balance that GBCT require in terms of adaptability (which was 75/25 % across the three disciplines). • Reported differences across the disciplines: o Coaches across the three disciplines are more mixed in their views on the balance of independence that GBCT require (which was 50/50% across the three disciplines for the majority of coaches, however, a notable number of road and track coaches suggested the balance to be 25/75%, and a similar number of track coaches suggested a balance of 75/25%). o Coaches across the three disciplines are more mixed in their views on the balance of resilience GBCT require (which was 50/50% across the three disciplines for the majority of coaches, however, a notable number of track coaches believe the balance to be 75/25%. **Views on the levels of coaching variation**: • Reported similarities across the disciplines: o Coaches across the three disciplines generally agree or strongly agree that riders require different coaches at different stages/levels. o Coaches across the three disciplines generally agree that coaches should not use the same methods and practices as their peers through the pathway. • Reported differences across the disciplines: o Coaches across the three disciplines are more mixed in their views on whether the rider should work with same coach for as long as possible, if getting results. A majority of coaches neither agreed or disagreed, whilst a notable number of track and road coaches agreed, furthermore there were also a high number of MTB coaches who disagreed with this statement. o Coaches across the three disciplines are more mixed in their views on whether coaches throughout the pathway should use the same methods and practices as GBCT. A notable number of road and track coaches disagreed with the statement, a sizable number of MTB coaches neither agreed or disagreed.

Table 4.4. The Focus and Goals of Coaching on the Full Pathway.

Coach perceptions on the focus and goals of their coaching	**Views on the focus of coaching**: • Reported similarities across the disciplines: o Coaches across the three disciplines generally agree on the purposes of coaching (which were a focus on the short- term, i.e., today or next week, however, a number of coaches across the disciplines also believe in a long-term focus, i.e. next-year). • Reported differences across the disciplines: o Coaches across the three disciplines are more mixed in their views regarding the stakeholder purposes of coaching (focus). For example, the coaches perceive the riders and other coaches to be focussed on the longer-term. **View on the goals of coaching:** • Reported similarities across the disciplines: o Coaches across the three disciplines generally agree on their goals (which were; 1) fun and enjoyment, 2) preparing rider for the next level, 3) preparing rider to be a lifelong participant, 4) supporting riders to achieve results t current age group/level, 5) developing riders with the same qualities as GBCT. • Reported differences across the disciplines: o Coaches across the three disciplines are more mixed in their views regarding the stakeholder goals for developing an individual. For example, the coaches perceive the parents, riders and other coaches to have a goal of supporting riders to achieve results at current age group/level, additionally, the coaches believe the parents goals are also different in regard to developing the rider with the same qualities as a GBCT rider.

Table 4.5. The Coaching Delivery on the Full Pathway.

Coach perceptions on the content and methods of their coaching delivery	**View on coaching content**: • Reported similarities across the disciplines: o Coaches across the three disciplines generally agree on the type of training content, which was; 1) conditioning, 2) fun, 3) technical, 4) tactics, 5) psychology and, 6) tried and tested focused practices from GBCT) • Reported differences across the disciplines: o Coaches across the three disciplines are more mixed in their views regarding the type of training content in regard to frequency of use. For example; 1) a notable percentage of MTB coaches never use conditioning based practices, 2) MTB coaches appear to deliver more fun-focussed practices over the road and track coaches, delivering, often and always, 3) a majority of track and MTB coaches deliver more technical based sessions, with MTB delivering slightly more frequently (always and often), 4) a majority of road and MTB coaches have a reduced focus on tactics based practices, 5) a number of track coaches never deliver psychology based practices whilst a notable number deliver this sometimes, with a notable number of track and MTB coaches never delivering this type of practice, and finally, 6), whilst most disciplines use practices from GBCT sometimes, track coaches use these most often with a notable percentage of road and MTB never using this practice. **Views on coaching methods**: • Reported similarities across the disciplines o Coaches across the three disciplines generally agree on the balance of coaching methods employed, which was, 1) 75/25% for coach or rider led planning, 50/50% for old or new approaches, 3) 50/50 for repeated or variable practice, 4) 50/50% for instruction or questioning, 5) 50/50% for practices for the individual or group, 6) 50/50% for solving problems or practicing solutions, 7) 50/50% for coach or rider led feedback, 8) 50/50% for measurement of performance or for learning, and finally, 9) 50/50% for coach or rider led goal setting. • Reported differences across the disciplines o Coaches across the three disciplines are more mixed in their views regarding the balance of coaching methods used. For example; 1) a notable percentage of MTB and road coaches reported using a balance of 100/0% for coach-led planning, 2) more road and MTB coaches reported using a balance of 25/75%, than track, for old or new approaches, 3) a notable percentage of MTB coaches reported using a 25/75% balance for repeated or variable practices, 4) a notable percentage of MTB coaches reported using a balance of 75/25% in favour of instruction over questioning in their practice, 5) a high percentage of MTB and track coaches favour a balance of 75/25% for individual practice over model practices for the group, 6) a notable percentage of MTB coaches reported using a balance of 75/25% for practice that included solving problems or practicing solutions, 7) none, 8) a notable percentage of MTB coaches reported using a balance of 25/75% for measurement of performance or for learning, clearly favouring the latter, and finally, 9) a notable percentage of MTB coaches reported using a balance of 75/25% favouring using coach led over rider led goal setting.

The key aspects identified in the results show a large similarity in the coaches' perceptions of the why (i.e., focus and goals of their coaching), the what (i.e., content of coaching) and how (i.e. coaching methods), across the three disciplines of Road, Track and MTB. However, the results also suggest that coaches across the disciplines have a number of differences in their coaching practice.

Unsurprisingly, there are a number of differences that could stem from the lack of information and training from the NGB. For example, there is no current information available on the type of rider GBCT required in regards to adaptability, independence and resilience. Therefore, it is understandable that the coaches are not clear and are using their own judgement based on what they know from the environment they coach in (social milieu) or from prior experience. Interestingly the coaches across the three disciplines agreed on the balance of adaptability for the riders at 75/25% favouring a senior rider who can call upon a host of race tactics/styles and one who can respond to a range of challenges. However, the majority of the same coaches generally agreed that the balance of independence and resilience was 50/50%, with some notable differences demonstrated across the disciplines. For example, road and track coaches believed the balance to be 25/75% for independence, favouring a senior rider who can lead on their own programmes, sessions and evaluations as opposed to a senior rider who follows programmes, sessions and evaluations. Similarly, for resilience the coaches of the track discipline suggested a balance of 75/25% favouring, a senior rider who use themselves to bounce back from setbacks and persist when things are difficult as opposed to a senior rider who uses the support of others. Another essential point in the results is the difference shown by the discipline coaches in regard to the riders working with the same coach for as long as possible if they are getting results. Whilst a majority of all coaches could neither agree nor disagree, a notable number of track and road agreed to the statement, with MTB coaches disagreeing.

The coaches of road and track then disagreed with the statement that coaches throughout the pathway should use the same methods and practices as those in the GBCT, whereas, the MTB coaches neither agreed nor disagreed. The results also demonstrate a mixed view on stakeholder clarity in terms of the purposes of coaching (focus) and the goals of coaching. Specifically, the coaches' focus and goals do not align to the perceived focus of the riders, for example, the coaches focus is on the short term, with a goal of fun and enjoyment, whist the riders focus is on the long-term and to achieve results at the current age group/level.

Finally, the results seem to demonstrate a large contrast in the use of coaching content and methods used, that appear to have evolved through the coaches practice and the environments they coach in. Whilst some guidance is provided in the coaching courses, the balance of these practices (content/method) appears to have been driven by the coach based on what they think is required to coach a developing rider. In Chapter 3 it was identified that the BC pathway must cater for multiple disciplines, and riders who will commonly switch or engage with these multiple disciplines. This raises an interesting point regarding the riders' journey, if they engage in different/multiple discipline(s) as expected by the NGB. The similarity in the results could suggest the riders are following the *straight and narrow pathway* that was identified in Chapter 2, Figure 2.1. That is, the riders face *similar* types of coaches, take part in *similar* types of training in *similar* environments, be exposed to *similar* types of coaching methods and face *similar* types of structured challenge (if any) as they progress up the pathway. This pathway, it is suggested will produce riders who progress fast, learning from a copy and reproduce environment, with adaptability, independence and resilience being low.

Returning to the origin of the coaches' knowledge, the coaching courses and relevant information available supports the coaches' current actions and beliefs on how to coach cycling. For example, the coaches generally agree on the purposes of coaching

as being on a short-term focus (e.g., today) with a goal of fun and enjoyment, which meets the central message from the NGB (Table 4.1). Importantly, however, this approach could compromise the long-term development of the rider (e.g., failing to meet rider motivations and to provide appropriate challenge). In addition, the coaches in the three disciplines generally seem to approach their practice through "coach centred" interventions. That is, it appears that similar training content is delivered (with some variation in frequency), the same way (e.g., coach-led planning, coach-led goal setting). Unfortunately, this "recipe" or "formulaic" coaching practice the BC coaches are delivering could be a consequence of the formal coach education delivered by the NGB.

4.5.2. Why I Might Have Found What I Found

Interestingly, the "take homes" suggest that a lack of coherent information from the NGB is supporting the balance of coherence/incoherence across the disciplines. The coaches are potentially gleaning information from their "social milieu" or from additional sources in regards to what type of senior rider GBCT require. For example, Table 4.1 identified that whilst attributes of adaptability, independence and resilience were identified as being required in riders, to date no measure (balance) or indeed no method of achieving this attribute has been communicated to the coaches. It appears coaches *assume* they know what GBCT require and are trying to develop a rider in their own way or copying their peers. Furthermore, it appears that the current coach training provided to these coaches has influenced their practice and is potentially not meeting the needs of the rider or the system, and is still based on the professional knowledge of the sport.

To explain the findings in this study, I again utilize the demographic data presented in Chapter 3 (section 3.2.3) and the coaching typology identified (section 3.4.2). Importantly, the coaches in this study follow a similar but somewhat different

typology to that outlined in Chapter 3 (section 3.4.2). That is, the coaches in this study (horizontal coherence) are immersed in a sub-culture of cycling; they self-identify in a discipline group (e.g., Road, Track and MTB) and an environment in which they coach.

Similar to the discussion in Chapter 3, and to provide structure to this section, I also present the same four specific subsections for comparison and to outline similar influencing factors on the pathway through a discipline "lens" that may lead to the incoherence/coherence demonstrated in the results. These subsections cover: 1). Epistemological reasons for the results, 2). structural/environmental reasons for the results, 3). coach education reasons for the results; and 4). socio-cultural reasons for the results.

4.5.3. Epistemological Reasons for the Results

Overall, it appears that the discipline coaches in this study have a narrow spread of beliefs *across the disciplines* that are demonstrated through the similarity of the coaches' perceptions. However, the results also suggest coaches *within the disciplines* have a broad spread of beliefs that could be at either epistemological extreme (i.e., entirely sophisticated, or entirely naïve), (Schommer, 1990, 2002), or in various stages of transition, Schommer, (1994). The distribution of beliefs (Schommer, 1994) is evidenced in the results (Figure 4.9), where it shows a contrast in the graph shapes (M shape) within each disciplines. This similarity was also demonstrated by a high percentage of coaches across the disciplines who responded not sure (NS) to five statements in Figure 4.9, suggesting the coaches are in various stages of transition displaying mixed epistemologies (naïve to sophisticated).

The narrow spread of beliefs across the coaches of road, track and MTB suggests a level of coherence on the pathway that has evolved through the influences of the NGB, the coaches' experiences and the increased sociocultural stimuli in the specific discipline environment.

Coaches of all three disciplines show a high-level similarity and therefore coherence, across the disciplines, generally agreeing on many areas as listed in the "take homes". Given the unique cycling demands required in the three disciplines (e.g., type of rider, type of bike, physiological, psychological, and skill), it is interesting to note that the coaches did not perceive these differences across the disciplines. This point could potentially be explained by the coaches' epistemological position being generally naïve in some areas (e.g., balance of independence, balance of resilience) and sophisticated in others (e.g., riders require different coaches at different stages or levels)

Interestingly the coaches across the three disciplines were mixed in their views in a number of other areas with coaches within the disciplines displaying more sophisticated epistemology's. The difference in the coach's perceptions identified in the "take homes" potentially suggests the coaches are heavily influenced by their social milieu, NGB and other successful coaches as identified earlier. Additionally, the differences reported by the coaches could be explained by the body of discipline coaches practicing on the pathway being at varying stages of expertise in their coaching journey, (e.g., 37.4% of road coaches up to 2yrs coaching, with 62.6% coaching for 3-11 or more years). Given this point the coaches' personal epistemological positions, Grecic and Collins, (2012, 2013), could be said to underpin the coherence/incoherence found in this study. For example, the coaches' responses generally support the work of Hill, MacNamara, and Collins, (2015), and MacNamara, Button, and Collins, (2010a, 2010b), in their belief that a balance of resilience is an important factor in the development of (athletes) riders for GBCT. However, the coaches report their practice as structured, instructional, and coach-led, in terms of planning and goalsetting, which could lack the individual challenge required to fully develop riders' resilience.

4.5.4. Structural / Environmental Reasons for the Results

To support the discussion, I now describe the "typical" structure and environment that the three disciplines of road, track and MTB coexist in the BC pathway. The coaches' practice is usually undertaken in two-types of participation club in the BC eco-system (e.g., recreation or racing). These clubs cater for a plethora of different age groups (e.g., 3 to 93yrs) and abilities, and are in the main, where all coaches generally start their practice.

Due to the rules of the NGB, coach licence and insurance issues, the younger riders, (3 to 15 yrs.) engage in coaching sessions that are generally undertaken off road (car park/field) and are mostly delivered by a Level 1 or Level 2 coach, with these coaches mostly, newly qualified in the last one to two years. The coaches deliver cycling foundation and core development skills (e.g., technique) to the young riders using a road bike or MTB, whilst the older riders go riding on the road. If the riders and coaches wish to specialise into a discipline (e.g., Road, Track or MTB), the coaches have to undertake additional formal training in a Level 2 Discipline Specific Unit (coaches can also progress to a Level 3 DSU coach in Road, Track and MTB after the successful completion of the Level 2). This vertical progression on the coaching pathway enables the coach to be insured and to deliver discipline skills (e.g., tactical, advance techniques, preparation for racing). This is the point on the coaching pathway where the environments (e.g., Track Indoor/Outdoor Velodrome, Road Circuit and closed roads, MTB Trail or cross-country) start to be specific and utilise purpose built facilities, circuits and equipment. For example, BC Youth Policy 2017 states:

> **Road:** youth racing takes place on traffic-free, closed road circuits, with demanding corners, lots of braking, accelerating and cornering, that demand the rider to have power, stamina and excellent riding skills (technical and tactical).

Bikes have restrictions; e.g., no aero bars, gears and race distance restricted (e.g., 20km – 60km in a single race) based on age/category

Mountain bike: youth racing takes place in a variety of off-road venues such as, parkland, woodland and forestry sites. The terrain includes climbs, descents and technical features, such as 'rock gardens', that demand the rider to have power, stamina and excellent riding skills (technical and tactical). No restrictions on bikes, races defined by time (e.g., 30 and 60 minutes) rather than distance and based on age/category

Track cycling: youth racing takes place on indoor and outdoor oval tracks ranging from less than 200 to over 400 metres in length, with surfaces made from a variety of materials including wood, tarmac and concrete. Tracks are banked to varying degrees to enable riders to maintain high speeds. Rider demands include, power, speed, stamina and excellent riding skills (technical and tactical). Bikes have no brakes to regulate speed, no gear selection, no freewheel.

Given the above structural and formulaic approach to delivering the disciplines across the sport and through its education programme, it is unsurprising that the coaches display similarities in a number of areas within the study as identified in the "take homes", (e.g., coaches agree on the short-term purposes and goals of coaching). Additionally, and importantly, the vertical progression outlined for coaches, "forces" coaches to undertake further qualification sooner than they are potentially ready (e.g., 37.4% of discipline coaches have only been coaching up to 2yrs). This point raises an interesting question and was raised in Chapter 3. Is the coherence/incoherence found in the study partially attributed to the BC pathway design that is primarily "staffed" by local novice volunteer coaches who appear to have mixed epistemologies (naïve to sophisticated) and are clearly mimicking their peers?

Equally important in the study is the coaches results that suggest a number of differences in a number of areas. These differences can be explained to some degree by the fact that pathway coaching is undertaken by large body of coaches (as identified in Chapter 3) who have not been strategically placed (Webb et al., 2016) and have no clear purpose or role identified by the BC. This point is exacerbated by the fact that the "body" of coaches in the study include commercial operators (professional coaches) who have a clear opportunity to make some money from coaching young riders on a one to one basis. This practice appears to propagate the aspirations of the riders and their parents who aspire to be the next medallist in one of the Olympic disciplines. Anecdotal evidence and my professional experience suggests these coaches undertake coaching in their own way once qualified, outside the system, and in a way that is not coherent with the needs of GBCT riders on the pathway.

Furthermore, the system, environment and the coaches have not encouraged pathway stakeholders (e.g., parents, and other coaches) to be engaged in the development of the riders. Indeed, it is widely known that the club eco-system sees parents dropping the children off and then they go for a ride themselves, leaving their offspring for the coach to do their job. Understandably, the power relationship that is perceived by the parents is also reciprocated with the coach-centred approach through the disciplines, where they lead on nearly all the coaching process. This point is further emphasized in the results where the majority of coaches perceive pathway stakeholders (i.e., riders, parents, and other coaches) to lack clarity and coherence regarding the purposes of coaching, which is unsurprising given they are not involved with the system or the process (Pankhurst & Collins, 2013). Currently the first three stages of the current BC pathway have very limited engagement from parents.

4.5.5. Coach Education Reasons for the Results

Coach education across the three disciplines of road, track and MTB follows a very similar, if not the same structure. To apply to go on the course the coach must have successfully completed a Level 2 Core cycling course. All three DSU's run over two days usually consecutive (i.e., Sat/Sun) for around seven hours per day. The topics/content covered build on the core cycling techniques and the basic plan, do review cycle and move onto investigating event demands to determine what a good track/road/MTB rider looks like (e.g., technical, tactical and physical), practical session planning relevant to DSU demands, track/road/MTB environment and equipment, risks and insurance, coach-led racing, practical coaching sessions and practical and theory assessment, and finally action planning.

It appears from the results that the coaches' similar perceptions are potentially influenced by the current coaching pathway and the NGB coach education programme. This "recipe" or "formulaic" coach education with its standardized curricula with vertical progression that is provided to these coaches, is potentially not meeting the needs of the rider or the system, and is still based on the professional knowledge of the sport. The design of the current programme is based on a "gold standard" of coaching delivered by tutors that learners must (and do) mimic, Abraham and Collins, (1998). This point is further evidenced in the results with the coaches' in general agreement that they deliver the same type of content (e.g., technical) using the same methods (e.g., coach-led) across the disciplines'. Additionally, the current DSU content appears to be playing a large part in the current coaches practice (e.g., coach-led racing, fun activities and a short-term focus of today, and through episodic session planning). The results in the "take homes" suggest these areas are similar across the three disciplines and have the potential not to be meeting the riders' needs or motivations.

The results also suggest there are a number of differences in the coaches' perceptions across the disciplines that were identified in the "take homes" section. These differences can be potentially explained due to the lack of alignment with the coach educators who created the original content and the performance pathway team. That is, given BC's recent successes over five Olympics, the performance pathway has not published an LTRD model (as chapter 3 identified) to underpin the "curriculum" for rider development through the pathway for all disciplines. It has however, issued the discipline demands covering, some technical and data focused, C.G.S benchmarks, (example for men's endurance in Appendix K) to full-time pathway coaches. Furthermore, the talent phase of the pathway within the NGB has published the "are you ready bench marks" to a limited group of riders to help them determine what is required in each Olympic discipline. However, these documents do not align to the coach education programme and more importantly, do not show the rider "how" to achieve the C.G.S and technical benchmarks. To-date there are no psychosocial criteria (e.g., PCDE's) available from the NGB for coaches to understand how to/or if to develop these attributes in their riders, nor is there any information on teaching and learning principles for coaches to understand how to deliver their practice to fully engage the rider(s) in differing contexts.

Previously I have identified that the body of coaches on the pathway that have responded to the study have a wide range of experiences (novice to professional) and prior knowledge (new to cycling, raced at a high level, professional jobs). However, the current coaching pathway does not cater for any Accredited Prior Learning (APL), so the coaches attend the full course and are indoctrinated with the syllabus and then "sent" back to their own environment to work it all out. The timeframe for this learning episode can be as little as four months to learn to coach a discipline (be competent). Unfortunately, the current coaching pathway encourages the coach to complete the

training required to coach disciplines through lots of procedural knowledge, but lacking in the declarative knowledge that will enable them to deliver effectively in their environments.

A further explanation for the differences recorded in the "take homes" could be due to the lack of continued and on-going support from coach education for the coaches when they return to the own social milieu. This support could potentially support the coach align their own philosophy to their coaching practice to meet the needs of the rider. Additionally, the support could reinforce messages or learning that the coach has not retained through "wash out", (i.e., the coaches only use/remember certain elements of the learning), and to "shape" the influences brought about in the coaches' social milieu.

Unfortunately, cycling has yet to fully embrace "holistic" coach and rider development and is still anchored in its traditional roots with knowledge and coaching practice largely guided by "hand-me-down" knowledge (e.g., technical and data driven, C.G.S) and others experience, Cushion, Ford, and Williams (2012), and Williams and Hodges (2005).

4.5.6. Socio-Cultural Reasons for the Results

To further expand on the similarities and differences in the "take homes", I now describe what is currently known to BC and myself regarding the socio- cultural factors in the three discipline groups of road, track and MTB.

It was identified in section 4.5.2 of this chapter, that whilst the coaches follow a similar typology that was identified in Chapter 3, (section 3.2.3 and section 3.4.2), the coaches in this study are immersed in a sub-culture of cycling. That is, they primarily self-identify in a discipline group (e.g., Road, Track and MTB) and an environment in which they coach.

However, given the discipline crossover that exists through the pathway for many riders and coaches, and which is specifically encouraged for riders within the "rider route", it is not uncommon for road riders to spend time riding the track in autumn and winter to maintain base endurance and to continue to race and vice versa. At the individual level for coach and rider, cycling and bike ownership in across the world appears to be associated to age, race, gender, educational level and household income, (Handy, Xing, & Buehler, 2010; Krizek & Johnson, 2006; Pinjari, Eluru, Bhat, Pendyala, & Spissu, 2008); and the type of cycling (and therefore coaching) is somewhat determined by location, Stinson and Bhat, (2004). This point is particularly relevant to the disciplines of MTB and Track as there are limited facilities that racing and coaching can take place that meet the UCI regional and national standards and importantly cater for poor weather. For example, there are only six indoor Velodromes in the UK, (Calshot, Derby, Glasgow, London, Manchester, and Newport), and a further twenty-two tracks suitable for racing and coaching to varying degrees. Most, if not all cyclists ride the open road to "get the miles in" and then move on to their chosen discipline. Road cyclists will race and be coached on closed road circuits and some will then race in open road races. Overall, the riders who move into the selected stage of the pathway are similar in age and, relatively similar race, gender, educational level and parent's household income.

The similarities and differences reported in the "take homes" appear to be to be "shaped" and influence by the culture of the sport, structure of the pathway, environment and coach education settings the coach interacts with in their disciplines. These settings are extremely complex and unique social settings (cf. Hodkinson, 2004) with the inclusion of varying agendas, diverse influencers, competing egos and within complex hierarchies (Jones, Armour, & Potrac, 2004). The common behaviours, values and beliefs, (Donnelly &Young, 1988), can and do pressure the coaches to behave in

certain ways in order to conform (e.g., type of practice, techniques, tactics, equipment, clothes, and communication) and secure approval (e.g., say one thing and do another), Bowes and Jones, 2006; Collins, Abraham, and Collins, 2012; and Stoszkowski and Collins, 2014.

4.6. Summary

This study has identified a balance of coherence in the discipline coaches' practice that was not assumed given the unique sporting demands across Road, Track and MTB. The large similarity in coaches' perceptions of the why (i.e., focus and goals of their coaching), the what (i.e., content of coaching) and how (i.e. coaching methods), across the three disciplines potentially suggests a lack of coherent information from the NGB (i.e., LTRDM). Conversely, the opposite could be stated. In others words, the coaches' epistemological beliefs and actual practice are influenced firstly by BC, and secondly from their "social milieu" and are practicing how they have been taught on the coaching course and are copying their peers (e.g., coaches who have developed successful senior riders, successful riders).

The results may also suggest the coaches *assume* they know what GBCT require to develop riders on the pathway by delivering "recipe" or "formulaic" coaching practice (e.g., same content, same goals, and same "old methods", over new methods) through an instructional approach with "coach centred" interventions (e.g., coach-led feedback, coach-led goal setting). This balance of coherence shown in the results concurs with the results in Chapter 3, where the coaches say one thing based on their own epistemological position but perhaps are pressured to practice in a way that "fits" in with the social milieu in which they practice (Bowes & Jones, 2006; Collins, Abraham, & Collins, 2012; Stoszkowski & Collins, 2014).

Furthermore, the smaller contrasts shown in the results that relate to actual practice across the disciplines could potentially be explained by the coaches'

epistemological position being naïve. Interestingly, the results could also suggest a narrow spread of epistemological beliefs across the discipline coaches that is potentially demonstrated through similarity of the coaches' perceptions (e.g., coaches generally agree on the purposes of coaching as being on a short-term focus and a goal of fun and enjoyment). Supporting this point, the incoherence/coherence in the results could be explained by the body of discipline coaches practicing on the pathway being at varying stages of expertise in their coaching journey, but are by and large more experienced.

Importantly, Chapter 2 identified that the coaches would benefit from developing their epistemology and being "strategically placed" at suitable transition or specialist points by the system controller to support the "ping-pong" of the riders' journey. Unfortunately, this is does not happen on the BC pathway and subsequently it appears to be "staffed" by coaches who are in various stages of transition and display a distribution of epistemological beliefs that are predominately naïve but sometimes appear to be sophisticated, Schommer, (1994).

One possible explanation for the lack of clarity and coherence could be attributed to the absence of a LTRD model that guides and supports the coaches and other stakeholders to develop riders over the long-term. Unfortunately, the results of the study suggest that within the BC club eco-system there are coaches and clubs still "wedded" to the culture of a C.G.S sport and other professional knowledge of the sport for the short term success. However, that stated, there are some coaches and clubs who have a developmental philosophy and focus on the short-term approach (e.g., today) with a goal of fun and enjoyment and one of supporting the riders to be life-long participants.

Given the complexity of cycling (e.g., multiple disciplines and races within) the current coaching and rider pathway fails to fully meet the needs of rider, coach and stakeholders. It has yet to embrace "holistic" rider development (e.g., PCDE) and is

still anchored in its traditional roots with knowledge and coaching practice largely guided by “hand-me-down” knowledge (e.g., technical and data driven, C.G.S) and experience, Cushion, Ford, and Williams, (2012), and Williams and Hodges, (2005).

4.7. Strengths, Limitations, and the Next Step

Chapter 3 and Chapter 4 discussions explored notable aspects of vertical and horizontal coherence or incoherence in coaches’ perceptions through an age group and discipline group “lens”. The discussions also identified the complexity across *an entire set of coaches* in BC`s Talent Pathway(s) in delivering desired outputs and potentially competing outcomes (Webb et al., 2016). Importantly, and against the intended purposes of thesis, the studies have provided evidence on the current balance of coherence/incoherence in the BC pathway across all age groups and three disciplines. This evidence is from a ***significant body of coaches*** who represent the current cycling coaching population, thus the results provide a clear stimulus for my continued professional practice.

The method for the studies in Chapter 3 and Chapter 4 was coherent with my pragmatic philosophy (see Chapter 1) in that the selected method overcame the practicalities of acquiring perceptions from a large pool of coaches and, therefore, generated perceptions from the entire pathway, which unearthed general patterns of coherence/incoherence. The single method approach used in these studies was a descriptive questionnaire. This method seeks to ascertain respondents 'perspectives` or experiences on a specified subject or phenomena in the moment, Saunders, et al., (2009) and can answer questions across the who, how, what, which, when spectrum (as this study harnesses), Cooper and Schindler (2003) and Kelley, Clark, Brown, and Sitzia (2003).

The study also provided a unique approach to capturing coaches’ perceptions of their practice in an entire talent system previously never undertaken, to find how

coaches deliver a coherent "service" for developing riders. To this end, a visual inspection strategy was employed (Barton, Lloyd, Spriggs, & Gast, 2018; Gast, & Spriggs, 2010; Parsonson & Baer, 1978, 1986, 2015; Parsonson, Baer, Kratochwill, & Levin, 1992), to provide a *practically*-meaningful way in determining coaches' perceptions of themselves and their actions, and importantly their perception of other key stakeholders on the pathway.

However, several limitations may have impacted on the results presented in Chapter 3 and Chapter 4. Firstly, whilst descriptive questionnaires are currently used regularly in sports settings, the inability to explore responses through probing questions has not revealed more in-depth information, Dale, Arber, and Procter, (1988). Furthermore, and importantly, this approach may have also been affected by social desirability response bias and cultural norms, (Bou Malham, & Saucier, 2016, Grimm, 2010, and Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) with the coaches self-reporting their own and other stakeholders' perceptions, saying what they believe the researcher (working for the NGB) wanted to hear (Nederhof, 1985).

This in part could be due to the potential power relationship (e.g., licenced to practice) and to construct (create, maintain, and modify) one's own persona, Baumeister, (1982) in the eyes of the NGB. It is also known that coaches can hold overly favourable perceptions of their own ability and actions over their peers (Kruger & Dunning, 2009), thus potentially impacting the results of the study (i.e., what they say, not what they actually do). Furthermore, the design of the studies, in terms of focusing on the coach's perceptions alone means that caution should be taken when interpreting the findings. Indeed, not undertaking actual practical observations of the coaches practice and interviewing riders and their parents limits this study.

Therefore, to underpin the findings from these studies, specifically in the area of coach education and development, the next chapter explored key stakeholders' opinions

on the current coach education provision and future alternatives for optimising the alignment of coaches in BC. Moreover, and in line with the approaches in Chapters 3 and 4, this study also aimed to explore how similar or different these opinions were. This critical evaluation offered further insight into the levels of agreement or contention as to the impact of current coach education and the extent to which it is currently meeting the needs of the riders, the sport, coaches and other stakeholders.

CHAPTER 5

IMPROVING THE ALIGNMENT OF COACHES: KEY STAKEHOLDER PERCEPTIONS ON FUTURE DIRECTIONS

5.1. Introduction

In Chapter 2, the need for effective rider and coach pathways to support the development of talent was highlighted as critically important, with coherence and alignment at the forefront of discussion; both vertically (i.e., up and down age groups) and horizontally (i.e., across disciplines). Subsequently, the level of vertical coherence was critically explored in Chapter 3 in relation to: (a) the overall goals and design of the pathway; (b) the goals at specific stages/phases and (c) coaching delivery at specific stages/phases of the pathway. Interestingly the study in Chapter 3 identified that a level of coherence was found up and down the age grouped coaches.

More specifically, coaches were similar with regards to their shared view: 1) that GBCT desire senior riders that are adaptable; 2) that coaches should not use the same methods and practices as their peers through the pathway (levels or disciplines); 3) that coaches should have clear purposes and goals at specific stages of the pathway; and finally; 4) that the coaches favour a level of coach-led planning over rider-led planning. In contrast, however, the study in Chapter 3 also reported a notable level of incoherence in other aspects. For example, coaches were different with regards to their shared view: 1) on the level of independence and resilience desired by GBCT; 2) on whether riders require different coaches at various stages/levels; 3) on whether the rider should work with the coach for as long as possible if getting results; 4) whether they should use the same methods and practices as GBCT; 5) on what stakeholder (rider, parents, other coaches, GBCT) goals and focus are, compared to their own; 6) on the appropriate coaching content to use that meets the need of the individuals age/stage, and finally, 7) on the appropriate teaching and coaching methods to use to meet the needs of the individuals age/stage.

In Chapter 4, the overall purpose of the study was to explore the levels of horizontal coherence across coaches in BC's three Olympic disciplines: Road, Track, and MTB. More specifically, the study aimed to explore how similar or different these coaches were with regards to their views on: (a) the overall goals and design of the BC pathway; (b) the focus and goals of their coaching; and (c) the content and methods of their coaching delivery. The study subsequently identified that a level of coherence was found across the discipline grouped coaches. More specifically, coaches were similar across the disciplines with regards to their shared view: 1) that GBCT require senior riders with a level of adaptability; 2) that riders require different coaches at different stages/levels; 3) that coaches should not use the same methods and practices as their peers through the pathway; 4) that coaches have clear purposes and goals at specific stages of the pathway for riders with the potential to make GBCT; 5) that the goals and perceptions of other stakeholders (rider, parents, other coaches, GBCT) do not align to theirs; and finally, 6) on the type of training content and methods used by coaches for riders with the potential to make GBCT. Conversely, however, the study in Chapter 4 also reported a notable level of incoherence in other aspects. More specifically, the coaches were different across the disciplines with regards to their shared view: 1) that GBCT require senior riders with a level of independence and resilience; 2) whether the rider should work with same coach for as long as possible, if getting results; 3) whether coaches throughout the pathway should use the same methods and practices as GBCT; 4) on what stakeholder (rider, parents, other coaches, and GBCT) goals and focus are, compared to their own; and finally, 5). on the type of training content and methods used by coaches for riders with the potential to make GBCT.

Overall the studies in Chapter 3 and 4 suggested that the absence of an explicit LTRD model (to guide rider and coach development) could be contributing to the coherence/incoherence and limiting development of both riders and the body of

coaches. It was also hypothesised that the coaches' epistemological positions, the structure/environment, coach education, and the socio-cultural context might be affecting the coaches' beliefs and perceptions, and therefore the level of coherence/incoherence demonstrated.

Indeed, what seemed to be clear from Chapters 3 and 4 is that, despite working at different levels of the rider pathway and clearly requiring different skill sets and competences to achieve effective coaching outcomes (Allen, Bell, Lynn, Taylor, & Lavallee, 2012), the future provision of coach education should sensibly seek to improve levels of core coherence across coaches in the BC pathway. In other words, finding ways to set the 'philosophical bandwidth' outlined in Chapter 2 (see Figure 2.5).

5.2. What I Did Next: A Summary of My Professional Action

Building on the above points, and my pragmatic philosophy, I decided that the next step was to review the current coach education provision to explore key stakeholders' opinions on the provision and any future alternatives for optimising the alignment of coaches in BC. In line with one of the recommendations in Chapter 2, i.e., the requirement for a step change in the education and development of coaches, it was decided that given the findings from Chapter 3 and 4, that there is a clear need to determine, or indeed develop an underpinning "philosophical bandwidth" or approach to developing effective coaches in BC (e.g., coaches' knowledge, athlete outcomes, coaching contexts), Cote and Gilbert (2009), at different levels of the riders' development. To undertake such a large-scale review, maintain independence and to reduce any bias from the coach education team, and myself I decided to use independent researchers. Furthermore, given this review was an attempt to move away from what, Côté (2006, p220), called a "top-down approach", coaches and other stakeholders needed to be consulted to help design and develop the future coach education provision. This "bottom-up" approach, would be a first for BC (and perhaps other NGB's), and is

in line with suggestions from Chesterfield, Potrac, and Jones (2010), Mccullick, Belcher, and Schempp (2005), and Nelson, Cushion, and Potrac (2013), ensuring relevance of content for the coaches to engage in.

To progress the review, a meeting was held with an independent research group (name withheld for commercial reasons) to determine a level of philosophical alignment and to establish if a working rapport was present. After background discussions, it was decided that the independent researchers would design and deliver an initial key stakeholder workshop to establish a level of coherent knowledge and a philosophical base regarding coach education and development within NGB of sport and specifically BC. Unfortunately, due to the practicalities of sports coaching, four volunteer coaches could not attend the workshop due to work commitments and where they are domiciled. However, these participants were purposively selected and were spoken to at length by myself to gauge level of knowledge and their philosophical base.

In the first part of the workshop, the coaches and stakeholders were introduced to the idiosyncrasies of coach development (e.g., jargon, targets and parameters of work/budget). Underpinning this discussion was the introduction of Shared Mental Models (SMM) to enable the coaches to develop a shared understanding of key process in coach education. Clarification of the sport's demands were outlined based on the CGS profile of the disciplines and the balance of required declarative and procedural knowledge (cf. Abraham, Collins & Martindale, 2006) for coaching cycling. The group were involved in discussions on decision-making, problem solving and what makes an expert coach; indeed, what expertise looks like (Nash, Martindale, Collins, & Martindale, 2012). An explanation of how the social environment and the context can, and often does impact learning. The group explored communities of practice (CoP) using examples from Stoszkowski and Collins (2014) to demonstrate the influence of this type of learning. The final part of the morning session discussed Professional

Judgement and Decision Making (PJDM) and mentoring, aligning both concepts to personal epistemology.

The second part of the workshop discussed the evolution of the coaching scheme working in groups, where the stakeholders considered the content from the first session and what they already know or have experienced. Three groups worked on individual areas; group 1, covered the macro design of the coaching pathway; group 2, covered the content balance based on the different cycling demands across the qualification levels, discipline and for different stages of rider; and finally, group 3, covered the micro environment in regard to coach development opportunities. The session outputs (Appendix F), directed the development of the interview guide which I devised to build from the session content whilst also addressing the objectives of this phase.

5.3. Purpose of Study

Against the professional action described above, the purpose of this chapter was to explore key stakeholders' opinions on the current coach education provision and future alternatives for optimising the alignment of coaches in BC. Moreover, and in line with the approaches in Chapters 3 and 4, this study also aimed to explore how similar or different these opinions were. This critical evaluation offered insight into the levels of agreement or contention as to the impact of current coach education and the extent to which it was currently meeting the needs of the riders, the sport, coaches and other stakeholders. Additionally, the study also intended to explore the levels of stakeholder support for a potential "new" structure to align the talent pathway. Overall, and more specifically, the purposes of this study were to explore: 1) areas of agreement with regards to better aligning the coaching pathway moving forwards; and 2) areas of disagreement with regards to better aligning the coaching pathway moving forwards; and finally 3) opinions on a potential structure for better aligning the coaching pathway moving forwards.

5.4 Methodology

5.4.1. Design

Given the purposes above and the pragmatics of the research process (i.e., to examine coaches' and other stakeholders' perceptions, opinions and ideas of the coach education pathway), a qualitative approach was deemed appropriate. Specifically, qualitative research aims to provide detailed, 'rich picture' insights that can help understand the how, the why, the what and the where of experiences (Maxwell, 2012). In further support of the specific research strategy used in this study, Easterby-Smith, Thorpe, and Jackson, (2008) and Jankowicz (2005), identified this method as providing the opportunity to 'probe' answers, enabling participants to explain or build on their responses, thereby providing potentially richer and more detailed data.

Therefore, semi-structured interviews were selected to allow for rich data to be collected across individuals with contrasting roles, views and needs; thus, generating a useful breadth and depth of opinion. This single research strategy is in line with that identified by a number of authors (Lincoln & Denzin, 1998; Marshall & Rossman; 2014; Patton, 2002; Ritchie & Lewis 2003) due to the specialist nature of the phenomena being researched.

The study utilised two approaches for the semi-structured interviews that consisted of individual and focus group sessions. Supporting this approach, Ritchie and Lewis (2003) identified three key factors, *nature of data, subject matter and study population* in selecting individual or focus group. Therefore, given these factors, individual interviews were deemed suitable (for the practicing coaches) due to interviewees being geographically dispersed. Additionally, the coaches' unique context, knowledge and personal history (or experience of their coach education journey) was considered relevant for this study. In contrast, the focus group participants were all senior system builders who were located in a similar environment and had collectively

accumulated over forty years applied and theoretical knowledge of the coach education landscape. Importantly, it was thought that this group could refine contextual discussions as they arose (Ritchie & Lewis 2003), with an emphasis on the strategic position of coach education and development in BC.

Given independent researchers were engaged to support this study, it is important to identify clear roles and responsibilities, i.e., the researchers were used to design and deliver the initial workshop (as identified earlier) and to collect the data from the interviews and focus groups. I led on the development and design of the interview guide, setting up the interviews and the analysis procedures.

5.4.2. My Role in the Research Process.

Considering the above points, those identified earlier in section 5.2 (What I Did Next), and the importance of this topic, it was deemed appropriate that this work required an independent viewpoint. Furthermore, to enable an independent review of the coach education provision on the pathway, I decided to commission the research for this study to negate my own "hunches" and working ideas and ensure my openness to emergent concepts and themes (Layder, 1998). All the independent researchers engaged in the study were highly experienced practitioners in the field of coaching, coach education and performance, who understood the research setting, culture, and language (Fontana & Frey, 2005; Punch, 2013). As part of my recruitment process, I confirmed that all held a rich set of skills in listening, questioning, reflecting in action, probing and adjusting the flow of conversation (Patton, 2002).

5.4.3. Participants.

The study participants (n=11) comprised of 9 males and 2 females who had a mean age of 37 years (range 18 to 52 years). Participants had, on average, over 8 years of cycling involvement and comprised of 4 full-time coaches and 4 volunteer coaches with the remaining 3 participants' holding roles as system builders (i.e., 1 x GBCT

Programme Manager; 1 x GBCT Head of Performance Support; 1 x GBCT Coach and Leadership Manager).

In line with Creswell (2007), the participants were purposively selected to ensure they could be considered "critical" stakeholders on the pathway and provide a "rich picture" of the current coaching pathway through their applied knowledge and prior experience in a similar context. Importantly, the participants covered the broad spread of cycling domains from participation (n=4 participants), talent (n=4 participants) and performance (n=3 participants).

Reflecting on the expertise within the group, the coaching participants (n=8), had been coaching for an average of 5.6 years with two coaches having ridden as professional riders for over 10 years. The non-coach participants had worked at a high level in sport performance and coaching capacities over the last 10 years, and are sport science graduates. Inclusion criteria for the coaching participants were that they were actively coaching and had progressed through the BC coaching pathway, were Level 2 UKCC qualified or higher, and had been coaching their discipline for a minimum of 4 years. For the non-coaching participants, each had a strong background in sport and significant understanding of coaching in key parts of the BC system. To protect anonymity, no further information related to the biography of each participant is included.

5.4.4. Interview Guide.

A semi-structured interview guide was constructed as a flexible framework for the interviews and incorporated the themes that emanated from the pre-study workshop (see section 5.2). In this sense, semi-structured guides allowed the researchers some freedom to explore the complexities of topics and, importantly, to therefore remain open to new paths that emerged during the process (Gray, 2014). Indeed, the interview guide was developed with the specific purpose of obtaining rich data from the participants

(Creswell, 2007). Specifically, the areas covered were: 1) perceptions on guiding principles for coach education and development and the extent of their presence within current BC provision; 2) the participants' needs in relation to the coach development pathway (or the perceived needs of others) and how well these were being met at present; 3) the participant's opinions on a potential new structure for coach education moving forward.

Following on from the design phase and supporting my pragmatic approach (as per Chapter 1), I ran a pilot study with a purposively selected expert panel (who were not involved in the main study) to evaluate the draft Interview Guide in terms of its' clarity, coherence, and consistency (cf. Camiré, Trudel, & Forneris, 2014; Wright, Trudel, & Culver, 2007). This panel had a combination of applied experience, understood pertinent literature related to this inquiry, and worked in coach education and development roles on a day-to-day basis in BC. More specifically, the panel included two senior cycling coach developers who had a range of experience covering six to eight years, a Lecturer in Sports Coaching (qualified as a PhD in Physiology) who had spent eight years working as a coach developer/educator, and a PhD Research Practitioner who had worked in the coach development and education field for over 10 years. All the panel held cycling and other NGB coaching awards and professional qualifications in teaching at Further or Higher Education level.

Following the pilot interviews, the broad areas of enquiry and the majority of content in the guide were retained. Of that which was amended, this related to aspects of wording and language only. More specifically, some parts were modified to better reflect cycling language and enable clarity of jargon and technical terms (to ensure the interview guide stood a better chance of being fully understood by all participants from the more novice to the more expert). To encourage consistency and flexibility throughout the focus group and interviews, follow-up prompts and probes were used

within a semi-structured guide to elicit responses on particular areas and ensure data depth and richness (Briggs, 2000; Burgess, 1984; Creswell, 2007; McCann & Clarke, 2005; and Minichiello, Aroni, Timewell, & Alexander, 1990). The final version is presented in Appendix D.

5.4.5. Procedure.

Potential participants were contacted via email, in which they were given information about the project and asked if they wished to contribute. Once initial responses to these invites had been received, two focus groups and several one-to-one interviews were planned. Due to scheduling and response issues on the part of some participants, ultimately one focus group took place and the participants of the second focus group were offered one-to-one interviews instead; an option which two participants took up. Once interview dates were confirmed, individuals were then sent a copy of the interview guide to enhance their understanding and familiarity with the area of focus before data were collected.

As described earlier, the focus group and all interviews were conducted by the independent researchers. The focus group discussion lasted 90 minutes, with the individual interviews taking between 45-60 minutes, with the variation in interview times due to the pace and direction of the conversations and depth of responses from a wide range of participants. All procedures were in line with the University's ethics policies and informed consent obtained from all participants with permission granted by all participants for their contributions to appear in this study.

5.4.6. Data Analysis.

All interviews and focus groups were recorded using voice recording equipment and subsequently transcribed verbatim. Following the procedures outlined by Côté, Salmela, Baria, and Russell (1993), the transcriptions were then read and re-read before raw data units were converted into thematic hierarchies.

More specifically, thematic hierarchies were created in relation to each of the study's three purposes; namely, areas where participants agreed that better alignment might come from, areas where participants did not agree on opportunities for better alignment, and, finally, the participants' perceptions of a potential structure for better alignment. For each of these areas, tags were generated from the raw data units, similar tags were then combined under sub-themes, and these sub-themes were then organised into a distinct framework of higher order themes (Creswell, 2007; Thomas, 2006). The first stage of the process (raw data to initial themes) was completed solely by the independent researchers. After this, I joined the process, working with them using the anonymous data to develop second stage conclusions.

5.4.7. Addressing trustworthiness.

This study employed a number of procedures to optimise trustworthiness in the data collection and analysis procedures, including features outlined by Creswell (2007), Robson (2011), Silverman (2001), and Thomas (2006). Regarding the data collection phase, trust and rapport between researchers and participants can have a significant influence on the process and outcome of interview-based studies (Sparkes & Smith, 2009). With respect to this, I sought to enhance these features, not only between myself and the participants, but also between the independent researchers and participants. Regarding my relationship with the participants, levels of trust and rapport were targeted over many months by orientating them with the detail of the study. I also worked to establish a community identity (cf. Stoszkowski & Collins, 2012) with the new ideas being presented. As stated earlier, however, I was also aware of the potential power dynamic within the coaching culture of my sport, hence the decision to use independent researchers for the face to face data collection. Regarding the relationship between the independent researchers and participants (cf. Stoszkowski & Collins, 2012), I also made efforts to optimise trust and rapport by careful pre-briefing on the

epistemology of the new structures, followed by open debate on the content and structure of the interview schedule. Finally, a greater than usual 'third party' consideration of themes was completed at the analysis stage. Of further benefit, I ensured that the independent researchers were also experienced practitioners in coaching and talent development domains, with further significant experience in conducting interview-based evaluations.

With regards to the analysis, transparency in this process was enhanced by the use of qualitative analysis software. As a part of this, the rationale behind interpretations was logged in conceptual memos; which subsequently offered a stimulus for self-reflection and discussion with the independent researchers (Davis & Meyer, 2009). I also kept a journal to reflect on the research process and how any biases (both my own and of the independent researchers) may have interacted with the developing findings (Patton, 2002). As further features, the constant comparison method was deployed to review, modify, and reinforce the developing thematic hierarchies (Corbin & Strauss, 2008); I also sought to challenge interpretations through discussing the sub-themes and major themes with the independent researchers and other *critical friends* (Faulkner & Sparkes, 1999). Regarding the latter, I also arranged for two independent expert practitioner-academics to review the developed codes and themes to determine the quality and effectiveness of the data analysis process. A further measure employed was the independent evaluation of the coding and transcripts by a professional coach developer who holds a Ph.D. in coaching science who concurred with my own interpretation from the raw data. This also largely concurred with the original interpretations. In cases where an alternative to the original coding was suggested, this discussion took place until agreement was reached. Finally, member reflections (Smith & McGannon, 2017) were also acquired from a sub-sample of participants as a further gauge on the accuracy, balance, fairness, and respectfulness of the thematic structures

and quotes presented in the Results section (Sparkes & Smith, 2009). No changes were made in response to this process.

5.5. Results

The purpose of this study was to critically explore key stakeholder perceptions of the coaching pathway and potential models for coach education that could further align the talent pathway in BC. More specifically, this study was designed to explore: 1) areas of agreement with regards to better aligning the coaching pathway moving forwards; and 2) areas of disagreement with regards to better aligning the coaching pathway moving forwards; and finally 3) opinions on a potential structure for better aligning the coaching pathway moving forwards. Accordingly, the results that follow are structured against these specific purposes. Participants have been assigned a pseudonym via a number (P1-P8) and a focus group identifier. Importantly, and to aid interpretation and alignment of results, a VP will identify the volunteer participant coaches who did not attend the pre-interview workshop discussed in section 5.2.

5.5.1. Improving the Alignment of the Coaching Pathway Moving Forwards: Areas of Agreement

Throughout every interview there was a clear sense of passion for the sport, together with a consistent desire to support coaches as much as possible. The following components emerged as general points of agreement across the participants with regards to the current landscape and potential future evolutions in coach education and development.

5.5.1.1. Limited investment and engagement in the current pathway.

Overall, the participants identified the challenge of "formal" coach education and the quality, or non-existence of a learning experience post course as notable areas to consider. This potential weakness in the formal coach education courses is ably pointed out by participant 4 who stated:

"People pass them and then you never see them ever again".

This formal approach to learning is clearly not the only approach the coaches desire, with the suggestion that they feel unsupported in their coaching endeavours once the qualification is completed. Emphasising this point participant 7 confirmed the following:

"At the minute, once you finish the qualification, that's it".

Indeed, it was also identified that unless you had a clear idea of the role in which you planned to coach (e.g., professional coach requiring a Level 3), progression through the coaching stream was not clear for the many coaches who wish to "just" coach and further develop. However, the participants suggest the course meets their initial needs but feel they are left on their own to figure out what they do next. This was best summarised by the following from participant 3:

"The courses are brilliant, and the mentors are fantastic. But once it's finished, you just don't have much support. So it's what next? Unless you want to do something specific, it's not clear"

In this vein, several participants felt it important to express the pitfalls of framing any coaching pathway as a largely formal route with isolated learning episodes. This developmental approach to coach education is supported by the participants with them suggesting that education and personal development could be a higher priority (e.g., financially, accessibility) for the sport as a whole, with participant 1 stressing:

"I believe that in the role of education, BC need to be supporting easier, cheaper and faster ways to enable people gain qualifications to get them coaching quicker".

As well as concerns over the extent of the formal approach it was felt that the value of the sport's coaching pathway wasn't helped by some of the system's priority goals at times (e.g., success at the next Olympics and Paralympics) with the value of

coach education often undermined (or at least superseded) by some of the approaches taken by the NGB as exemplified by those working at the elite performance level:

> *"There are a significant lack of formal qualifications in coaches at the elite level, which has a knock on effect to the credibility of the coach education system: if the coaches at the top aren't committed to coach education then why should a coach out in the community be?" - Focus Group*

This lack of engagement from the coaches at the elite level can it part be explained by the number of participants who explained that formal pathways can often be poorly received (by elite coaches) and it was suggested that future focus be placed more on 'development' over 'education' as characterised by the views of the *focus group:*

> *"There's not been buy-in from the elite level for a coach education framework. There has been a commitment to informal learning (e.g., going to observe other coaches in other environments, or going to conferences) but there's not been a commitment to formal learning".*

As evidenced by the preceding statement, the *Focus Group* further suggested:

> *"Elite coaches aren't fans of formal learning, the sport has been pretty resistant and some coaches have had no formal education in years"…*

… and that the relevance of the formal learning experience for elite coaches did not meet their needs, with a clear preference for experiential knowledge and informal opportunities. Furthermore, and supporting this point the f*ocus group* suggested the coaches themselves could create informal development opportunities working with "experts" in their environments, stating:

> *"Something we can be better at is fostering opportunities to learn across cycling disciplines; do we recognise and internally promote who the experts are?".*

5.5.1.2. Need for more appropriate streams.

As one reason for limited engagement in the coaching pathway, participants suggested that this may be related to the current system whereby coaches often have to move 'up' a level to be developed (e.g., Level 2 to 3, or Academy to Podium) and recognised as a 'better' coach. As an alternative, many participants pointed to the need for streams that promoted 'horizontal' as well as 'vertical' progression; essentially meaning, for example, that coaches could become high level development coaches, as opposed to needing to change age groups to be acknowledged as 'elite' themselves. Unfortunately, the current system is based on a hierarchal approach where the coaches working with GBCT are deemed of more value and expert. This point was clearly pointed out in the *Focus Group:*

> *"How can we broaden the education and reward? If we've got the world's best U16 coach, they can only get a wage rise if they move up to support podium riders potentially, but they might not want to do that or be good at it. progression is currently [vertically-dominated]".*

However, participant 1, did recognise that in spite of the current system there are some good coaches operating at various levels sub-podium:

> *..."we've got some really good coaches; I guess at what you'd call the youth specific coaches. I think it's trying (a way in which) to maximise this".*

Unfortunately, within the current system there is no consistent message from NGB coach education to inform coaches that all roles are vitally important within their differing contexts and you do not need to move/develop vertically to be a good coach. This point was observed by participant 8:

> *"The award structure at the moment is selling you one thing but it wants to do another. If I want, say, to coach young children, you would go down a route of*

upskilling yourself to become as good a coach as you could in that area. And that's different to moving onto the next award."

In addition, the current coaching pathway fails to financially reward coaches lower in the "pecking" order (i.e., working with children and youth) and the GBCT pathway struggles to retain and subsequently recruit capable coaches, as identified by participant 4:

"It's a constant brain drain, a frustration. We can't keep youth coaches in the job, because you can't earn anymore."

The glass ceiling in payment for coaching was also exacerbated due to the fact that the current coach education does not provide any training or development to these coaches, their development is all experiential (i.e., on the job) with limited support or guidance. The youth coaches could progress vertically to Level 3 but the relevance and context of the course will not develop the skills specific to the environment, participant or the domain they coach in. Participant 4 summed this point up fittingly:

"Currently those who take Level 3 do it for private coaching. So, the youth coaches don't really do it. Level 3 content is only really useful for training adults... youth training prescription is really niche."

5.5.1.3. Progression beyond level 3.

It appears the participants understand and support the need for developing more inclusive streams for coaches with content relevant to their domain. However, they also demonstrated a divergent position in describing the need for the opportunity to progress vertically beyond a Level 3 qualification up to a Level 4. This point was outlined by participant 2:

"We're crying out for Level 4 and a broader outlook... we're doing our sport disservice here".

Supporting this positon and providing more of a rationale behind the statement, participant 8 suggested:

"The main reason to go down that [Level 4] route would be to support the professionalisation of cycling coaching, which is quite low at the moment. Having that fuller pathway with an award above Level 3 would create a high benchmark for people to aspire to."

As well as general support for the addition of a Level 4 qualification, some individuals also expressed opinions on what a Level 4 would entail. For example, that Level 3 becomes very discipline focussed, and Level 4 focussed more on the underpinning sciences (i.e., the 'Ologies' and Pedagogy). Explaining this point further participant 6 stated:

"We need a 'deeper dive' [in a Level 4 qualification], add more context to it. More physiology, more on the intricacies of certain events"

As demonstrated above, there was an overwhelmingly positive response for the inclusion of a route beyond the current Level 3 qualification; with the most common suggestion being a Level 4 qualification. However, in lieu of this, participants did believe that further specific modules, or CPD could bridge the gap whilst a Level 4 was developed. It is also important to acknowledge that judgment on the value of a Level 4 would be withheld until it was clear what the content of the programme would be and what it allowed coaches to then go on and do. Participant 5 was clear as to the importance of the Level 4 to them specifically stating:

I would want to know what a Level 4 covered. I wouldn't bother doing it unless it made me more skilled."

Whilst the *Focus Group* debated the hierarchy and social status of the potential training, asking:

"Does Level 4 mean that coaches think they are better than others?

5.5.1.4. Coach development.

The importance of accessible learning and coach development (e.g., modules, Bite-size CPD and social learning), were key agenda items for the participants and also the policy makers and NGB alike. The move to improve the quality of coaching and safeguarding of participants is currently limited in application due to the current structure of NGB coach education provision. This point was echoed by P8:

> *"At the moment things are too restricted and too siloed. I think giving people the option to pick up specific knowledge in specific areas regardless of where they're at is a really good thing".*

Building on this perspective and reflective of views across the participants, there was overwhelming positivity for the future provision of modules across the levels to allow coaches to up-skill, regardless of their precise motivation. For example, some individuals believed the modules would support coaches who were keen to progress their knowledge but did not have financial resources to move 'up a level'. Clearly, resource issues appear to effect the majority of volunteer coaches when completing training, however a modular approach could be favourable, as VP2 stated:

> *"One of the things we've seen is that the current pathway is expensive, it's time consuming and there are elements that may never be used depending on the environment you're coaching in. So, I would definitely support specific focus areas".*

Another area that could support the change to modules with a specific focus and relevance to the coach is what the focus group identified as learning based on smaller "chunks" of content to help coaches integrate into practice, as per the following:

> *"A modular approach would allow for bite-sized chunks, rather than 3-4 day courses [which are difficult to schedule] when people are busy; bite-sized*

chunks of learning can help people to learn and integrate rather than bigger chunks" - Focus Group

Furthermore, and supporting an individualised modular learning approach, P6 suggested it could help to gain deeper understanding regarding context and knowledge. However, P8 also identified personal motivation as a factor in undertaking any further training as below:

"People like achieving things, certainly from a person-centred point of view. I've offered lots of CPD in the last 2 or 3 years and the uptake is getting better, but ultimately people have to be really internally motivated to do this sort of stuff. They need to get better, just for the sake of getting better."

Interestingly, the focus group saw things a little differently. Specifically, the group supported a module approach based on the coaches' areas of interest but were concerned about the coaches' choices regarding important topics that were available. The focus group stated:

"A module is good because it's elective [i.e., 'it would be great to have these things / these are areas of interest']; but a potential risk is that people who think they are good at things [might not be], so they might not choose to do some important things."

Participants also pointed to the need for greater provision and involvement in *communities of practice and social learning*. For example, an online presence (e.g., via Hive or Microsoft Teams) was, on the whole, positively regarded as a means to share best practice. It was also cited as being successful across other sports and, importantly, in 'naturally occurring' pockets within cycling. Given the nature of social learning, it is unsurprising that clubs are "finding" ways to support themselves and are looking outside the NGB. Supporting this point VP7 identified their CoP and, importantly, a critical point concerning support networks:

"I was lucky that coaches at my club already run our own Facebook group to bounce off ideas; but if you don't have your own network then you wouldn't have that type of support".

Additional communication/social network apps were discussed as useful but with some it still proves a challenge for coaches to incorporate into their practice, as P6 suggests:

"Apps like Huddle and CoachNow are good. I've tried Skype for case conferences but that's not been too successful".

Whilst some participants had concerns that an online platform or App could have a negative impact if not managed correctly, they agreed that this would likely be overruled, or at least tempered by the positive elements. However, participants agreed that the social online platform/App should supplement rather than drive the coach education pathway. Interestingly, the interviewees still believed coaching to be a social endeavour, with VP3 stating:

"Coach education has to be hands on, face-to-face, applied. We can't substitute this with online teaching".

The social learning aspects coach development and formal coach education has made some progress in BC over the last few years with a "blended" approach and can be a foundation on which to build opportunities for broader groups, as the focus group suggest:

"[Social learning is] currently limited but will increase soon [at elite level]. Coaches are being encouraged to share experiences and knowledge internally and the plan is to start using a newsletter format to inspire and instil some curiosity".

Interestingly, an additional coach development opportunity has seen support offered to facilitate “discussion” forums that help the coaches with their applied problems with coaches from the pathway. The focus group acknowledged this point:

"The talent breakfasts seem really good at a regional level".

It is important to remember that, whilst individual choice has been suggested to meet the coaches’ motivations, the delivery of such a “system” will require a “step change” in the NGB delivery models. Also, and probably harder to “change” is the culture of the workforce. That stated, however, the interviewees saw modules, CPD and social learning as an organic way to grow their knowledge base, and decide whether to invest in further study, or change 'stream' (level or domain). Additionally, whilst nearly all of the coaches interviewed were very clear about wanting more development opportunities (CPD) or wanting to offer more dependent on their role, it was clear that a formal acknowledgement of this CPD might be necessary.

5.5.1.5. Licensing/auditing.

It is well established that a number of NGB have licences to practice (e.g., Cricket, Tennis, and Swimming) for their coaches who must complete CPD units to continue to practice. Whilst this is, a quality mechanism to support/inform the coaches’ delivery, it is also a method of reward and recognition. The implementation of such a system in BC raised some concerns regarding costs and operational detail (e.g., how would it work). However, several participants brought up the concept of licensing when asked what they believed coaches of their level needed to be the best that they could be in their roles.

What was clear from P 3 is that they felt CPD would keep them at the forefront of new sporting ideas, when stating:

"The RFU requires their coaches to do some CPD every year, and they've got loads of options. It just stops us from getting rusty when sport is changing so much" – (VP3)

Unfortunately, and in line with previous comments there has been little investment or engagement by BC in post course coach support or development. However, there appears to be a requirement from some coaches to be helped and supported and even regulated (e.g., log book, number of hours) to become better coaches, or indeed get back into coaching as VP7 stated:

"Some of the coaches at my club have never had any sort of feedback. [Something like] an annual drop-in, not an assessment, where you get a feel for where you are and how well you're doing things [would be helpful] ...Or even if we had to keep some sort of coaching log. Some people might not coach for a year and then get dropped in to coach a club; some requirement that you have to do a certain amount of hours that are signed off by someone else would be useful".

Supporting the above point with an additional suggestion to address the current lack of CPD engagement, the focus group stated:

"An auditing-style process could help with a culture of development; yearly or hourly requirements of CPD might be useful – and choosing what this is on"

5.5.1.6. Content for developing coaches.

Generally, the interviews did not cover what the content at each level of education or development should be (i.e., what topics / skills should be educated or developed). However, several participants expressed that they felt coaching pathways could be enhanced by redressing what content is taught. Whilst there were no level-specific requests, a number of themes were identified; including the principles of learning environments (moving beyond traditional coaching processes) and leadership

skills. However, many participants believed that a focus on communication and interpersonal skills was particularly paramount. In some cases, it was suggested that this was more important than technical knowledge, for example P4 stated:

"For me that's coaching. Knowing how to ride a bike is almost irrelevant if you can't communicate well. That's something that's totally neglected in coaching awards."

As a result of the current NGB training predominately containing professional knowledge (e.g., technical, tactical and CSG content) the training could be too structured to cater for novice coaches coming into the sport; therefore, not providing the content that is required in a specific environment (e.g., children or elite). Supporting this point, the focus group stated:

"From an elite level, it would be helpful to have a 'working with practitioners'-type [element] to coach education so that coaches understand how to maximise that [feature of the environment]."

One of the most interesting observations was from the focus group who again suggested that the current training fails to meet the need of elite coaches due to the lack of relationship building training in the programme. However, the statement was caveated with the point that the content is there (in the training), but the elite coaches have not engaged, as stated:

"One of most of the astounding things in coach education is the limited focus on the softer side of building relationships; how to be human. It does exist in some of the core programmes, but a number of coaches at the elite level haven't done them."

5.5.2. Improving the Alignment of the Coaching Pathway Moving Forwards: Areas of Disagreement

Due to the mixed roles, interests and needs of the participants, there were naturally some areas of disagreement. Accordingly, the areas discussed below are the

main areas of contention or disagreement. Alongside this, the participants showed different agendas or priorities in several areas. However, many of these are clearly due to their different subject matter expertise. Finally, it is worth noting that disagreements tend to be more nuanced than black versus white. In short, there was more agreement than disagreement, with many points presented with subtle rather than absolute differences.

5.5.2.1. Discipline specific units: when to 'specialise'?

Due to the complex nature of cycling and its six sub-disciplines, the timing (when accessible) and content of discipline specific units (DSU) in the coach education pathway was a hotly debated topic. The discipline specific units (DSU) are currently delivered to coaches after they have completed the level 2 core qualification when the majority of coaches choose the DSU they want to undertake further training in to develop themselves (or their riders). This "choice" inevitably stems from the environment they wish to coach in or their desire to upskill in coaching the discipline they have taken part in for many a year as identified in Chapter 4. The interviewees held a common view that discipline-specific training was important once some core skills had been established, with VP2 emphasising this point:

> *"In a sporting capacity [the disciplines] are segregated properly... but they do have some common ground."*

However, what was clear from the interviewees was that recognition of the different technical elements within the disciplines should be noted and catered for in coach training. VP7 supported the technical nature of the sport(s) of cycling, stating:

> *"I feel like it's totally different in different disciplines: BMX using start gates, jumps, [etc.] back to track cycling where it's about [track-specific demands]; the disciplines are varied so need [specific technical education]."*

Interestingly, and conversely, a number of coaches felt that the DSU's should be delivered earlier in the coaches' development by the NGB to upskill the coaches with the technical skills of the discipline. P1 and subsequently P8 hold this point of view stating:

"My view is that we need coaches to be able to coach in their discipline as soon as possible."

"You need to go straight from the early qualifications straight into the disciplines, and that makes sense for the disciplines."

As demonstrated here, in relation to both the current pathway structure and potential amendments/suggestions to the pathway, participants had very differing opinions as to when coaches should cover discipline specific units. For some, the DSU's were the core reason as to why an individual commenced the pathway, and therefore should be covered as early as possible. Somewhat comparatively, other participants did not comment on the timings of DSUs.

5.5.2.2. APL/APEL: How much, what of and when?

In general, there was a strong consensus that implementing a clearer structure for the accreditation of prior learning and/or experience (APL/APEL) would be a welcome amendment to the coaching pathway. For the majority of participants, they expressed a view that several elements of Level 1 would be unnecessary for some potential coaches. For example, P1 stated:

"I really think APEL is important. If you've done a Level 1 in other sports, you should be able to transfer that across. But we need ways of checking that knowledge."

Furthermore, it was generally and strongly agreed that Level 1 qualified coaches from other sports should be able to move straight to Level 2. With regards to other professionals, however, such as those with education qualifications, or sports related

degrees, participants felt that there should be a process to identify their current level of knowledge. Interestingly and supporting this point, VP5 stated:

"Cycling is a complex sport. Therefore, some of the elements covered at Level 1, such as the Health and Safety, are still really important regardless of how many degrees you've got!"

Building on this point, several participants suggested that we must be mindful of the complex and technical nature of the sport before giving APEL. Furthermore, a number of the participants felt that neither a degree nor a qualification from another sport would be sufficient to bypass Level 2 or Level 3 for example VP2 stated:

"Culture of the sport is important. I think there are things that are essential, for example anti-doping."

Whilst VP7 identified another essential point regarding the technical nature of the sport(s)being a potential barrier stating:

"I'm not sure what you'd have in your locker that would be relevant to get APEL from Level 2 [in BMX]. I don't think a degree would give you the technical know-how: a lot of coaching is about breaking down the techniques and coaching them."

5.5.2.3. Common level 1: relevance to all?

The majority of participants felt that a common "broad brush" Level 1 would be the most appropriate pathway amendment to enable novice coaches "to do as much as possible", and to allow a smoother transition between sub-disciplines. That sated, the participants also identified a number of key points to consider prior to developing a common Level 1 as P6 stated:

"We need to make sure this is in sync with effective culture; not high performance culture, but good culture and developing people. So, making Level 1 a very accessible entry-level point but also something that really lays a strong

foundation, and the pillars run through the Level 2 and 3 really clearly. It could link the courses really well."

Interestingly, the participants were also supportive of any change in the Level 1 being able to accommodate a number of sub-disciplines that are currently categorised in BC as different roles with different training and different insurance. P8 explained:

"If you zoom out and think about the end user, 'what do people want?', invariably it's a blend of all those things [coach, trainer, leader] ... Some sort of blended early qualification would really fit the bill."

5.5.3. Improving the Alignment of the Coaching Pathway Moving Forwards: Opinions on a Potential New Structure

Having discussed various areas of the current coach education system and some general evolutions, each participant was then shown a specific example of a potential future pathway, based on the workshop with coaches referenced at the start of this study (with comments Appendix F). This pathway is presented in Appendix E and based on the following pillars:

- built on a coach-centred approach, enabling a more individualised approach to personal development;
- the incorporation of APEL where possible;
- stream-specific information, complemented by 'optional' bolt-on's to widen knowledge;
- the use of bolt-on's as CPD options between levels;
- reduced duplication, and;
- a four level model across streams.

In terms of responses, the majority of participants gave very positive feedback on the pathway, with participants asked to provide a rating out of 10, with participants rating the potential "new" pathway a 7.5 out of 10, on average. Importantly, however, there was also critical consideration offered; again pointing to the nuances required in

any future evolution. Most prominently, participants commented on the following aspects.

5.5.3.1. A more individualised and coach-centred approach.

The majority of participants supported an improved focus for the training provision. Some discussion in the interviews took place regarding content, with the "softer" skills of coaching being at the forefront. However, the participants were keen to emphasise throughout the interviews on the value of a more individualised and coach-centred approach. With the focus group stating:

"If coaches feel it's about them and it's going to make them better, and the sport give them time to engage in it [then greater returns will emerge]."

In support of this point and further emphasising the benefits of intrinsic motivation for participants with their own learning journey, P8 stated:

"This approach is spot on, supporting what the individual wants to do. It works for the sport and works for the people in the sport."

It appears the potential "new" structure could meet a number of needs for specific individuals with limited controls on a large amount of content available, choice of what to do and when to do it and indeed not being "stuck" in one role. VP7 ably reflected on this point, stating:

"It's a 9/10 structure: when the boxes are all filled in, it might change, but as a structure I like it. It seems like there is a lot more information and it's a lot more intensive. I like the fact that there are options to do modules on different disciplines to help with transitions between specialisms."

5.5.3.2. More comprehensive coverage through the three streams.

Participants were all aware that the current pathway had three 'streams', known as coaching, leading and instructing. However, when presented with alternative stream options (i.e., 'performance', 'development', and 'participation'), many felt that these

more accurately reflected the roles that individuals (especially coaches) would look to take on. This was specifically important to P4 who suggested the current pathway does not meet the riders' needs, stating:

"The pathways make sense, because currently I've got several athletes that fall in a gap. They're 15, 16, but they're elite performers."

Similarly, the participants thought that clarity of role and domain specificity was important for coherent communication and developing culture, as P6 pointed out:

"Splitting the participation versus performance pathways is a real positive. As well as the modules. There's a consistency of message and key themes for developing culture."

Interestingly, participants believed that the promotion of these streams would allow for appropriate acknowledgement of successful coaches at each level. However, it is also important to acknowledge that some felt these streams could be more specialised still. For example, the following quote from P 3 indicates that the precise content of these streams is integral, as some individuals may look to choose a more recreational/leader role over a coaching role and therefore will(may) not require some of the more complex content;

"This is too much knowledge for those looking at supporting rides and riders on a more recreational level. If they want to go out and encourage more ladies to get out on their bike, that's fantastic, but they've got no inclination to find out what's going on in someone's mind, or why their body does a certain thing."

5.5.3.3. Particular caveats: complexity and specification.

Reflecting on the complexity of developing a pathway for the many roles in cycling, and one that all stakeholders can understand, was reflected in the participant's comments. Specifically, by VP3 who observed:

"It's overwhelming."

In support of the proposed pathway and reflecting on their own understanding, whilst recognising the complexity of how it will be perceived by their peers, VP7 stated:

"Not everyone is like me, but I wonder if people will look and think it's too much and put people off; the generic and specialist routes need to be made clear; divide by hashed line between 'this is what you have to do' and 'this is what you can do."

Finally, it is also key to emphasise the perceived value of earlier specification that was identified earlier in the section and exemplified here by P1:

"We've got very specific disciplines, so it's good to have the option to go down discipline specific route as early as possible... discipline specific at Level 3 is a long route to get to, and it's an expensive route to get to. I think we need a faster route to all people to be enablers of a session earlier."

5.6. Discussion

The purpose of this study was to critically explore key stakeholder perceptions of the coaching pathway and potential models for coach education that could further align the talent pathway in BC. This study used three specific areas to explore the pathway: 1) areas of agreement with regards to better aligning the coaching pathway moving forwards; and 2) areas of disagreement with regards to better aligning the coaching pathway moving forwards; and finally 3) opinions on a potential structure for better aligning the coaching pathway moving forwards.

5.6.1. The 'Take Homes'

Generally, the participants were coherent in their perceptions regarding the coaching pathway with a significant emphasis on the following aspects: 1) limited investment and engagement (SYSTEM) in the current pathway; 2) the need for more appropriate streams (STRUCTURE) to support role clarity; 3) the types of coach development (METHODS); and 4) the content for developing coaches (CONTENT).

The above aspects suggest the coaches/stakeholders in the study are coherent in their understanding and awareness of the challenges of funding for coach education and development in the NGB. However, they wish to see better engagement from the professional coaches in GBCT to support the credibility of the programme. It also appears that the current pathway coach education does not meet the needs of the coaches and the riders, in terms of structure, methods of delivery and content. The main area of incoherence was focussed around when to specialise with the discipline specific units (DSU) (PROFESSIONAL KNOWLEDGE) that allows access to the specific skills content. This is an interesting point that suggests the current coaching "curriculum" lacks clarity for the coaches to undertake their role effectively.

Finally, the coaches appeared to demonstrate a sophisticated epistemology throughout the study areas that was not expected given the heavily structured programme the coaches have been indoctrinated with. Most notably, participants' interviews made it clear that any potential structure should be more individualised and have a coach-centred approach underpinning the design. The remainder of the discussion now focuses on the main themes and some particularly notable findings from this study.

5.6.2. Integration with, and Consideration Against, the Previous Coach Education Literature

5.6.2.1. Limited investment and engagement in the current pathway.

The results suggest that BC are still predominately delivering a formalised Coach Education programme to trainee coaches that is focussed on technical, tactical and sports science knowledge (cf. Nelson, Cushion & Potrac, 2006). This professional knowledge, identified by Collinson, (1996), is delivered in blocks of isolated formal learning episodes generally over a weekend where coaches are assessed as competent (or not). Interestingly and in line with observations from Cassidy, Mallett, and Tinning,

(2008), and Nash and Sproule, (2012), the courses do not contain enough (if any) pedagogy.

Coaching and coach education still has a major significance attached to its provision and continues to be subject to debate (Cassidy, Potrac, & McKenzie, 2006; Cassidy, Jones & Potrac, 2015; Cushion, Amour & Jones, 2006; Jones, 2000; and Lyle, 2002). Accordingly, it was interesting to note that some parts of BC potentially still believe that their coaching pool are merely technicians driving outcomes that are CGS based through education that is structured and overly formal. This point of view fails to recognise the complexity that can be involved when delivering the coaching role, Cushion, 2007; Lyle 2002a; Nash and Sproule, (2012), where coaches engage in a multitude of interacting variables, therefore requiring different bodies of knowledge and many varied skills. It appears the coach's and, ultimately, the rider's needs are not being met with formal training that does not cover the relevant content for the riders' stage of development. Given the coaches wish to continue their learning after the course stating "what's next", perhaps this presents an opportunity for the NGB?

Furthermore, and supporting the coaches' points of view, Wright, Trudel, and Culver (2007) suggest the formal pathway should be complemented by informal learning opportunities, such as a community of practice (Stoszkowski & Collins 2014a) or support from a coach developer or mentor, (Lemyre, Trudel, & Durand-Bush, 2007). It appears the combination of formal, non-formal and informal learning sources would meet the coaches' requirements (Mallett, Trudel, Lyle, & Rynne, 2009; Nelson, Cushion, & Potrac, 2006; and Vella, Crowe, & Oades, 2013) as they appear to value the formal courses and would like to engage in other learning opportunities.

However, the formality and current structure of the pathway leads to confusion of "what next" for the majority of coaches. This raises an interesting point regarding who is leading the coach's "learning journey". The coaches clearly believe BC should

prioritise investment, improve accessibility, increase CPD and make things easier and cheaper for them, but what are they doing to help themselves? Interestingly, the coaches and stakeholders in the study appear to suggest they want more formality from BC coach education not less; therefore, opposing the view of Cushion et al., (2010), Gilbert, Gallimore and Trudel (2009) and Piggott (2012), who contend, coaches continue to place greater value on experiential learning than on formal coach education.

Clearly, however, the formality, the content and the current structure (only formal) appears to lack the engagement and credibility for some coaches (mainly the elite) that seek a more informal developmental approach to coach learning. Unsurprisingly, these coaches have yet to fully engage due to their perception of the courses being too basic and lacking usefulness and relevance, Nelson, Cushion, and Potrac, (2013). This point was felt to be an issue for the majority of coaches who suggested the current recruitment of coaches for the NGB that did not have formal training in the UK or overseas undermined the coach education system. Furthermore, the coaches believed this would lead to lack of credibility for the system, which would lead to a lack of engagement from other coaches in the system. However, we must remember that elite coaches utilise many broad learning experiences when undertaking their roles as Abraham, Collins, and Martindale, (2006), and Rynne and Mallett, (2012) identified, (e.g., ex athlete, learning from other coaches, serendipitous, on-the current or previous job coaching and from current or former athletes) so why should they not be recruited?

Unfortunately, to date, the system has only provided one pathway of formalised learning, with no recognition of prior formal or informal learning taking place. The current system is a "risk" based system were the coaches' get what's needed to ensure they are safe, and therefore insured. This formal risk based approach is delivered to coaches mainly in the participation (club) domain and links to licensing.

Further specific formal learning has been developed with a focus on the Olympic disciplines of Track, Road, MTB and BMX. However, reduced investment by the NGB and indeed Sport England (UK Sport) in coach development over the last funding cycles has created a level of "strategic ambiguity" (North,2011) for the pathway in trying to meet performance and participation outcomes. Supporting this point Coaffee, (2008) suggested the lack of funding is still a major limitation in UK for long-term sustainable sport policy, and as a consequence workforce budgets are potentially cut. Practically, this point is apparent in the sparse learning and engagement that has been evident for the sport and in particular the minor disciplines (e.g., Cycle Speedway, Cyclo Cross). Finally, the strategy of prioritising the Olympic and Paralympic disciplines and racing events, over a pathway of coach development for the majority of participants in the sport has potentially led to strategic dissonance and a lack of strategic intent and foresight, Burgelman and Grove (1996).

5.6.2.2. Need for more appropriate streams.

It has to be recognised that coaching cycling has many complexities that exist in the sports landscape (e.g., workforce funding, participation and performance objectives). Additionally, cycling could be classed as highly technical sport with many "nuances" and demands within the disciplines (i.e., the sports). Furthermore, given cycling could be classed as a lifelong activity in its many forms (e.g., utility, recreation, participation, sport) creating a one-size coaching pathway may be problematic as the coaches identified in the interviews.

The current pathway supports the vertical progression of the coaches, i.e., level 1-3, with discipline units at level 2 and 3 and caters for three workforce streams; coaches, leaders and instructor. These "labels" do not currently reflect the needs of the rider, the context and importantly the environment that activity will take place in. Furthermore, we must also acknowledge that coaches working at different levels of the

rider pathway within BC clearly require different skill sets and competences to achieve effective coaching performance outcomes (Allen, Bell, Lynn, Taylor & Lavallee, 2012). The need for more appropriate steams and more focussed coach education provision is required to truly reflect what environments coaches work in and importantly to caters for the needs of the riders at their age and stage of development.

The proposed draft structure (Appendix E) re-aligns the above streams into participation, development and performance, these streams were deemed to more appropriate from an applied approach and allows coaches to progress their coaching development in their specific domain (e.g., children, youth, talent, elite). Supporting this point, the coaches in the study suggest a "horizontal" progression route alongside a "vertical" route to enable them to be the best they can be without having to complete the next formal qualification or change age groups. The coaches clearly wish to be acknowledged for their experience and the role they undertake not by a level "tag". This suggestion from the coaches aligns to the 4x4 (or 6x4) principle that was prevalent in the coaching workforce 2009-2016 guide, (North 2009). This formed part of the UK Coaching Framework which many sports adopted, and others like cycling, did not fully develop their rider pathway model and as a consequence never developed a complete coaching pathway model to align with a LTRDM.

The previous point is a pertinent one, given Chapter 3 and Chapter 4 identified that the absence of an explicit LTRD model to guide rider and coach development was potentially limiting the development of the coaches and consequently their riders. However, and importantly, the coaches believe that the proposed streams will enable and guide the development of themselves and riders through coherent messaging and key themes originating from a developed LTRDM. Whilst the promotion of these streams support the work of coaches at each level, there is potentially streams within

streams to further specialise in a specific role (e.g., coaching children, coaching talented riders or leading women on a ride in participation stream).

Finally, the current pathway appears to be affecting the pipeline of quality coaches as coaches (have to) *move up* to the next vertical level in the pathway (e.g., Talent, Foundation, Academy) to get improved benefits and the reward and recognition of working with more senior riders, or *move out* to get recognition and improved financial incentives.

5.6.2.3. Coach development.

Further supporting the informal coaching development approach, the interviewees suggested that there was a need for an online presence to share best practice and supplement coach education (not replace). It appears the BC coaches concur with the work of Stoszkowski and Collins (2016) and Trudel, Culver, and Werthner (2013), in that they have a preference for informal, bespoke learning experiences (e.g., informal group sharing and problem solving sessions (talent breakfasts) and informal mentoring). Additionally, the study suggests the BC coaches are increasingly open to the use of technology to support their informal development; suggestions which align with the work of Cushion and Townsend, (2018) and Stoszkowski, and Collins, (2017).

Specifically, and supporting the above authors' points, BC coaches are moving into digital channels (e.g., Facebook, Twitter, Skype, Hive, Huddle) to support their coaching practice. Whilst the coaches are branching out on their own into the digital world they believe BC should provide an online presence to support their development. This request will have to consider the benefits and challenges as outlined by Stoszkowski, and Collins, (2014a) and furthermore ensure this collaborative development is structured and managed (cf. Stoszkowski, Collins & Olsson, 2017). Another essential point, and supporting Hassanin and Light (2014), the interviewees

still believe that coach learning takes place in particular social and culturally situated contexts that relate to the environments in which they work. Therefore, the suggestion for online engagement was potentially for supporting not replacing the face to face interactions (e.g., discussions, observations).

The central theme emanating from the results regarding coach development, suggests that the current offering of coach education is too restrictive, does not support development in specific domains with relevant content, and has cost and time implications (Nash & Sproule, 2012). However, the coaches in the study appear to have a developmental philosophy that sees them requesting more CPD in a modular bite-size format to gain deeper contextual information in relation to whom they were coaching and at what stage of the pathway. Interestingly, this developmental philosophy is also apparent in the sport's general coaching population. In a previous BC CPD (unpublished) study, the coaches supported the desire to do more CPD and identified a number of topics that fall outside the normal professional knowledge that Collinson, (1996) suggests is at the forefront of coaches requests.

Furthermore, and following on from the above, the coaches' developmental approach was demonstrated through their request for a yearly licence to practice that requires a minimum of a yearly CPD. The coaches believed they and other coaches should be the best they can be and the NGB should support that, with a "stick and carrot". Finally, it was also apparent that the coaches would like some form of contact, support and guidance post qualification from a person who could feedback on how well things were going to help with driving a culture of development over qualification.

5.6.2.4. Content for developing coaches.

In the absence of a LTRDM, the coaches were not asked specific questions regarding the course or CPD content. However, the study participants identified that the coaches believed a number of important topics should be included in any new course or

modules to redress the balance of current professional skills (e.g., technical, tactical) taught on the coaching pathway. This focus on technical and tactical knowledge and topics in sports science (cf. Nelson et al., 2006) is currently in line with most NGB coach education delivery. Interestingly, this approach is not without its challenges as there is an acceptance that sport specific skills can be complex to understand for beginner or novice coaches (Nash & Sproule, 2012). Nevertheless, the coaches in the study believe that there should be a change in the "curriculum" for coaching courses.

However, it appears the coaches are "challenged" in what content is right for them, in terms of learning the relevant skills to coach cycling over and above the technical/tactical. Interestingly, the coaches clearly had a personal focus (i.e., what worked for them) and did not reference what content would be applicable for the development of riders at their age and stage in specific contexts. Nelson et al. (2006), who found coaches required relevant and usable content that they could easily apply to their practical situations, supported this point. The themes the coaches identified as being neglected in the current awards are; the principles of learning environments, leadership, communication, intrapersonal (philosophy, values, reflection), and interpersonal skills, with the latter suggested as particularly paramount to build relationships to enable effective coaching (Côté & Gilbert, 2009).

5.6.2.5. Discipline specific units: when to 'specialise'?

It was identified in Chapter 4 that cycling by its very nature is complex, due in part to its six sub-disciplines and the differing cultures within those sub groups. Therefore, determining when the coaches should access the discipline specific units (DSU) in their development journey is a very difficult task without a clear LTRDM to guide the content and the progressions relevant to the age and stage of the riders being coached. Currently the disciplines cannot be accessed until the coaches have completed their core level 2 training; however, the GBCT pathway coaches believe the riders need

the skills of the discipline earlier in their development. This point is not universally agreed, with the study coaches suggesting the DSU were "segregated" properly due to their varied and specific demands of each discipline. However, given the broad spectrum of interviewees, from a newly qualified coach to GBCT coaches and performance coaches, it is clear that there is a lack of coherence as to what role each coach plays at each level, or at least one level below and one above. This lack of coherence and a clear LTRDM may be the reason coaches disagree on when the coach should start training in the DSU.

5.6.2.6. A more individualised and coach-centred approach.

In line with, Knowles, Gilbourne, Borrie, and Nevill (2001), and, Nelson, Cushion, and Potrac (2013) the results of the study suggest the coaches would value a more individualised approach to content and random learning provision. This approach could support the coach on their own learning journey meeting their motivations and relevant to their needs (cf. Gilbert, Gallimore & Trudel, 2009; MacDonald, Côté & Deakin, 2010; Vargas-Tonsing, 2007; Wiersma & Sherman, 2005) at their pace of development. However, without an underpinning LTRDM, an individualised curriculum has the potential not to cover the relevant topics that are vitally important for the development of riders at their age and stage.

For example, the comment, "coaches in their early stages of their careers are told what to do (coach)". This point is an important one, in Chapter 3 and 4 the results suggest coaches are mimicking their peers and are heavily influenced (told) by the delivery coach education, its tutors and their own peers.

5.7. Summary.

This study identified a level of coherence across key stakeholder of the coaching pathway that suggests a remodelling of the coach education provision is required to further align the talent pathway in BC. However and interestingly, the stakeholders

demonstrated a level of incoherence in regards to when the discipline specific units should be introduced.

Unpacking the above comments, it appears the coaches' suggestions for a new structure that is individualized and coach-centred, is grounded on their needs and not of the riders. Furthermore, the stakeholders had little consideration of the age and stage of the rider in relation to content for coaching the developing rider. This point could be underpinned by the current highly formalized coach education delivery which appears to indoctrinate coaches in doing the same things as their peers. This formal course predominately covers the professional knowledge of the sport that is "handed down" and is not focussed on any specific age/stage of the pathway. The stakeholders' comments also lend weight to the anecdotal evidence that the current formal education is not preparing coaches to effectively (and therefore the riders) work at different levels of the pathway. However, it was noted in Chapter 2 that a deep-rooted culture in a pathway programme (or team) would affectively develop "athletes" through a highly focussed programme with performance being in a specific manner to meet the designed outcomes. It could be argued that the current pathway *is* producing riders through the straight and narrow pathway identified in Chapter 2, with similar coaches, similar practices, similar methods with some notable successes. Moreover, the coaching pathway has not evolved with the current demands of meeting the dual objectives of increase participation and more medals through high performance. These factors contribute to a pathway that is not providing the coaches with the variety of skill and competences to deliver the appropriate challenge for the riders to meet pathway outcomes in 2019 and beyond.

Clearly, to cover coach education for such a diverse sport as cycling can be problematic with its multiple disciplines and it appears a number of issues are "holding" back the development of the coaches. The sport prioritises the Olympic disciplines and

increasing participation, with some limited investment in coach education and development. Importantly the NGB's focus on medals has overlooked the development of a LTRDM that would guide the coaching programme and the development of riders at the base of the "pipeline". The sport appears to have a willing workforce with the coaches in the study suggesting that they wanted more knowledge and learning to enable them to improve their coaching practice to meet the needs of the rider. Unfortunately, there is not enough investment to "go-around" for the NGB to develop/facilitate more informal learning opportunities. However, and building on these points, the coaches suggested that informal learning would help with their development but did not know what topics to undertake. It appears the coaches' naïve epistemology is holding them onto the "apron" strings of the NGB for knowledge and the coaches have become "systemised". For example, the NGB arranged an informal talent breakfast series to support the development of the pathway coaches (none of which discussed cycling). This intervention would not have happened if it was left to the coaches themselves for a number of reasons, not of which was time and commitment.

It is apparent the current vertical progression "up the pathway" with knowledge "held back" by the NGB until you complete the designed sequence, i.e., Level 1, Level 2, Level 2 DSU, Level 3 and Level 3 DSU, does not meet the needs of the sport and the coach, and indeed, could be holding the coach and rider development back. To improve the pathway, the study stakeholders suggested a "streamed" approach with horizontal progression for coaches wish to develop. This approach would allow for the introduction of the discipline skills at the relevant age/stage for the rider to develop through participation, development and performance steams with domain specific (e.g., children, youth, talent, and elite) content and development.

The desire for the coach to further develop was clearly present in the stakeholder group, albeit they were not sure where to go and get the "knowledge" or indeed, to consolidate and to contextualise the knowledge that is all around their practice environment and beyond. This developmental philosophy sees the coaches requiring more than the professional knowledge of the sport to supplement the knowledge given on the coaching course, not to replace.

Finally, this study identified that the current coach education programme does not meet the needs of the rider or the coach. The lack of coherence appears to stem from the main issue of the lack of a LTRDM to guide the "curriculum" of the coaches and rider's education and development. This point is particularly relevant in the area of the discipline skills that are required at the age/stage to move through the pathway and to be "successful" in the participation or performance domains. Given the breadth of experience in the stakeholder group could not lead them to any agreement, perhaps it's time to develop a LTRDM to move the sport forward and align the sports pathway.

5.8. Strengths, Limitations, and the Next Step.

Chapter 5 sought to explore key stakeholders' opinions on the current coach education provision and future alternatives for optimising the alignment of coaches in BC. Moreover, and in line with the approaches in Chapters 3 and 4, this study explored how similar or different these opinions were. This critical evaluation has offered insight into the levels of agreement or contention, as to the impact of current coach education and the extent to which it is currently meeting the needs of the riders, the sport, coaches and other stakeholders.

The method for this study was coherent with my pragmatic philosophy (see Chapter 1), in that, given the purposes of this thesis, this study has provided an independent view point using a "bottom-up" (Chesterfield, Potrac, & Jones, 2010; Mccullick, Belcher, & Schempp, 2005; Nelson, Cushion, & Potrac, 2013), approach to

determine actual stakeholders' agreement or contention with regards to better aligning the coaching pathway moving forwards.

The independent researchers' experience allowed for quality information to be gathered in the same general areas through a focussed interview guide. Their ability to be adaptable to allow a degree of freedom for the interviewee was another positive feature (McNamara, 2009). Furthermore, the qualitative method of semi-structured interviews allowed for rich data to be collected across individuals with contrasting roles, views and needs; thus, generating a useful breadth and depth of opinion, Lincoln and Denzin (1998), Marshall and Rossman (2014), Patton, (2002); and Ritchie and Lewis (2003). Given the cultural nature of the NGB, gaining stakeholder engagement and general agreement through an independent researcher was felt to enhance the findings through the use of one-one interviews and a focus group, (Ritchie &Lewis, 2003). These sessions yielded 'rich picture' insights that helped understand the how, the why, the what and the where of the stakeholders' actual experiences (Maxwell, 2012).

However, several limitations may have impacted on the results presented in Chapter 5. Firstly, the use of semi-structured interviews limited the number and types of questions to be used thus reducing the scope and freedom of the interviewee to express what is relevant and meaningful for them (Culver, Gilbert, & Sparkes, 2012). Additionally, the interviewees were a relatively small sample and the breadth of experience may not be truly representative of the many coaching roles in cycling, therefore not fully generalizable. However, they were representative across the coaching domains. Furthermore, the active role of the interviewer in the social activity of focus group or interviews (Smith & Sparkes, 2016) has not been linked to the analysis, (cf. Harwood, Drew, & Knight, 2010).

A further limitation is that all the stakeholders were currently involved with BC in some way and were focussed on their individual experiences, beliefs and perceptions.

Therefore, given the study was to review the coaching pathway and engagement in the training offered by the NGB it would have been prudent to speak to coaches or other stakeholders who have disengaged (i.e., inactive coaches or riders) with the sport over the last few years. Indeed, the absence of data from the riders and their parent's regarding their experiences or perceptions of the effectiveness of the coaches in the system limits this study. Finally, given the wealth of experience of the independent researchers, the stakeholders could have been influenced in their responses by the researchers' personal biases.

The final chapter summarises the findings from the four studies included in this thesis and then expands on the findings and the implications for cycling. The chapter also explains the recent advances on the pathway over the last two to three years of my professional practice and my undertaking of this thesis. Finally, the chapter outlines the implications for coaching pathways of other sports, implications for advancing talent pathways research and lastly concluded the thesis.

CHAPTER 6

SUMMARY OF FINDINGS, IMPLICATIONS AND CONCLUSIONS

6.1. Summary of Findings

To advance professional practice in my own domain, this thesis examined coaches in the British Cycling coaching system to determine the levels of vertical and horizontal coherence across the "entire set" of coaches on the talent pathway. Furthermore, and to provide insights for other TDE system builders, the thesis sought to offer a number of conceptual principles and mechanisms that should be present in coherent talent pathways. Subsequently, these principles and mechanisms were used to critically examine how they contribute to coherence/incoherence on the BC talent pathway. The thesis was structured in four studies with Chapter 2 the first of these.

Specifically, Chapter 2 identified a number of generic key markers of coherent talent pathways as an overview of what coherent talent pathways "look like", whilst also considering coaching specific markers of coherence and common challenges of coaching coherence. This chapter also suggested that coherence is present in clearly defined systems and can be evidenced through a level of vertical coherence (i.e., up, and down age groups / levels) or a level of horizontal coherence (i.e., across disciplines within the same age group / level) to support the development of the performer in a coherent and consistent manner. These levels of coherence should meet the variability of the organisation's context and their long-term objectives.

Indeed, coherent talent pathways were characterised by a clear definition of the goals to be achieved (as understood by the system, athlete, coach, parent, etc.), role clarity (e.g., across coaches and stakeholders) and the type of performer the sport requires at general and specific phases of development.

Subsequently, and against this base, Chapter 3 determined a level of vertical coherence and incoherence in the BC pathway (i.e., up and down the age grouped

coaches) in relation to: (a) the overall goals and design of the pathway; (b) the goals at specific stages/phases and (c) coaching delivery at specific stages/phases of the pathway. The chapter went on to list the areas of coherence/incoherence against the three specific areas identified above. Chapter 3 also sought to explore the coaches' epistemological position as a potential factor that influences their beliefs and perceptions.

Specifically, I hypothesised that the coaches' experiences of the structure/environment, coach education, and the coaches' socio-cultural context were contributing to the coherence/incoherence shown. Importantly, Chapter 3 also suggested that coaches displayed a range of epistemologies from naïve to sophisticated, with this spread contributing to the coherence/incoherence found in the study. Finally, this chapter suggested that some coaches appeared to lack internal coherence (i.e., the alignment of one's philosophy with actual practice); in other words, saying one thing and practicing another.

Building on the coherence/incoherence found, I next examined horizontal coherence (i.e., across disciplines within the same age group / level) in the BC pathway. This was explored across coaches in BC's three Olympic disciplines: Road, Track, and MTB. More specifically, the study aimed to explore how similar or different these coaches were with regards to their views on: (a) the overall goals and design of the BC pathway; (b) the focus and goals of their coaching; and (c) the content and methods of their coaching delivery. The chapter went on to list the areas of coherence/incoherence found across the discipline-grouped coaches against the three specific areas identified above. Importantly, the study demonstrated a level of similarity not expected across the unique sporting demands of the three disciplines. For example, similarities were apparent in coaches' perceptions of the why (i.e., focus and goals of their coaching), the what (i.e., content of coaching) and how (i.e. coaching methods), across the three

disciplines. Results suggested the discipline coaches have a narrow spread of epistemological beliefs *between* disciplines. *Within* the disciplines, however, coaches have a broad spread of beliefs that could be at either epistemological extreme (i.e., entirely sophisticated, or entirely naïve). Building on this point, the chapter suggested that the coaches' experiences of the structure/environment, coach education, and their socio-cultural context were all contributing to the coherence/incoherence shown. Furthermore, as in Chapter 3, the coaches appeared to lack internal coherence (i.e., the alignment of one's philosophy with actual practice).

Taken together, Chapter 3 and Chapter 4 suggests that the current coaching pathway and the NGB coach education programme heavily influence coaches' perceptions. Furthermore, both studies suggest that the absence of an explicit LTRD model (to guide rider and coach development) could be potentially contributing to the coherence/incoherence, limiting development of both riders and the body of coaches. Indeed, despite working at different levels of the rider pathway and clearly requiring different skill sets, the future provision of coach education and development should sensibly seek to improve levels of core coherence across coaches in the BC pathway.

Therefore, and in line with one of the recommendations in Chapter 2, (i.e., the requirement for a step change in the education and development of coaches), it was decided that Chapter 5 would focus on a critical evaluation of the levels of agreement or contention covering; the impact of current coach education; and the extent to which it is currently meeting the needs of the riders, the sport, coaches and other stakeholders.

Accordingly, Chapter 5 focused on the fourth objective of the thesis. It outlined three specific areas for consideration; 1) areas of agreement with regards to better aligning the coaching pathway moving forwards; and 2) areas of disagreement with regards to better aligning the coaching pathway moving forwards; and finally 3) opinions on a potential structure for better aligning the coaching pathway moving

forwards. Findings were integrated with, and considered against, the previous coach education literature and were grouped into the following areas; limited investment and engagement in the current pathway; need for more appropriate streams; coach development; content for developing coaches; discipline specific units: when to 'specialise'; and a more individualised and coach-centred approach. The chapter identified levels of incoherence across key stakeholders that suggests a remodelling of the coach education provision is required to further align the talent pathway in BC.

This final chapter addresses the fifth objective of the thesis, as stated in Chapter 1, and outlines broader recommendations by which the improvements identified can be achieved. The chapter considers the implications and next steps for BC building on findings from the four studies. From this base, implications for coaching pathways in other sports are considered. Finally, this chapter presents some implications for advancing talent pathways research.

6.2. Implications and Next Steps for Cycling

This section builds on the generic (i.e., no particular sport or pathway), conceptual principles and mechanisms of coherent talent pathways explored in Chapter 2. Specifically, the discussion utilises the recommendations offered for pathway mangers in Chapter 2, to compare and contrast the actual applied findings from the BC pathway from Chapter 3, 4 and 5. Based upon my applied experience, and the last six years working at BC, I have therefore chosen to focus on some key actions that would seem to lie at the heart of successful change in this area, specifically for BC.

6.2.1. Structure and environment: the overall goals and design of the pathway.

It was suggested in previous discussion that the current BC pathway produces a type of rider developed from "the straight and narrow pathway" as depicted in Figure 1 in Chapter 2. These potential podium riders generally start their journey in a BC Go-Ride Club; with coaches and stakeholders preferring to focus on the "moment" (this

week over long-term) with a notable emphasis on fun and enjoyment and helping the riders be a lifelong cyclist. These riders copy and reproduce their learnt skills from a plethora of similar types of novice coaches, in similar environments with similar coaching methods learnt from the NGB, and ones that mimic those of their coaches' peers. Whilst these riders progress quickly, however, they appear not to be "ready" for the next transition on the pathway. Unsurprisingly, against the balance of vertical and horizontal incoherence identified in Chapter 3 and Chapter 4 that were present throughout the current pathway, i.e., type of rider overall, type of rider at each stage and long-term aims, findings at a macro level suggest the current BC pathway requires a "re-design". This point is also apparent in Chapter 5, where the stakeholders demonstrated agreement in suggesting the current coaching pathway was not meeting their, or their riders' current needs, in a number of areas. Another key finding was that BC have not 'published' a LTRDM to guide the design and development of coach education and coach development. Therefore, any 'redesign' of the coaching provision should be underpinned by a robust "Long Term Rider Development Model" (LTRDM) with explicit long-term aims (cf. Holland et al., 2010; Martindale et al., 2007; Martindale & Mortimer, 2011). This action will give clarity to all stakeholders of the "big picture" (i.e., GBCT/BC long-term vision) and will be locked into and proactively use the surrounding contexts, (Henriksen et al., 2010a, 2010b, 2011). This pathway will require BC to develop a 'single system' that supports all environments within the cycling eco-system (e.g., Go-ride clubs, affiliated or non-affiliated club, and independent facilities and operators). Furthermore, the 'single system' would establish and work with a shared ideology of coaching practice that is reflected in a "philosophical bandwidth", (Webb et al., 2016), see Chapter 2, Figure 3, that clearly defines the general and specific aims of coaching throughout the pathway.

6.2.2. Epistemology: Alignment of philosophies and impact on goals at specific stages/phases.

The central theme emanating from the studies suggests that BC coaches' personal epistemological positions have a broad spread of beliefs, from naïve to sophisticated across the age groups, but have a narrow spread across the three disciplines. However, what is also apparent from the study, is the coaches' balance of internal coherence (i.e., the alignment of one's philosophy with actual practice). Reflecting on these findings and the levels of incoherence/coherence, the challenge for BC is to utilise the vast breadth of experience and personal backgrounds of the coaches on the pathway to align the specific goals at the relevant stages /phases. Chapter 2 suggested that, to improve coherence in the pathway, coaches should be provided with resources to help them explore, understand, articulate and develop their own epistemology and how it links with other stakeholders on the pathway (cf. Grecic & Collins, 2013). Engaging with this suggestion, and as discussed in the "Goldilocks" pathway in Chapter 2, would see the coaches and, importantly, the system builders understanding and sharing the pathway ideology to ensure a philosophical 'bandwidth' is present to achieve desired outcomes for rider development.

Furthermore, strategic placement of coaches on the pathway by the system controller (where appropriate) as outlined by Webb et al., (2016), would optimally exploit the coaches' differences (naïve or sophisticated) in delivering pathway outcomes. Equally importantly, this action would provide the role clarity that is required on coherent pathways by all stakeholders. This lack of clarity "on who does what, when and why" is currently missing from the pathway and has been replaced with practice that is heavily influenced by the NGB coaching qualifications, club coaching agenda and social milieu, irrespective of the coaches' personal epistemology. The future alignment of the pathway based on personal epistemology could see cycling break away from the cultural anchors of the past and coaches becoming more self-

directed and more system -relevant in their learning and delivery, moving away from solely instruction as a teaching method. Additionally, coaches could potentially cease to mimic others when delivering sessions and include more than the professional and craft knowledge of their social milieu through utilising PCDE's, (MacNamara et al., 2010a, 2010b) to support the holistic development of the riders at an environmental, individual and age specific level.

6.2.3. Coach education and coach development at specific stages/phases of the pathway.

It has been identified that BC coaches learn from a formal "recipe" or "formulaic" coach education programme: a standardized curriculum with vertical progression and heavily weighted to developmental (participation) outcomes. This curriculum is not based on evidence or learning theory and is many years old. The need for a LTRDM was highlighted earlier in this thesis, in order to guide the development and subsequent delivery of coaching practice. In this regard, current practice follows the culture of cycling and is, as you would expect, formulaic, with limited variation, and heavily coach-led (e.g., planning, goal-setting, instructional delivery and feedback), with little engagement with pathway stakeholders (i.e., riders, parents, and other coaches). Finally, as the previous section identified the coaching pathway needs to be re-designed. However, to support coaches' understanding of the what, how, why, when of performer development, the program should be based on capability (not competence) and underpinned by a professional judgment and decision making approach (Abraham & Collins, 2011), irrespective of epistemological stance.

6.2.4. Socio-cultural and agents of change

Socio-cultural factors seem to play a large part in the behaviours of the coaches and those around them in BC. The majority of coaches in the studies appear to be copying practice from significant others (e.g., NGB, ex-riders, peers) without any practice variation to meet the age and stage of the rider.

Therefore, to influence the coaching practice in these complex and unique social settings (cf. Hodkinson, 2004), BC should engage in a program of coach development post course. Accepting coach education is currently a compromise model (i.e., limited time, limited content, limited engagement), but is valued by some coaches to get them started, BC should support the continued development journey with "field based" "Agents of Change".

It is widely accepted that the coaches' social milieu influences and shapes (sometimes indoctrinates) individuals to conform to knowledge and behaviours accepted by the group/sub-culture in which they operate (Cushion, et al., 2003). Therefore, the agent of change can work with the CoP, (Culver & Trudel, 2006; Stoszkowski & Collins, 2014), in their environment to support their development for the precise role they are to play on the pathway. This will enable the coach to deliver the appropriate challenge and to support the nature of the "ping or pong" that the sports has designed into the bandwidth of variation.

Beyond the implications identified above, BC will clearly have to prioritise the development of a LTRDM (or similar guide) that articulates the demands of the sport and the disciplines that require riders to develop from participation to performance. This model can then direct, support and guide rider development with coherent messages of what, how, why, and when of development, including the required variation and similarity where appropriate. The model will clearly define the long-term objectives and the type of performer the sport wishes to develop at podium level and indeed at every stage on the journey. Defining the philosophical "bandwidth" of the pathway will also be important to guide the ping or pong of performer development; utilising a shared ideology of coaching practice clearly defining the general and specific aims of coaching throughout the pathway.

Furthermore, BC will have to re-design the coaching pathway, building the new pathway on the evidential requirements of the sport that may be included in the developed LTRDM. Chapter 5 clearly support the need for a pathway that caters for different streams and different participants in the sport of cycling. To fully engage the coaches, BC will follow the recommendations in Chapter 2 and covered throughout this thesis, in supporting coaches to develop an understanding of their own personal epistemology (i.e., one's beliefs about knowledge and learning), to enable them to be more internally consistent (i.e., they think and act in a way that reliably reflects their values and beliefs).

Finally, BC should look to recruit "Agents of Change", developing them in a coherent manner that aligns with the pathway philosophy. These change agents will work with coaches and stakeholders through their social milieu to influence the culture and social networks of cycling. An important element of this role will be the cross-level communication to ensure coaches understand the riders' requirements at particular phases of the pathway, i.e., at least one level above and one below.

6.3. Recent Advances on the British Cycling Pathway – 'Using' the Thesis

Given the nature of the Professional Doctorate being woven into my professional practice, I have continued to investigate and apply key concepts from Chapter 2 into my daily work over the last two years. Moreover, the findings from Chapters 3 and 4 have initiated a "call to action" with pathway colleagues in an attempt to *make a change* in the BC pathway and, specifically, in my area of responsibility, coach education and development. Interventions to support the current pathway and future development of the BC pathway have included the following advances.

6.3.1. Developments on the pathway throughout the last two years.

6.3.1.1. Coach education.

In an attempt to further understand the questions of 'what works', how and for whom in this context of coach learning in BC, (Stodter & Cushion, 2017), I commissioned research into 'Understanding BC's Coach Education Pathway'. Firstly, the research will investigate how BC's formal education challenges coaches' prior knowledge and experience as they are 'socialised' into BC qualified coaches and explore how coaches integrate 'new' knowledge into their practice when entering the social context of their coaching environment, post-course. Secondly, the project will examine coaching "in the field", identifying the "what" and "why" of coaching and highlight coaches' perceived barriers and opportunities when integrating the content from BC's formal education within their practice. Lastly, the research will explore the power relations within BC and clubs, and how this effects coaches' ability to replicate the coaching standards outlined in BC's formal education.

Initial results (unpublished report, Wood 2019, Appendix K) concur with a number of elements reported in my thesis. Firstly, and importantly, the initial report supports the lack of coherence on the pathway that was found in this thesis. Specifically, in terms of stakeholder coherence regarding the overall goals and design of the pathway, in study 3 and 4 with the following demonstrating the point;

"…the focus for those at the *"top"* centres on the coaches' role in winning medals, whilst coaches felt their job was to coach riders cycling skills for life and to coach children to ride bikes for fun" (Wood 2019, p14).

The unpublished report also suggests that coaches feel the course content is largely removed from the realities of their coaching, (p14). Further interesting points are presented in the report that support the findings in this thesis, for example;

"*… the over assessing of learners, and the "production" of a workforce not equipped with the skills to coach*" (p11).

"*…the pathway has a heavy technical content, to teach beginners the technical skills they need to know"* (p11).

"*… the formal education provision – the pathway – that BC developed, is not fit for purpose"* (p11).

The report also identifies limited investment and engagement in the current pathway as a factor in support of comments made above in this chapter and Chapter 5, such as;

"*…the lack of funding available further compromises BC coach education pathway…as they do not have the financial ability to pay for a trained workforce…and lack of funding limits the way the courses are delivered"* (p12).

6.3.1.2. Rider, parent and coach development

The importance of the athlete triad was stressed in Chapter 1, with significance placed on their interactions on the pathway. Therefore, given this thesis has investigated coaches' perceptions of coherence on the pathway, it was felt that, as important stakeholders, parents should be contacted through a different study to determine alignment and role clarity. Factors that this thesis suggests as markers of coherence. The evaluation study (unpublished study, Appendix L) was led by me as part of my day-to-day role with a colleague and Camila Knight, to determine the level of knowledge which cycling parents had when they and their offspring entered the talent pathway on the first and second stages. The study was also intended to identify what knowledge or support the parents required from BC.

Supporting the findings in Chapter 3 and 4, this study suggests that parents are focused on the psychosocial development of their child, with an improvement in the child's confidence and work ethic, discipline and effort as key benefits of cycling.

Additionally, the study suggests that parents require more information on the BC talent pathway and development processes, whilst they also stated that the coach- athlete relationship was the most important area. These findings also concur with the incoherence shown in this thesis where coaches' perceptions of the parents are not aligned in regard to the focus of coaching, goals and content provided in training. Finally, the coaches' approach to "leading" all the coaching process is clearly not helping the riders or the parents and supports the findings in this thesis.

Building on the engagement of the triad, we have developed four workshops (Appendix L) from the results of the study to support the parents, coaches and riders in furthering their knowledge and also to initiate alignment through role clarity and goal setting. This work was also an introduction into the philosophy of the talent program. The four workshops developed cover; 1) Introduction to the pathway, the coaches' role and most importantly, the parents' role within the athlete triad; 2) Roles and responsibilities; 3) Goal Setting; riders and parents; 4) Parental Behaviours: Controlling emotions; 5) Communication between system managers, coaches, athletes and parents.

In a further attempt to utilise the initial findings in this thesis, specifically, Chapter 3 and 4, I have worked this year with the Talent Manger to align the talent inductions and talent program with a developmental philosophy. This was delivered for the professional pathway coaches in the age group and disciplines to explore their incoherence that was shown in the results.

Importantly, the content discussed with the coaches was to enable them to deliver a coherent message to the first-year talent riders, coaches and parents. The sessions were run as a CoP and led by an agent of change to establish consistent messaging and alignment of philosophy. This was undertaken to establish a working "bandwidth" which would enable the right "ping or pong" for their riders' development to be planned. Furthermore, and to support role clarity for the coaches, riders and

parents, the coaches were introduced to the parent's study to explain their needs for the pathway and importantly align this phase of the pathway.

The coaches were also introduced to new areas of knowledge covering; understanding their philosophy and how it impacts their coaching practice; pedagogy, teaching and learning principles; psychological characteristics of developing excellence (PCDE) and how, importantly, to combine in their practice.

6.3.1.3. Tutor development (coach developer).

Given the importance of tutors in the transmission, translation and the delivery of knowledge in coach education (Cushion, Griffiths & Armour, 2017), I believed BC needed to gain further valuable insight into the BC tutor workforce. More importantly, given the potential for incoherence in this group and the affect that they could and do have on the "new" coaching workforce, it was important to understand their epistemological stance in regard to teaching, and importantly learning. Further questions I believed needing answering were, for example; how do tutors learn; what do they find beneficial and unbeneficial; when do they learn; why do they (if they do) continue to learn; and how can BC facilitate learning for the tutors. Therefore, I commissioned further research into the 'Learning and Education of Coach Developers' within BC. This work is to cover tutors in the areas of coaching, officiating, and leading, (Draft Abstract, Jewitt-Beck, 2019, Appendix M). Initial results from this study suggest that the workforce consists of a "myriad" of role and context specific typologies that referenced a complex formal coach education environment. Furthermore, BC's approach to training is in conflict with the tutor's need to know, resulting in tutor resistance to institutionalised learning. Given the final point, it could be argued that the tutors are playing a part in the coherence on the pathway as shown in Chapter 3 and 4. This finding also supports one of the objectives in the tutor study, that is, to develop a series of "learning" packages *with and for* the tutors to support their

further development in a way that is relevant for them but importantly supports the pathway coherence.

6.4. Implications for Coaching Pathways in Other Sports

The shift in focus of this research should prompt other sports to critically explore their talent pathway coherence/incoherence using the principles and mechanisms identified in these studies. Indeed, the results in Chapter 3 and 4 have identified previously unknown incoherence in BC coaches' perceptions in a number of important areas that could be potentially affect performer development. In undertaking such research, sports should clearly determine their coaches' perceptions regarding; 1) the overall goals and design of the pathway; 2) the goals of coaching at specific stages of the pathway; and 3) coaching delivery at specific stages of the pathway. In doing so, the sports will determine if their pathway is aligned and if it caters for all the potential transitions that occur as part of the performer development journey. Specifically, they will identify what has been and what is planned to come at different ages and stages (Sandström et al., 2016). More specifically, coherence will be reflected in the coaches' perceptions of a systematic and 'joined up' coaching pathway, whereby the coaching at each level sets performers up to survive and thrive at the next and all subsequent levels.

Equally important for the sports is to ensure they have a long-term athlete development model to guide the curriculum for athlete and coach development programs. In the same way sports should address the following:

- Gain an understanding of their coach education pathways through investigating how the sports formal education challenges coaches' prior knowledge and experience as they are 'socialised' into the sports qualified coaches.
- Explore how coaches integrate 'new' knowledge into their practice when entering the social context of their coaching environment, post-course.

- Examine coaching “in the field”, identifying the “what” and “why” of coaching and highlight coaches’ perceived barriers and opportunities when integrating the content from BC’s formal education within their practice.
- Given the importance of tutors in the transmission, translation and the delivery of knowledge in coach education (Cushion, et al., 2017), the sports should investigate the alignment of the tutor workforce with the principles and mechanisms of the pathway.
- A review and potential alignment of curriculum content in NGB coach education with an introduction of professional judgement and decision-making skills.

6.5. Implications for Advancing Talent Pathways Research

Clearly, given the shift in focus of this thesis, further empirical investigation is required to authenticate and then extend on the principles and mechanisms that have been outlined in this work. Furthermore, completion of this study has identified gaps in both talent development and coaching research that would enhance our understanding of this complex area. The following represents areas that will provide an evidence base, either to prove or disprove coaches’ perceptions and epistemologies as a valuable measure of pathway coherence/incoherence. More specifically, future research is required on:

- “Sense checking” studies where the ping-pong experience of performers who have made it/did not make it to senior level are evaluated against coach epistemologies.
- Action research in an applied environment to advance our knowledge on principles and mechanisms for optimising coaching coherence.
- Tracking the professional preparation of change agents and then their attempts to introduce, align and integrate coach epistemologies. In addition, examining the impact across multiple stakeholders, including coaches, performers, pathway

managers, top organisation management and external barometers such as parents.

- Skills audit of coaches working on the talent pathway through an epistemological lens, to determine their epistemological position in regard the content delivered on the pathway.
- Workforce training and development in the talent pathway environment: the training and deployment of volunteer coaches in delivering specific developmental outcomes.

6.6. Concluding Comments

The overarching objective of thesis was to explore the principles and mechanisms of coherent coaching in the BC talent pathway on which I am the Head of Education (covering coach education and development). In meeting the thesis aim through the five specific objectives outlined in Chapter 1, this work has contributed to a clearer understanding of what is required to align the talent pathway in BC in regard to coherent coaching. Specifically, the conceptual principles and mechanisms outlined in Chapter 2 and utilised in Chapter 3 and 4, have proven to be validated to some degree through the results. The coherence/incoherence in the findings has also prompted a review of the complete coaching pathway, which is to be reviewed based on a newly developed LTRDM. Overall, this thesis has significantly contributed to my professional practice both on a practical and theoretical level. Equally as important, this work has contributed to the talent research in that it has explored an area that has had little, if any attention. Finally, this programme of research has generated evidence in which to re-align the BC coaching pathway and offer a potential mechanism in which other sports can investigate the levels of coherence on their own pathway.

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APPENDIX TABLE OF CONTENTS

APPENDIX A

ETHICAL APPROVAL

28 October 2016

Andrew Cruickshank / Vincent Webb
School of Sport and Wellbeing
University of Central Lancashire

Dear Andrew / Vincent

Re: BAHSS Ethics Committee Application
Unique Reference Number: BAHSS 381

The BAHSS ethics committee has granted approval of your proposal application '**Exploring levels of coherence in the British Cycling Talent Pathway**'. Approval is granted up to the end of project date* or for 5 years from the date of this letter, whichever is the longer.

It is your responsibility to ensure that

- the project is carried out in line with the information provided in the forms you have submitted
- you regularly re-consider the ethical issues that may be raised in generating and analysing your data
- any proposed amendments/changes to the project are raised with, and approved, by Committee
- you notify roffice@uclan.ac.uk if the end date changes or the project does not start
- serious adverse events that occur from the project are reported to Committee
- a closure report is submitted to complete the ethics governance procedures (Existing paperwork can be used for this purposes e.g. funder's end of grant report; abstract for student award or NRES final report. If none of these are available use e-Ethics Closure Report Proforma).

Yours sincerely

Peter Lucas
Chair
BAHSS Ethics Committee

* for research degree students this will be the final lapse date

NB - Ethical approval is contingent on any health and safety checklists having been completed, and necessary approvals as a result of gained.

APPENDIX B

SELF-REPORT QUESTIONAIRE

What coaches think about their role on the pathway.

Dear Coach,

We would like to gather your views on the role of yourself and other coaches on the British Cycling Coaching Pathway. The results will inform the future direction of coaching and coach development on the Pathway and will also be used in academic papers and publications.

You will be asked to complete a number of questions which should take approximately 30 minutes. Where possible we would like you to complete all the questions in one go. The focus of these questions will be on your role as a coach and your perceptions of other coaches and the pathway.

Your participation is completely voluntary and you can stop responding at anytime, however, your data up to that point will be included in the analysis. By submitting the survey you are giving informed consent to take part in the study. The anonymised data that is collected will be stored securely for 5 years on a password protected computer accessible only by the researchers and then destroyed. The project has been approved by the University of Central Lancashire Ethics Committee.

If you have any questions or complaints about the study you may contact the University Officer for Ethics (OfficerforEthics@uclan.ac.uk).

If you have any further questions about the survey either before or after participating then please contact me on: vinnywebb@britishcycling.org.uk.

Thank you for participating in the survey, your feedback is important.

What coaches think about their role on the pathway.

1. Are you male or female?

- ◯ Male
- ◯ Female

2. What is your age?

- ◯ Under 20
- ◯ 20 to 29
- ◯ 30 to 39
- ◯ 40 to 49
- ◯ 50 to 59
- ◯ 60 to 69
- ◯ 70 or older

3. What is **your highest level** of British Cycling Coaching Qualification excluding Discipline Specific Awards?

- ◯ Level 1
- ◯ Level 2
- ◯ Level 3
- ◯ Club Coach
- ◯ Not Qualified

Other (please specify)

4. How long have you been at **your highest level** of coaching qualification?

- ◯ Less than 1 year
- ◯ 1 to 2 years
- ◯ 3 to 5 years
- ◯ 6 to 10 years
- ◯ 11 or more years
- ◯ Not applicable, I dont have a cycling coaching qualification

5. Please indicate the **highest level** in your **main Discipline** Specific Award (i.e., the discipline you coach most).

	Level 2	Level 3
Road and Time Trial	◯	◯
Track	◯	◯
MTB	◯	◯
BMX	◯	◯
Cycle Speedway	◯	◯
Cyclo-Cross	◯	◯
Not completed a discipline award yet	◯	◯

6. How long have you been coaching overall?

- ◯ Less than a year
- ◯ 1 to 2 years
- ◯ 3 to 5 years
- ◯ 6 to 10 years
- ◯ 11 or more years

7. What is your **main** coaching role? (i.e., in what capacity do you coach **most**?)

- ◯ Volunteer coach
- ◯ Self-employed part-time coach
- ◯ Self-employed full-time coach
- ◯ Employed part-time coach
- ◯ Employed full-time coach

Other (please specify)

8. In which **environment** (I.e. stage/level) of the British Cycling pathway do you do **most** of your coaching?

- ◯ Go-Ride Club
- ◯ Club affiliated to BC
- ◯ Club not affiliated to BC
- ◯ School
- ◯ Pathway Foundation
- ◯ Pathway Academy
- ◯ Podium
- ◯ Independant Professional

Other (please specify)

9. Which **discipline** do you coach **most** in this **environment**? If you coach two or more disciplines equally, please select the discipline that you feel is your strongest.

- ◯ Road
- ◯ Track
- ◯ MTB
- ◯ BMX
- ◯ Cycle speedway
- ◯ Cyclo-cross

10. Who influences or has influenced your coaching the most? Please rank your selection with 1 being your first choice and 8 being your last choice.

- ⠿ ⬍ Experienced coaches who have not necessarily developed successful athletes at my stage of the pathway
- ⠿ ⬍ Coaches who have developed successful athletes at my stage of the pathway
- ⠿ ⬍ Coaches who have worked with senior elite riders
- ⠿ ⬍ Coaches who have a similar coaching ability to me
- ⠿ ⬍ British Cycling coaching course and tutors
- ⠿ ⬍ Experienced riders
- ⠿ ⬍ Coaches from other sports
- ⠿ ⬍ Nobody in particular

11. How much **do you** agree or disagree with the following statements?

	Strongly disagree	Disagree	Not sure	Agree	Strongly agree
The knowledge that underpins expert coaching today is different to what it was 20 years ago	○	○	○	○	○
Expert coaching is a simple process based on basic facts	○	○	○	○	○
Expert coaching is learned by carefully copying current experts	○	○	○	○	○
Expert coaches are made more than born	○	○	○	○	○
Expert coaching is learned quickly or not at all	○	○	○	○	○

12. Considering your previous response, what do you feel **other coaches** generally think? Answer for those who coach at the **same level** and **discipline** of the pathway as you.

	Strongly disagree	Disagree	Not sure	Agree	Strongly agree
The knowledge that underpins expert coaching today is different to what it was 20 years ago	○	○	○	○	○
Expert coaching is a simple process based on clear facts	○	○	○	○	○
Expert coaching is learned by carefully copying current experts	○	○	○	○	○
Expert coaches are made more than than born	○	○	○	○	○
Expert coaching is learned quickly or not at all	○	○	○	○	○

13. What do you feel is the **general** focus of everyone listed below for the **level** and **discipline** that you coach **most**?

	The rider performing well in the session today	The rider performing well next week	The rider performing well next month	The rider performing well next year	The rider performing well as a senior
You	○	○	○	○	○
Your riders who have the potential to make the GBCT	○	○	○	○	○
The parents / guardians of riders who have the potential to make the GBCT	○	○	○	○	○
Other coaches at your level/discipline who have riders with the potential to make the GBCT	○	○	○	○	○

* 14. From this point onwards, please answer all questions that follow in relation to:

1) The **environment (I.e., stage/level), discipline (if applicable)** and **age group** that **you coach most.**

and

2) **Riders who you believe have the potential to make the Great Britain Cycling Team (GBCT).**

Please type **'YES'** in the box below to confirm that you understand this requirement.

* 15. What age of riders do you coach **most** out of the following options?

- ◯ Under 12 year old
- ◯ 12 to 16 years olds
- ◯ 17 to 21 years olds
- ◯ 22 or older

Further comment (if required).

* 16. For the **age group, level and discipline that you coach most** how often do **you** use the following with riders who have the potential to make the GBCT?

	under 12 years old
Conditioning-focused practices (*e.g., getting miles in the rider's legs*)	
Technical-focused practices (*e.g., drills from the BC Gears book*)	
Tactics-focused practices (*e.g., race management*)	
Psychology-focused practices (*e.g., distraction control, goal setting, responding to setbacks*)	
Fun-focused practices (*i.e., those for enjoyment purposes first and foremost*)	
Tried and tested practices from the GBCT	

* 17. For the **age group, level and discipline that you coach most** how often do **you** use the following with riders who have the potential to make the GBCT?

	12-16 years
Conditioning-focused practices (*e.g., getting miles in the rider's legs*)	
Technical-focused practices (*e.g., drills from the BC Gears book*)	
Tactics-focused practices (*e.g., race management*)	
Psychology-focused practices (*e.g., distraction control, goal setting, responding to setbacks*)	
Fun-focused practices (*i.e., those for enjoyment purposes first and foremost*)	
Tried and tested practices from the GBCT	

* 18. For the **age group, level and discipline that you coach most** how often do **you** use the following with riders who have the potential to make the GBCT?

	17-21 years
Conditioning-focused practices (*e.g., getting miles in the rider's legs*)	
Technical-focused practices (*e.g., drills from the BC Gears book*)	
Tactics-focused practices (*e.g., race management*)	
Psychology-focused practices (*e.g., distraction control, goal setting, responding to setbacks*)	
Fun-focused practices (*i.e., those for enjoyment purposes first and foremost*)	
Tried and tested practices from the GBCT	

* 19. For the **age group, level and discipline that you coach most** how often do **you** use the following with riders who have the potential to make the GBCT?

	22 or older
Conditioning-focused practices (*e.g., getting miles in the rider's legs*)	
Technical-focused practices (*e.g., drills from the BC Gears book*)	
Tactics-focused practices (*e.g., race management*)	
Psychology-focused practices (*e.g., distraction control, goal setting, responding to setbacks*)	
Fun-focused practices (*i.e., those for enjoyment purposes first and foremost*)	
Tried and tested practices from the GBCT	

* 20. Based on what you've seen or heard, how often **do other coaches** at the same **level** and **discipline** use the following with riders who have the potential to make the GBCT?

	All of the time	Often	Sometimes	Rarely	Never	Don't know
Conditioning-focused practices (*e.g., getting miles in the rider's legs*)						
Technical-focused practices (*e.g., drills from the BC Gears book*)						
Tactics-focused practices (*e.g., race management*)						
Psychology-focused practices (*e.g., distraction control, goal setting, responding to setbacks*)						
Fun-focused practices (*i.e., those for enjoyment purposes first and foremost*)						
Tried and tested practices from the GBCT						

* 21. What **balance** of coaching methods do you and other coaches at the **same level** and **discipline, generally** use with riders who have the potential to make the GBCT?

Select percentage weighting for options A and B **for both you and other** coaches.

	Used by me	Used by other coaches at the same level and discipline of the pathway
(A) Instruction OR (B) questioning		
(A) Practices that develop qualities specific to the individual OR (B) Practices that develop model qualities across a group		
(A) Getting riders to solve problems OR (B) Getting riders to practice solutions		
(A) Coach-led goal setting OR (B) rider-led goal setting		
(A) Coach-led feedback OR (B) rider-led feedback		
(A) Coach-led planning OR (B) rider-led planning		
(A) Following what's worked previously OR (B) developing new approaches		
(A) Repeated practice (i.e., practicing the same thing) OR (B) variable practice (i.e., practicing different things)		
(A) Measurement of performance (e.g., measurement of times/results) OR (B) measurement of learning (e.g., measurement of behaviours/perceptions)		

22. What do **you** believe are the most important goals in coaching riders with the potential to make the GBCT in your **level** and **discipline**?

Please rank the following options from **1** (**most** important) to **5** (**least** important)

- To prepare riders to be lifelong participants of cycling
- To develop riders with the same qualities of current GBCT riders
- To support the riders to achieve results at their current age-group / level
- To prepare the riders physically, technically, tactically and mentally for the next level
- To enable the riders to have fun and enjoyment from cycling

23. What do **you** feel **parents and guardians** think are the most important goals in coaching riders with the potential to make the GBCT in your **level** and **discipline**?

Please rank the following options from **1** (**most** important) to **5** (**least** important)

- To prepare riders to be lifelong participants of cycling
- To develop riders with the same qualities of current GBCT riders
- To support the riders to achieve results at their current age-group / level
- To prepare the riders physically, technically, tactically and mentally for the next level
- To enable the riders to have fun and enjoyment from cycling

24. What do **you** feel **your riders** who have potential to make the GBCT think are the most important goals in your **level** and **discipline**?

Please rank the following options from **1** (**most** important) to **5** (**least** important)

- To prepare riders to be lifelong participants of cycling
- To develop riders with the same qualities of current GBCT riders
- To support the riders to achieve results at their current age-group / level
- To prepare the riders physically, technically, tactically and mentally for the next level
- To enable the riders to have fun and enjoyment from cycling

25. What do **you** feel **other coaches** think are the most important goals in coaching riders with the potential to make the GBCT in your **level** and **discipline**?

Please rank the following options from **1** (**most** important) to **5** (**least** important)

- To prepare riders to be lifelong participants of cycling
- To develop riders with the same qualities of current GBCT riders
- To support the riders to achieve results at their current age-group / level
- To prepare the riders physically, technically, tactically and mentally for the next level
- To enable the riders to have fun and enjoyment from cycling

26. What do **you** feel **GBCT/BC** think are the most important goals in coaching riders with the potential to make the GBCT in your **level** and **discipline**?

Please rank the following options from **1** (**most** important) to **5** (**least** important)

- To prepare riders to be lifelong participants of cycling
- To develop riders with the same qualities of current GBCT riders
- To support the riders to achieve results at their current age-group / level
- To prepare the riders physically, technically, tactically and mentally for the next level
- To enable the riders to have fun and enjoyment from cycling

* 27. Using the dropdown menu, what balance **do you think** the GBCT want to see between scenario **a and b** below for the **level** and **discipline** you coach **most**:

a) senior cyclists who can call upon a host of race tactics/styles and respond to a range of different challenges

OR

b) senior cyclists who can rely upon a trademark tactic/style and can get the most out of training consistently the same way

* 28. Using the dropdown menu, what balance **do you think** the GBCT want to see between scenario **a and b** below for the **level** and **discipline** that you coach **most**:

(a) senior cyclists who can follow programmes, sessions and evaluations that are given to them

OR

(b) senior cyclists who can lead on their own programmes, sessions and evaluations

* 29. Using the dropdown menu, what balance **do you think** the GBCT want to see between scenario **a and b** below for the **level** and **discipline** that you coach **most**:

(a) senior cyclists who use themselves to bounce back from setbacks and persist when things are difficult

OR

(b) senior cyclists who use the support of others to bounce back from setbacks and persist when things are difficult

30. How much **do you** agree or disagree with the following statements in relation to the **level** and **discipline** that you coach **most** in the BC talent pathway?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Riders require different coaches at different levels and stages of their development	○	○	○	○	○
A rider should work with the same coach for as long as possible if they are getting results	○	○	○	○	○
Coaches throughout the pathway should use the same methods and practices	○	○	○	○	○
Coaches throughout the pathway should use the same methods and practices as those in the GBCT	○	○	○	○	○

31. Who has communicated with you about your **specific** role in developing riders? Please select all that apply.

- [ ] GBCT Head Coach
- [ ] GBCT Coach(all disciplines)
- [ ] Performance Pathway Manager
- [ ] Foundation/Academy Coach
- [ ] Go-Ride Coach
- [ ] Go-Ride Regional Manger
- [ ] Head coach in Club
- [ ] Club coach
- [ ] Coach Education
- [ ] Go-Ride Development team
- [ ] Other (please specify)

32. What type of communications have you had to help you understand rider development on the BC pathway? Please tick all that apply.

- [ ] Coaching News E-Zine
- [ ] Rider Route Booklet
- [ ] RSR Workshops
- [ ] Foundation/academy coaching forums
- [ ] Individual discussion with GBCT coaches
- [ ] CCT Workshops
- [ ] Go-Ride Conference – Coaching Workshop
- [ ] Coaching Courses
- [ ] Webinars
- [ ] Coaches Group at Club
- [ ] Go-Ride Coach example coaching sessions

Other (please specify)

33. To what extent have all of these communications sent the same message to you as a coach? Please select one option and then provide a short explanation in the box at the bottom.

- ◯ Highly coherent and consistent
- ◯ Relatively coherent and consistent
- ◯ Relatively incoherent and inconsistent
- ◯ Highly incoherent and inconsistent

Please provide a short description of why you feel that this is the case.

APPENDIX. C

COACH AND STAKEHOLDER INFORMATION

Dear XXX

Hello! I am YYYY, a partner in xxxxxxx. We are working with British Cycling to assist in the development of new approaches to coach education and accreditation. Your name has been suggested as someone who we should talk to about ideas for future evolution.

We would like to hear your views on questions relating to the coaching of cycling in the UK. A number of people are being consulted, through interviews and focus groups. These will last around 45-60 minutes for interviews and 75-90 minutes for focus groups. Your comments will be used to construct a report to the Executive Leadership Team/Board which, together with suggested plans for next steps, will help to drive things forward in this key area. As such, your opinion is invaluable in helping to shape the future of the sport.

Our questions will fall into four broad categories. I provide some brief details below, in order that you can consider responses in advance. One of my colleagues or myself will interview you as part of our work for BC. Please be assured that we are completely independent of the Governing Body, so are focused on faithfully reporting the views of key individuals such as yourself.

I hope this offers you enough information and look forwards to hearing from you to arrange a meeting/interview. In the meantime, should you have any questions or concerns, please get in touch with my colleague xxxxxxx, who is leading the project. His contact details are xxxxxxx.

Many thanks,

YYYY
Email and mobile

APPENDIX. D

INTERVIEW GUIDE

INFORMATION AHEAD OF YOUR INTERVIEW

As stated earlier, the interview will cover four broad areas. You will be able to ask for examples and questions for clarification in all areas.

1. Guiding Principles for Coach Education and Development

We would like to know your opinions on the following principles or ideas. In each case, please feel free to comment on how suitable the idea might be for cycling. Please also describe your level of knowledge and experience of each.

- Use of a 'modular' system of courses, whereby developing coaches at any level could pick up knowledge on topics or disciplines additional to the one in which they originally qualified.
- An autonomous approach for coaches on what they can do with their level of qualification. So within guidelines, the coach decides on what S/HE can do – with guidance offered at assessments on general (normally, people with this qualification can…) and specific (having looked at your profile, I think YOU could…) principles.
- A progression route beyond Level 3.
- A holistic pathway model, making it easier to transfer between coaching, leadership and cycle training.
- A common core course at Level 1, providing an introduction to coaching, leadership and cycle training.
- Allowing some recognition, or accreditation, of prior experience or learning (sometimes called APEL), whereby suitable qualifications (e.g. PE or sport degree) and/or experience (e.g. teacher or qualified coach in another sport) would potentially exempt an applicant from certain parts of the assessment process, with the awarding of 'automatic' accreditation for that element.
- Removal of cross-over between courses, as far as possible, so that coaches/leaders/instructors do not have to repeat content.
- Digital discussion platforms, such as the 'Hive Learning' approach used by Football and the SRU https://www.hivelearning.com/site/sport.html
- Enhanced CPD offer, to support coaches/leaders/instructors to be the best they can be, for their given environment (rather than take the next "level" up).
- Opportunities to access ongoing support and development, through a British Cycling mentor scheme

2. Your needs

- Based on your current role, what do you need from the coach development pathway now or in the future? Think about progression, CPD, licensing, etc.
- Please consider "other coaches" in your position (or coaches at your club, in your discipline, etc.) - what do they need? What should the pathway do for them? How should they best engage with and move through it?

3. A Potential Structure

After these sections, your interviewer will share a diagram with you. This shows one **POSSIBLE** structure for the overall coaching scheme. As before, you will be able to ask questions of clarification. We will then ask your opinion on the following:

- Overall, how do you rate the suggested scheme (1-Rubbish to 10 Excellent)?
- What are the strengths? What aspects do you think are good? Why?
- What are the weaknesses or areas in need of further development? Why?
- What do you feel is missing from this structure? How would you change it for the better?

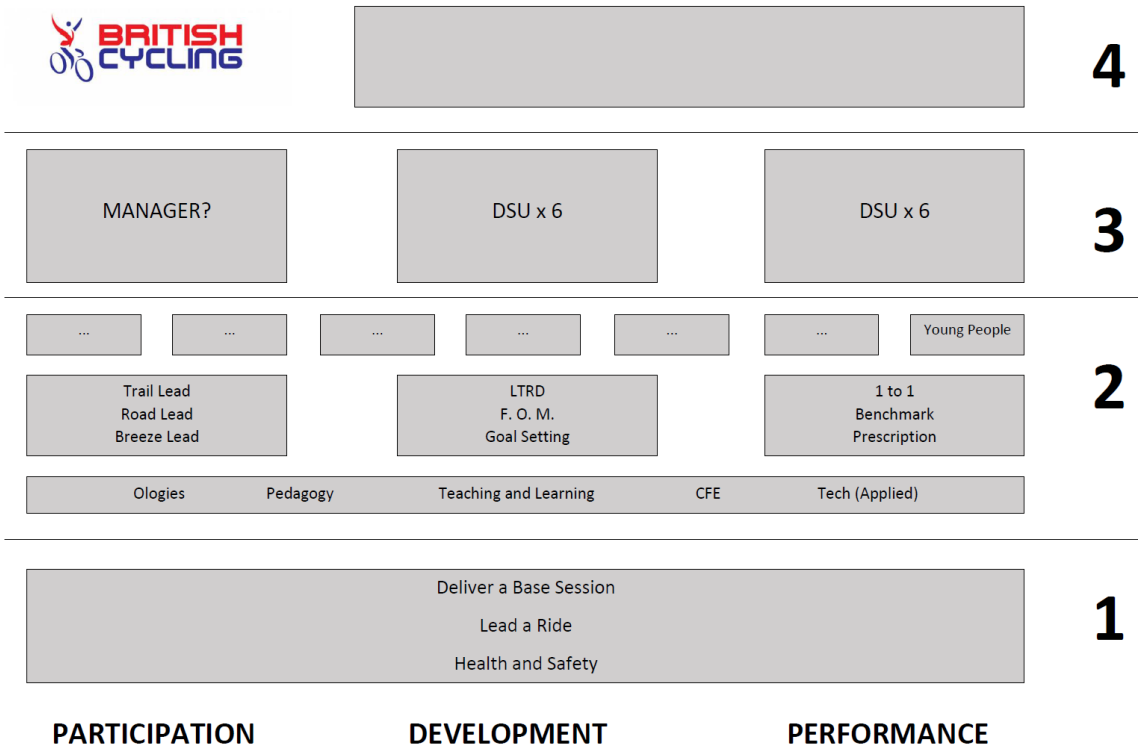
4. Other comments

Reflecting back on the interview and on your knowledge and experience of the existing coaching scheme…

- Is there anything we have missed? Or anything which is part of the present scheme which should be retained, or tweaked and carried forwards?
- Are you aware of any developments or approaches in other sports which BC should consider/be using?
- Finally, we want to make sure that you are comfortable with how your inputs may be used?
    - Would you like your comments to be incorporated into the report anonymously?
    - OR…are you happy for your name and a brief background description to be included at the start of the report?
    - OR… are you happy for your name and a brief description to be used AND your name placed beside direct quotes from your interview?

APPENDIX.E

COACHING PATHWAY OUTLINE (EXAMPLE FOR INTERVIEWEES)



APPENDIX. F

ESTABLISHING THE BASE

Group Session Outputs

GROUP 1 – The Coaching Pathway

The group considered the macro design of the pathway. Drawing on the existing model but with a significant influence of the General to Specific ideas presented in the exemplar from the Motor Sport Pathway. This was always going to overlap/interact with the other group's discussions, especially Group 2's, so was deliberately placed first.

Major ideas included the use of a 'modular' system, whereby coaches at any level could pick up additional knowledge in areas additional to the one in which they originally qualified. If associated with an autonomous approach for coaches (i.e. within guidelines, YOU control what YOU can do – guidance offered at assessments) this could be very useful for encouraging coach progression in both breadth (I can do this AND this) and depth (I can do now this better than before). This is a positive and potentially powerful change BUT the group were appropriately concerned about safety and litigation issues which may arise. We considered professional accreditation in other professions as potential models for transfer.

In summary, the group proposed a 4 (Level of coach) X 3 (athlete pathway) model, as shown in the attached picture. Perfectly practical but some work needed on culture and attitude to ensure the social buy-in and support which are so important for embedding the approach.

GROUP 2 - Content balance

This group chose to discuss the how the content covered within coaching qualifications could be adapted, and how this content should be spread across qualification level, discipline and participation type. Initially the group found it difficult to stay on topic, as their discussions often turned towards the Macro structure. Seemingly, they believed that the Macro structure does not allow for a clear and coherent balance of content. As such, they opted to include a qualification lower than that which is currently provided by British Cycling (BC). From here they drew heavily on two main resources or 'ideas' offered during the presentation, the first a concept of the nursing education model

(which suggests all elements are covered in details at the beginning and end of the learning experience, and then give more applied and specific learning in between), and a model designed by Abraham et al (2006) which shows three learning components within the development of expertise; 'Ologies, Sport Specific and Pedagogy'.

Combing these two concepts the group demonstrated the balance of content using a pillar system, which showed how each of the three concepts would be taught at each level. For example, the safety pillar started broad when being taught at entry level coach qualifications and then narrowed out quickly. Whereas 'ologies starting very narrow and broadened out as the qualifications increased.

The general impression the group was trying to create was the need to present a broad range of expertise to entry level qualifications, whilst demonstrating the importance for them to understand their limits, leading through to more applied sport specific skills, with the final level of qualification allowing true expertise to develop.

GROUP 3 – The Micro-Environment

Based on the presentation and discussion that preceded it, this group recognised that there are a number of opportunities for formal and informal coach development across participation, talent development, and performance domains – which, importantly, bring significant benefits. That said, there was a feeling that informal opportunities / provision could be extended (e.g., like the return of offline 'coach forums'), better 'advertised', and made more accessible against time constraints (e.g., electronic / digital solutions such as Hive or Whatsapp). Additionally, there was also a feeling that these could all do with further (or more specific) shaping to ensure optimal return. In this sense, the group felt that there was a need to bring more 'formality' to the 'informal' interactions between coaches to improve the efficiency of the learning process; such as directing coaches to particular opportunities and establishing clearer, shared criteria on what 'good coaching' is (e.g., to discourage 'copy and paste learning'). For example, the group seemed to feel that the peer observation is often done 'from a distance' or 'in the shadows' with little explicit interaction between 'mentor' and 'mentee' – so limiting the 'translation' or a 'lens' by which to evaluate what was being coached and *why*. Finally, social reward structures were also considered, with the importance of British Cycling holding up desired examples of good coaching and improving coaches to the wider community, as well as recognising the role played by every coach of athletes who make it through the pathway.

APPENDIX G

OUTLINE STRUCTURE OF BRITISH CYCLING PATHWAY

Pathway Environment Stage/level	**Age Group (yrs.)**	**Goal/Aim**	**Competition**	**How Riders enter Stage**
Community Club	3-16	To provide the development of young people in cycling.	No competition or league structures	Open through clubs.
Club Cluster of Racing	6-16	To introduce novice riders to transition into a "non-formalised" more competitive pathway from the club development environment.	Entry level racing provided by "clusters of club's"	Open through clubs.
Youth Racing	6-16	To introduce riders to the next level of a "formalised" competition structure that young people can access to test and refine their skills against other riders.	Formal youth racing at club, regional and national	Open access as part of club, team or independently.
Club Clusters of Training	12-16	To support riders to "bridge" the gap from club and "entry-level cycle racing" to the next level/stage (first stage of talent pathway).	Youth Racing	Open but limited to a first come first served basis.
Regional School of Racing	12-15	To prepare riders for the next level/stage of the "Rider Route" and the specific event demands for racing.	Youth regional and inter-regional	Open nomination, selected based on current racing performance, potential, and enthusiasm.
Apprentice	13-15	To prepare riders for the next level/stage of the "Rider Route" and the specific event demands for racing.	National	Selected from RSR and competitive performances at regional, inter-regional, and national races.
Junior Academy	15-17	To prepare riders for the next level/stage of the "Rider Route" and the specific event demands for racing.	International	Selected from the previous level (*Apprentice*) and from *any external riders* positioned in the top ten in national level races.
Senior Academy	17-21	To prepare riders for the podium stage of the "Rider Route" and the specific event demands for racing.	International /National/Olympic	Selected from the previous year's *Junior Academy* graduates who have excelled or *any external riders excelling* at international level.

APPENDIX H

OUTLINE OF COACHING DELIVERY ON THE BRITISH CYCLING PATHWAY

Pathway Environment Stage/level	**Age Group (yrs.)**	**Coaching Delivery**
Community Club	3 – 16	Structured (i.e., planned, linked and progressive) fun coaching activities from training course resources for individuals and groups delivered in generic (off-road) environments) providing progressive bike-handling and core cycling technical skills through fun games (e.g., stop and balance, no feet), skill (e.g., group riding), technique (e.g., peddling), and personal development (e.g., social skills).
Club Clusters of Training	12 - 16	Progressive curriculum based on "GBCT Readiness Standards" in a specific environment (e.g., track, road circuit, and BMX circuit) providing challenge through race scenario training(tactical) and further development of "on the bike" technical skills (e.g., handling and discipline techniques), and the physical demands for the next level.
Regional School of Racing	12 - 15	Progressive curriculum based on "GBCT Readiness Standards" for riders at this level but looking to connect the next level (*Apprentice*) delivered in a specific environment (e.g., track, road circuit, and BMX circuit) providing appropriate challenge through race scenario training(tactical) and further development of "on the bike" skills (e.g. physiological), but with an additional emphasis of "off the bike" skills such as psychosocial development (e.g., shared - goal setting, responsibility, commitment), nutrition (e.g., pre/during/post-race), anti-doping, personal and bike administration.
Apprentice	13 - 15	Progressive development of "on bike" and "off bike" skills and practices from the RSR to prepare them for the next stage/phase. Increased focus on the physical demands of the specific disciplines with individualised plans outlining the required increase in volume and intensity of race and training activity. Riders will be introduced to an individualised strength and power development programme and "off the bike" skills that includes psychosocial development skills (e.g., motivation, organisational skills, time management, competitiveness, developing a professional attitude quality practice and performance evaluation), nutrition (e.g., pre/during/post-race), anti-doping, personal and bike administration. Own electronic training and development diary to aid reflection of the process and to communicate to the coach. The riders will also have one to one remote coaching support.
Junior Academy Senior Academy	15 – 17 17 -21	Progressive development of the "on bike" and "off bike" skills and practices from the Apprentice programme to prepare them for the next stage/phase. Individualized plan and goals (designed and set by the rider, supported by the coach) with an increase in variation and challenge (e.g., training and racing base in Europe, best v best in training and competition or a higher aspirational level race). Riders will also undertake further strength and power development and "off the bike" skills that includes further psychosocial development skills (e.g., coping with pressure, planning, self-determination, imagery, focus), and activities on the demands of life as a full time athlete, health and nutrition (e.g., pre/during/post-race), anti-doping, public speaking, foreign language, personal and bike administration. Own electronic training and development diary to aid reflection of the process and to communicate to the coach. The riders also have one to one remote coaching support.

APPENDIX I.

Visual Inspection Moderation for Inter-Rater – Reliability.

Process.

Panel of Experts as per Questionnaire Group

Initial Training consisted of the familiarisation with Figure 3.6, specifically, the results graphs, and a further discussion regarding the survey questions and answers from the candidates. The researcher then facilitated a further discussion with the expert group to agree the key criteria.

Key Criteria Identified and Agreed.

- ***M – Shapes - suggest biggest contrasts*** in coaches' perceptions of…? (i.e., some are doing it more/less than others); ***smaller contrasts indicated by flatter lines***
- ***Sharper gradients in shapes suggests greater consensus*** from coaches perceptions of …? (e.g., little conditioning at under 12; lots of fun at under 12
- ***Bigger swings in shape could be indicative of a bigger "ping-pong"*** through the age groups, (e.g., conditioning focus from under 16 to 17-21)
- ***Similar shapes through the age groups*** indicates the same activities/methods are being used

Task

Each expert panel member was instructed to visually inspect the same Figure 3.6, using the key criteria presented earlier, this consisted of 5 separate questions/answers for 4 separate age groups (under 12, 12-16,17-21 and 22 plus), and totalled 20 graphs. Each correct graph at each age group equated to a 25% mark. Therefore, in below example, 4 age groups correct for conditioning, equals 100% and so on. The panel members analysed each graph on their own, recorded their interpretations for each graph, and provide a rationale for their decision. Additionally, they were asked to comment on the high data points that influenced their decisions.

Example Pro-forma for each expert member to record individual results.

Age Group	Conditioning	Technical	Tactical	Psychological	Fun
>22 yrs	Often 35%	Often 35%	Some 40%	Often 35%	Often 35%
17-21yrs	Often 55%	Some 45%	Some 35%	Some 40%	Some 50%
12-16 yrs	Some 45%	Often 50%	Some 45%	Some 50%	Often 35%
<12 yrs	Never 55%	Often 50%	Some 65%	Some 45%	Always 55%
	100	100	100	100	100

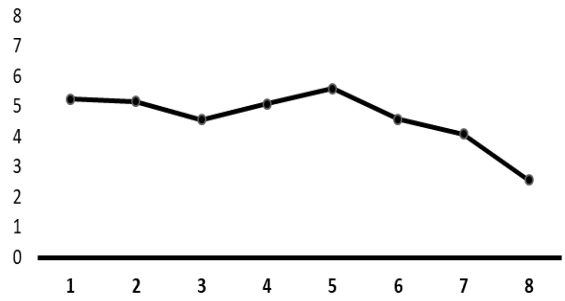
For each graph, the expert panel reached a consensus (where possible) that derived from the task and from a further discussion.

N.B. Most disagreements appeared to be due to the failure of the preliminary criteria to adequately deal with trends, small swings on the graphs. The results from all expert panel were analysed and provided a mean agreement of 80%. **House, House, & Campbell (1981), s**uggest that agreement among raters with mean agreement at or above 70% is necessary, above 80% is adequate, and above 90% is good.

APPENDIX J.

SUPPLEMENTARY RESULTS

Question 10. Who Influences or Has Influenced Your Coaching the Most?



Influence factor ID number

1. Experienced coaches who have not necessarily developed successful athletes at my stage of the pathway.
2. Coaches who have developed successful athletes at my stage of the pathway.
3. Coaches who have worked with senior elite riders.
4. Coaches who have similar coaching ability to me.
5. British Cycling coaching courses and tutors
6. Experienced riders.
7. Coaches from other sports.
8. Nobody in particular.

Figure. xx. All age groups combined

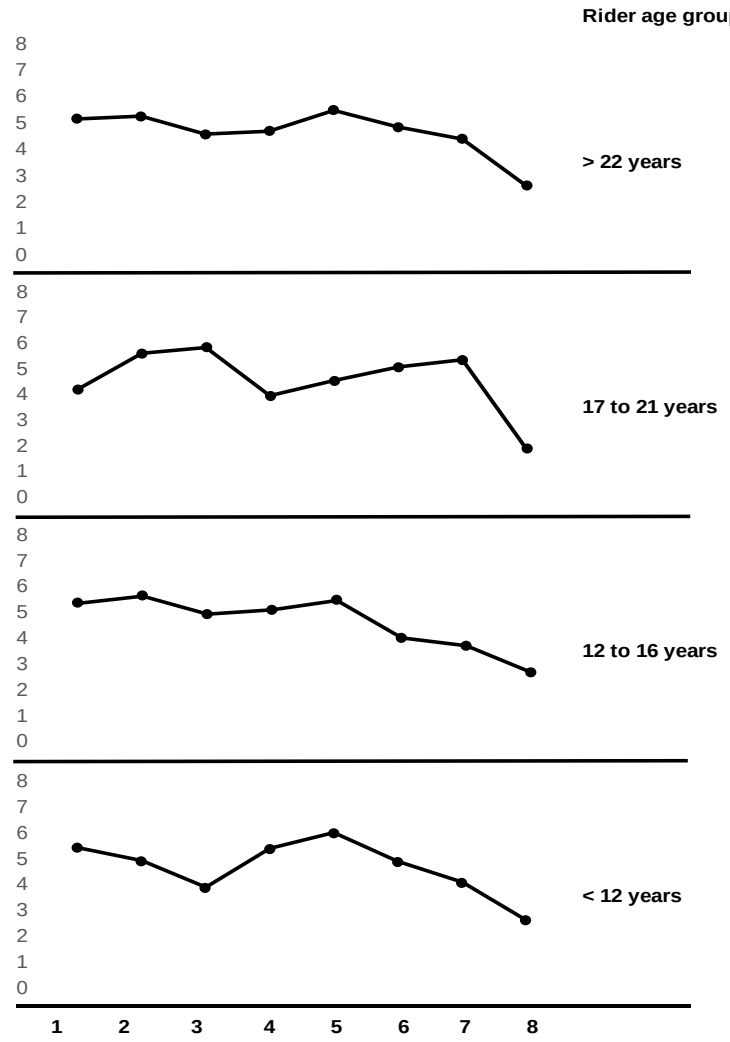


Figure. xx. Individual age groups

APPENDIX K

PART-EXAMPLE OF MENS ENDURANCE BENCHMARKS

PERFORMANCES	YOUTH		
Best race result in an Olympic track event, including scratch and points	Top 8 YTH Omnium Series / Nationals	Top 5 YTH Omnium Series / Nationals	Podium YTH Omnium Series / Nationals
Best race result in an Olympic road event, including stage wins	Top 10 YTH National Series / Nationals	Top 5 YTH National Series / Nationals	Podium YTH National Series / Nationals
Flying 200m / Lap	200m < 12.0	200m < 11.7	200m < 11.5
Individual pursuit	2k IP < 02:29	2k IP < 02:21	2k IP < 02:18
Time trial	500m TT < 37.0	500m TT < 36.0	500m TT < 35.0
Team pursuit	3k TP < 03:30	3k TP < 03:27	3k TP < 03:24
Road Time Trial	10m TT < 22:07	10m TT < 21:09	10m TT < 20:12

PHYSICAL	YOUTH		
Aerobic power	> 326 w > 5.5 wpk	> 383 w > 6.3 wpk	> 441 w > 7.0 wpk
Anaerobic power	x	x	x
Peak power	> 878 w > 15.0 wpk	> 1022w > 16.7 wpk	> 1166 w > 18.5 wpk

TRACK SKILLS When grading, the observer should keep in mind the perceived best standard for the rider's current age group, e.g. youth, junior or senior

Pedalling & form: ankle and pelvic stability • position on saddle • hip angel / trunk posture • arm position • completeness of pedal rev	Weak – requires significant attention
Starts: positioning • timing • launch • acceleration	Weak – requires significant attention
Bike Control: out of the saddle – straight • out of saddle – banking • transition seated to standing • lunge and bike throw	Weak – requires significant attention
Slow Speed Riding: high and slow • track stand	Weak – requires significant attention
Riding Race Lines: line in • line bottom • using track gradients •line at speed • protecting race line	Weak – requires significant attention
Group Riding & Changes: changes • close riding • move through bunch • pick up wheels • taking and holding position • finish formation • hand slings • madison changes at speed	Weak – requires significant attention

TRACK RACE CRAFT When grading, the observer should keep in mind the perceived best standard for the rider's current age group, e.g. youth, junior or senior

Pacing: pace judgement • pace control • respond / amend during effort	Weak – requires significant attention
Attacking: moves over the bunch • moves under the bunch • timing an attack	Weak – requires significant attention
Finishing: gap rush and overtaking • gap management • decisive with actions • win from front • win from behind	Weak – requires significant attention
Race Awareness: observation front • observation back • observation across track • lap board • race standings	Weak – requires significant attention
Decision making: can control / activate / manipulate a race • understands various tactics • • responds appropriately to moves • implements right tactics at right time	Weak – requires significant attention
Communication: communicate with team mates • communicate with opponents • communicate with coaches and support • responds to coach and commissaire instruction	Weak – requires significant attention

ROAD SKILLS When grading, the observer should keep in mind the perceived best standard for the rider's current age group, e.g. youth, junior or U23

Pedalling & form: ankle and pelvic stability • position on saddle • hip angel / trunk posture • arm position • completeness of pedal rev	Weak – requires significant attention
Bike Control: line on the front • riding in formation • use of the road • riding straight lines • out of the saddle • taking a bottle • removing / adding clothing • lunge / bike throws	Weak – requires significant attention
Cornering: cornering individual • cornering in bunch • wet cornering • high speed cornering • slow speed cornering	Weak – requires significant attention
Descending: descending position • descending individual • descending in bunch	Weak – requires significant attention
Climbing: out of the saddle • in the saddle	Weak – requires significant attention
Group Riding: bunch positioning • close riding • picking wheels • change	Weak – requires significant attention

ROAD RACE CRAFT When grading, the observer should keep in mind the perceived best standard for the rider's current age group, e.g. youth, junior or U23

Pacing: pace judgement • pace control • respond / amend during effort • understanding when to work	Weak – requires significant attention
Attacking: moves over the bunch • moves under the bunch • timing an attack	Weak – requires significant attention
Finishing: gap rush and overtaking • gap management • decisive with actions • win from front • win from behind • timing the sprint	Weak – requires significant attention
Race Strategy: route knowledge • road awareness - fuelling strategy • gear selection • moving in the convoy • awareness of environment	Weak – requires significant attention
Decision making: can control / activate / manipulate a race • understands various tactics or approaches • responds appropriately to moves • implements right tactics at right time	Weak – requires significant attention
Communication: communicate with team mates • communicate with opponents • communicate with coaches and support	Weak – requires significant attention

QUALITIES: When grading against the descriptors, the observer should keep in mind the programme model, e.g. day-to-day training sessions, part-time / camp based or full-time / residential

Habits & Attitudes: self-starter • realistic about where they are • has plan to progress • accountable for errors • well organised • strives to meet programme values • respectful to team • honest • programme ambassador	Poor – unacceptable or limited display of actions associated with behaviour
Coachable: desire to improve • welcomes new ideas • good communicator and listener • open to critique • learns from experiences • implements instruction • solves problems • shows patience • makes good decisions	Poor – unacceptable or limited display of actions associated with behaviour
Nerve: delivers when it matters • thrives in a competitive environment • performs under pressure • can be relied on for key moments • rational and logical under pressure • remains confident when not going well	Poor – unacceptable or limited display of actions associated with behaviour
Grit: strong work ethic • shows determination • pushes themselves hard • dedicated to goals • willing to sacrifice • relishes a battle • demonstrates self-belief • bounces-back after setbacks • diligent despite difficulties	Poor – unacceptable or limited display of actions associated with behaviour
Athleticism: Body is suited to the needs of their event for their current age group – guided by body composition and anthropometrical data	Physique is a limitation to performance
Availability: how much training / racing has the rider missed • what previous injuries / illnesses have been reported • how significant were these injuries / illnesses • how likely is it these injuries / illnesses will reoccur	Several injuries and illnesses >8 weeks missed in previous year

APPENDIX L

UNDERSTANDING BRITISH CYCLING'S COACH EDUCATION PATHWAY

Interim Report Findings – January 2019

Liverpool John Moores University

Aims of the Current Research

The current PhD aims to understand British Cycling's (BC) coach education pathway. Firstly, this research will investigate how BC's formal education challenges coaches' prior knowledge and experience as they are 'socialised' into BC qualified coaches and explore how coaches integrate 'new' knowledge into their practice when entering the social context of their coaching environment, post-course. Secondly, this PhD will examine coaching "in the field", identifying the "what" and "why" of coaching and highlight coaches' perceived barriers and opportunities when integrating the content from BC's formal education within their practice. Lastly, this research will explore the power relations within BC and clubs, and how this effects coaches' ability to replicate the coaching standards outlined in BC's formal education.

Results to Date

This current version of the coach education provision was driven by the previous Coaching Director, and focused on improving rider performance at the elite level, whereas, coaches felt their job was to coach riders cycling skills for life - to coach children to ride bikes for fun.

Coaches felt the course content was largely removed from the realities of their coaching

BC created a brand that coaches wanted to be a part of. However, it also created a system that locked knowledge away, bound to the identity of this brand. Knowledge is only accessible to those coaches who are trained, excluding those who are unqualified, producing a "them" and "us" culture.

The result was a programme that over assessed learners, and produced a workforce who were not fully equipped with the skills needed to coach. The formal education provision that British Cycling developed, is not fit for purpose.

The coaching pathway has a heavy technical content; to teach the technical skills they need to know.

The lack of funding available further compromises BC's coach education pathway. The lack of funding limits the way they(BC) can deliver their courses.

APPENDIX M

BRIEF SUMMARY OF BC PARENTS' SURVEY
PRODUCED BY CAMILLA KNIGHT

Demographics

Number of respondents: 55

Parents' cycling experience:
None: 24
Identified as recreational/leisure: 15
General competitive cycling (different disciplines): 11
National/International (as junior, adult or vet): 5

Other children who ride:
No: 25; Yes: 30

Of those who ride, number in RSR (or more):
In RSR (or more – e.g., apprentice): 7
Not in RSR because too young: 12
Not in RSR but no reason given: 11

Age of Rider in RSR:
13 yrs. - 9
14 yrs. - 26
15 yrs. – 15
16 yrs. – 5

I. Best Parts/Benefits of having a child involved in cycling (in no particular order):

1. Development in child's confidence
2. Improvements in work ethic/discipline/effort
3. Social opportunities/making friends/being part of the cycling community
4. Improved fitness and health
5. Family activity/travel around UK

II. Main challenges you've encountered with having a child in competitive cycling:

1. Cost
2. Travel – distances and juggling commitments
3. Understanding the system/pathway
4. Knowing which competitions to enter
5. Parents' own limited knowledge

III. Information that would have been useful from club:

1. Information on BC pathways
2. Information on local events and competitions (esp. which are the best to enter)
3. Different cycling disciplines
4. What to expect in cycling – commitment, costs etc.
5. Training programmes/coaching guidance

IV. 3 things learnt that other parents should know (there is lots of variety in these responses):

1. Which races to enter
2. Importance of trying different disciplines and the role of track
3. Let children learn from their own mistakes and don't push them
4. Knowing what equipment to buy (and price to pay), with appropriate guidance
5. Enjoying it – parents and child

V. Areas lacking in knowledge:

1) Club philosophy
2) Cycling/Talent pathways and development process in BC
3) Anti-doping rules and regulations
4) Psychological demands and development of cyclist
5) Who can support/help riders

VI. Areas noted as most important:

1) Coach-athlete-parent relationships
2) Growth development and maturation
3) Managing injuries
4) Nutrition for training and competitions
5) Anti-doping rules and regulations
6) Psychological demands and development of cyclist
7) Balancing school and cycling
8) Holistic development of child
9) Keeping child safe in cycling

Based on most important and areas lacking knowledge two areas jump out as the biggest difference:

1) Anti-doping rules and regulations
2) Psychological demands and development of cyclist

However, combined with the earlier comments, the addition of information on talent pathways and competition structures, and also who can support riders as they develop, are also particularly important to focus on as well.

The areas noted as most important are consistent with other sports and the areas where knowledge is lacking is generally similar.

However, there were some surprises particularly related to parents' views on knowing how to support their child in sport, their training involvement, their focus on the coach-athlete- parent relationship, and their management of ups and downs of cycling were all lower than anticipated compared to other sports.

Summary of findings and suggested workshop themes over page.

Summary of Findings

Topic		Knowledge (1 -10)	Importance (1-10)
Club philosophy (i.e., focus	Range	1-10	2-10
	Mean (average)	6.3	8.1
	Median (most common)	6	8
Coach-athlete-parent relationships	Range	1-10	2-10
	Mean (average)	6.5	9.2
	Median (most common)	7	10
Cycling/Talent pathways and development process within British Cycling	Range	1-9	1-10
	Mean (average)	5.6	8
	Median (most common)	6	8
Competition structures	Range	1-10	2-10
	Mean (average)	6.6	8.2
	Median (most common)	7	9
Physical training demands	Range	3-10	1-10
	Mean (average)	7.02	8.7
	Median (most common)	7	9
Growth, development, and maturation of children	Range	2-10	5-10
	Mean (average)	6.8	9.08
	Median (most common)	7	10
Managing injuries	Range	2-10	1-10
	Mean (average)	6.2	8.9
	Median (most common)	7	10
Funding/Costs of cycling	Range	2-10	3-10
	Mean (average)	7.4	8.5
	Median (most common)	8	9
Nutrition for training and competitions	Range	2-10	7-10
	Mean (average)	6.8	9.2
	Median (most common)	7	10
Anti-doping rules and regulations	Range	1-10	1-10
	Mean (average)	5.5	8.4
	Median (most common)	6	10
Psychological demands and development of cyclist	Range	2-10	6-10
	Mean (average)	6.2	9
	Median (most common)	6	10
Managing ups/downs in the cycling journey	Range	2-10	5-10
	Mean (average)	7.1	8.7
	Median (most common)	7	10
Supporting children at competitions	Range	5-10	3-10
	Mean (average)	8.1	8.8
	Median (most common)	8	10

Suggested Workshop Themes.

Session 1: Introduction to the pathway, the coaches' role and most importantly the parents' role within the athlete triad.

- Introduce the pathway – what it looks like, who's involved
- Introduce the pathway philosophy
- Introduce the coach/athlete/triad - recognising the important role that parents play

Session 2: Roles and responsibilities.

- Reinforce the athlete/parent/coach triad
- Outline the different roles parents have – provider/interpreter/role model
- Discuss the challenges around the roles and responsibilities and overlap ('ownership' of the child passing from parent to coach)

Session 3: Goal Setting -interactive activity with parents

- Parents' expectations of goal setting and how their expectations change over time, not always for the better

Session 4: Parental Behaviours: Controlling emotions

- Explore the concept that parents do the wrong thing for the right reason
- Emphasise why young people get involved in sport/what they hope to get from it and the impact that parental behaviour can have (get involved for fun, but can feel pressure from other people to win)

Session 5: Communication

- Communication between system, coaches, athletes and parents
- Communication with athlete and parent away from the sport setting
- Communication between coach and parent, so parent is aware of what's going on

APPENDIX N

DRAFT ABSTRACT

Authors': R. Jewitt-Beck, T. Huntley, Prof. Z. Knowles and Dr A. Whitehead
Institution: Liverpool John Moores University United Kingdom
Manuscript type: Original research
Title: Learning and Education of Coach Developers within a UK National Governing Body.

Recent sport coaching literature has made reference to the inadequacies of formal coach education (Piggott, 2012; Vella, Crowe & Oades, 2013; Stodter & Cushion, 2017). However, although formal coach education may well not be suited to the complex nature of coaching in reality, a sport governing body will always require some formal level of verification for their coaches. Furthermore, within the contested space of a 'coach centred' coach education, there is a lack of conceptual clarity around the role of the Coach Developer (CD) as key agents in facilitation and delivery of formal education and development opportunities (Cushion, Griffiths & Armour, 2017). Given the paucity of CD literature, this manuscript aims to explore the learning, development and educational experiences of CD's within the unique context of a leading UK National Governing Body of Sport (NGB).

Philosophically the researchers positioned the study within a constructivist epistemology, in which knowledge was co-constructed with the participants (Smith & Sparks, 2014). Participants were recruited through criteria sampling (Patton, 2002), which included CD's actively delivering for the NGB and to be aged 18 or over. The principles of Constructivist Grounded Theory were utilised to analyse the interview data of 20 CD's (Gender M:16; mean 11 years' experience) collected email (average 21 follow up exchange emails) and five telephone (average 53 minutes) interviews. This research employed Knowles, Holton and Swanson (2016) six principles of andragogy. The framework proposed that adult learning is best understood and developed when using the six concepts: the need to know, the learners' self-concept, previous experience, readiness, orientation and motivation to learn. The results identified the CD workforce consisted of myriad of role and context specific typologies that referenced a complex formal coach education environment. Additionally, the NGB's approach to training was in conflict to the CDs sense of need to know and self-concept. This resulted in CD's resistance to institutionalised learning and also inhibited CD's 'readiness to learn' through which career development opportunities were either (or) non-existent, ideological or irrelevant. Despite these barriers, the CD's were able to articulate a desire to learn, which resonated with notions of orientation and motivation. However, within the interviews themselves CD's were unable to provide examples beyond technocratic rationalistic detail. In conclusion, this manuscript adds to the growing body of literature utilising andragogy (Callary, Rathwell, & Young, 2017) as a tool to develop understanding of adult learning specifically in a coaching context. The findings from the interviews indicate andragogy has utility beyond theoretical explanation to explain adult learning and has demonstrated potential to enhance the provision of CD education.