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A theoretical and empirical investigation of the multitude of dual career experiences in sport

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A Theoretical and Empirical Investigation of the Multitude of Dual Career Experiences in Sport

by

Emily Deason

A Doctoral Thesis

Submitted in partial fulfilment of the requirements
for the award of Doctor of Philosophy of Loughborough University
March, 2019

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Social research, in simplest terms, involves a dialogue between ideas and evidence.

Ragin, 1994, p. 55

Abstract

This thesis sought to explore and examine the multitude of dual career experiences in sport, (i.e., the experience of combining a sporting career with an educational or vocational career). The research focus upon dual careers in sport derived from several research approaches within sport psychology including: the transitions literature (e.g., Wylleman & Lavallee, 2004; Wylleman, Reints, & De Knop, 2013), the holistic athlete perspective literature (e.g., Henriksen, Stambulova, & Roessler, 2010; Wylleman et al., 2013), and the athletic retirement literature (see Knights, Sherry, & Ruddock-Hudson, 2016). The research approaches highlighted the importance of considering an athlete's life outside of sport and/or their preparation for life after sport. This led to an increased interest in the ability of athletes to pursue an education or vocation alongside their sporting endeavours and the impact these activities have on factors such as, sporting performance, academic performance, well-being and ability to cope with transition and/or adversity. One aim of this thesis was to provide a fundamental contribution to the research field by comprehensively reviewing and synthesising the evidence which addresses the factors that facilitate positive experiences of managing a sporting career alongside an education or vocation. The results outline factors that have been identified as impacting the experience of a dual career, such as: the academic environment, sporting environment, personal resources, and social support.

The thesis was then guided by the gaps in the research knowledge that were highlighted by the review. One area that was identified to be of interest for further research was the spectrum of dual career experiences that are presented in the literature and the lack of theoretical conceptualization which explain the development of these different experiences. For example, on the one hand, previous research identified a variety of positive experiences from pursuing a dual career (e.g., Aquilina, 2013; Lavallee & Robinson, 2007; Miller & Kerr, 2002; Murphy, Petitpas, & Brewer, 1996; Pink, Saunders, & Stynes, 2015). However, the negative experiences of pursuing two career goals have also been extensively reported (e.g., Cosh & Tully, 2014; Knight, Harwood, & Sellars, 2018; Singer, 2008; Ryan, 2015; Ryba, Stambulova, Ronkainen, Bundgaard, & Selänne, 2015; Tekavc, Wylleman, & Cecić Erpič, 2015). The thesis then employs a method that has, thus far, not been used in this research area and further explores these contrasting experiences via a grounded theory analysis (chapter 4) which integrates inductive interview data with previous research (e.g., Aunola, Selänne, Selänne, & Ryba, 2018; Chamorro, Torregrosa, Sánchez Oliva, García Calvo, & León, 2016; Ryba, Stambulova, Selänne, Aunola, & Nurmi, 2017; Stambulova, Engström, Franck, Linnér, & Lindahl, 2015). The findings present experiences of dual careers as categorised into one of

three pathways: the parallel dual career pathway, the sporting pathway and, the educational/vocational pathway. All three pathways exhibit varying outcomes, benefits, and detriments, which are outlined as: the educational gap, vocational skills gap, and the sporting gap. This chapter also outlines a suggested process for the development of these pathways, dual career development mechanism, which incorporates identity, motivation, and self-efficacy. The research contributes to the understanding of dual career athletes as a heterogenous group, as opposed to a homogeneous group. However, this research advances the current understanding by viewing the experiences from a developmental standpoint and presenting a theory of the whole dual career lifespan.

The findings presented in the grounded theory development led to the hypothesis that individuals in each pathway would exhibit different patterns of athletic identity, career identity, and self-efficacy. For example, (a) individuals in the parallel dual career pathway are hypothesised to exhibit a balanced career identity, career self-efficacy, athletic identity, and athletic self-efficacy' (b) individuals in the sporting pathway are predicted to show a higher athletic identity and athletic self-efficacy than a career identity and career self-efficacy; and (c) individuals in the educational/vocational pathway are predicted to show a higher career identity and career self-efficacy than athletic identity and athletic self-efficacy. The categorisation of dual career individuals and the suggested relationship between sporting development and career development according to the pathways presented in chapter 4 are then further explored and supported via the results of a principle component analysis and cluster analysis (chapter 5). The results upheld the hypothesis by identifying three heterogeneous groups based on their scores on identity and self-efficacy measures. The inclusion of retired dual career athletes provided us with two further groups identified as representing individuals who were further along the three pathways. Previous research has conducted similar methods with elite youth or school-aged athletes (e.g., Aunola et al., 2018; Chamorro et al., 2016) but focused on measure of motivation to categorise individuals. This research, therefore, makes a novel contribution through, confirming the hypothesis of athletic identity, student identity, and self-esteem as factors that impact dual career experiences. These findings conclude that dual career support systems and practitioners must consider the type of dual career pathway which best suits the individual in question and take steps to prepare the individual for the associated gaps of each pathway.

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Publications resulting from this thesis

Cartigny, E., Fletcher, D., Coupland, C., & Taylor, G. (2019) Mind the Gap: A Grounded Theory of Dual Career Pathways in Sport. *Journal of Applied Sport Psychology*, (Accepted Manuscript). DOI: 10.1080/10413200.2019.1654559

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Chapter One:

Introduction

1.1. Introduction

The aim of this introduction chapter is to highlight the importance of studying dual careers in sport. This chapter aims to outline what is meant in this thesis by the term *dual career* by addressing the practical rationale for researching dual careers; outlining the broader organisational and policy context, particularly within Europe and the UK; and situating the current thesis within the historical research evolutions that are closely related to this area. The following chapter avoids outlining the most relevant research to the thesis by way of ensuring that is not repetitive with chapter 3, which presents a comprehensive, systematic mixed-studies review of the dual career literature. In addition, each of the research chapters (3, 4, and 5) begin with an introduction that contains the most relevant literature to the research question that was addressed.

1.2. Rationale for Investigating the Research Area

There are several justifications that underpin the rationale for investigating this research area, including the growing importance of this area to individual nations. There are a growing number of media reports from recent major games (such as, Rio Olympic Games, 2016; Gold Coast Commonwealth Games, 2018; and PyeongChang Winter Olympics, 2018) that outline the contribution made by dual career athletes to national sporting success. Official statistics from England's national lead on dual career services, Talented Athlete Scholarship Scheme (TASS) show that out of 630 athletes that attended Rio 2016 Summer Olympic and Paralympic Games 165 were currently supported by TASS or were TASS alumni athletes. It is important to note that the TASS statistic only covers English athletes, yet Great Britain compete at summer and winter Olympic and Paralympic games as a team (Team GB) made up of athletes from England, Scotland, Wales, and Northern Ireland. Other organisations (e.g., Winning Students) which support dual career athletes in Scotland, Wales and Northern Ireland, did not provide figures on their impact. Therefore, it is fair to conclude the contribution of dual career athletes to Team GB is higher. The success of dual career athletes supported by TASS in comparison with the wider British/English teams are presented in Table 1. The success of these TASS supported individual in achieving medals at major games highlights the number of successful athletes that experience a dual career during their sporting development.

Table 1.

The attendance and medal records of dual career athletes supported by TASS in comparison with the wider British/English teams across three recent major games.

Major games*	**Number of British athletes who attended the games**	**Number of TASS athletes** who attended the games**	**Number of medals achieved by British athletes**	**Number of medals achieved by TASS athletes****
Rio summer Olympic and Paralympic Games, 2016	630	165	211	78
PyeongChang winter Olympic and Paralympic Games, 2018	76	27	12	7
Major games*	**Number of English athletes who attended the games**	**Number of TASS athletes** who attended the games**	**Number of medals achieved by English athletes**	**Number of medals achieved by TASS athletes****
Gold Coast Commonwealth Games, 2018	390	101	136	48

*Defined as international multi-sport events

**Individuals who are currently or have previously received support from the provider TASS

Data retrieved from https://www.tass.gov.uk/about/facts-figures/; https://teamengland.org/commonwealth-games-history/gold-coast-2018; https://www.teamgb.com/games; http://paralympics.org.uk/articles/medal-count

Many other educational institutions who support dual career athletes via scholarships, particularly higher education institutions, used recent major games to promote the impact their athletes and alumni had on national sporting success. Two universities with recognised reputations for sport in the UK include Loughborough University and the University of Bath. Loughborough University reported that "just short of 100 current students, alumni and campus-based athletes" attended the Commonwealth Games in 2018 ("Loughborough goes to Gold Coast 2018", 2018). The athletes associated with the university achieved a total medal tally of 30, a feat that would have put them 11th in the overall medal table if Loughborough University was a nation. The University of Bath also reported that 30 sport performers, who are based on their campus, competed at the 2018 Commonwealth Games and recorded a medal total of 17. Additionally, the University of Bath, who hosts the national governing body (NGB) for winter sliding sports, reported 16 campus-based athletes who competed at

PyeongChang winter Olympics 2018 and achieved 3 of Great Britain's 5 medals ("PeyongChang 2018", 2018). By outlining the impact university students and alumni have on the success of Great Britain at major games, it is clear to see not only the importance of supporting dual careers in practice, and, therefore, its relevance as a research topic, but also the important role of higher education institutions in Britain's national sporting success.

The relevance of dual careers in sport is also highlighted by the wider debate on athlete mental health and the duty of care role that sporting organisations hold for the welfare of athletes. Recent years have seen wide-spread media reports that provide testimonies of athletes who experienced metal health issues upon retirement from sport (e.g., Orchard, 2017; Ramsay, 2018; Youde, 2018). Relating to this, and of particular interest to this thesis, are two investigations into the current situation within sport: a report of interim results from Professional Players' Federation's (PPF) investigation into life after sport (Professional Players Federation, 2018), and the Government commissioned report regarding Duty of Care in Sport (Grey-Thompson & Department for Digital, Culture, Media & Sport, 2017). The PPF's report showed that around half of retired sport performers had concerns about their mental or emotional wellbeing since retiring. The report recognised the loss of identity as an athlete and the struggle to find a new purpose as factors that contribute to issues such as depression, self-harm, addiction, and financial problems. The most striking finding of the report was that all the sports included in the study have wide-ranging transition programmes to help athletes move into a life after sport, including career training, 24-hour-a-day counselling, and funding for education. The findings of the report present the athletic retirement transition as an area that requires further exploration and support.

With a broader focus, the government's Duty of Care in Sport report outlines a foray of misgivings committed by sport/sporting organisations, while outlining areas of best practice and recommendations for improvement. A large section of this report focuses on education, particularly the role sport should play in enabling athletes to maintain an education (should they, the athlete, wish to) and the recognition of TASS as an example of best practice. One widely recognised rationale supporting athletes to maintain an education is to enable sport performers to prepare for life after sport. A rationale that has been advocated by a number of high-profile and successful athletes. For example, Tennis player Andy Murray outlines education as preparation for life after sport and stated, "That's [Education's] actually something I regret not doing myself - I wish I spent more time in education and that's something I would pass on to others and certainly recommend more athletes do." (Ornstein, 2017). Additionally, three-time Olympic rowing gold medallist James Tomkins stated,

"When I retired from rowing, the transition was far easier for me because I had been developing that second career whilst I was competing." ("Managing a dual career", n.d.).

The Duty of Care report also considers the approach of sporting organisations in addressing mental health issues of current athletes. In this case, activities outside of sport are recognised as benefiting athletes' mental health and their wellbeing in sport. Many anecdotal reports from high-profile athletes support this consideration. For example, sprinter Dina Asher-Smith studied History at university and stated, "I think university makes you a more balanced person all round because sometimes it's not healthy for your entire life to be sport...when you're relaxed and happy with what you do, that translates to a better performance on the track." ("Alumna Asher-Smith", n.d.). Hence, the pursuit of dual careers is not only recognised for the practical preparation for life after sport, but as an important consideration in the wider debate regarding supporting athlete's mental health during sport and after retirement from sport.

1.3. Dual Careers in Sport in Practice

1.3.1. The education system in the UK. In the UK, the education system is split into four parts (Education and learning, n.d.): primary education, secondary education, further education, and higher education. Primary education begins in the UK at the age of 5 and continues until age 11. From age 11, students will enter secondary school and work towards taking their General Certificate of Secondary Education (GCSE) exams at the age of 16. Primary and secondary education is mandatory in the UK and it is, therefore, referred to as compulsory education. In England, Wales, and Northern Ireland, all 16 to 18-year olds are required to maintain full-time education. They can do this via three options: either continue in a school setting and take their advanced level exams (A-Levels), continue in a school or college setting and sitting B-Tech (Business and Technology Education Council) professional qualifications, or commence a work place apprenticeship or training scheme and completing a General National Vocational Qualification, GNVQ. In Scotland, secondary school pupils sit National exams (equivalent to GCSEs) at the age of 15/16, normally for between six and eight subjects including compulsory exams in English and Mathematics. At the age of 16 students can choose to leave school and enter employment or choose to remain at school for a further two years and sit Higher or Advanced Higher exams (equivalent to A-Levels). A-Levels, B-Techs, GNVQs, and Scottish Highers make up further education. Further education is a requirement of studying at the higher education level. The UK has over one hundred university and college institutions that constitute the higher education network. These

institutions offer a range of courses which include, foundation, undergraduate/bachelor's, postgraduate/master's and postgraduate doctoral or research (e.g., PhD) degrees.

1.3.2. The sport system in the UK. At a government level, each of the four home nations take a varied approach to sport. In England, two departments are responsible for regulating and funding sport, the Department of Culture, Media, and Sport (DCMS), which encompasses elite sport and sport as a leisure activity, and the Department for Education and Skills which covers sport in schools. Instead, in Scotland, Wales, and Northern Ireland, one department is responsible for sport, the Department for Environment, Sport and Culture in Scotland, the Department of Education and Culture in Wales, and the Department of Culture, Arts and Leisure in Northern Ireland. These governing departments monitor the work of and provide funding for the four regional sport councils, Sport England, SportScotland, Sport Wales, and Sport Northern Ireland. These councils are responsible for the spectrum of sport, from grassroots to elite sport. In addition, there also exists a national sports council that is responsible for high performance sport across the UK, UK Sport. Further to these organisations, each sport will have a national governing body (NGB) who is responsible for coordinating the network of clubs in the UK and will contribute to both grassroots and elite sport. The NGB might cover one home nation or it might cover the entire UK, depending on the nature of the sport and how they compete (e.g., professional, Olympic, or Commonwealth). To give examples, netball competes on an international level as separate home nations and is governed by four sperate governing bodies, England Netball, Netball Scotland, Welsh Netball, and Netball Northern Ireland. Alternatively, British Rowing the NGB for rowing covers the entirety of the UK and competes at international competitions as Great Britain.

Olympic sport in Great Britain has seen a substantial increase in medal success in recent years, from finishing 36th in the medal table at the 1996 Atlanta Olympics to the most recent Olympic and Paralympic Games, in Rio, where Great Britain finish 2nd and broke records in becoming the only country to improve on their medal total from a home Olympics games (Shibli, 2016). A number of changes in sport policy have been recognised as influencing this success starting with the decision in 1997 by government to fund elite sport through National Lottery funding and government exchequer, which led to the setup of UK Sport to oversee the distribution of this funding. Importantly, the successful bid to host the Olympic Games in London, granted in 2005, lead to further increases in funding of elite sports. In 2006, full responsibility of the management of government funds for elite sport was

awarded to UK Sport. UK sport distributes government funds to a number of World Class Performance programmes (WCPP) and NGBs based on the medal potential of that sport. To give context to this, for the London cycle UK Sport invested £313 million to fund 32 Olympic and Paralympic sports governing bodies (UK Sport, 2011). After this investment proved to be a success at the London Olympics, a budget of £125 million per year up to the Rio 2016 Olympics was announced to continue supporting elite sport as part of the legacy of the games.

The increase in government involvement into the sport sector has encouraged NBGs to increase their professionalism, benefiting the sport sector through increased accountability and efficiency in sport delivery (Grey-Thompson & Department for Digital, Culture, Media & Sport, 2017). In other ways the funding has been recognised as a negative influence on sport, the increased funding has meant that individual athletes are encouraged to train as full-time athletes. While full-time training is beneficial for sporting performance, accepting this funding means athletes have renounced the control of their careers to NGBs. The full control of an individual's career in the hands of NGBs has the potential to become problematic when the organisation is working solely towards medal targets and not the benefit of the athlete as a person. After a number of welfare and safety concerns in sport, the government commissioned the previously mentioned Duty of Care in Sport report (Grey-Thompson & Department for Digital, Culture, Media & Sport, 2017), which highlighted poor practice, such as encouraging an attitude of intolerance for failure or encouraging athletes to neglect an alternative career and, therefore, their plans for post-sport life. Aside from Olympic and Paralympic sport, there are a number of sports in the UK that sustain professional playing leagues, including cricket, football, golf, rugby league, rugby union, and tennis. Traditionally, professional opportunities in the UK were exclusive to male sport. However, more opportunities have opened to women, with English professional contracts for cricket in 2014, in 2016 for rugby union, and the full professionalisation of the Women's football Super League for the 2018/2019 season.

1.3.3. The overlap between sport, education, and vocation in the UK system. To conceptualise the overlap between educational/vocational development and sporting development and, therefore, the occurrence of dual career in practice it is useful to first outline the holistic athletic career model (Wylleman et al., 2013). This model underpins the researcher's understanding of athletic development throughout the thesis. The model illustrates the holistic perspective of athletes' demands and outlines the developmental stages

(and corresponding transitions) of five main life domains, athletic, academic/vocational, psychological, psychosocial, and financial. Aspiring athletes must negotiate the demands and transitions presented by each developmental stage across all five life domains, the failure to negotiate these can hinder athletic or academic development and result in a crisis transition (Stambulova, 2003). Although the model outlines common demands and transitions that occur across the holistic development for athletes, these demands and challenges can vary significantly depending upon the characteristics of the sport and the educational system the individual is surrounded by (Morris, Tod, & Eubank, 2016; Park, Lavallee, & Tod, 2013; Stambulova, 2003). The holistic athletic career model is limited by presenting a general overview of the common transitions. In practice, the path of athletic and academic development can appear very differently depending on the sport. To illustrate, early maturation sports (e.g., gymnastic) will commence much earlier, approximately age 3-5. Whereas late maturation sports (e.g., rowing) will commence much later, approximately age 15-18. Furthermore, the model largely focuses on one educational and vocational trajectory, from compulsory education to further/higher education to professional sport to post-sport career (highlighted in red in figure 1). As illustrated in this introduction, this is just one possible pathway for athletes and dual career athletes in the UK context. To demonstrate this and specify the context in which this thesis relates to, figure 1 outlines an understanding of these transitions, specifically in the UK education and sport systems.

As shown in figure 1, a dual career has the potential to commence during compulsory education, approximately age 8-15 (depending on the sport), when young aspiring athletes' transition from initiation to development stages of the athletic domain and commence their competitive sporting career (Wylleman et al., 2013). However, it should be noted that there are four main factors that could influence the point at which education could be disrupted by sport, these include: whether the sport is a professional, team or individual sport; whether the sport is early/middle/late maturation (as discussed in previous paragraph); the system of training centres; and the specific rules and quality standards in respect of athlete education that are required by the state or by the sports federation (Henry, 2013). Currently, in the UK, there is only one example of an elite sports school (Glasgow School of Sport), where the school environment is purposefully designed for supporting young athletes and their athletic development alongside school-aged education. More commonly, school-aged athletes themselves are required to manage their two pursuits on a personal basis, negotiating and communicating to the different stakeholders their demands of school and sport. A dual career during school is particularly important for athletes competing in early specialisation sports,

such as gymnastics. After the completion of compulsory education, only a few athletes from a small sample of professional or lottery funded sports (e.g., men's football, men's and women's track or road cycling) will be able to transition from compulsory education immediately into professional sport. Of this group, an even smaller number of athletes will be able to financially sustain themselves for both their athletic career and post-sport life and, therefore, this pathway presents a risk of being ill prepared for life-after-sport and injury. Alternatively, from the age of 16, individuals could choose to either attend further education, higher education (after the completion of further education), or employment.

<table>
<tr><td>Age</td><td colspan="6">10 15 20 25 30 35</td></tr>
<tr><td>Athletic Level</td><td>Initiation</td><td colspan="2">Development</td><td colspan="2">Mastery</td><td>Discontinuation</td></tr>
<tr><td rowspan="6">Academic/
Vocational Level</td><td rowspan="3">Compulsory education</td><td>Further education</td><td>Higher education</td><td colspan="2">Vocation</td><td rowspan="3">Post-athletic career</td></tr>
<tr><td>Further education</td><td colspan="3">Vocation</td></tr>
<tr><td colspan="4">Vocation</td></tr>
<tr><td>Further education</td><td>Higher education</td><td colspan="2">Professional sport</td><td></td></tr>
<tr><td rowspan="2">Further education/ vocation</td><td colspan="3" rowspan="2">Professional sport</td><td rowspan="2"></td></tr>
<tr><td colspan="4">Professional sport</td></tr>
<tr><td>Psychological Level</td><td>Childhood</td><td colspan="2">Adolescence</td><td>Young adulthood</td><td colspan="2">Adulthood</td></tr>
<tr><td>Psychosocial</td><td>Parents
Siblings
Peers</td><td colspan="2">Peers /teammates
Coach
Parents</td><td colspan="2">Partner
Coach/Support staff
Peers/ teammates</td><td>Family
Peers</td></tr>
<tr><td>Financial Level</td><td>Family</td><td colspan="2">Family
Sport governing body</td><td colspan="2">Sport governing body
Family Employer</td><td>Employer</td></tr>
</table>

Figure 1. *Holistic athletic career model, Adapted from Wylleman, et al., 2013 for the UK education and sport system.*

N.B. developmental stages that represent a dual career are highlighted in bold.

Red box outlines the pathway highlighted by Wylleman et al., 2013.

The age of 16-25 is considered a critical period for athletes, particularly dual career athletes, due to the multiple transitions that take place in the period which span all life domains (Wylleman et al., 2013). These include: the junior-to-senior transition which occurs when athletes progress from age-related sport into senior or elite sport. This transition has received wide spread research in sport psychology and has been recognised as problematic for many athletes in practice (e.g., Bloom, 1985; Côté, Baker, & Abernethy, 2007; Morris et al., 2016; Stambulova, 2003; Wylleman & Lavallee, 2004). Of particular interest for the dual career context is the close proximity of the junior-to-senior transition and transitions in education (e.g., the transition from compulsory education to vocation, further or higher education). This includes the associated transitions in psychosocial development and financial (in)dependence that comes with the progression from school to either university or work (e.g., a change in social support network due to moving away from established parents, peers and coaches). A transition in the psychological life domain also occurs during this period, the progression from adolescent to young adulthood. This psychological transition includes the development of a self-identity (Brewer, Van Raalte, & Petitpas, 2000). However, the impact of an individual's athletic involvement on their identity development and the degree to which they define their identity by their athletic pursuits (i.e., their athletic identity) has the potential to become problematic. The exclusive and over identification with one's athletic role (i.e., identity foreclosure) has been shown by research to have a negative impact on their exploration of other career, education, and lifestyle options (Murphy et al., 1996).

In terms of support during this developmental stage, a limited, but recently increased, number of universities in the UK (e.g., University of Bath, Leeds triathlon centre, Loughborough University) have developed links with national sporting governing bodies (e.g., British Swimming, British Triathlon) or national institutes for sport (e.g., English Institute of Sport, Sport Scotland) to provide the opportunity for athletes to combine higher education with world-class sporting facilities and support (see Brown, Fletcher, Henry, Borrie, Emmett, Buzza, & Wombwell, 2015). These programmes are likely to offer part-time study to allow for the intense training hours that are required of athletes at this level. Again, these opportunities are limited to the most talented athletes in this age groups (identified by the sport governing body) and are mostly utilised by later specialisation sports (e.g., rowing or triathlon). A wider variety of universities offer talented athletes (again, identified by the sport governing body) the opportunity to combine sport with an education via TASS scholarships. TASS, established in 2004, support, "up and coming athletes to balance the demands of college and university life with training and competing at national and

international level" (Sport England, 2014). The government funded TASS programme aims to standardise practice across a network of further and higher education institutions across England, including standardised policies on the treatment of athletes by universities. A similar programme exists to support athletes in Scotland (Winning Students), but there is no formal system in Wales or Northern Ireland. Individual institutions may also have their own scholarship system for competitive athletes, who are not funded by the national institute for sport or by World Class programmes, TASS or Winning Students. Athlete selection and the level of support provided to these schemes are conducted by the institution themselves.

After exiting higher or further education (at the earliest, at age 21), the highest performing athletes are again afforded opportunities to pursue a sole commitment to sport via professional contracts or Olympic funding. Alternatively, athletes would be required to enter the work-force to financially sustain themselves and their sport career. Currently, there exists only one formal system to combine sport with a vocation in the UK. This is the newly established (launched in 2016) partnership between TASS and the British Army, which enables individuals to pursue a career in the armed forces whilst receiving support for their sporting endeavours ("TASS supports military athletes" n.d.). Outside of this programme, individuals are required to manage their vocational requirements themselves and rely on their employer's willingness to make flexible arrangements.

The final transition to consider is the transition out of sport and into a post-sport career. Much of the research shows that this transition is problematic for athletes (e.g., Cecić Erpič, Wylleman, & Zupančič, 2004; Lally, 2007; Lavallee, Gordon, & Grove, 1997), difficulties include the loss of athletic identity and loss of support network (Park et al., 2013). A body of research has shown that athletes who had prepared for this transition were better able to cope with life-after-sport (e.g., Knights et al., 2016). Preparation could be via education, vocational skills development or activities outside of sport and, therefore, through the development of a multi-faceted identity. As a consequence of these findings the focus on the influence of life outside of sport and/or preparation for life after sport led to the interest in the ability of athletes to pursue an education or vocation alongside their sporting endeavours and the impact these activities have on factors, such as sporting performance and ability to cope with transition and/or adversity.

The holistic athletic career model outlines the normative transitions which have been identified as occurring in athletes' development. However, research shows that athletes commonly experience a combination of normative and non-normative transitions (i.e., transitions or changes that are unpredictable) throughout their career (e.g., Bloom, 1985;

Salmela, 1994; Stambulova, 2003; Wylleman, Alfermann, & Lavallee, 2004). These transitions are generally unanticipated and involuntary and can include, for example, failing to graduate, a forced change of subject of study, a season-ending injury, the loss of a personal coach, or deselection. Furthermore, research has shown that, when poorly managed, any transition, normative or non-normative, has the potential to become a crisis transition (i.e., when the athlete is unable to cope effectively on their own and needs a psychological intervention; Stambulova, 2003). At this stage, the process of transition depends on the effectiveness of the intervention. Effective intervention leads to the successful but ‘‘delayed’’ transition. Alternatively, ineffective or no intervention situations are followed by negative (often long-term) consequences or so-called ‘‘costs’’ for failure to cope with the transition (e.g., injuries, overtraining, neuroses, psycho-somatic illnesses, alcohol/drug use, criminal behaviours). Both non-normative and crisis transitions are not identified in the holistic athletic career model. As a consequence, the model doesn’t represent all of the trajectories and outcomes of athletic development that occur in practice, only the ideal development pathway.

1.3.4. Broader European context. While a focus on the immediate context is vital, an understanding of the wider context which has the potential to influence the system in the UK is also important. The previous decade has seen a significant focus on the dual career area by the European Union (EU). While the nations within the EU remain sovereign and independent states in their own right, the union allows for and encourages communication between nations on matters of common interest. Sport is not an area in which the EU has a direct competence to act, but sport has been recognised as an area which nations could benefit from collaboration (Aquilina & Henry, 2010). The EU’s main concern in this area is two-fold: first, the (re)integration of athletes into the labour market in their post-sport lives, and, second, the role sport holds in denying athletes the right to access education (Henry, 2013). This concern instigated an array of research projects and reports on the state of dual career and dual career provisions within Europe. One key publication was the EU Guidelines on Dual Careers of Athletes (European Union Expert Group: Education and Training in Sport, 2012). The report investigated the dual career arrangements across 25 member states in Europe, presents 36 suggestions to improving provisions for athletes’ in their access of education and/or vocation, and illustrates these with examples of best practice. Through this report it becomes clear that the extent to which athletes’ rights are recognised and protected varies between nations (Aquilina & Henry, 2010).

To further the understanding of different national attitudes towards dual careers across Europe, Aquilina and Henry (2010) categorises the approaches to supporting athletes in higher education taken by each member state into four typologies: (a) state-centric system, where there exists a legal obligation on educational institutions to provide adapted opportunities for student-athletes (e.g., France, Spain, Poland and Portugal); (b) state as facilitator system where permissive legislation or regulations exist for acknowledging student-athletes' needs, but there is no legal requirement to act (e.g., Belgium (Flanders), Denmark, Estonia, Finland, Germany, Latvia, Lithuania and Sweden); (c) national sport federation as facilitator system, where the needs of the individuals are negotiated by the sporting bodies (largely funded by the state) with the educational institution (e.g., Greece and United Kingdom); (d) 'laisser-faire', where there are few or no formal structures and the individual is required to negotiate personal agreements (e.g., Austria, Ireland, Slovakia and Slovenia). This categorisation highlights the variety in approaches from firm to no formal structures and enables like-for-like comparisons of dual career provisions. However, the study only considered the national approaches to higher education dual career support. In fact, if we consider the UK's approach to the combination of sport and school, or sport and vocation, it would sit in the *laisser faire* category rather than *national sport federation as facilitator* category. The impact of the EU guidelines instigated further research projects to be commissioned by the EU, including a number of ERASMUS+ projects (e.g., Gold in Education and Elite Sport, Study on Minimum Quality Requirements for Dual Career Services, and Be a Winner in Elite Sport and Employment Before and After Athletic Retirement) which have focused on understanding dual career athletes' experiences of combining their sport with their academic, rather than vocational pursuits.

In summary, by outlining the overlap in development of sport and education/vocation within the UK context, it is clear that sport performers are required to combine their sporting ambitions with either education, a vocation, or vocational skills training at several periods over their athletic life span. Sports performers are often encouraged to focus all their effort on athletic development, neglecting their other life domains. However, each developmental stage and normative transition present the potential for a crisis transition, diminished athletic development, and the drop-out from sport or education/vocation. All the while, non-normative transitions, which the individual cannot specifically prepare for, present the same risk to athletic development. These points highlight the Faustian bargain which athletes must take, where an increased commitment to sport, although beneficial for athletic development, risks a foreclosed identity, inability to cope with adversity, financial instability, and poor

preparation for life-after-sport. To alleviate these risks, many athletes choose to supplement their athletic pursuits with further education, higher education and/or a vocation (i.e., a dual career). Hence, the consideration of dual careers through the entirety of the developmental stages of an athletic career is important for sport psychology and sport research to understand.

1.4. Definitions of Dual Career

By outlining the variety of opportunities to pursue sport with either a school, college, university education or a vocation that encapsulates the term dual career within the UK, it is clear that a definition of the term is required. Several definitions have been proposed in the research literature, two have been chosen here to illustrate issues with defining a dual career in sport. First, Corrado, Tessitore, Capranica, Rauter, and Topic (2012) defined dual career as "a combination of sport and education". Although this definition is simplistic and easy to comprehend, it fails to encapsulate the full spectrum of dual career experiences. As illustrated, it is understood that the combination of sport and education is critical for talented, youth athletes during the overlap between their compulsory education and the initiation stage of their sporting ambitions. It is also crucial for athletes of later specialization sports, who chose to pursue higher or further educational options alongside their sporting career. However, Corrado et al.'s (2012) definition does not include athletes who combine their sport with a vocation. A combination that is crucial for sub-elite or non-funded athletes, who are required to do so in order to financially sustain themselves and their sporting endeavours. Furthermore, some athletes choose to maintain contact with a non-sport career in preparation for their athletic retirement.

At the other end of the spectrum, the European Union published recommended policy actions in support of dual career and used the following definition:

> 'the requirement for athletes to successfully initiate, develop and finalize their athletic career as part of a lifelong career, in combination with the pursuit of education and/professional occupation as well as other domains' (European Union Expert Group: Education and Training in Sport, 2012)

This definition incorporates the combination of vocational endeavours as well as educational activities. The definition emphasises dual career as occurring across the lifespan of the individual and also recognizes the importance of a holistic perspective towards the individual. However, the definition uses the term athletes in the opening phrase of the definition and

places the initial emphasis on the individual's sporting career. In doing this, it is argued that the definition suggests that, in a dual career, sport is prioritized over educational or vocational activities or private life. A higher focus on sport is not always the experience of dual careers in practice. For example: non-funded, dual career athletes might work full-time while training and competing on evenings and weekends. It could be argued that the term *dual career athlete* also does this, since it includes the name *athlete* as opposed to *student* or *employee*.

To address these issues, this thesis proposes the following definition: A dual career is defined as the pursuit of sport alongside education or vocational endeavours. This definition retains simplicity yet remains broad enough to encapsulate a variety of dual career experiences. The definition includes both athletes in education and in a vocation, whist avoiding any assumption on the way individuals may prioritize these careers. It is argued that the terminology used in this research area, including the definitions, should recognize that individuals have more complex situations than the athlete population. Hence, a major aim of the thesis is to incorporate the multitude of experiences that can be understood and encapsulated by the term dual career in sport.

1.5. Purpose and Overview of the Thesis

The initial research interest of this thesis was centred around the experiences of talented or aspiring athletes who maintained educational pursuits. Yet, the practical experiences of dual career show that sport can be combined with an education or a vocation at all stages of an athletic career. Chapter 2 offers an outline of the methodological stance of critical realism that was taken throughout the thesis and its reference to the methods in each of the chapters. Primarily, the thesis aims to comprehensively consider the research findings which address the factors that facilitate positive experiences of managing a sporting career alongside an education or vocation. To achieve this, a systematic mixed-studies review (Chapter 3) was conducted. From the systematic review, it was clear that the dual career research field focused on dual career pursuits in compulsory and higher education settings, and that there was a distinct lack of theoretical knowledge which explains the differing experiences of a dual career. A grounded theory analysis was therefore conducted to address this theoretical gap (Chapter 4). The grounded theory extends the research understanding of dual career athletes as a heterogenous group with varying pathways and outcomes. The theory is presented in two sections: section 1 explains the contrasting experiences and outcomes of dual careers and section 2 postulates the role of identity and self-efficacy in the development of these experiences. To explore this empirically, a cluster analysis concludes

this thesis (Chapter 5). The final analysis contributes to the confirmation of the grounded theory findings. Finally, the research and practical impact of this thesis, in advancing the knowledge of dual career experiences across the lifespan, is discussed in Chapter 6.

Chapter Two:

Methodology

This chapter outlines the methodological approach taken by the researcher throughout this thesis. To address the thesis aim, to explore the multitude of experiences that occur over the lifespan of a dual career in sport, the researcher engages with multiple qualitative and quantitative methods and combines qualitive and quantitative results within a systematic review (chapter 3). The basis behind this decision is described in the following chapter through outlining the researcher's philosophical standpoint which tells us the basic assumptions that are held for reality and knowledge, in this case ontological realism and epistemological subjectivism. These assumptions sit within the research paradigm of critical realism and guide the research strategy and, therefore, the methods used for this thesis. Critical realism upholds that methods are tools of data collection that researchers can use in order to answer research questions, that different methods have different strengths and weakness, and that researchers should select the research method that is most appropriate for the research question. Hence, the multi- and mixed- methods approach for this thesis; The researcher selected a systematic review method that would provide the most comprehensive understanding of the research context (chapter 3), a qualitative grounded theory analysis to gain an in-depth understanding and to develop theoretical understandings (chapter 4), and a quantitative cluster analysis to examine aspects the developed theory (chapter 5).

2.1. Philosophical Standpoint

Understanding the philosophical standpoint, how it influences the phenomena of investigation, and the relationship of this phenomena to the researcher leads to a superior understanding of the social world (May, 2001). As Lincoln emphasizes:

> "[Paradigm assumptions] matter because they tell us something important about the researcher's standpoint. They tell us something about the researcher's proposed relationship to the other(s). They tell us something about what the researcher thinks counts as knowledge, and who can deliver the most valuable slice of this knowledge. They tell us how the researcher intends to take account of multiples and contradictory values she will encounter." (Lincoln, 2010, p. 7)

How the research process is conceived and constructed (methodology) is underpinned by assumptions made regarding the nature of the social world (ontology) and the nature of knowledge (epistemology). The teaching of research methods and methodology, within psychology and sport psychology, tends to focus on the paradigms of positivism and interpretivism, especially the dichotomy between these approaches. However, this

dichotomization did not fully reflect the personal understanding of the nature of social reality and knowledge acquisition experienced by the researcher.

According to the researcher, by understanding positivism, and its association with quantitative methods, and interpretivism, and its association with qualitative methods, as mutually exclusive diminishes the complexity of the social world that we live in. To expand, in embarking upon an undergraduate degree, I (the researcher) would have described myself as a scientist who favored quantitative methods and the search for an objective truth. However, as I advanced my understanding of psychology, particularly in recognizing the individual differences in experiencing phenomena, trauma, or events, I began to recognize the weaknesses of quantitative methods in reflecting these individual differences as more than simply outliers. However, the standpoint of interpretivism also did not fully reflect my understanding of the social world. In particular, the relativist position (that there are many different interpretations of the same phenomena and that all should be presented as equally valid) left me questioning: if all we can do if describe different interpretations (that are all equally valued), then what is the meaning of science? Furthermore, if everybody's interpretations are different then is it meaningful to try to communicate somebody else's interpretation? Are we able to understand somebody else experience?

These questions, that are unanswered by positivism and interpretivism, led to a search for alternative paradigms that would better reflect my (the researcher's) personal understanding of the social world; a paradigm that recognizes different historical and cultural interpretations but that retains a realist ontology. In searching for this I discovered critical realism, a paradigm that recognizes the complexities in the social world, and therefore develops layers of reality. In doing this the paradigm is able to justify and accept the historical and cultural differences of individual and societal interpretations but maintains an objective reality that we (as researchers) are striving to reach. To reflect this process of philosophical development of the researcher, the subsequent sections will outline the dichotomization of positivism and interpretivism, presents some of the criticism of these paradigms, and how critical realism addresses these criticisms.

2.1.1. Ontology. Ontology is considered to be an essential starting point for research, from which epistemological and methodological assumptions follow (Blaikie, 1993; Noonan, 2008). One's ontological position essentially derives from answering the question: what is the nature of social reality? This question addresses further queries of what a researcher understands to exist and what makes up social reality. Critically, an ontological position must

address whether social reality can exist externally to human beings or if it is a product of our interactions. Two predominant schools of thought arise from answering these questions: realism and relativism.

Realism is defined by Phillips (1987) as "the view that entities exist independently of being perceived, or independently of our theories about them" (p. 205). According to realism, an independent reality is defined as one that exists separately from human beings and our interpretation. A realist reality is considered to be singular, objective, and governed by universal laws or mechanisms. This reality does not change over time or between contexts (Guba & Lincoln, 1994). This understanding of the world encourages the researcher to seek objective truths through empirical, unbiased investigation. Alternatively, relativism stipulates that reality is not independent of human understanding and can only be known through the reflection of human thoughts and ideas. Relativist researchers comprehend there to be multiple understandings of reality as interpreted by human beings and each of these understandings are equally valuable (Sparkes, 1992). Hence, social reality is shaped (or constructed) by human beings (Blaikie, 2007). This understanding of the world encourages researchers to embrace the fluid nature of our investigations and to recognize that there can be no knowledge that is free from interpretation.

The realist/relativist comparison is elegantly illustrated by Russel (2001) through the simple analogy of observing a table. From a realist perspective, a person is able to see a table in front of them. Any other person (assuming they have no impairments to suggest otherwise) who comes into the same room will see the same table. The same table as the one they would feel should they attempt to touch it. In this perspective, the experience of the table is the same for both people. However, if we consider looking at the table in more detail, both people would be able to see different shades of colour present on the table depending on where they were stood in the room and the source of light. In fact, no two people will see the exact same table, in the exact same shade of colour, at the exact same time, because no two people can stand in the exact same position in space, at the exact same time. This second understanding of the table's appearance would be a relativist's perspective. In this perspective, the experience of the table is very different for both people and would continue to be different for anyone experiencing the table in the future.

While realism and relativism sit at the two extreme ends of the ontological spectrum, there are many variations that exist between them. One ontological position that is important to consider for critical realism and this thesis is depth realism (see figure 2). This perspective understands reality as existing across three domains: the empirical, which is concerned with

what can be experienced; the real, which is concerned with the mechanisms and structures that produce the empirical events (whether they are observable or not); and the actual, which are the consequences of the real mechanisms or structures and can manifest themselves empirically (Blaikie, 2007; Danermark, Ekstrom, & Jakobsen, 2005). Developing our understanding of the real domain is considered to be the purpose of scientific enquiry according to critical realists (Blaikie, 2007). Depth realism, like a realist understanding of reality, postulates that there is an external world that is independent of our understanding of it, but depth realism recognizes that human beings are not always able to access this external reality, and therefore, reality cannot wholly be explained through direct empirical observation (Sayer, 2000).

To explain depth realism further, take our understanding of the table. According to the depth realism perspective, there exists a *real* table that is external to our understanding of it and does not change over time or context. This real table produces *actual* structures and mechanisms (e.g., reflects light in a certain way, feels hard to the touch), some of which are knowable to us as empirical events and some are not. However, our understanding of the table, based on *empirical* observations of real structures and mechanisms, has evolved and changed over time (e.g., developed an understanding of gravity, sound, light refraction ect.). In the future our empirical understanding of the table may still change, based on further observations. But, the *real* table does not. Hence, this thesis recognizes that, our understandings may change based on further observations.

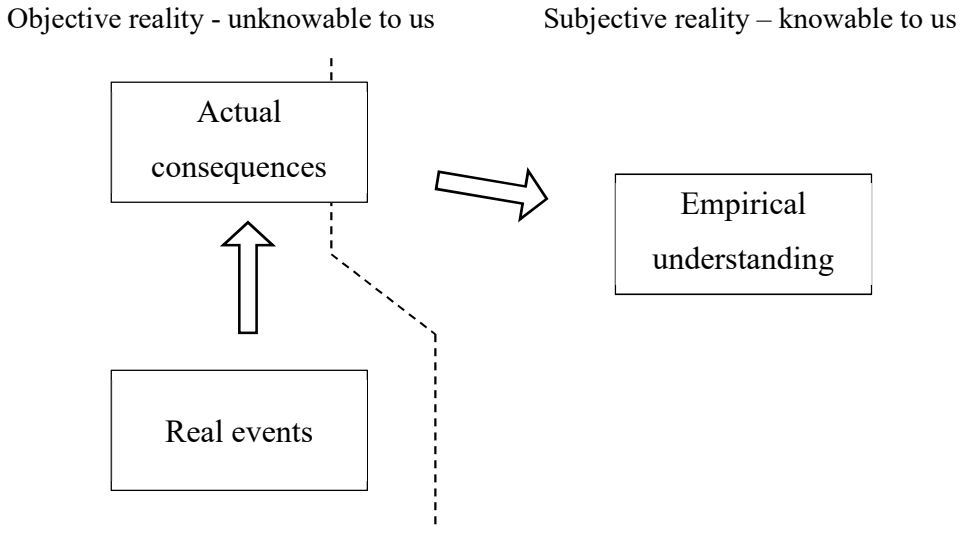


Figure 2. Critical realism's stratified ontology, depth realism (adapted from Downward & Mearman, 2007)

2.1.2. Epistemology. Once the researcher has explored their understanding of the nature of reality, the question which immediately follows is an epistemological consideration: how can we *know* this social reality? (Guba & Lincoln, 1994). Establishing how we come to know an object or phenomena and how that knowledge is communicated is a fundamental task for researchers. An epistemological position should explain what is considered as knowledge, how we are able to know, whether knowledge can be acquired or experienced, and what is currently known. These questions also allow researchers to debate what is considered to be adequate or valid knowledge (Blaikie, 1993).

The two extremes of epistemological positioning are widely recognized as objectivism and subjectivism. An objectivist epistemology understands knowledge as a reflection of an objective truth, which exists independently of interpretation and outside of historic, social, or cultural influence. The role of a researcher in scientific enquiry according to objectivism is to impartially access this truth through empirical investigation. The researcher and the researched are separate entities and the meaningful understanding of the researched lies with the researched itself, not with the researcher or their interpretation. This point is expanded by Crotty (1998, p. 8):

> "A tree in the forest is a tree, regardless of whether anyone is aware of its existence. When human beings recognize it as a tree, they are simply discovering a meaning that has been lying in wait for them all along."

If, like this example, the researched entity is a tree then an objectivist position would maintain that the tree exists and is understood independently of the researcher. The knowledge obtained from observing this tree is absolute along with being value, interpretation, and context free. Yet, for an objectivist, only phenomena or events that can be directly observed or measured can be accepted as knowledge (Hayes, 2000). Generally, this epistemology is associated with (but not limited to) a realist ontology (further discussed in the *ontology* subsection).

Subjectivism, on the other hand, understands knowledge to be constructed by human beings. According to this position, knowledge is not discovered, it is the product of human beings attempting to make sense of the world around them. This knowledge has no reference to an external reality. Additionally, multiple understandings or truths exist regarding one object and one person's understanding of an object or phenomena is no more valuable than another person's understanding. The object under investigation exists separately from the meaning that is taken by the researcher (Blaikie, 2007). To take the example of observing a tree from above: one observer of a tree could describe it as a climbing frame. Whereas,

another observer could describe the tree as a shelter. Neither observer is more or less correct than the other (Crotty, 1998). Therefore, the aim of scientific enquiry, according to subjectivism, is to understand phenomena from the perspective of society or an individual. Knowledge constructed in this way is dependent on experience and embraces context. The subjectivist position is largely associated with (but not limited to) a relativist ontology (further discussed in the *ontology* subsection).

Similar to the ontology debate, the dichotomization of these two epistemological positions would be a simplification of the wide variety of views that exist (Blaikie, 2007). One of these alternative approaches, which is relevant to this thesis, is a neo-realist perspective. This perspective is largely associated with depth realism (further discussed in the *ontology* subsection), which establishes a stratified reality of real, actual, and empirical events. Depth realism establishes that a real external reality exists with actual consequences for empirical events, but that our understanding of these events manifest over time and context. Hence, epistemological subjectivism is maintained whereby knowledge about social reality is historically, socially, and culturally dependent. Neo-realism, on the other hand, accepts that there is an external reality, but does not uphold that we are always able to directly access or know that reality (Sayer, 2000). To use the example of the earth: historically, scientists held the knowledge that the earth was flat. This knowledge has now manifested over time to the understanding that the earth is spherical. Although, this exists as our truth now it is still possible that, upon further empirical observations, our knowledge of the earth could change. In this way, scientific knowledge is always formulated in terms of fallible, conceptual frameworks (Clark, 2008). The aim of scientific enquiry for neo-realism is not only to observe empirical events, it is also to identify and understand the real structures or mechanisms that produce the experiences we observe. Hence the aim of this thesis, is to identify and understand the mechanism that produce the multitude of dual career experiences in sport.

2.2. Research Paradigms and Research Strategies

A research paradigm can be defined as “the set of common beliefs and agreements shared between scientists about how problems should be understood and addressed” (Kuhn, 1962). Therefore, the research paradigm in which an investigation is situated within can allude to important characteristics for consideration such as: ontology, epistemology, and methods (Guba, 1990). This section outlines the two most common research paradigms in sports psychology (positivism and interpretivism). The discussion regarding the strengths and

weaknesses of these paradigms is by no means a comprehensive debate but focuses on the strengths and weaknesses which resonate most strongly with the researcher and this thesis. The positivist and interpretivist positions are then compared to the research paradigm adopted for the current thesis, critical realism. Finally, this section will aim to outline how critical realism influenced the methods decision-making process of this thesis, the approach of multi- and mixed-methods, and the impact this has on a major theme within the thesis, identity.

2.2.1. Positivist standpoint. The positivist research position links the ontology of realism with an epistemology of objectivism (discussed in detail in *Philosophical Standpoint*). According to this position, the role of the researcher is to discover universal truths about social reality or the universal laws that govern our reality, through the direct observation of events, objects, and human behaviors via the application of systematic techniques (Hayes, 2000). This form of research, also known as a nomothetic research approach, generally aims to conduct precise measurements and control extraneous variables, in order to draw general conclusions. From this, researchers can then make predictions about the most likely human response to a given situation (Gratton & Jones, 2010). The nomothetic approach involves the use of group averages and the reduction of variation or individual idiosyncrasies. As a consequence of this understanding of the world, positivist researchers in psychology tend to attempt to emulate the largely quantitative research methods of traditional sciences (Gratton & Jones, 2010). Although the systematic approach of positivism is admirable, the reduction of human behavior to generalizable laws and predicting actions is problematic in a complex and unstable social world. Furthermore, the positivist standpoint ignores intangible concepts which drive human behavior (e.g., emotions or free will).

The positivist paradigm tends to adopt a deductive research strategy, which takes a selection of general propositions and, through logical reasoning, develops a statement regarding a specific situation. An example of deductive reasoning is as follows:

All athletes have a VO2 max score of above 60. Simon is an athlete;
therefore, Simon must have a VO2 max score of above 60.

In deductive reasoning the validity of the conclusions is reliant upon the validity of the general premises. In this example, although generally true, there could be exceptions to the rule ‘all athletes have a VO2 max score of above 60’ or an exception to the rule ‘Simon is an athlete’ (i.e., depending on your definition of an athlete, Simon might classify as an athlete or not). However, as illustrated in this example, the premises could be misleading, and the conclusion could be rejected

based on further observations of athletes or of Simon. Science has widely used the deductive method by developing theories or hypotheses and testing the premises which the theories logically rely on – also known as the hypothetico-deductive method (Blaikie, 2007).

2.2.2. Interpretivist standpoint. An alternative to the positivist paradigm is the interpretivist position which combines a relativist ontology with a subjectivist epistemology (discussed in detail in *Philosophical Standpoint*). The subjective approach embraces the influence of context, culture, and history in human behavior. The role of the researcher is to gain an in-depth understanding of individual perceptions and experiences (Gratton & Jones, 2010). Furthermore, by maintaining a relativist ontology, each individual will experience the same phenomena in a different way. This approach accentuates the individual differences and is also known as the ideographic approach (Hayes, 2000). This approach lends to qualitative research methods which maintain small sample sizes and focus on detail. Despite the strengths of these methods in embracing individuality and context, the logical conclusion of relativism poses the following problematic questions: can we meaningfully share or communicate any experience if everyone's experience is different? Can a researcher ever wholly understand another person's cultural or historic context if they have not experienced it themselves? What is the purpose of research if we cannot do these things?

Interpretivist research tends to adopt an inductive approach which occurs when specific observations or experiences are reasoned to general conclusions. An example of this would be:

> Athlete A trains for 30 hours per week. Athlete B trains for 33 hours per week. Athlete C trains for 39 hours per week. All athletes train for 30 hours or more per week.

The problem with this form of reasoning is the involvement of an inference from a limited set of observations. In the example above, not all athletes have been observed, only a sample. Since the observations support each other, a general conclusion has been made regarding the wider population of athletes. Although it is probable (based on these observations), that all athletes follow the same pattern, it could still be possible that some athletes train for less than 30 hours. However, an inductive reasoning strategy such as this does not recognize this. As a consequence of this limitation, any knowledge produced through an inductive research strategy is not certain, it is only likely (Wuisman, 2005).

2.2.3. Critical realist standpoint. Critical realism (see works such as: Bhaskar, 1978, 1997; Downwood, 2005; and Sayer, 1992), is often recognized as a middle ground between the positivism and interpretivism paradigms. The critical realism research philosophy, like positivism, maintains a realist ontology, yet upholds that we are not able to fully apprehend this reality (depth realism; see *ontology* subsection). Instead, we produce fluid, socially, and contextually dependent knowledge (Bhaskar, 1975); a view that is more closely associated with epistemological subjectivism than with objectivism (neo-realism; see *epistemology* subsection). The role of the researcher in psychology, according to critical realism, is to not only identify causal mechanisms of human behavior, but to understand the context and conditions in which these mechanisms are activated (Sayer, 2000). This position is taken whilst accepting that there can be more than one way to make sense of the phenomena and that theories of mechanisms can change depending on time, context, and culture. The critical realist perspective would reject the positivist stance that human behavior can be predicted, because of the belief that human agency plays a role in determining human behavior (Houston, 2001). In this thesis, the critical realist position is considered to be a more advantageous explanation of the nuances of social reality. The paradigm is able to embrace idiosyncrasy whilst exploring the mechanisms and structures that give rise to social phenomena (Danermark et al., 2005).

Critical realism has been recognized as using abductive or retroductive research strategies (Blaikie, 2007). Abduction entails the inference of a general premise as the most likely explanation of a series of observations. An example of abductive reasoning is as follows:

> An athlete performs poorly at a recent competition. Their times in training have been getting worse and they seem distant from the team during training sessions.
>
> A logical conclusion to these observations is that the athlete isn't committed to becoming an athlete anymore. Alternatively, the athlete could be having difficulty coping with a family matter at home or could be experiencing over-training.

Abductive reasoning produces several possible explanations for the observation. The research strategy cannot be certain which is the most valuable conclusion but would aim to eliminate some explanations as not possible by further observations (e.g., observing that the person in question has a happy, supportive home life). If further observations are not possible, abductive reasoning tends to follow the rule that the simplest explanation is the most likely

(i.e., Occam's Razor). Abductive reasoning is more typical of social research, where the observations can be complex or incomplete.

Alternatively, through retroduction (Downward & Mearman, 2007), the researcher proposes an explanation or mechanism that is capable of producing or accounting for an event or phenomena (Sayer, 1992). For example:

> Amy has never achieved her best results at major competitions; perhaps she is not capable of competing at that level. Amy has shown she can achieve the same times as athletes in major competition; perhaps she has confidence issues that affect her performance at major competitions.

Similar to abductive reasoning, the explanation of the event is not guaranteed. It is simply a probable mechanism through which the event was possible. Further observations would be required to select the explanation that is most satisfying.

The combination of quantitative and qualitative methods is philosophically accepted under critical realism (McEvoy & Richards, 2006). The purpose of research for critical realists is understanding through retroductive inferences, which requires a detailed and context-specific understanding of a phenomenon and the underlying mechanism that may allow the phenomenon to exist (discussed in detail in *Critical realist research strategy*). Therefore, using a diverse set of methods to gain the most complete understanding of the phenomena possible is central to the critical realist paradigm.

2.3. Rational for Multi- and Mixed-Methods Approach of this Thesis

The combination of qualitative and quantitative methods has been fervently debated within the social and behavioral sciences (Sechrest & Sidani, 1995). Two main standpoints can be seen as arising from these debates: purist and pragmatist (McEnvoy & Richards, 2006; Onwuegbuzie & Leech, 2007; Rossman & Wilson, 1985). Many purist methodologists will argue for the incompatibility of alternative methods (Guba & Lincoln, 1989; Leininger, 1994). This conclusion is based on the assumption that: on the one hand, quantitative methods are assumed to derive from a positivist ontology (realism), which adopts the belief in a single, objective reality (Lincoln & Guba, 1985). Alternatively, qualitative methods derive from a largely interpretivist ontology (relativism), which adopts the belief in a multiple and relative reality. Therefore, the two contrasting ontological beliefs cannot be combined.

In contrast to this, the pragmatic view (similarly to the critical realist view) moderates the role of ontology in underpinning methods and defines methods simply as tools of data collection that any researcher can use and, therefore, the researcher should use the most

appropriate tool to answer the research question. They would also argue that quantitative methods are not exclusively positivist neither are qualitative techniques exclusively interpretivist. Instead, the strengths and weaknesses of both methods can be complimentary in facilitating a complete understanding of the research phenomena (Tashakkori & Teddlie, 1998; Johnson & Onwuegbuzie, 2004). However, there are several practical difficulties which derive from attempting to combine highly contextualized interpretative findings with quantitative data that aims to establish empirical generalizations (Bryman, 2007). Moreover, pragmatism has received wide criticism for producing naïve, uninformed research that simply ignores paradigm positions (Lincoln, 2010).

In response to perceived flaws in both the purist and pragmatist arguments, a third approach was identified, the anti-conflationist approach, which is adopted by critical realism (Bryman, 2007; Hammersley, 1992; Roberts, 2002). This approach would agree that there are differences in qualitative and quantitative enquiry but encourages the recognition of their similarities, such as both methods fundamentally aim to increase human understanding of a research question or phenomena (Dzurec and Abraham, 1993). Additionally, many methods use an amalgamation of qualitative and quantitative aspects, for example: questionnaire development begins with a qualitative element and content analysis uses counts of verbal data. The anti-conflationist approach, therefore, argues that the same methods can be used by two researchers that claim different ontological or epistemological positions. For example, positivist, post-positivist, and constructivist research paradigms have all used grounded theory methods. The anti-conflationist view is considered to host a particular strength over pragmatism as it retains focus and consideration of ontological and epistemological assumptions. Following the logic of justification, qualitative and quantitative methods are only mixed when a paradigmatic argument can be attained for which the techniques, procedures, and strategies are based on (Smith, 1993). The anti-conflationist approach has been recognized as being largely underpinned by a critical realism philosophy (McEvoy & Richards, 2006).

In summary, there are a number of assumptions that critical realism holds for developing a research strategy and the use of different methods: (a) methods are tools of data collection for researchers to engage with to answer research questions; (b) methods are not associated with specific research paradigms, any method can be adapted to be used by any research paradigm; (c) that different methods have strengths in answering particular types of research question over others (i.e., qualitative methods better answer questions of ‘why’ and ‘when’, whereas quantitative methods better answer questions of ‘what’ and ‘how much’)

and; (d) the researcher should pair their research question with the best method to answer it. This logic encourages the multi- and mixed- method approach used in this thesis. The use of multiple methods when researching a particular social phenomenon has also been termed method triangulation (Gratton & Jones, 2010). The advantage of method triangulation is the increased confidence or validity in your findings that comes with confirming the results by using more than one method. Methodological triangulation enables the researcher to balance the strengths and weaknesses of either method, and thus, provide a more robust source of data to draw inferences from (Sparkes, 2015). Quantitative and qualitative methods can be employed to reveal different facets of the same reality and, also, to examine reality from different perspectives enabling the researcher to gain a more complete understanding of the phenomena (Risjord, Moloney, & Dunbar, 2001).

2.4. Critical Realism Implications for Studying Identity

Identity is presented as a major theme for all three data collection chapters (chapter three, four, and five). The researcher, therefore, felt it was important to consider the theoretical understanding of identity according to the critical realist standpoint in order to clarify the framework in which identity is considered throughout this thesis. In many ways, the study of identity is a contested topic. Yet, fundamentally, it is considered as a reflection of the self in response to the question: Who am I? (Coupland & Brown, 2012). Differences in the understanding of identity largely derive from the ontological views of researchers (Marks & O'Mahoney, 2014; Ronkainen, Kavoura, & Ryba, 2016), which range from social constructionism (e.g., Foucault, 1993; Jackson & Hogg, 2010), through interpretative views or narrative views (e.g., Erikson, 1950) and more post-positivist or existential views of social identity theory (e.g., Stets & Burke, 2000; Tajfel, 2010).

Social constructionism rejects realist ontologies and stipulates that identity is a discourse that is fluid, multi-dimensional form that is constructed by society through language. Researchers with this view of reality tend to focus on the power relationships that construct and maintain social categories. This view implies that all accounts of identity are true, and therefore, any measures of validity are futile. However, if identity is reduced to discourse then it remains a descriptive concept. Therefore, it is difficult for researchers to explain how identity is created, altered, or destroyed. For example, how does one resist an identity discourse constructed by society if this is the only way to construct identities? Social constructionism has been criticised for resulting in an 'invisible' self that has little explanatory value (Marks & O'Mahoney, 2014). Interpretivist's views of identity have often focused on

Erikson's (1950) view of identity as a series of developmental stages and focus on the holistic understanding of identity development (Ronkainen et al., 2016). Narrative understandings of identity are also popular, which view identity as a social, evolving story of the self (Sparkes & Smith, 2009). A notable example of this in sport psychology, is the work of Carless and Douglas (2013) who developed ideas of the performance narrative in elite sport. Social identity theory, on the other hand, would define identity as the degree to which a person classifies themselves with a social group. For example, a person holds the identity of an athlete as they consider themselves within this social group. This theory has been highly criticised for overly focusing on the social properties of identity and ignoring personal identity (i.e., the unique information a person holds for themselves). The theory doesn't acknowledge the idiosyncrasies of people within the same group (e.g., athletes, even within the same team, hold different personal identities).

Critical realism, once again, is considered to take a middle ground between these positions. The research paradigm upholds a stratified ontology for investigating identity and stipulates that, while identity is constructed, it is dependent on social structures (Marks & O'Mahoney, 2014). Real generative mechanisms in society can produce several possible empirical behaviors over which the individual has agency to choose. For example, social situations produce several options and the individual is able to select the option that best reflects their personal identity. This understanding intrinsically links social and personal identity (Archer, 2000). Through this understanding, researchers can use empirical, subjective descriptions, such as interviews, to describe the construction of identity narratives, but also to reveal causal mechanisms about why identity exists and how it is changed.

2.5. Summary

In this chapter the researcher has outlined that the focus of this thesis, according to the critical realism paradigm, is not to discover universal truths about dual careers that transcend context, culture, and history or to predict that an event or phenomena will occur (positivism / deduction), nor is the purpose to solely understand and interpret different experiences of dual career and draw general conclusions (interpretivism / induction). The purpose is to ascertain and to elaborate perceptions of dual career experiences, and explore the underlying mechanisms that are most likely to lead to these experiences (critical realism / abduction and retroduction). To achieve this purpose, the current thesis, first, conducted a systematic review to better understand the outcomes and experiences of a dual career. Second, a grounded theory was conducted to address gaps in the understanding of dual career athlete experiences

and develop a possible mechanism that produces these experiences. Finally, the thesis then seek further empirical evidence for this mechanism through a cluster analysis.

As a consequence of this approach, the thesis engages with a variety of qualitative, quantitative, and mixed-methods research techniques. The methods were used logically to address the particular research question proposed by each of the three chapters. The research section of this thesis begins with the aim to clarify the knowledge available on the impact DC has on factors such as, sporting performance, academic performance and well-being. To address this aim, a comprehensive, systematic exploration of the current knowledge that is available on the dual career outcomes, via a mixed-method systematic review was conducted. The available literature uses both qualitative and quantitative methods in the area of dual career, therefore, it is crucial for the systematic review to consider and synthesize all methods. The systematic review highlights several gaps in our understanding of the research area. In particular, the literature lacks a theoretical understanding of the manifestation of positive and negative dual career experiences and the impact these have on the individual's development over their athletic lifespan. A grounded theory method is then used to address this gap. The researcher selected Charmaz's constructivist variation of grounded theory as it is consistent with a neo-realist epistemology, where meaning is constructed through social interaction. Finally, the underlying mechanism of identity, which was recognized as an influential factor in the developed theory, is investigated in a quantitative cluster analysis. The paradigm assumptions were always considered when using traditionally conflicting methods, according to the anti-conflationist approach. Hence, in an aim to understand a complete picture of the phenomena under consideration, this thesis will undertake a multi- and mixed-methods approach to addressing the multitude of dual career experiences in sport.

Chapter Three:

The factors that facilitate experiences of dual careers in sport: A mixed-studies review.

The thesis aims to identify the factors that facilitate positive experiences of managing a sporting career alongside an education or vocation. To achieve this, chapter 3 aims to comprehensively review the research knowledge of the factors that impact the experience of a dual career.

3.1. Introduction

Achieving success as an elite athlete requires years of sacrifice and commitment to deliberate practice (Alfermann & Stambulova, 2007; Côté et al., 2007; Wylleman & Lavallee, 2004). In fact, sport performers and coaches often extend this performance narrative to the view that sporting excellence requires sacrifice of all areas of life other than sport (Carless & Douglas, 2013; Warriner & Lavallee, 2008). However, in practice, a sporting career is highly competitive, short in lifespan, financially unstable, and at risk of ending abruptly due to injury (Van Tuyckom & Jöreskog, 2012; Carless & Douglas, 2013). These realities of sport mean that an exclusive commitment to sport and negligence of other areas of life, while it could result in successful elite sport performance, presents several risks for the individual. For example, research shows that the development of a premature and exclusive sporting identity, particularly when individuals do not explore alternative identities (i.e., a foreclosed identity), has negative consequences for the individual's ability to cope with adversity (Brewer, Van Raalte, & Petitpas, 2000; Lally, 2007; Murphy et al., 1996; Park et a., 2013; Petitpas & France, 2010; Stambulova, Franck, & Weibull, 2011). Adversities that have been the focus of research include, coping with injury and/or the end of one's sporting career (Alfermann & Stambulova, 2007; Grove, Lavellee, & Gordon, 1997; Horton & Mack, 2000; Kleiber & Brock, 1992). To expand, sport performers with a foreclosed athletic identity define their self (and their self-worth) according to their sporting activities and achievements, their support network is exclusively from the sporting world, and they have not considered a career outside of sport. Hence, they experience difficulties coping with the transition out of sport due to a loss of their identity and support network, and a lack of preparation for a post-sport career (Knights et al., 2016). Research suggests that one way to mitigate these risks is by maintaining activities outside of sport, such as an education and/or a vocation (e.g., Aquilina & Henry, 2010; Brown et al., 2015; Haley & Saghafi, 2012; Lally & Kerr, 2005).

Through engaging with activities outside of sport, individuals develop a more diverse sense of self and alternative identities to their athletic one. These identities can then be relied upon in periods of sporting adversity. Individuals with a more diverse sense of self are also more likely to have a support network outside of sport and have made steps to prepare for a

career after sport. Hence, they are better able to cope with the transition out of sport (Lally, 2007; Knights et al., 2016; Taylor, Ogilvie, & Lavallee, 2005). It must be noted, however, that the pursuit of multiple careers (defined as a dual career) is not without challenge. Both an athletic career and an educational/vocational career can be time consuming, inflexible, physically demanding, and psychologically demanding (Jobling & Boag, 2003). Furthermore, the current research presents conflicting experiences of dual career in sport. While, some reports show a positive experience of combining sport and an education/vocation (e.g., Pink et al., 2015; Pink, Lonie, & Saunders, 2018; Ryba et al., 2015). Other research shows the incompatibility of maintaining two careers through reporting the negative experiences (e.g., Cosh & Tully, 2014; Singer 2008; Tekavc et al., 2015). It is, therefore, important for sports psychologists and researchers to further understand the factors that facilitate positive experiences of managing a sporting career alongside an education or vocation.

3.1.1. Dual career context. As previously outlined in the thesis introduction, the overlap between sporting development and educational/vocational development means that a dual career is likely to commence during compulsory education and (with the exception of professional sports performers) extends the entire athletic lifespan of the individual. At the turn of the century, the increased professionalization of sport and the increased demands placed on athletes (particularly young athletes), that result in them facing a dichotomy between sport and educational or vocational activities, became a growing concern for both research and practice (Henry, 2013). Since then, the European Union (EU) has commissioned several reports and research projects that have investigated the impact of sport on educational development for athletes (e.g., European Commission Directorate-General Education & Culture, 2004; European Commission Directorate-General Education & Culture, 2007; European Commission Directorate-General Education & Culture, 2008; European Parliament Directorate-General for Research. 2003; European Parliament's Committee on Culture and Education, 2010; European Union Expert Group: Education and Training in Sport, 2012). These reports present two main concerns surrounding the topic of dual career: first, the integration of athletes into the labour market upon athletic retirement, and second, the rights of athletes to access education and vocational training (Henry, 2013).

A UK report, entitled Duty of Care in Sport, supported the view that enabling athletes to maintain an education or vocation, through a dual career is an issue of athlete welfare (Grey-Thompson & Department for Digital, Culture, Media & Sport, 2017). The documents recognise dual career, not only as an ideal situation that individuals could benefit from but, as

a legal right for athletes. The EU guidelines on dual careers of athletes were developed to promote good practice in supporting multiple career management (European Union Expert Group: Education and Training in Sport, 2012). While the EU has no jurisdiction to act in member states, the 35 guidelines encourage the reasonable adjustment of programmes to support multiple careers in sport and were largely directed towards dual career programmes, educational institutions, and sporting organisations that support dual career athletes (e.g., Talented Athlete Scholarship Scheme' (TASS), launched in the UK in 2004; the International Olympic Committee (IOC)'s athlete career programme launched in 2005; Loughborough University's Scholarship programme; and English Institute of Sport's Performance Lifestyle programme).

3.1.2. Dual career in research. Dual career research initiated almost exclusively in northern America and focuses on the American collegiate scholarship system (e.g., Bimper, 2014; Brown, Glastetter-Fender, & Shelton, 2000; Denny & Steiner, 2009; Hansen & Sackett, 1993; Houle and Kluck, 2015; Killeya-Jones, 2005; Kleiber and Brock, 1992; McAllister, Motamedi, Hame, Shapiro, & Dorey, 2001; Melendez, 2009; Murphy, et al., 1996; Perna, Ahlgren, & Zaichkowsky, 1999; Steiner, Denny, & Stemmle, 2010; Storch, Storch, Killiany, & Roberti, 2005; Sturm, Feltx, & Gilso, 2011; Tyrance, Harris, & Post, 2013). This research is largely quantitative in nature and has two main focuses: (a) identifying personal characteristics of student-athletes, such as: athletic identity, student identity, career maturity, career planning, identity foreclosure, or coping styles; (b) identifying outcomes of combining a college degree with a high-level sport scholarship, such as: happiness, wellbeing, psychological adjustment, or academic performance. Although this research allows a cross-sectional, snap-shot understanding of dual career in sport and the factors that might impact their experience, only a handful of this research focused on the experience of the student-athlete (e.g., Bimper, Harrison, & Clark, 2013; Cooper & Hall, 2016; Singer, 2008). Moreover, the research rarely uses the same variables or measures to compare athletes. As a result, the research area is disjointed and lacks clarity in moving forward with promoting positive dual career experiences.

An alternative body of research stems predominantly from a special issue on dual career development and transitions published in The Psychology of Sport and Exercise journal (Stambulova & Wylleman, 2015), which largely focuses on qualitative research and the perceptions or experiences of dual career athletes. This special issue includes a spread of research, mainly, based in the European but also explores the worldwide contexts. Through

this in-depth reporting of dual career experiences, the researcher is able to understand the barriers to managing a dual career from the individual's point of view. Understanding the individual's point of view is essential for researchers in developing interventions, schemes, or guidelines for the research area that will function in practice. Therefore, the quantitative literature is largely disjointed and American-focused while the European research is qualitatively focused. The synthesising of these qualitative and quantitative findings, via a systematic review, has the potential to provide a more comprehensive understanding of the research phenomena and initiate the development of evidence-based practice in supporting the combination of sport and education or vocation.

Two systematic reviews have previously been conducted within this research area (Guidotti, Cortis, & Capranica, 2015; Li & Sum, 2017). Guidotti et al., (2015) reviewed 49 papers (43 articles, 2 books, 3 book chapters and 1 report) published in Europe between 2007 and 2014. The review categorized studies based on four dimensions: micro- (individual), meso- (interpersonal), macro- (sport and education environments), and global (policies). Yet, it was noted that the primary review papers largely focused on micro-level phenomena. Several major DC themes arose from the review as factors that impact dual career experiences, including psychological aspects, athletes' life and transitions, evaluation of DC programmes, issues and challenges, political and organizational aspects of sport and education environments, and athletic development practices. While this review presents important findings on factors that impact dual career experiences, it is limited in the impact of its findings due to excluding the body of research published worldwide, in particular the large body of quantitative literature that focuses on American scholarship system. Additionally, the research was published before the release of a special issue on dual career development and transitions (Stambulova & Wylleman, 2015) that includes 13 articles, 8 of which are relevant to the European context. Moreover Stambulova and Wylleman, (2019) also recently published a critical review of the European literature that highlights the research trends across Europe (e.g., a focus on cultural praxis and a holistic lifespan approach) and suggests a number of gaps in the literature for future research to address (e.g., a greater focus on a dual career in work and a need to focus on dual career environments).

Li and Sum's (2017) study advances on the previous review by the inclusions of worldwide research and research published between 2014 and 2016. The findings present a new understanding of the transition into a dual career by separating the process further into four stages: becoming the athlete with a dual career, negotiating a new lifestyle, dealing with the daily routine, attaining balance / denying to continue. Furthermore, the review categorises

factors that influence the experience of dual career into individual (Physical and Psychological conditions), interpersonal (social agents and coping strategies), and external factors (opportunity, prejudice, barriers, unfavourable conditions, financial and support). Although Li and Sum's (2017) review recognises the different pathways a dual career athlete might take and the challenges or opportunities that changed their trajectories, these different pathways are not outlined in their model. However, Li and Sum's review excludes research based on methodology and, therefore, only includes 9 published journal articles that use qualitative methods.

While both these systematic reviews and critical reviews provide an overview of the European and qualitative dual career literature, they are limited by excluding the literature from worldwide contexts and from quantitative data. By further reviewing the dual career literature from a variety of contexts and methodological positions, the research can better understand the factors that facilitate the positive experiences of managing a sporting career alongside an education or vocation. By understanding these factors across various contexts, researchers are able to identify particular areas of practice that promote a positive dual career experience and, therefore, provide suggestions for optimising the support of dual careers in practice. Taking this into consideration, the aim of this chapter is to conduct a systematic review that comprehensively considers the research findings, irrespective of methodology and geographical location, that address the research and practical need to further understand the factors that facilitate the positive experiences of managing a sporting career alongside an education or vocation.

3.2. Methods

Systematic reviews are considered to be the gold standard research method to collect, critique, and summarize primary research in addressing a particular research question (Liberati et al., 2009; Munn, Stern, Aromataris, Lockwood, & Jordan, 2018). While other methods to do this do exist (e.g., a literature review, critical review, or narrative review) a systematic review provides increased authenticity to its findings due to the robust, reproducible, and structured method of synthesising existing research. Due to this method, systematic reviews provide increased confidence that all the relevant, available, and quality evidence has been taken into consideration (Collins & Fauser, 2005). The benefit of conducting a systematic review is three-fold: (a) to enable knowledge to be collected in a manageable way and, therefore, increase access to research findings, (b) confirmation of multiple research findings on particular points of interest, and (c) to identify gaps in the

research knowledge and, therefore, areas of future research directions (Moher, Liberati, Tetzlaff, Altman, & Prisma group, 2009). Traditionally, systematic reviews have focused on synthesising findings of randomised control trials to determine the effectiveness of interventions (see The Cochrane Collaboration, 2011). However, more recently, there has been a trend in the development of more diverse systematic review methods and more diversity in the research questions they address (Sandelowski, Voils, Leeman, & Crandell, 2012).

Method-specific systematic reviews (e.g., meta-analysis, meta-synthesis), while being the traditional methods to conduct systematic reviews, are unable to cope with diverse research methods and diverse research questions (e.g., Boaz et al., 2006; Dixon-Woods, Agarwal, Jones, Young, & Sutton, 2005; Harden & Thomas, 2005; Hawker, Payne, Kerr, Hardey, & Powell, 2002; Lemmer, Grellier, & Steven, 1999; Pearson & Salmond, 2015; Pope, Mays, & Popay, 2007). For purist psychologists, the ideological and epistemological differences in qualitative and quantitative research are too great to comprehend combining their results (Sparkes, 2015). However, Sandelowski et al., (2012) argues that method-specific review procedures divert attention from understanding the nature and content of the research phenomena and fail to recognise that methodologically diverse primary studies may yield thematically similar findings. In this view, qualitative research can be viewed as complimenting quantitative methods by accessing features of human experience that is unreachable with quantitative methods. Qualitative research can access participant-centred, culturally-sensitive findings and, therefore, enhance the practical significance of quantitative research findings (Sandelowski, Voils, & Barroso, 2006). According to the critical realism paradigm, which this thesis subscribes to (see *Methodology* section), methods are tools to be used by researchers and that different methods have different strengths. To illustrate, qualitative research aims to understand the subjective human experience but cannot provide empirical evidence to support the effectiveness of one approach over another. Whereas, quantitative methods provide statistical and reproduceable evidence but often ignore participant perspective and diverse contexts. Therefore, by triangulating the results of qualitative and quantitative data, a mixed-studies review has the potential to form a more diverse and comprehensive understanding of the research phenomena (Sparkes, 2015).

Three categories of procedures for conducting a mixed-methods systematic review have been identified (Harden & Thomas, 2010; Sandelowski et al., 2006): (a) a systematic review of primary research that uses mixed methods. This is not appropriate in this case because there is only limited primary research that applies mixed-methods in the dual career

area; (b) where the review conducts two or more method-specific syntheses but where the research findings from different methods are not integrated, also termed a contingent synthesis; (c) segregated methodologies conduct separate quantitative and qualitative synthesis prior to the final mixed-studies synthesis, where theories developed in the first synthesis can be tested. The findings either support each other (confirmation), contradict each other (refutation), or they add to each other (complementary). The segregated method is considered a superior method, and is therefore selected for this study, because it is the only method to present individual syntheses and then combine the data in the same synthesis (Pearson & Salmond, 2015).

In this study, the research aim, the research question, the research area, and the previous research guided the selection of the systematic review method the researcher used (Harden & Thomas, 2005). The research aim, to further understanding the factors that facilitate the positive experiences of managing a sporting career alongside an education or vocation, can be separated into three more specific research questions: (a) What are the experiences of dual career in sport? (b) What are the outcomes associated with dual careers in sport, and what factors are associated with these outcomes? (c) Which factors are associated with positive experiences of dual careers in sport? The first question lends itself to qualitative methods, whereas the second lends itself to quantitative methods, and the third to a qualitative and quantitative synthesis. Since the aim of this research was to provide a comprehensive understanding of the research area, and the research area is methodologically diverse, to select a method-specific review procedure would have excluded a substantial portion of the available literature. Therefore, the use of a mixed-studies synthesis approach is logical in this case. The following section outlines the process followed by this review in order to collate the available research that investigates the factors that facilitate positive experiences of the pursuit of an education or vocation alongside an elite sporting career. A wide range of research methods have been used to address this research question. However, it was considered important, to understanding the whole picture of dual career research, that no studies were excluded on the basis of the method used. A segregated method was selected because it aligns with the research questions and presents the findings from individual syntheses before combining data in the same synthesis (Harden & Thomas, 2010; Pearson & Salmond, 2015; Sandelowski et al., 2006).

3.2.1. Procedure. Any systematic review, regardless of the approach, adheres to the following the five stages: identification of the question or focus for the review, identification

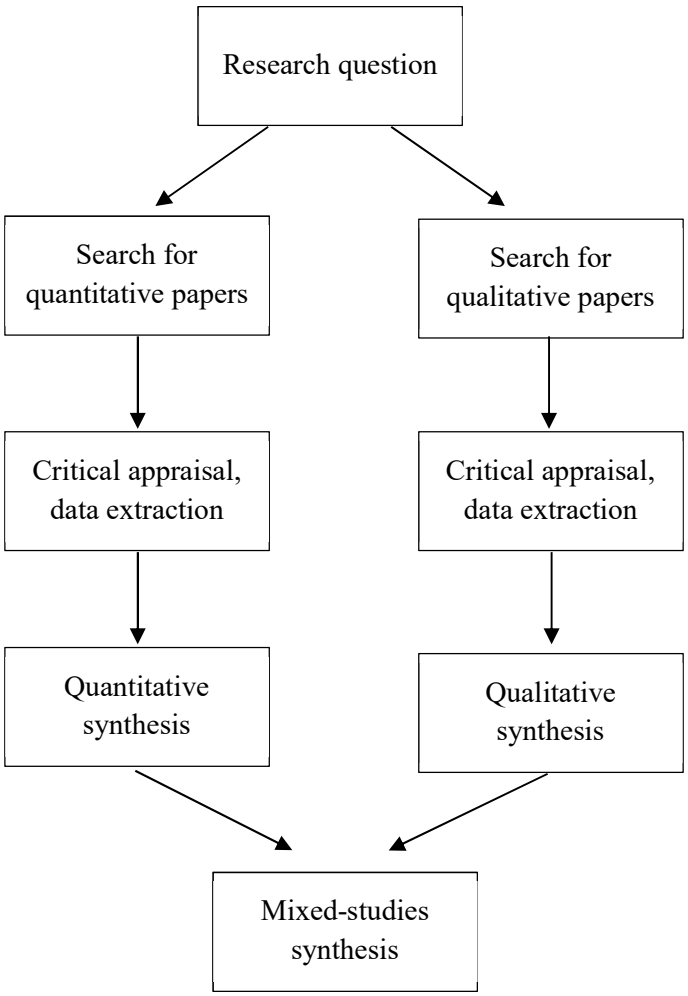


Figure 3. Mixed-studies synthesis using the segregated method (adapted from Sandelowski et al., 2006).

of relevant published papers, appraisal of relevant studies for research quality, extraction of the data and finally, comparison and synthesis of study data (Harris, Quatman, Manring, Siston, & Flanigan, 2014; Moher et al., 2009). The process of a mixed-studies review, used in this thesis and outlined in figure 3, begins in a similar fashion by identifying the research question and the relevant published papers based on clearly defined inclusion criteria, followed by an assessment of quality of the included research studies (Harris et al., 2014; Moher et al., 2009). A segregated mixed method review then goes on to extract qualitative and quantitative data. Before, finally, extracted data is synthesised and reported in the findings (Harden & Thomas, 2010; Pearson & Salmond, 2015; Sandelowski et al., 2006).

3.2.1.1. Identification of the research question. As previously established, the research area requires further understanding of the factors that facilitate the positive

experiences of managing a sporting career alongside an education or vocation. The previous systematic reviews in this area have contributed to this research question but have neglected evidence based on geographical location or method used. Taking this into consideration, the aim of this chapter is to conduct a systematic review that comprehensively considers the research findings, irrespective of methodology and geographical location, that address the research and practical need to further understand the factors that facilitate the positive experiences of managing a sporting career alongside an education or vocation. The research aim can be separated into three more specific research questions to be addressed in the data synthesises: (a) What are the experiences of dual career in sport? (qualitative data synthesis) (b) What are the outcomes associated with dual careers in sport, and what factors are associated with these outcomes? (quantitative data synthesis) (c) Which factors are associated with positive experiences of dual careers in sport? (mixed-studies data synthesis).

3.2.1.2. Identification of relevant published papers. Rigorous searches of seven electronic databases (Viz. PsycINFO, PsycARTICLES, ScienceDirect, Scopus, Web of Knowledge, Medline, and SPORTDiscus) were conducted for a wide range of key phrases (Viz. dual career athlete, academic, education, vocation, employment, student, collegiate, elite, expert, high-level, athlete). First, for qualitative research papers (included search terms such as, qualitative, experience, perceptions) and then for quantitative research papers (included search terms such as, quantitative, measure, factors). The searches covered all publication years up to the time the review was conducted (June, 2016). A hand-search was also conducted of the reference section of all papers that underwent full-text analysis. The results of the database searches identified 2691 citations. All citations were then screened for relevance in the order of title, abstract, and full-text. Figure 4 shows the flow of research papers through this process, which is outlined by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher et al., 2009).

Full-texts of the remaining citations were then analysed for the following inclusion/exclusion criteria:

(1) studies must use participants classified as elite athletes according to Swann, Moran, and Piggott's (2015) model of classification;

(2) sample participants must be dual career athletes therefore they must engage in either a vocation or education, alongside their athletic career;

(3) studies must examine a factor to dual career management and must address both athletic and academic/vocational aspects of the athlete’s lives;

(4) studies must use empirical data collection and;

(5) full-text must be available in English, in a peer review journal.

Studies were most commonly excluded for not addressing the academic aspect of dual career pursuits or not including an elite athlete sample.

3.2.1.3. Appraisal of research quality. The appraisal of the quality of research that is included is a crucial step in the systematic review process to ensure rigor and reliability in the review findings (Harden & Thomas, 2010; Pearson & Salmond, 2015; Sandelowski et al., 2006). As Thomas and Harden (2008) state, there is little guidance or agreement amongst the literature as to the optimum method to assess quality in mixed-studies reviews. Procedures range from method-specific tools: at one end of the scale the Cochrane Qualitative Research Methods Group proposes eight tools for critically appraising qualitative research (Cochrane Qualitative Research Methods Group, 2010), which, although commonly used, were developed for more traditional intervention review questions. At the other end of the scale, the Mixed Methods Appraisal Tool can be used to assess all research included in a mixed-studies review (Pace, Pluye, Bartlett, Macaulay, Salsberg, Jagosh, & Seller, 2012). However, the tool has not been widely used, only provides 4 assessment questions for each study type, and, therefore, risks failing to recognize the nuances of different research methods.

The current study used the Critical Appraisal Skills Programme (CASP; Critical Appraisal Skills Programme, 2017a; Critical Appraisal Skills Programme, 2017b) assessment tools. These critical appraisal tools use criteria specific to the method used in the primary research to assess quality and presents a compromise between generalisable and specific criteria assessments. The researcher utilised these tools to create a score of low, medium or high for each research paper, according to the level of agreement it shared with the appropriate tool. The CASP checklist for quantitative studies provides 12 questions to consider (Critical Appraisal Skills Programme, 2017a). If the answer was ‘yes’ to: less than 3 questions this was a low score; 3-9 questions this was a medium score; more than 9 questions scored high. Similarly, the CASP checklist for qualitative studies provides 10 questions to consider, (Critical Appraisal Skills Programme, 2017b). If the answer to was ‘yes’ to: less than 2 questions this was a low score; 2-8 questions this was a medium score; more than 8 questions scored high. These scores are shown in Table 2. No studies were excluded based on low quality.

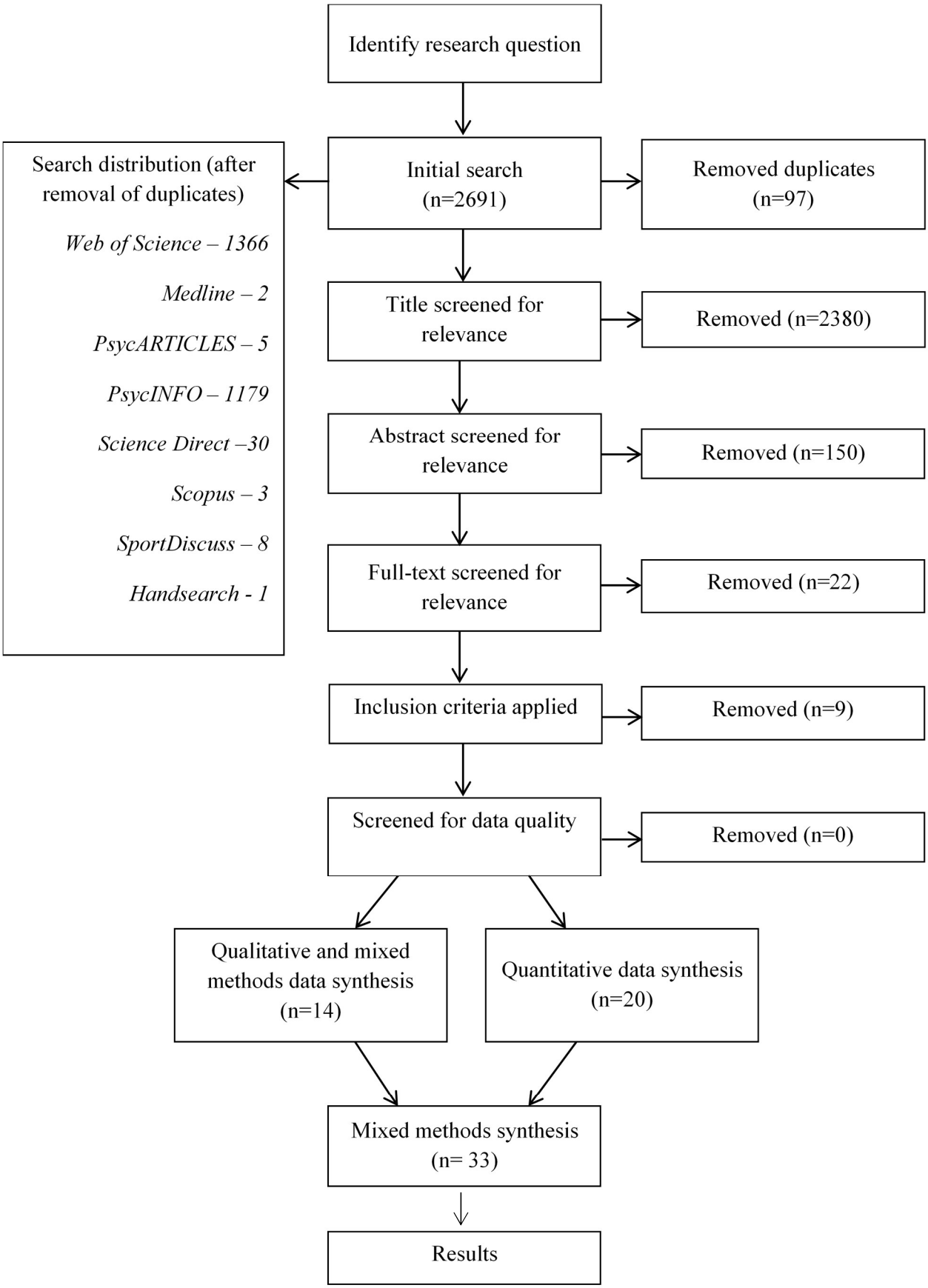


Figure 4. Flow diagram to illustrate the mixed-studies review research selection process.

Table 2.

Key characteristics of all studies included in mixed-studies synthesis (chapter three)

Study no.	First Author	Year	Method	Sample size	Participant characteristics and study setting	Quality
1	Baron-Thiene	2015	Quantitative. Questionnaire.	125	42% female. Aged 15 to 18. Elite sports school, Germany. 10 sports examined.	High
2	Bimper	2014	Quantitative. Questionnaire.	255	100% male. Aged 17 to 21. USA college students. 1 sport.	High
3	Bimper	2013	Qualitative. Interviews.	7	100% male. Aged 19 to 21. College students. USA.	High
4	Blodgett	2015	Qualitative. Drawings and interviews.	13	61% female. Aged 14 to 22. High school, college or university. USA. Aboriginal, relocated athletes. 1 sport.	High
5	Brown	2000	Quantitative. Questionnaire.	189	38% female. Ages not given. American college/university students. 7 sports.	High
6	Brown et al.	2015	Qualitative. Interviews and focus groups.	26	Genders or age range not given. Recently graduated University student athletes, and support staff at one British university. 5 sports.	Medium

7	Brown	2015	Qualitative. Interviews and observations.	20	Genders not given. Aged 14 to 18. Elite sports school and state school with an elite athlete programme. New Zealand.	High
8	Cosh	2014	Qualitative. Interview.	20	60% female. Age range not given. Australian University student athletes. 14 sports.	High
9	Denny	2008	Quantitative. Interview.	140	44% females. Aged 16 to 24. American college athletes and non-athletes. 5 sports.	High
10	Emrich	2009	Quantitative. Survey.	199	39% females. Ages not given. Germany. Elite sports schools and mainstream high school.	Medium
11	Geraniosova	2015	Qualitative. Interviews	5	60% females. Age range not given. Retired, professional and non-professional sports in Slovakia. 4 sports	High
12	Gledhill	2015	Qualitative. Interviews. Grounded theory	13	100% females. Mean age 19. UK youth football (soccer)	High
13	Hansen	1993	Quantitative. Questionnaire.	83	100% females. Aged 17 to 24. American college student athletes. 10 sports	Medium
14	Houle	2015	Quantitative. Questionnaire.	221	52% females. Aged 19 to 23. American college student athletes. 12 sports.	High

15	Killeya-Jones	2005	Quantitative. Questionnaire.	40	100% males. Aged 18 to 24. American colleges student athletes.	Medium
16	Kleiber	1992	Quantitative. Questionnaire.	54	Genders or ages not given. American college student athletes.	Medium
17	López de Subijana	2015	Quantitative. Questionnaire.	575	42% females. Aged 17 to 31. Olympic athletes. Spanish career development programme	High
18	McAllister	2001	Quantitative. Questionnaire.	562	40% females. Age range not given. American university and college student athletes.	High
19	Melendez	2010	Quantitative. Questionnaire.	101	38% females. Aged 17 to 23. American university student athletes.	High
20	Moen	2015	Quantitative. Questionnaire.	77	51% females. Aged 16 to 20. Norwegian High school athletes. 4 sports.	High
21	Murphy	1996	Quantitative. Questionnaire.	124	20% females. Aged 18 to 24. American university athletes. 7 sports	Medium
22	Perna	1999	Quantitative. Questionnaire.	73	100% males. Age range not given. American college athletes and non-athletes.	High

23	Pink	2015	Qualitative. Interviews and observations.	48	100% males. Age range not given. Australian rules football club	High
24	Riemer	2000	Qualitative. Interviews.	30	100% females. Age range not given. American college athletes. Tennis and basketball.	Medium
25	Ryan	2015	Qualitative. Interviews	17	59% females. Aged 17 to 45. New Zealand elite athletes. 7 sports	High
26	Ryba	2014	Qualitative. Interviews	6	50% females. Aged between 25 and 36. European transnational dual career athletes.	High
25	Simons	2007	Qualitative. Survey	538	42% females. Ages not given. 3 sports. American university.	Medium
26	Singer	2008	Qualitative. Focus groups and interviews.	4	100% males. Age range not given. African American student athletes in American university. 1 sport, American football.	High
27	Stambulova	2015	Mixed methods. Questionnaire and interviews.	250	Genders not given. Aged 16. Elite sports school students in Sweden. Individual and team sports.	High
28	Steiner	2010	Quantitative. Questionnaire.	522	48% females. Aged 17 to 29. American university athletes and non- athletes.	Medium

29	Storch	2005	Quantitative. Questionnaire.	398	67% females. Aged 17 to 41. American university athletes and non-athletes.	Medium
30	Sturm	2011	Quantitative. Questionnaire.	188	35% females. Age range not given. American universities, Division 1 and Division 3 student athletes.	Medium
31	Tekavc	2015	Qualitative. Interviews.	12	50% females. Aged 23 to 37. European, recently retired athletes.	High
32	Tshube	2015	Qualitative. Interviews and focus groups	17	29% females. Aged 27 to 43. Recently retired African athletes. 8 sports.	High
33	Tyrance	2013	Quantitative. Questionnaire.	538	53% females. Aged 18 to 23. American university athletes. 14 sports.	High

3.2.2. Data synthesis.

3.2.2.1. Qualitative synthesis. After identifying the research papers that matched the inclusion and exclusion criteria, 14 studies used a qualitative method. Qualitative data was extracted and synthesised using a thematic synthesis approach (Thomas & Harden, 2008). Data was extracted if it addressed the research question: What are the experiences of dual career in sport? All findings sections of the studies were extracted into QRS international's NVivo 10 software and initially coded using a line-by-line coding technique. From this initial coding, text units were then sorted into first-, second-, and third-order themes. First-order themes represent text units grouped together based on common descriptive themes. Second-order themes represent first-order themes grouped together based on higher-level analytic themes. Third-order themes represent overarching high-level analytic themes comprising the first- and second-level themes (Braun & Clarke, 2006).

3.2.2.2. Quantitative synthesis. After identifying the research papers that matched the inclusion and exclusion criteria, 20 studies used a quantitative method. To conduct a meta-analysis of this data, the effect sizes, weighted mean differences the 95% confidence intervals are needed for analysis. A meta-analysis also requires homogeneity in the measures used to make a comparison. From the data extraction of these studies, it was evident that a meta-analysis was not plausible due to the heterogeneity of the quantitative study designs and the lack of effect size reporting. Therefore, the study followed the guidance for mixed-studies review (The Joanna Briggs Institute, 2014), which stated that where statistical pooling is not possible the findings should be presented in narrative form.

3.2.2.3. Mixed-methods synthesis. The final synthesis in this study aimed to outline the factors that are associated with positive experiences of dual careers in sport. This element of the review process adds additional knowledge to the review through the combination of research findings from diverse methods. For qualitative and quantitative data to be synthesised and, therefore, equally inform the review, the data must be transformed into a mutually compatible format (Voils, Hasselblad, Crandell, Chang, Lee, & Sandelowski, 2009). A quantitative to qualitative conversion was chosen because, despite the method being less commonly used, it is considered as less error prone (The Joanna Briggs Institute, 2014) and ensures that the context is not lost in the analysis (Sandelowski, Leeman, Knafl, & Crandel, 2013). This review applied a novel conversion method set out by Crandell, Voils, Chang and Sandelowski (2011) because it synthesises data at the study level, as opposed to the

participant level, meaning that all studies are given equal weight to the results whether they used 1 participant or 100 participants. Furthermore, by designating themes identified in previous synthesis the method can convey information about the adherence of different factors on, in this case, positive experiences of dual career in sport. The method is also able to distinguish between findings that suggest no relationship and findings that were not studied. However, this approach may be considered as less advantageous for quantitative reports because it involves dichotomizing a finding that is generally reported with a measure of effect, such as: p-value or effect size.

The process of this approach was as follows: firstly, a data matrix of the themes addressed by each study was created, previously identified by the qualitative and quantitative synthesis. The researcher then coded each variable based on whether it signified adherence, non-adherence, or both adherence and non-adherence to facilitating positive experiences of dual career in sport (The Joanna Briggs Institute, 2014). Secondly, a naïve analysis was conducted. This analysis takes an average of the adherence/non-adherence values in each column to estimate the strength of the relationship between each factor and adherence to dual career pursuits (Crandell et al., 2011). Although the naïve analysis is criticised for reporting confidence intervals that are based on very small samples and assuming normality, a more powerful analysis was not possible due to the data available in the included studies (Crandell et al., 2011). The results of the synthesis identified four factors that were most commonly researched and had confidence values that suggested they facilitated positive experiences of dual career in sport. These factors were then taken as themes and the narrative findings to ensure the nuances of knowledge from the research were not lost.

3.2.3. Reporting findings. Similar to guidance on quality assessment, there is only a small amount of guidance on publishing and reporting standards for mixed-studies reviews (Thomas & Harden, 2008). Therefore, the reviewer used a combination of guidelines to ensure the transparent reporting of the process. Firstly, reporting was directed by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines for a traditional systematic review. These are highly regarded but focus heavily on reviews of effectiveness of intervention studies (Moher et al., 2009). Second, the reviewer was directed by the Realist and Meta-narrative Evidence Syntheses: Evolving Standards (RAMESES) publication standards for meta-narrative and qualitative reviews (Wong, Greenhalgh, Westhorp, Buckingham, & Pawson, 2013).

3.3. Results

3.3.1. Included studies. The results of the database searches identified 2691 citations after the removal of 97 duplicates and articles from non-peer-reviewed journals. All 2691 citations were then screened for relevant titles, where 2380 citations were removed and a further 150 citations were removed after appraisal of the abstracts. If insufficient information was available in the title or abstract stage of evaluation, studies were retained until a later stage. The hand-search created one additional article to the review. Full-texts of the remaining 63 citations were then analysed and inclusion/exclusion criteria were applied. Full-text analysis left 33 studies for inclusion in the review. Figure 4 depicts the flow of information through these stages.

3.3.2. Study characteristics. All studies were published between 1992 and the time of the review (June, 2016). A total of 8125 participants from 33 different sports took part in the studies. Participants ranged between the ages of 12 and 45, and were all elite at either the junior or senior level. Close to half of the studies (n = 15) investigated dual career athletes in the American college or university system. Whereas, eleven studies investigated dual career athletes in Europe, two in New Zealand, two in Australia and two in Africa. This distribution is shown in figure 5 and, also, illustrates the increase in dual career literature in general within the last decade. Four studies examined adolescent athletes at elite sports schools and four studies examined them in mainstream high schools. The vast majority of studies focused on university/college student-athletes (n = 23), followed by high school-aged athletes (n = 7). No studies focused on athletes with a vocation. Although employee-athletes were included in three studies (Geraniosova & Ronkainen, 2015; Ryan, 2015; Tshube & Feltz, 2015), these studies gave no clear distinction between the experiences of student-athletes and employee-athletes. Therefore, little can be said in this review regarding the factors that facilitate dual career management for employee-athletes (i.e., an athlete that combines their sporting career with a vocation).

3.3.3. Qualitative synthesis. The qualitative synthesis aimed to address the experiences of dual career in sport. A total of 16 research studies were identified as addressing this question through qualitative methods. Most research studies (n = 13) used individual interviews and thematic analysis methods in their research. Three of these used focus groups or drawings to supplement the data collection process. Only two studies used a case-study approach and one study used a grounded theory method. The synthesis process

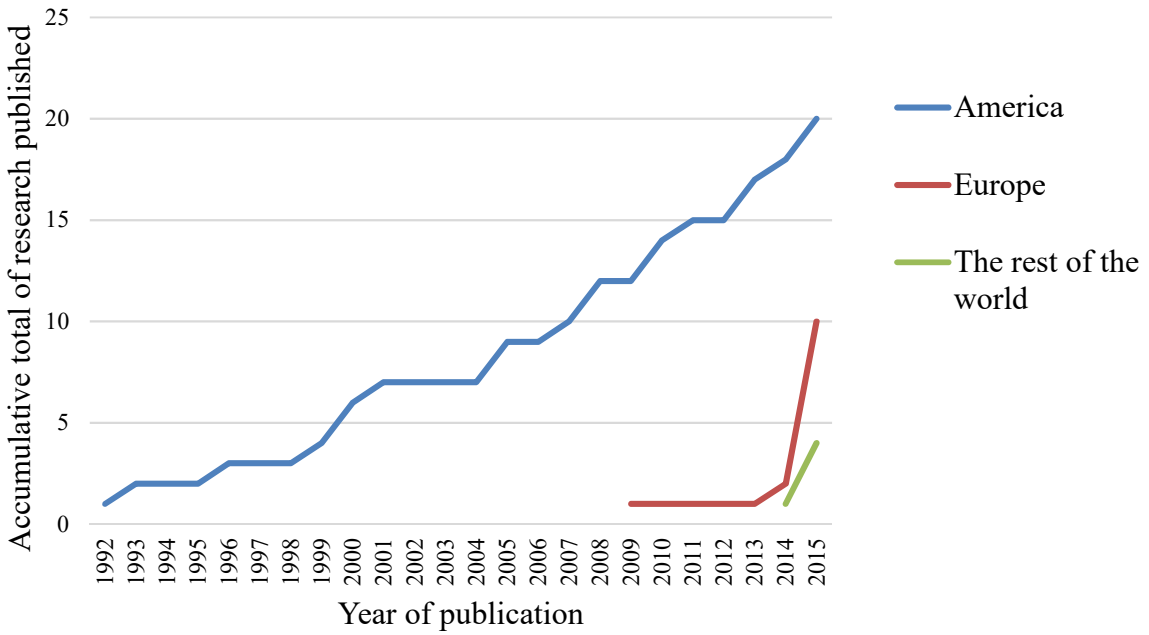


Figure 5. Dual career research published across the world

identified a number of themes that impact dual career experiences. However, the evidence for each of these themes was conflicting. For example, in some cases the evidence suggested that coaches can facilitate positive experiences of dual career management, but in other studies the evidence suggests coaches are barriers to dual career pursuits. Hence, while the qualitative synthesis identifies these factors that impact dual career experiences, a mixed-method synthesis is still required as a method to assess the confidence a researcher can place in the evidence and reduce the possibility of bias in this process.

The synthesis process enabled the identification of three higher order themes. First, the theme '*athletic environment conditions and constraints*' identified the environment's attitude towards dual career, the existence of a scholarship scheme, the athletic level, and the existence of an injury as impacting the individual's experience of dual career. Second, the theme 'academic environment conditions and constraints' identifies the availability of flexibility, the availability of support, the enrolment in an elite sport school or career assistance programme, the academic attitude towards sport, and the academic competence of the individual as influencing the dual career experience. Third, the theme of 'individual resources' identifies social resources, such as family support and peer support as influencing dual career experience. The theme also recognised the impact of personal resources, such as autonomy in decision making, ethnic background, gender, and financial stability as impacting experience. A typology of the themes can be seen in Table 3.

3.3.4. Quantitative synthesis. The quantitative synthesis aimed to address the research question: What are the outcomes associated with dual careers in sport, and what factors are associated with these outcomes? All the 20 studies, identified as using qualitative methods, used questionnaires as a data collection method. The most commonly used measure was the Athletic Identity Measurement Scale (AIMS), however, this was still used in less than half (n = 8) the primary research papers that were collected. The studies investigated five outcome themes, including: mental and physical wellbeing (9 studies), career decision making or planning (5 studies), dual career continuation (3 studies), academic performance (2 studies), and athletic performance (2 studies). Additionally, the studies identified an array of factors associated with dual career, including: athletic identity (8 studies), gender (5 studies), student identity/career plans (4 studies), physical health/injury (3 studies), ethnicity (2 studies), self-esteem (2 studies), type of education/educational support (2 studies), mental health (1 study), motivation (1 study), type of sport (1 study), and social support (1 study). Therefore, the heterogeneity in the measures used, the outcomes measure, and the factors identified between studies was considered too diverse to make a meaningful comparison via a meta-analysis. Instead the descriptions of study characteristics, outcome measures, and key findings which address the research question are presented in narrative form in Table 4. While some of the factors overlap with the themes addressed in the qualitative synthesis (e.g., social support, type of education, and type of sport), the quantitative synthesis identifies a range of new factors to consider. Hence, the combination of the findings via a mixed-methods synthesis is still required (Pearson & Salmond, 2015).

Table 3

Typology of first-, second- and third-order themes that emerged from qualitative synthesis within mixed-studies review (chapter three)

Third order themes	Second order themes	First order themes
Athletic environment conditions and constraints	Sport environment	Scholarship support
		Environment culture towards education
		Coach support
	Athletic level	Adjustment to elite level
		Travel
	Injury	
Academic environment conditions and constraints	Academic environment	Flexibility/support
		Elite sport school / career programme
		Environment culture towards sport
	Academic level	Academic competence
Individual resources	Social resources	Family support
		Peer support
	Personal resources	Personal attributes
		Autonomy in decision making
		Ethnic background
		Financial stability

Table 4

Quantitative study characteristics and summary of key findings from mixed-studies review (chapter three)

First author	Study characteristics	Measures used	Key findings
Baron-Thiene (2015)	Questionnaire.	Personality traits (Freiburger Personlichkeitsin-ventar); goal orientation (sport orientation questionnaire); and volition skills (volitional components in sport)	*Outcome*: dropout from dual career *Factors*: type of sport - most athletes that dropped out of a dual career were from individual sports; gender - most athletes that dropped out of a dual career were female; number of physical complaints; self-optimisation; win orientated motivation.
Bimper (2013)	Questionnaire.	Cross, racial identity scale; athletic identity measure (AIMS).	*Outcome*: poor grade point average (GPA). *Factor*: ethnicity / athletic identity- Black student-athletes have a higher athletic identity and lower GPA.
Brown (2000)	Questionnaire.	The foreclosure subscale of Objective Measure of Ego-Identity Status (OM-EIS); athletic identity measure (AIMS); Career Locus of Control Scale (CLCS); Career Decision-Making Self-Efficacy Scale – short form (CDMSE-SF).	*Outcome*: career decision-making self-efficacy; expectation to reach professional sporting status *Factors*: Hours of sport participation; identity foreclosure; career control.
Denny (2008)	Questionnaire.	Rotter's Locus of Control; Mindfulness/mindlessness scale (MMS); Weinberger Adjustment Inventory (WAI).	*Outcome*: Happiness *Factor*: Self-esteem; Mindfulness.

Emrich (2009)	Questionnaires.	Self-reported athletic performance.	*Outcome*: athletic performance. *Factors*: attendance to an elite sport school (ESS); type of sport – no effect for summer sports. Winter sports did see an advanced athletic performance for elite sport school students.
Hansen (1993)	Questionnaire.	Strong Interest Inventory (SII); General Occupational Themes (GOT).	*Outcome*: agreement between college major and vocational interest *Factors*: Gender - no difference
Houle (2015)	Questionnaire.	Athletic Identity Measurement Scale (AIMS); Career Decision Self-Efficacy Scale – Short Form (CDSE-SF); Career Decision Scale (CDS).	*Outcome*: career maturity *Factors*: athletic identity; career decision-making
Killeya-Jones (2005)	Questionnaire.	Spielberger's Trait Anxiety Inventory; Center for Epidemiological Studies Depression Scale; Rosenberg's Self-esteem Scale; Identity collection instrument.	*Outcome*: psychological adjustment and satisfaction *Factors*: discrepancy between the student and athlete role; evaluation of the student role.
Kleiber (1992)	Questionnaire.	Life satisfaction scale; Rosenberg's Self-esteem Scale.	*Outcome*: life satisfaction. *Factors*: injury; self-esteem
López de Subijana (2015)	Questionnaire.	Specifically, designed questionnaire to assess experiences of managing a dual career.	*Outcome*: academic level *Factors*: enrolment in a career programme; willingness to ask for help; set schedules and mandatory class attendance.

McAllister (2001)	Questionnaire.	Medical Outcomes Study – Short Form.	*Outcome:* mental and physical health *Factors*: injury; training time
Melendez (2009)	Questionnaire.	Athletic Identity Measurement Scale (AIMS); Student Adaptation to College Questionnaire (SACQ).	*Outcome*: academic and personal-emotional adjustment. *Factors*: gender; ethnicity; athletic identity
Moen (2015)	Questionnaire.	Mindful Attention Awareness Scale (MAAS); Perceived Stress Scale (PSS-14); Athlete Satisfaction Questionnaire (ASQ); Athlete Burnout Questionnaire (ABQ).	*Outcome*: burnout *Factors*: mindfulness
Murphy (1996)	Questionnaire.	Foreclosure subscale of the Objective Measure of Ego-Identity Status (OM-EIS); Athletic Identity Measurement Scale (AIMS); Attitude scale of the Career Maturity Inventory (CMI).	*Outcome*: career maturity *Factors*: identity foreclosure; athletic identity
Perna (1999)	Questionnaire.	Satisfaction With Life Scale (SWL); occupational plan and injury history.	*Outcome*: life satisfaction *Factors*: post-collegiate occupational plan
Stambulova (2015)	Mixed methods. Questionnaires	Dual Career Survey (DCS); Athletic Identity Measurement Scale (AIMS); Student Identity Measurement Scale (SIMS)	*Outcome*: dual carer coping *Factors*: athletic identity; student identity
Steiner (2010)	Questionnaire.	Weinberger Adjustment Inventory (WAI).	*Outcome*: adjustment to transition *Factors*: distress; anxiety; depression; self-restraint; defensiveness; denial of distress.

Storch (2005)	Questionnaire.	Social Anxiety Scale for Adolescents (SAS-A); Depression, Alcohol and Non-support subscales of Personal Assessment Inventory (PAI).	*Outcome*: anxiety and depression *Factors*: gender; social support
Sturm (2011)	Questionnaire.	Athletic Identity Measurement Scale (AIMS); Measurement of Student Identity (MSI).	*Outcome*: athletic level; athletic identity; student identity *Factors:* gender
Tyrance (2013)	Questionnaire.	Athletic Identity Measurement Scale (AIMS); Career Futures Inventory (CFI).	*Outcome*: future career optimism *Factors*: expectation to play professionally sports; athletic identity.

Table 5

Table of facilitating factors that derived from mixed methods synthesis element of the mixed-studies review (chapter three)

Factor	Number of cases	Mean* (95% confidence interval**)
Social support	11	.91 (.91, .91)
Personal resources	11	.73 (.73, .73)
Academic environment openness to dual career	9	.89 (.89, .89)
Athletic environment openness to dual career	8	.81 (.81, .81)
Belief in benefits of investment in both	7	.93 (.93, .93)
Professionalization	7	.86 (.86, .86)
Realistic expectation / demands	5	1 (1,1)
Gender	5	.70 (.70, .70)
Ethnicity	4	.50 (.50, .50)
Absence of injuries	3	1 (1,1)
Academic level	3	1 (1,1)
Athletic level	3	.83 (.83, .83)
Academic self-belief	2	1 (1,1)
Personal agency	2	.75 (.75, .75)
Age	1	1 (1,1)
Role discrepancy	1	1 (1,1)
Athletic self-belief	1	1 (1,1)
Vocational interest	1	.50 (.50, .50)
Wellbeing / psychological health	1	.50 (.50, .50)
Physical fatigue/complaints	1	.50 (.50, .50)

*Mean values range from 0 to 1, with values closer to 1 signifying factors associated with adherence to facilitating dual career management.

** accurate to two d.p.

3.3.5. Mixed-methods synthesis. As seen in Table 5, the naïve analysis and mixed-methods synthesis identified four factors that were most commonly researched and had a mean estimate that suggested it facilitates positive experiences of dual career management: social support, personal resources, academic environment, and athletic environment. The following section will outline some of the research findings from these factors.

3.3.5.1. Social support. Dual career individuals in the review studies often described their success as having partial dependence on others. However, it was essential that their social support held an interest in maintaining both aspects of the individuals' dual career pursuits for social support to be considered as facilitating positive experiences of dual careers. Most commonly, parents were reported as playing a significant role in facilitating dual career pursuits, particularly in a young athlete's life (Baron-Theine & Alfermann, 2015; Brown et al., 2015; Brown, 2015). In general, parents were important figures in a young person's life in providing moral support and guidance in decision-making (Tekavc et al., 2015). Additionally, parents were regularly described by athletes as strong financial facilitators for sporting activities, as well as physically transporting athletes to training and competitions (Tekavc et al., 2015). Parents were also seen as important advocates for maintaining commitment to educational pursuits (Gledhill & Harwood, 2015; Tekavc et al., 2015). However, too much parental control was recognised as a barrier to self-responsibility and was associated with poor adjustment to university/college (Stambulova et al., 2015; Tekavc et al., 2015).

Student-athletes and retired athletes described the presence of a peer role model within their sporting environment as a significant facilitator to the transition to university in terms of setting sporting and educational expectations for incoming members of the team/squad (Brown et al., 2015; Tshube & Feltz, 2015). Furthermore, having an elite role model to observe was described, in some cases, as beneficial to younger athletes because the athletes tailored their behaviours in accordance with the elite athlete (Brown et al., 2015). In other cases, adolescent soccer players described seeing older international players lead a disciplined lifestyle. The expectation that they would be required to lead a similar lifestyle caused younger athletes to choose to dropout from sport (Gledhill & Harwood, 2015). Successful alumni role models were also considered as motivation to succeed because the student-athlete was able to identify with their position (Bimper et al., 2013).

The transition into university was shown to be a substantial period of change for a dual career individuals' social network, largely due to moving away from home and their

existing social network (Blodgett & Schinke, 2015; Bimper et al., 2013). Sport could often be recognised as a barrier to engagement in social activities at university and an individual's adjustment to the new environment (Riemer et al., 2000). Student-athletes often described losing contact with their non-athlete peers due to their sporting commitments (Ryan, 2015). This narrowing of the dual career individual's social network could be a barrier to positive experiences of dual career pursuits. For example, university athletes explained that having access to a community of non-athlete student peers and peer study groups, who purposefully challenged them academically, was an essential facilitator for academic motivation (Bimper et al., 2013). However, non-athlete peers were also described as having a negative effect on the focus of high school student-athletes (Gledhill & Harwood, 2015). The players explained that their friends outside of the sporting arena would be engaging in "normal teenage life" (Gledhill & Harwood, 2015, p.19), such as socialising and drinking. Social acceptance is considered of high importance to adolescents, therefore the fact that they were required to challenge social norms because of their engagement in sport is a significant barrier to the continuation of sporting endeavours.

Understandably, athletes reported both positive, negative, and fluctuating relationships with their coaches (Brown et al., 2015; Ryba et al., 2015). Regardless of whether the relationship was positive or negative, a coach held an influential position in the athletes' lives and, therefore, could exist as a barrier or facilitator to dual career management. Having a negative coach-athlete relationship was particularly difficult for team sport players rather than individual sport players because the athlete is less likely to be able to change coach or have a choice in their coach (Tekavc et al., 2015). On the one hand, coaches aimed to retain the athlete's full focus on sport and could make it particularly difficult for an athlete to plan for or commit to activities outside of sport by giving late notice for training sessions and refusing flexibility (Singer, 2008; Ryan, 2015). Many dual career athletes describe experiencing an expectation from their coaches to prioritise sport to the detriment of any alternative focus (Singer, 2008). A sample of American football players in an American university viewed the term 'student-athlete' as inappropriate due to the amount of time they were expected to commit to sport. Athletes felt that major decisions in their lives were controlled by the expectations of coaches and NGBs. Furthermore, athletes tended to describe sport prioritisation as out of their control and instead determined by coaches who chose training times and frequency (Cosh & Tully, 2014; Stambulova et al., 2015). On the other hand, some studies showed reports of coaches who fully supported a balanced lifestyle (Gledhill & Harwood, 2015; Tekavc et al., 2015). These coaches acted as facilitators for

positive experiences of dual career in sport by not only allowing activities but encouraging the development of an alternative identity and enabling the athletes to prioritise education or vocations at certain time points.

3.3.5.2. Personal resources. A variety of personal attributes were described as beneficial in helping a dual career individual to manage the high demands of both a career and an education. Some of the personal attributes that were identified by athletes and coaches as favourable included: the ability to proactively plan (Brown et al., 2015); taking responsibility for managing both activities (Steiner et al., 2010); having an openness for learning and a strong work ethic (Brown et al., 2015); dedication, commitment, and determination (Tshube & Feltz, 2015); and effective time management skills (Cosh & Tully, 2014; Ryan, 2015; Singer, 2008). Career planning skills, an internal orientation towards career planning, and a high career decision-making self-efficacy were also seen as facilitating dual career management because individuals were more likely to explore their career identities and form a more diverse sense of self (Murphy et al., 1996; Brown et al., 2000; Tshube & Feltz, 2015). Furthermore, motivation to compete, high self-optimisation, high win orientation, and high goal orientation were seen to be higher in adolescent dual career athletes than in individuals who dropped out from dual career activities (Baron-Thiene & Alfermann, 2015).

Autonomy in decision-making was shown to impact the experience of dual careers in several ways. First, if individuals had not made the decision to pursue a dual career for themselves and/or did not invest in all aspects of both sport and education, then they often did not see the benefits of one or the other pursuit. Hence, it was essential for the continuation of both sporting and educational pursuits that individuals have a sense of autonomy in their decision-making regarding dual career activities (Ryba et al., 2015). The experience of university student-athletes who were aiming to achieve the minimum academic requirement to pass or to remain eligible to play sport was a common theme across the studies (Cosh & Tully, 2014; Ryan, 2015; Ryba et al., 2015; Singer, 2008; Tekavc et al., 2015). Succeeding academically was desirable in principle but recognised as not realisable in practice (Cosh & Tully, 2014). Athletes perceived themselves to be capable of academic success but stated barriers, such as time and autonomy in how they spend their time, as external to their control (Singer, 2008). Athletes often compared themselves to non-athletes, stating that non-athletes had more time and more agency over how they spent their time, therefore non-athletes could be expected to achieve academically (Cosh & Tully, 2014; Singer, 2008). Some athletes did

recognise the dangers of low academic goals; they showed awareness to the likelihood of not succeeding in sport and the risk in not obtaining a quality degree to fall back on (Bimper et al., 2013). Academic sacrifices were not reported as often in primary school and secondary school students because the demands were considered to be easier to manage (Ryba et al., 2015; Tekavc et al., 2015; Tshube & Feltz, 2015).

3.3.5.3. Academic environments' openness to dual career pursuits. The willingness of the academic institution to accommodate dual career athletes was of vital importance to the experience of a dual career. For example, large workloads, set schedules, and mandatory class attendance were all recognised as substantial barriers for engaging in a dual career (López de Subijana, Barriopedro, & Conde, 2015; Tshube & Feltz, 2015). Whereas, changing exam dates due to competitions and part-time study allowed athletes to manage sport and study (Brown et al., 2015). For example, a number of different studies described student-athletes taking longer than planned to complete their university degree, up to 6 years was reported for a 3-year degree (Brown et al., 2015; Tekavc et al., 2015; Tshube & Feltz, 2015; López de Subijana et al., 2015). Unfortunately, academic flexibility was not consistent between universities or even faculty members within the same university (Tshube & Feltz, 2015; Brown et al., 2015). Sport-related degrees were commonly chosen amongst dual career athletes because these programmes tended to be more willing to make accommodations for student-athletes (Tekavc et al., 2015). Just one study (López de Subijana et al., 2015) specifically looked at Career Assistant Programmes (CAP) for dual career athletes. It showed that athletes supported via CAPs had reached a significantly higher academic level than non-CAP supported athletes. Furthermore, CAP supported athletes were better informed, more willing to ask for help, and were more likely to make helpful decisions such as, avoiding courses with a fixed attendance requirement. Consequently, gaining an understanding of an institution's flexibility and support services for elite athletes before attending is an essential consideration for dual career athletes (Ryba et al., 2015).

Academic support most likely came from teachers (high school student-athletes), professors (university students), or additional support staff specifically appointed to assist students or student-athletes. Teachers facilitated dual career pursuits by recognising athletic success, arranging exceptional measures in terms of school work, and presenting athletes as role models (Tekavc et al., 2015). Teachers were also described as facilitating dual career pursuits through encouraging their students to focus on their student role by emphasising long-term career planning, economic stability, and quality of life. However, this could also

lead to individuals experiencing significant role overload in the build-up to important examinations (Gledhill & Harwood, 2015). Alternatively, teachers, professor and academic staff could be a barrier to positive experiences of dual career. One study investigated athlete stigma in American colleges/universities and found that athletes often stated they had heard a faculty member make a negative comment regarding student-athletes. Comments such as, "expecting special treatment", "only interested in sport" and "not academically qualified" were shown to be most common (Simons, Bosworth, Fujita, & Jensen, 2007). Additionally, a substantial proportion of student-athletes described being refused flexible accommodations by professors (Simons et al., 2007).

Elite sports schools are institutions designed to nurture young athletic talent by offering an education alongside optimal training conditions and provisions to facilitate dual career management, such as flexible arrangements and adjusted schedules for training and competitions (Stambulova et al., 2015). The studies that investigated elite sport schools, showed that young athletes benefited from surrounding themselves with highly motivated individuals (Brown, 2015; Stambulova et al., 2015). As a result, elite sport school students were shown to have higher levels of self-optimisation, self-regulation, and an accelerated volition development (Brown, 2015; Elbe, Szymanski, & Beckmann, 2005). Despite this, there was no significant difference in athletic performance between elite sport school students and mainstream school students at the 2004 Olympic games. A difference was shown for winter sport athletes, where elite sport school students showed a higher medal success at an Olympic games. This was attributed to the advantage of available facilities provided by a winter sports institution that would not be available to mainstream school students. Additionally, elite sport school students showed a trend towards lower professional qualifications than mainstream school students (Emrich, Frohlich, Klein, & Pitsch, 2009). Therefore, despite an initial advantage to the personal resources of the athletes, no performance or academic advantages were seen.

3.3.5.4. Athletic environments' openness to dual career pursuits. The sport the dual career individual is involved in, and the associated NGB, club, and coaches, were shown to be factors in facilitating positive experiences of dual career pursuits. Studies gave conflicting reports regarding sports systems' view on dual career pursuits. On the one hand, athletes felt that they were viewed by their clubs or coaches exclusively as an athlete and viewed any alternative focus as a threat to one's athletic identity (Ryan, 2015; Singer, 2008). Athletes described feeling unable to engage in any other activities due to the time demands of sport.

Dual career individuals also reported measures put into place by clubs which made alternative pursuits logistically implausible (Ryan, 2015).

On the other hand, many sports clubs had provisions for dual career athletes. One case study showed dual career pursuits and life outside of sport to be actively encouraged (Pink et al., 2015). This club held the belief that a life outside of sport would lead to a better well-being for the player and, therefore, better on-field performance. Measures to support educational or vocational activities were put in place, such as: designated areas to work on academic or vocational activities; designated support personnel; and flexibility for study or a vocation. Many sports institutions and athletic departments had access to additional support services, and dual career athletes in the review studies referenced these as facilitating dual career pursuits (Bimper et al., 2013). Student-athletes were often connected with a tutor or mentor to assist with their athletic and academic support. The review studies consistently reported the accessibility of these programmes as crucial to the success of them (Bimper et al., 2013; Pink et al., 2015).

Two studies showed that university/college scholarships enabled student-athletes to access free education whilst competing in high-level sport (Ryba et al., 2015; Singer, 2008). This was seen by adolescent athletes as a major benefit for conducting dual career pursuits in this manner. However, scholarship athletes also reported perceiving an obligation to play/ or prioritise sport over education, more so than non-scholarship athletes (Riemer et al., 2000). This resulted in student-athletes neglecting the opportunity to obtain an education. Another fault with scholarship systems was reported to be the existence of academic leniency for talented athletes. This was mostly seen in American, high-revenue producing sports but was also seen at one university in the UK (Bimper et al., 2013; Brown et al., 2015). These measures did allow for more athletes to be available for athletic selection, but unfortunately, these athletes often lacked the skills to achieve academically (Bimper et al., 2013).

3.4. Discussion

The current study aimed to comprehensively review the research literature, with the intention to address the overall thesis aim to identity the factors that facilitate positive experiences of managing a sporting career alongside an education or vocation. Research in sport psychology has identified the view that athletes are required to sacrifice all aspects of their life in order to succeed at the highest level (i.e., the elite performance narrative; Carless & Douglas, 2013; Warriner & Lavallee, 2008). However, this sacrifice risks negative outcomes such as, identity foreclosure, poor athletic retirement, and an inability to deal with

adversity in sport (e.g., injury; Brewer et al., 2000; Lally, 2007; Knights et al., 2016; Murphy et al., 1996; Park et al., 2013; Petitpas & France, 2010; Stambulova et al., 2015). The pursuit of an education or vocation alongside sport (i.e., a dual career) is presented by the literature as potentially mitigating these risks through enabling athletes to develop an identity outside of sport (Aquilina & Henry, 2010; Brown et al., 2015; Haley & Saghafi, 2012; Lally & Kerr, 2005). However, much of the research shows the pursuit of a dual career as challenging. The management of two demanding endeavours can be associated with stress, overwhelm, burnout and, ultimately, lead to a dropout from sport or education/vocation (e.g., Cosh & Tully, 2014; Singer, 2008; Tekavc et al., 2015). The current body of literature in dual career derives from different contexts (e.g., transition, holistic athletic career model, and athletic retirement). Hence, a systematic review benefits the area by assessing the current knowledge on the promotion of positive experiences of dual careers in sport and the avoidance of stress, overwhelm, and dropout. Two systematic reviews (Guidotti et al., 2015; Li & Sum, 2017) and a critical review (Stambulova & Wylleman, 2019) have been conducted in this area, but these reviews neglected substantial portions of the literature based on geographical location (i.e., focused on only European literature) or methods (i.e., focused on only qualitative literature). Hence, the purpose of this review was to comprehensively review and synthesis the evidence which addresses the factors that facilitate positive experiences of managing a sporting career alongside an education or vocation.

The overarching research aim can be separated into three more specific research questions: (a) What are the experiences of dual career in sport? This question is addressed, in this review, through data derived from qualitative in-depth research and, a qualitative data synthesis. The findings of this synthesis extend the literature through presenting conflicting experiences of a dual career and outlining some of the factors that impact these experiences. Previously, the dual career literature has been criticised for focusing on the personal factors that impact a dual career (Guidotti et al., 2015). However, the current review presents a number of environmental factors. (b) What are the outcomes associated with dual careers in sport, and what factors are associated with these outcomes? This research question is addressed in this study via a quantitative data synthesis. The findings extend the literature through presenting differing dual career outcomes and the factors that are associated with these; (c) Which factors are associated with positive experiences of dual careers in sport? This final research question is addressed with both qualitative aspects of experience and quantitative factors via the mixed-studies data synthesis. The synthesis extends the literature by combining the evidence of quantitative and qualitative literature to present the positive

experiences of a dual career and the factors that impact these positive experiences. In this review, the researcher allowed the research questions and the primary research context to guide the selection of the most appropriate method (Thomas & Harden, 2008). Therefore, the current study conducted a mixed-studies review. This was selected due to the diversity of methods used in the primary studies and to gain a complete understanding of the research phenomena (Harden & Thomas, 2010; Sandelowski et al., 2006).

First, the current study identified the athletic environment, the academic environment, and individual resources as impacting individual's experiences of dual career in sport, via a qualitative synthesis. The quantitative synthesis then confirmed and extended this knowledge through the identification of an array of factors that were associated with various outcomes of dual career, including: athletic identity, gender, student identity, self-esteem, and motivation. The final mixed-methods synthesis combined these themes and presents evidence to suggest the four factors that the research suggest best facilitate the positive experiences of dual career. The first theme, social support, was included due to dual career individuals in the review studies regularly describing their success as having partial dependence on others including, parents, peer role models, and coaches. However, it was essential that their social support held an interest in encouraging both aspects of the individuals' dual career pursuits for social support to be considered as facilitating positive experiences of dual careers (e.g., Gledhill & Harwood, 2015; Tekavc et al., 2015; Tshube & Feltz, 2015). Second, the personal attributes or resources needed for managing a dual career was reported by various stakeholders and the athletes themselves. The skills needed include proactive planning, time management skills, autonomy in decision-making, and motivation for both aspects of a dual career (e.g., Baron-Thiene & Alfermann, 2015; Steiner et al., 2010; Tshube & Feltz, 2015). Third, the academic environment and its attitude towards sport, including the availability of special arrangements such as, flexibility in exams or timetables and the availability of support programmes/staff (e.g., Bimper, 2012; Brown et al., 2015; López et al., 2015; Singer, 2008). Finally, the athletic environment and its attitude towards education, including the availability of flexibility in training times and availability of support provisions (e.g., Pink et al., 2015; Ryan, 2015).

From the review of the available literature, it is clear that, under the circumstances outlined as facilitating positive experiences, a dual career can be a legitimate pathway to prepare athletes for their post-sport future, and protect against identity foreclosure, poor athletic retirement, and an inability to deal with adversity in sport. Furthermore, the current review extends the evidence for the promotion of particular practices to ensure a positive dual

career experience. These practices could include: dual career stakeholders engaging with social support (such as parents, teachers, and coaches) to outline the benefit of dual careers and emphasise their role in facilitating dual career management; peer mentor programmes that include sporting and non-sport role models; personal skills and competency development for athletes that include time management skills, planning skills, decision-making, and motivation; promotion of the importance of dual career support within educational institutions, including policy development to encourage flexibility in exams or timetables and the availability of support provisions; finally, promotion of dual career awareness in athletic environment, including policy development to encourage flexibility in training times and the availability of support provision. By outlining these practices, practitioners within the dual career context can compare the findings of this review with their current provision and, if necessary, adapt particular practices that are lacking or adapt current practices.

Two systematic reviews and a critical review have previously been conducted in this area. First, Guidotti and colleagues (2015)'s review of the European literature that was published up to and including 2014. The review noted that research focused on the micro- (individual) level. The current study advances the knowledge presented in Guidotti et al's study and shows the research context has expanded to include a body of research that includes several meso (interpersonal) and macro- (environment) level factors that impact the dual career experience. The reason for this difference is likely to be the inclusion of a wider variety of studies used in the current review (e.g., the inclusion of American studies and studies from 2014 to 2016). The most recent studies have addressed the gap in the research knowledge identified by the results of the Guidotti et al's (2015) review. To illustrate, Stambulova and Wylleman's (2019) critical review provides further insights into the European research trends (e.g., a focus on cultural praxis and on the holistic lifespan perspective) and areas for future research, including the need to increase research in dual career during work and focus on dual career environments. Second, Li and Sum (2017) published a systematic review of the qualitative literature. The review identified three main factors in facilitating dual career management: individual, interpersonal, and external. These three factors are similar to the factors the current study identified: social support, personal resources, academic environment, athletic environment. However, the current study provides a wider evidence base to separate external factors into more specific academic and athletic environmental factors. This distinction is important in practice, particularly when the environments are not integrated (e.g., a separate school and sport environment as opposed to an integrated university scholarship environment). Again, the reason for this difference is

likely to be the inclusion of a wider variety of studies used in the current review, (i.e., the inclusion of studies with quantitative methods).

The current systematic review, by including both literature from the North American context and the European context, adds value to the research literature by enabling the comparisons between two of the largest contributors to the dual career literature. While both the European sport model and the North American sport model hold similarities to one another, including similar Olympic sport systems, we must also recognise the differences. Particularly the differences that are important for the dual career context: First, the type of sport that is most popular in the two continents are different, football (soccer) is recognised as the most popular sport across Europe, and American football, basketball, and baseball are some of the most popular sports across North America. With this in mind, the revenue for sport in North America is, on average, considered greater. This is shown in that 62 of the top 100 highest earning athletes compete in the NFL (National Football League, American football's national league) or NBA (National Baseball Association, American's national baseball league; Badenhausen, 2019, June). Second, we must consider the professionalisation and revenue differences between university sport in America and university sport in Europe; while American universities compete in a series of national university divisions, which is considered part of the talent pathway to professional sport. In general, European universities are not part of the talent pathway for professional sport. However, recent developments in dual career support at universities has resulted in an increase in the level and professionalisation of university sport in Europe (e.g., Loughborough University, UK and Vrije University, Brussels).

The advantage of conducting a systematic review that extends to research from different contexts is the comparisons that can be made between these contexts and the approaches taken. With regards to the research approaches, the review highlights some major differences to the dual career topic that are taken by Europe and North America. Most strikingly is the difference in the amount of literature that was included in this review, studies from North America (n = 20) double the contribution of studies from European countries (n = 10). This highlights the developing nature of the dual career research within Europe in comparison to North America. With this in mind, dual career research from Europe used a more diverse set of methods to investigate the topic, including quantitative (n = 4), qualitative (n = 5) and mixed methods (n = 1). Whereas, studies originating from north America, largely, used quantitative methods (n = 15). The consequence of this focus on quantitative methods could be a lack of understanding of the lived experiences of dual career athletes in the

American context. While both the European and North American literature failed to focus on the combination of sport and work, the North American research almost exclusively focuses on the American college or university system – with only one study including athletes in a school setting. This results in a lack of understanding, in general, of dual careers during work, but a lack of research understanding of dual careers in diverse setting within the American context. One reason for this could be the greater tendency of sport in American to use the colligate and university settings to develop talent. However, this is a consideration for research and practice to consider more diverse ways to develop talent and support a dual career.

The benefit of conducting regular systematic reviews is the overview of the scope and type of research the method provides (Liberati et al., 2009; Munn et al., 2018). This review demonstrates the increase in dual career literature in general within the last decade but, in particular, the increase in research being conducted in the European context. Some reasons for this increase could be the identification of dual career as an area of interest by the European Union (see Henry, 2013), the publication of the EU guidelines (European Union Expert Group: Education and Training in Sport, 2012), Guidotti et al's (2015) review highlighting the lack of research, and the special issue on dual career development and transitions (Stambulova & Wylleman, 2015). Despite this increase in literature, no studies focused on the experience of pursuing sport alongside a vocation, an issue that was identified in Guidotti et al.'s (2015) review but was not addressed in the primary research. The majority of studies focused on the combination of sport with higher education/university or the combination of sport and school-level education. Although employee-athletes were included in three studies (Geraniosova & Ronkainen, 2015; Ryan, 2015; Tshube & Feltz, 2015) these studies gave no clear distinction between the experiences of student-athletes and vocational-athletes. If we consider the theoretical underpinning of this literature, the holistic athletic career model (Wylleman & Lavallee, 2004), currently the research focuses on the dual career development pathway from compulsory education to further/higher education and into professional sport. Therefore, there exists large gaps in our understanding of dual career development over the lifespan and a lack of evidence that considers the multitude of dual career experiences that appear in practice, including combining sport with a vocation at the development or mastery athletic level.

During the review process, difficulties arose when assessing studies for relevance due to a lack of clarity in the reporting standards. This review also highlights the need for clarity in the research regarding participant samples and continuity in the use of the term dual career.

The term ‘dual career’ was not universally used by the studies in this review, either in the title or the key words, instead using student-athlete or collegiate-athlete. This lack of continuity between research papers makes the identification of relevant research more difficult for practitioners and researchers. Additionally, many studies did not clarify their definition of elite and instead this had to be inferred from the participant characteristics. This review also raises a methodological point for future research to consider. Several studies that were identified in the search used a sample of student-athletes, yet these studies were not included in the review because they exclusively focused on aspects within the sport domain. These studies often drew conclusions on the implications for elite athletes from their findings (despite using a dual career sample). These studies failed to recognise a student-athlete sample has significantly different demands to a full-time elite athlete sample. Future research should consider this lack of clarity and clearly identify the research population.

3.4.1. Strengths and limitations. While traditional, method-specific systematic reviews of randomised control trials and intervention effectiveness (e.g., Cochrane Collaboration, 2011) are largely recognised as the gold standard, these types of reviews are unable to address more diverse research questions (Sandelowski et al., 2012). The current review asked a research question that was not appropriate for an intervention effectiveness review. Furthermore, the primary research literature that addresses this research question was diverse in the methods used. Therefore, a mixed-method review, although less recognised, was considered to provide more impact than a method-specific review (Thomas & Harden, 2008; Heyvaert, Hannes, Maes, & Onghena, 2013; Sandelowski et al., 2012). The current review still delivers the benefits of conducting a systematic review: collecting knowledge in a manageable way, confirming multiple research findings, and identifying gaps in the research knowledge (Moher et al., 2009).

Despite these benefits, the mixed-studies review method still presented some challenges for the researcher. Notably, the lack of information for the ideal method to assess research quality of primary studies and reporting of results within mixed-studies reviews (Thomas & Harden, 2008). As a result, this review used an amalgamation of methods to ensure methodological rigor was upheld. For quality assessment, both the Cochrane Collaboration (2011) assessment methods and the Mixed-Method Appraisal Tool (Pace et al., 2012) were considered, but the use of the CASP tools (Critical Appraisal Skills Programme, 2017a; Critical Appraisal Skills Programme, 2017b) as a compromise between generalisable and specific criteria assessments. The CASP tools ensures an adequate assessment of the

research quality is maintained. For guidance on reporting standard, this study used a combination of quality guidelines designed for systematic reviews, such as: PRISMA-P (Moher et al., 2009) designed for traditional systematic reviews, and the RAMESES publication standards for meta-narrative and qualitative reviews (Wong et al., 2013). By following of these guidelines, the research hopes to ensure the adequate reporting of the review process is maintained.

The qualitative synthesis portion of this review was limited due to the lack of homogeneity in the quantitative research within this field and, therefore, the inability to conduct a meta-analysis. A meta-analysis would have provided valid and reliable evidence of the factors that are most strongly associated with outcomes of dual career. Instead, this review conducted a narrative reporting of the quantitative research, which is susceptible to researcher bias. The systematic data extraction process into the findings table was used to reduce the possibility of this bias. Furthermore, the mixed-methods synthesis was able to reduce research bias in the identification of factors through a naïve analysis (The Joanna Briggs Institute, 2014). In the case of the mixed-method synthesis, the current study only investigated the positive experiences and the factors that impact them. This approach was taken so that the research can illuminate the factors that need to be considered by practice in order to promote positive experiences of a dual career. However, it could also be fruitful to consider the factors that impact negative experiences of a dual career so that practice can avoid these factors.

3.4.2. Practical implications. By synthesising the findings from a broad array of research, this review enables a greater understanding of the practical challenges and considerations for promoting effective practices. An area that was consistently referenced to throughout the review studies was social support and the need for the dual career athletes' social network to support both their academic and sporting pursuits. Therefore, it is important for practice to promote the benefits of a dual career (and risks of an athlete-first approach) to coaches, parents, and significant others and to outline their roles and responsibilities in facilitating dual career management. The development of psycho-education programs for coaches, parents and significant other could be an effective future direction. Relating to this, is the importance for the dual career athlete to select institutions that are open to a dual career, including a willingness to be flexible. For example, selecting a university that promotes sport and empowers individuals to maintain a balance between promoting sport and education, but also a sporting organisation that is willing to adapt training due to educational

demands. The presence and culture of peer support can also be influential in this. By understanding the approach organisations take towards dual career before attending, the dual career athlete can better select the approach that suits their needs. The support programs for dual career athlete also need to consider how they enable the development of some of the key skills that were identified in the review studies as facilitating dual career management, such as proactive planning, responsibility and autonomy, career planning, and effective time management.

3.4.3. Research implications. A benefit of conducting a systematic review is the clarity it brings to the gaps in understanding that exist within the research field. The current literature largely focuses on one theoretical understanding of a dual career across the athletic lifespan, presented by the holistic athletic career model (Wylleman et al., 2013). While this understanding outlines the key transitions that occur in the athletic, academic, psychological, psychosocial and financial levels of an individual's life, the model exclusively presents normative transitions (i.e., a dual career athlete progresses from school to higher education to professional sport and post-sport life). The current review provides extensive evidence of this pathway, but it also presents evidence to suggest that these are a variety of alternative pathways in the dual career lifespan. For example, many athletes are not able to make certain transitions and, therefore, dropout of sport or, many athletes do not study at the higher education level. The current review suggests that the dual career pathway is more complex than suggested in the dominant theory. Therefore, this review highlighted a lack of theoretical evidence that explores the multitude of dual career experiences, including combining sport with a vocation at the development or mastery athletic level. A possible reason of this gap in knowledge is the tendency of the research to focus on successful transitions and the tendency of the research to focus on dual careers of school- and university-aged athletes, which this review highlights. Therefore, a diversification of the sample characteristics (i.e., the inclusion of dual career athletes who combine sport with a vocation) and an expanded focus from the experiences of university student-athletes (i.e., the inclusion of dual career athletes who did not attend university but combined sport with work) is required by future studies to obtain a whole picture of the dual career lifespan. Finally, the primary studies were almost exclusively empirical as opposed to theoretical. As established, the current theoretical underpinning of the majority of dual career literature considers one pathway, therefore, theorical development to explain the multitude of dual career experiences identified in this review is considered by

the researcher, at this stage, to be the most poignant gap in the literature, and is therefore addressed in Chapter Four.

Chapter Four:

A Grounded Theory of Dual Career Pathways in Sport

The thesis aims to identity the factors that facilitate positive experiences of managing a sporting career alongside an education or vocation. To achieve this, a systematic mixed-studies review (Chapter 3) was conducted. From the systematic review, it was clear that the dual career research, largely, focused on dual career pursuits during compulsory and higher education settings, and that there was a lack of theoretical knowledge which explains the differing experiences of a dual career. Therefore, chapter 4 aims to address the theoretical gap and advance the research understanding of the multitude of dual career experiences.

4.1. Introduction

Most sport performers, with the exception of full-time professional athletes, pursue their sport ambitions alongside education or vocational endeavours. Talented youth athletes engage with compulsory education and, in later adolescence, the majority either pursue further/higher education or employment. This twin pathway of sport and education or vocational development (i.e., a dual career) represents a formative stage in an individual's life in terms of their physical, psychological, and social development. The initial research on dual career in sport did not begin with a specific focus on dual career athletes per se; rather, it emerged from work investigating the transitions that sport performers go through in their athletic development and recognizing the importance of a holistic perspective of athletes rather than a sole focus on them as sport performers (see Petitpas, Brewer, & Van Raalte, 1996; Wylleman et al., 2004; Wylleman & Lavallee, 2004). More recent research has begun to specifically focus on dual career in sport, with the European Union publishing recommended policy actions in support of dual careers in high-performance sport (European Union Expert Group: Education and Training in Sport, 2012) and the Psychology of Sport and Exercise publishing a Special Issue on Dual Career Development and Transitions (Stambulova & Wylleman, 2015).

Previous researchers have identified a variety of benefits associated with pursuing education or vocational endeavours alongside sport ambitions, including a sense of well-being brought about through developing a multi-dimensional identity (Miller & Kerr, 2002; Pink et al., 2015, 2018; Ryba et al., 2015). The identity accumulation hypothesis (Lang & Lee, 2005) explains that the more complex one's identity, the less psychological distress an individual will experience in adverse situations. The presence of an alternative focus in the athletes' lives was also described as a relief from the pressures of sport and provided perspective to the individual (Aquilina, 2013; Pink et al., 2015, 2018). Indeed, the well-being benefits of a dual career can extend beyond the athletic career itself and has been associated

with: positive athletic retirement (Brewer, et al., 2000; Taylor et al., 2005), increased life satisfaction after sport (Lavallee & Robinson, 2007), and an increased ability to make post-sport career decisions (Murphy et al., 1996). With the increasing number of higher education systems hosting high performance centres, dual career athletes could also benefit from utilising higher education systems' support services and facilities to advance their own athletic and personal development (Brown et al., 2015). Dual career athletes described elevated levels of motivation to maintain both sporting and educational or vocational endeavours, despite the challenges, in order to obtain these benefits (Aquilina, 2013; Cosh & Tully, 2014).

Although the positive experiences of a dual career have been demonstrated, the negative experiences of pursuing two career goals have also been extensively reported. A body of research has referred to the implausibility of dual career pursuits due to the high time demands and intense pressures on physical and mental energy (Cosh & Tully, 2014; Singer, 2008; Tekavc et al., 2015). Plus, the ability to manage a dual career is described as heavily dependent on the support from significant others (Knight et al., 2018). Owing to these challenges, dual career individuals felt compelled to compromise one of their pursuits (Ryan, 2015; Ryba et al., 2015; Tekavc et al., 2015), more often they would sacrifice their educational or vocational goals in favour of their sporting goals and described experiencing pressure from their sporting stakeholders to make this choice as a necessity to achieving elite status (Ryan, 2015). Sacrificing academic achievements has consequences for academic grades, confidence in academic tasks for dual career athletes and career decision-making skills (Bimper, 2014; Melendez, 2009; Murphy et al., 1996). However, some dual career individuals would sacrifice their sporting goals in favour of educational or vocational goals due to perceived barriers in reaching the top-level of sport, including the (in)ability to financially sustain themselves via a sporting career (Brown et al., 2000; Isoard-Gautheur, Guillet-Descas, Gaudreau, & Chanal, 2015).

A mixed-studies review, conducted in chapter 3, was conducted to address the conflicting reports of dual career experiences. The review showed that a dual career has the potential to prepare athletes for their post-sport future, protect against identity foreclosure, and enhance the ability to cope with adversity during a sporting career. The factors that promote these positive experiences of dual careers include, a social support network that invests in both aspects of dual careers, the individual resources including time management and proactive planning, an athletic environment that is open to supporting education, and an academic environment that is open to supporting sport. However, the mixed-studies review

also highlighted several gaps in the research knowledge. First, due to a tendency within the research to focus on a dual career during compulsory and further/higher education and, therefore, the exclusion of the experiences of combining sport with a vocation (either after school or higher education), there exists a lack of research knowledge which explores the diverse pathways of dual career, and, therefore, a lack of understanding of the entire lifespan of dual career development (see *introduction* section and figure 1). Second, the research conducted focused on one theoretical understandings of dual career, which promotes an understanding of the dual career experience through the normative transitions of one athletic career trajectory, from school to higher education to professional sport to post-sport life. As a result, currently the research does not explain, on a theoretical level, the development of different dual career trajectories and the multitude of experiences that are seen in practice (see introduction and chapter 3).

A small body of research (Azócar, Pérez, Pallarés, & Torregrosa, 2013; Pallarés, Azócar, Torregrosa, Selva, & Ramis, 2011; Torregrosa, Ramis, Pallarés, Azócar, & Selva, 2015) has addressed and categorised the career trajectories of elite athletes: (a) a linear trajectory, when the athlete is exclusively focused on their sporting career and associated with an exclusive athletic identity; (b) a convergent trajectory in which sport is prioritized but is compatible with an alternative job or with education and associated with a multi-personal identity; and (c) a parallel trajectory in which sport and higher education or work are almost equally prioritized and associated with a balanced, multi-personal identity. In these categorisations, the convergent and parallel pathways describe a dual career. Stambulova and colleagues (2015) extended this, with an investigation of high school student athletes, and suggested that the approaches to a dual career can be viewed as a spectrum from prioritizing sport (and higher visibility of athletic identity) at one end to prioritizing studies (and higher visibility of student identity) at the other end. Whereas, research (Aunola et al., 2018; Chamorro et al., 2016) into the motivational profiles of high school student athletes and youth athlete, respectively, suggests three motivational patterns in dual career athletes: a dual or balanced motivation pattern, characterized by high value placed on both education, sport, and life; a low academic motivation pattern, characterized by a high value placed on sport but a low value on education or life; and a (relatively) low sport motivated pattern characterized by a lower value placed on sport than education or life. These patterns were replicated with similar findings in university student athletes (Healey, Ntoumanis, & Duda, 2016; Lupo et al., 2015). Furthermore, a narrative analysis of young athletes' prospective career futures presents three similar career construction styles (Ryba et al., 2017). While this research

provides a greater understanding of the diverse pathways of dual career, the research area still lacks a theoretical perspective of the development of these pathways over the lifespan. Furthermore, these career trajectories have not been explored for individuals combining sport with a vocation.

Taking the current research and the gaps in this research knowledge into consideration, the purpose of this study is: (a) to extend the research base which identifies and examines individual pathways of sport and education or vocational development; (b) establish a first grounded theory of the factors and outcomes associated with different dual career pathways in sport. To achieve this research aim it was important for the study to explore the previously uncharted career trajectories of individuals in sport and a vocation, take a lifespan view of development, and understand the outcome of these trajectories through the experiences of retired athletes.

4.2. Methods

4.2.1. Approach to inquiry. The research question is best addressed through a rich and contextualized understanding of the human experience that can be accessed through qualitative methods. However, the research question also requires an in-depth understanding of the higher order concepts that extend beyond the individual and enable the development of theory. Glaser and Strauss (1967) first proposed the grounded theory method to inductively generate theory from data with the aim to develop a higher-level understanding of phenomena and is particularly suited to the investigation of phenomena that requires further breadth and depth in the research. Grounded theory provides a methodology to develop an understanding of social phenomena that avoids the use of pre-formed theories of a priori knowledge (Glaser & Strauss, 1967). In practice, a researcher cannot ignore their previous exposure to theory, but can adopt an open-mind approach to novel concepts (Charmaz, 2006). Furthermore, the grounded theory approach encourages a “rigorous analysis” and “continuous interrogation” of the data in order to “develop theoretical analysis” (Charmaz, 2006, p. 127). Hence, grounded theory was considered an appropriate method to further explore individual pathways of sport and education or vocational development and develop a first theory of the factors and outcomes associated with different dual career pathways in sport across the lifespan.

The three most widely used variants of grounded theory are recognised through their ontological and epistemological assumptions: a realist-positivist interpretation that assumes there is a single objective truth, discovered directly from the data (Glaser, 1992), a post-

positivist variant which acknowledges that data is interpreted by the researcher, but remains realist by aiming to recognise bias and maintain objectivity (Strauss & Corbin, 1990), and lastly, a constructivist interpretation which discards any notion of objectivity and focuses on the meaning that can be constructed from the interaction between participant and researcher (Charmaz, 2006). The variant of grounded theory utilized by researcher should match their philosophical standpoint to ensure that the core basis of their research is methodologically coherent (Holt & Tamminen, 2010b). This study, therefore, adopts a constructivist grounded theory approach as it is consistent with the critical realist standpoint. Furthermore, the constructivist variant offers several strengths, including a systematic, yet flexible, approach to data collection and interpretation strategies which emphasise the co-construction of knowledge and ensures that the emergent theory remains grounded within the data (Creswell, 2007; Mills, Bonner, & Francis, 2006). Regardless of the variant, grounded theory is a recognised as a ‘‘total methodology’’ (Weed, 2009, p. 504) which the researcher is required to engage with from start to finish. To ensure this, the current study not only followed Charmaz’s (2006) guide, but also followed the core elements of grounded theory: theoretical sensitivity, the avoidance of analysis through a prior knowledge; iterative process, the cyclical process of data collection and analysis; theoretical sampling, the purposeful sampling of participants to enhance understanding; constant comparison, the analysis of inductive data collection with the literature and the developing theory; codes, memos, and concepts, used as aids to the data collection process; theoretical saturation, the point at which to cease data collection; fit, work, relevance, and modifiability, to ensure research quality; and substantive theory, the recognition of the theory as grounded within the research context (Weed, 2017).

4.2.2. Participants. The sample of participants comprised of 17 individuals (9 male and 8 females) who had experiences of combining their aspirations of an elite sports career with an alternative education or vocation. The characteristics of all participants are summarised in Table 6. Of these 17, four individuals were current university students with aspirations to compete at an Olympic games; three pursued a sole focus in sport after compulsory education, one of which did not return to any form of education or vocation; one dropped out of higher education; four had an experience of combining sport with a vocation; five could be described as not reaching their sporting goal of competing at an Olympic or commonwealth games; and four achieved or exceeded their sporting goal whilst maintaining the pursuit of an educational or vocational goal. In terms of academic achievements: six individuals held no more than high school qualifications, but four of these were working

towards an undergraduate degree; seven individuals held undergraduate degrees, two of which were working towards postgraduate degrees; and three participants had completed an undergraduate degree. The participants came from a wide variety of sports (rowing, volleyball, canoeing, rugby, triathlon, swimming, hockey, cycling, curling and tennis) and from a variety of vocational backgrounds (life coach, accountant, defence industry, journalist, coach and lifestyle advisor).

Table 6

Summary of participant characteristics for grounded theory (chapter four), sporting, educational and/or experiences

Pseudonym	Gender	Sporting and educational / vocational journey	Pathway (according to the proposed model) and explanation
Jake	Male	Attended university while competing at the international university level. Currently studying a part-time postgraduate degree and attending national squad selection events.	DC pathway – equal focus towards both vocational career and sporting ambitions. Using management strategy of part-time study.
Sara	Female	Selected a university based on high-level of sport and the degree subject. Currently a full-time undergraduate student and competing at a senior international level.	DC pathway – always maintained an equal focus towards education, vocational career goals and sporting goals
Joel	Male	Focused on sport for a year after compulsory education to focus on training and transition to senior level but maintained work experience. Currently a full-time undergraduate student and attending Olympic selection events.	DC pathway –short-term prioritisations of sport, particularly over a transition, but there was always a focus/progression of both careers.
Leonard	Male	After compulsory education played sport professionally and internationally. During this time completed an undergraduate online degree part-time. Retired from sport and completed a post-graduate degree. Currently pursuing his post-sport career as a life-style coach and mentor.	Sporting pathway –prioritisation of sport, maintain vocational career development around sport. After retirement, needed further education to go onto a post-sport career.
Adam	Male	Selected a university based on high-level of sport and the degree subject, competed at an international age-group level during this time. Suffered an injury that encouraged the maintenance of a focus on education and a vocational career outside of sport. Currently a full-time undergraduate student and competing at a national level.	DC pathway – maintains a focus on both education and vocational career and on sport through his journey.
Ronald	Male	Terminated university early to focus sport become world champion and Olympic medallist. Worked part-time around sport. Recently retired from sport but does not have the education or vocational skills required for his vocational career aspirations.	Sporting pathway – sacrificed education and vocational career goals to pursue sport. Did maintain a vocation but was not relevant to post-athletic career aspirations.

Liam	Male	Combined full-time undergraduate and part-time postgraduate degrees with competing at an international level and at an Olympic games. Currently working part time as a teacher, whilst competing internationally.	DC pathway – equal focus on sporting and education/vocational goals were maintained throughout the athletic lifespan.
Nadine	Female	After university increased focus towards sport, competed international, at the Olympics and becoming world champion. During this sport prioritisation vocational career aspirations changed, and undergraduate degree was no longer relevant. Currently a full-time athlete exploring career options and work experience around sport.	Sporting pathway - prioritise sport and sacrificed of vocational career aspirations. Currently exploring vocational aspirations and work experience when it works with sport.
Holly	Female	Full-time job role in defence career before becoming a professional athlete. Shifted focus towards sport to become multiple Olympic medallist. Returned to work during off-season to maintain vocational career. Recently retired and described a lack of workplace experience.	Sporting pathway – prioritised sporting ambitions over vocational career and lacked workplace experience.
Abigail	Female	After university, selected a job that would work around a focus on sport, competed internationally and at an Olympic games. Retired and retrained to a career as a journalist. Currently working as a journalist.	Sporting pathway – prioritised sport over vocational career, needed further education and work experience upon athletic retirement.
Dominic	Male	Maintained competing at an international level throughout university. Prioritised career after university and was deselected from the national squad.	Educational/ Vocational pathway – focus on vocational career to the detriment of sporting career
Rachel	Female	During compulsory education, selected into a national senior training program, was shortly deselected from the program and attended university. No longer competes in this sport, currently a full-time undergraduate student.	Educational/ Vocational pathway – deselection encouraged a focus on education and a dropout from that sport.
Alice	Female	Maintained competing at an international level during compulsory education, higher education and now currently combining international competition with a vocation.	DC pathway – equal focus towards sport and vocational career throughout the lifespan.
Jamal	Male	After compulsory education, competed at as a professional senior athlete, whilst coaching part-time around sport. Recently retired but does not want to pursue coaching.	Sporting pathway – prioritisation of sport and sacrifice of education and vocational experience.

Gabrielle	Female	Competing at an international under 23s level during university but suffered a career-ending injury. Now no longer competes in sport, is a full-time undergraduate student.	Educational/ Vocational pathway – prioritisation of education due to a career ending injury.
Harry	Male	Competing at a national age-group level during compulsory education and university. Was not able to compete in the senior international competitions due to financial restraints, now retired from sport and pursuing a full-time postgraduate degree.	Educational/ Vocational pathway – prioritisation of education and vocational career due to financial barriers.
Ellen	Female	Competed at an international age-group level during compulsory education and university, was unable to transition to the senior level and suffered injuries. Retired from sport and is currently a full-time post-graduate student	Educational/ Vocational pathway – prioritisation of education and vocational career due to deselection and injury.

N.B. Participants appear in the table in the order they were interviewed, according to the theoretical sampling procedure.

At the outset, the researcher adopted a broad approach to recruitment, seeking any individual with an experience of a dual career. After 3 interviews and as the data collection/analysis process developed, the concept of theoretical sampling was used to purposefully select participants who had the potential to contribute to the emerging concepts or could address gaps in our understanding (Creswell, 2013; Robinson, 2014). For example, after discussing an event that caused a current dual career individual to question their commitment to education, a retired athlete with experience of dropping out of education was recruited to gather data on the longer-term impact this decision had on their experience and the outcome of this decision. This sampling approach led to the recruitment of both retired and current dual career athletes, and a large age-range between the participants 20 to 37 years ($\mu = 27$, $SD = 5.36$). The researcher restricted recruitment to participants who have been identified, through competing at the national and international level, as having the potential ability, interest in, and commitment to elite sport (i.e., talented, high-level, or high-performing athletes). Not all participants held British nationality, but all were educated in the British system.

4.2.3. Data collection strategy.

4.2.3.1. Participant recruitment and selection process. First, ethical approval for the research design and procedure was obtained from Loughborough University Ethical Committee. Potential participants were initially contacted via email, but interviews were conducted face-to-face or via online video call. A re-iteration of the ethical procedure was given to the participant immediately before the interview began and, at this point, they were offered the opportunity to ask any questions regarding the study and its procedures. After three interviews and as the initial data collection and analysis developed, the concept of theoretical sampling was used to purposefully select participants who could address gaps in our understanding (Robinson, 2014). This sampling method enables the researcher to refine the ideas and concepts in the emerging theory (Weed, 2009), and therefore, enhances the data adequacy (Levitt, Bamberg, Creswell, Frost, Josselson, & Suárez-Orozco, 2018). To illustrate, in this study, after discussions with an individual who withdrew from competitive sport after leaving university, the researcher specifically aimed to interview participants who pursued a reduced focus on their sporting endeavours. These participants' experiences, along with conversations with a practicing expert, helped to develop the educational/vocational pathway of the emerging theory.

Sampling in qualitative research is concerned with the richness of information, and therefore the number of participants required depends on the nature of the topic and the resources available (O'Reilly & Parker, 2013). When drawing towards the end of this study and considering if the sample size was adequate, the researcher was guided by the concept of theoretical saturation as opposed to the traditional concept of data saturation. Data saturation is recognised as collecting data to the point where the analysed information is repeating itself (Francis, Johnston, Robertson, Glidewell, Entwistle, Eccles, & Grimshaw, 2010). At this point, it is considered that there is no new information to be gained from collecting more data and the collection process concludes. However, there is no clear method for establishing when data saturation has been reached or a clear method of evidencing that you have reached data saturation. Theoretical saturation, on the other hand, occurs when the ongoing process of constant comparison no longer brings fresh theoretical insights, or no longer extends the insights to higher level concepts (Charmaz, 2006).

4.2.3.2. Interviews. Data was collected via a semi-structured, in-depth interview based on a life-story approach. This method was selected to gain a holistic perspective of the dual career individual's life history and the significant events that impacted their journey (Atkinson, 1998). An interview guide was used as a prompt for the researcher and to aid the collection of information-rich data but included sufficient flexibility to allow the participant to introduce alternative points of discussion (Charmaz, 2006). Questions ranged from a broad overview of their experience (e.g., can you describe your dual career experience so far?) to details about specific events and how they impacted their pathway (e.g., can you explain in detail what happen? How do you think this impacted your journey? Did your attitude to dual career change after this?). The researcher used additional probing questions to maintain focus on both aspects of the dual career and to encourage depth and detail in the participants' responses. Additional interview questions were developed during the data analysis to facilitate understanding of the emerging theory (e.g., what were your goals when you first started for each of the pursuits? Have these changed? Do you think you've been able to give both goals equal focus?). Furthermore, the researcher shared their understanding of the key issues of the context with participants to aid the co-construction of the theory.

All interviews were conducted, digitally recorded, and then transcribed verbatim by the researcher to aid immersion of the data. The researcher has personal knowledge of the dual career experience and this was used to develop a relationship of reciprocity with the participants. Each participant conducted one interview, which were conducted in a quiet,

private location at the participant's choice and ranged in duration from 45 to 90 minutes. The total duration of the data collection process, in this study, lasted for approximately six months.

4.2.4. Data Analysis. Grounded theory analysis takes place through a non-linear, iterative process (Charmaz, 2006): first, data is collected, analysed, and then compared with the available literature. Second, additional data is collected to enhance the analysis and development of the emerging theory. This constant comparison process fluctuates between inductive reasoning, deriving concepts from the data, and deductive reasoning, checking and refining of the emerging theory with empirical findings. The process has been described as "the core category of grounded theory" because it ensures that theory remains grounded in the data (Hallberg, 2006, p.143). The researcher aimed to transcribe and analyse each interview transcript before collecting further data. Although this was mostly upheld, it was not possible in some instances because interviews were conducted immediately after one another. Initially, codes took a line-by-line, descriptive nature, and remained receptive to all possible interpretations. At this stage, data was compared with data for similarities and differences. As recurring codes emerged and an analytic direction was beginning to establish, coding became more directed, selective, and conceptual to explain larger segments of the data. Despite the described progression of coding, there was an element of fluidity in these stages where the researcher reverted to initial coding methods when new categories emerged or to define the boundaries of categories. The coding process was conducted by the researcher but was supplemented by discussions with a practicing expert, who gave his understanding from over fifteen years working within the research context at a policy level. This ensures the relevance of the developing theory to the research topic (Charmaz, 2006). The discussions led to the foundations of the 'mind the gap' model and how it interlinked with the most salient concerns of the context.

The concept of theoretical sensitivity is considered crucial to grounded theory and refers to having an awareness and understanding of the meaning of the data (Strauss & Corbin, 1990). The theoretical sensitivity of a grounded theory is increased by being immersed in the literature and associated general ideas but is compromised by allowing the analysis to be guided by a detailed review or specific theoretical framework (Glaser, 1992). For that reason, in this study, no formal literature review was conducted before the data collection process. However, researcher was aware of the potential influence from previous knowledge they held of the literature and their experience of the area in practice. To remain

open to emerging concepts and to manage the researcher's perspectives, applying extant theory was avoided in the early stages of analysis (i.e., in the first three interviews) but introduced in the later stages (Charmaz, 2006). Some theories that were considered include holistic athletic career model (Wylleman et al, 2013), identity theory (Stryker, & Burke, 2000), and athletic development theories (Stambulova, 2003; Stambulova, Alfermann, Statler, & Côté, 2009).

4.2.4.1. Analytic tools. Several analytic tools were used to aid the data analysis process. Researcher's notes were recorded immediately after interviews which documented the researcher's initial thoughts about the relation of the interview to the emerging theory and the interaction between participant and researcher (Charmaz, 2006). Through the coding process, memos were used to explain categories; explore relationships between data, codes, concepts, and categories; to aid the process of developing coding from initial to theoretical; and to encourage reflexivity from the researcher. Memo-writing has been described as a "pivotal intermediate step between data collecting and writing" (Charmaz, 2006, p. 72). Additionally, NVivo software was used to organise codes, concepts, and memos (Hutchison, Johnston, & Breckon, 2010). As the understanding of the categories developed, diagramming was also used to develop the emerging theory and to offer concrete images of our developing ideas (Charmaz, 2006). By engaging in this process, it enabled the researcher to conceptualize the ideas derived from the data and visualise the gaps in understanding that were left in the emerging theory.

The findings from section 1 of this study are schematically presented, are conveyed in detail via three composite vignettes, and accompanying interpretation sections. A composite vignette comprises a mixture of accounts given by participants into one narrative (Spalding & Phillips, 2007). Therefore, these vignettes should not be read as individual quotes but as an amalgamation of shared accounts. Although the use of vignettes is not specifically described in the constructivist variant of grounded theory, Charmaz (2006) encourages grounded theorists to reflect context in their writing. The reporting method was selected as it promotes an understanding of the organizational structures surrounding the individual, the interconnection between the themes, and the participants' holistic experience over time (Ely, Vinz, Downing, & Anzul, 2003).

4.2.5. Research quality. The assessment of methodological integrity within qualitative research is a debated topic. Unlike quantitative research, the concepts of reliability

and validity are poor measures of quality for grounded theory, particularly the constructionist variant, as they reflect a realist ontology and objective epistemology (Sparkes & Smith, 2013). For this study, the researcher avoided the use of universal criteria for assessing rigor in qualitative studies in general and instead aimed to achieve trustworthiness through method-specific considerations (Burke, 2016; Smith & McGannon, 2017). However, the recent journal article reporting standards for qualitative research in psychology was followed to maintain continuity and comprehension in the language used when reporting (Levitt et al., 2018). To aid the understanding of research quality according to grounded theory, Charmaz (2006) presents a guide for conducting constructivist grounded theory. Additionally, Weed (2009, 2010, 2017) and Holt and Tamminen's (2010a, 2010b) provide recommendations for conducting quality in grounded theory research within sport psychology. By systematically following the grounded theory approach to data analysis, the researcher ensures rigor and trustworthiness in the emerging theory (Hussein, Hirst, Salyers, & Osuji, 2014).

Although the constructivist grounded theory variant incorporates Glaser and Strauss's (1967) criteria of fit, work, and relevance for evaluating research quality, Charmaz (2006) also adds a set of paradigm-specific criteria: credibility, originality, resonance, and usefulness. The credibility of this research is enhanced using a diverse sample with both male and female participants from a variety of sporting and educational backgrounds. Through this sampling strategy, the researcher was able to compare the experiences of individuals who did not attain one or more of their career goals with individuals who had. The use of negative cases has been recognised as an effective strategy for extending understanding (Patton, 2002) and, in this study, enabled the researcher to identify the factors/experience that are of particular salience to the different dual career outcomes. Resonating with the real-world context and encompassing the vast majority of dual career experiences was a specific focus of the sampling procedure. Finally, the use of a practicing expert ensures that the emergent theory is relevant and useful to the 'real-world' context (Charmaz, 2006; Levitt, Motulsky, Wertz, Morrow, & Ponterotto, 2017).

4.3. Findings and Interpretations

This section outlines the findings and interpretation of this study which aimed to address the following research aims: (a) to add to the research base which identifies and examines individual pathways of sport and education or vocational development; (b) establish a first grounded theory of the factors and outcomes associated with different dual career pathways in sport. Firstly, the findings are schematically presented in figure 6, the

narrative findings and interpretations are then presented in two sections. Section 1 outlines and analyses the three dual career pathways, the outcomes of these pathways and is accompanied by three composite vignettes. Section 2 outlines the development process that contributes to the manifestations of these pathways and is accompanied by two interview extracts.

The following findings derived from the data collection and analysis process. In general, a dual career begins during compulsory education where individuals start to transition from the initiation stages of an athletic career to the development stages and begin to develop sporting goals of becoming an elite athlete (Wylleman et al., 2013). Most

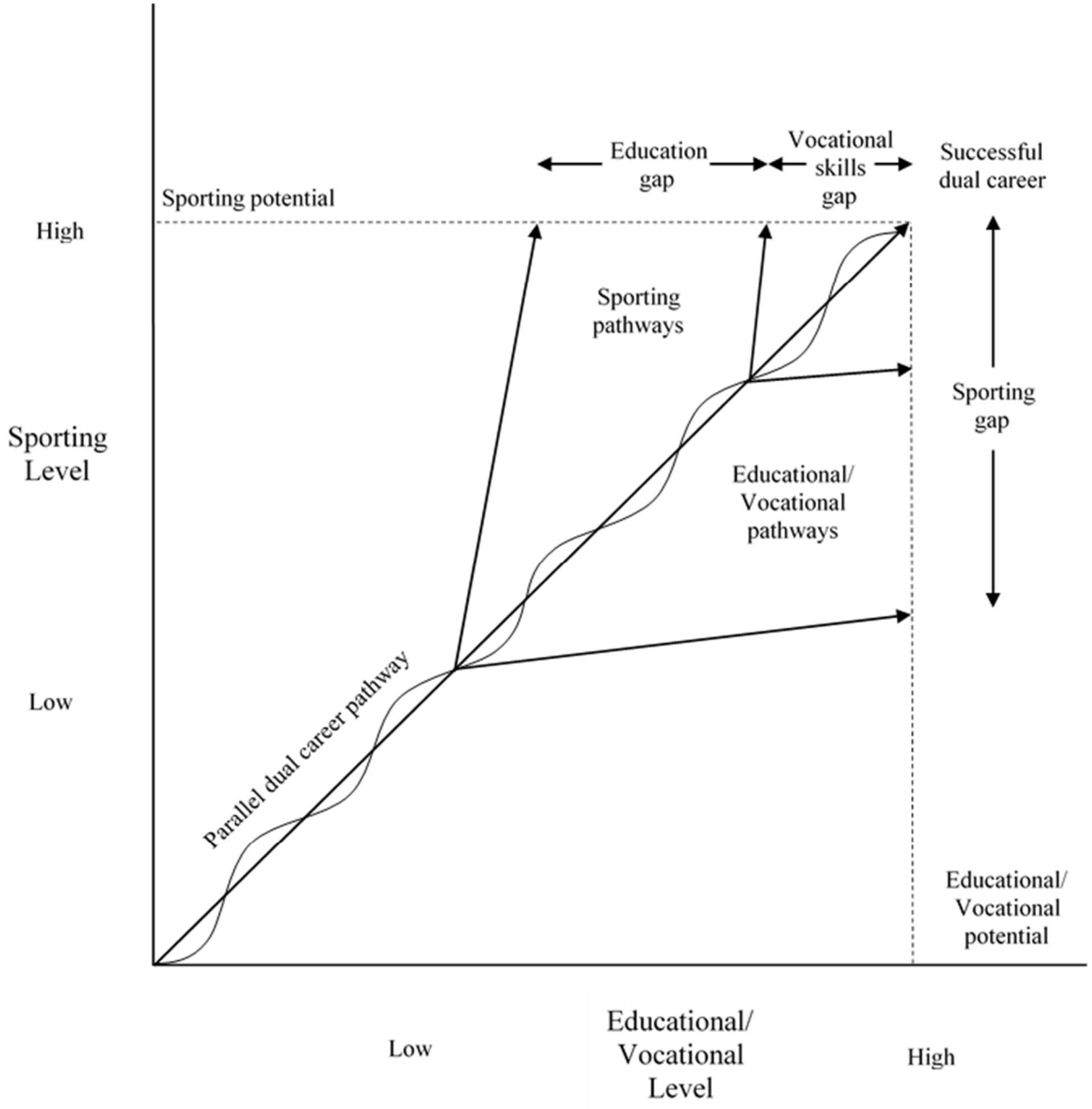


Figure 6. A visual representation of a grounded theory of dual career pathways in sport (chapter four)

participants in this study found the combination of sport and compulsory education challenging but found they were able to manage due to being surrounded by individuals who were largely willing to support both of their pursuits. A dual career was described as increasingly difficult during higher education and employment, and often this led to participants reducing their commitment to at least one of their career ambitions. A reduced commitment to one endeavour is categorised as either a sporting pathway or an educational/vocational pathway. However, other individuals, with a high degree of support, were able to maintain both endeavours for the duration of their sporting career. This is represented by the dual career pathway.

4.3.1. Section 1: Dual career pathways.

4.3.1.1. Sporting pathway. The first presented vignette illustrates experiences of individuals who affirmed their athletic sense of self throughout their athletic development. This continued affirmation encouraged the individuals to pursue a sole focus on sport and to reduce their commitment to academic or vocational development.

Sporting pathway vignette.

> I think school was where I got my first thirst for sport. I wouldn't say I was very academic. I gained confidence on the sports field and I was known at school for being sporty. It was an area of school where I developed my character and that's how I then learnt to be confident in myself and my abilities. I made quite a lot of progress early on. I raced well against the girls that were regularly on the British team and so I thought, that is definitely within my grasp. I went to my first European Championships, as part of the British team, and that started me thinking, maybe I could start to look at medalling at these championships. After that, I definitely started to commit to becoming the best athlete that I could possibly be. I don't think I knew what that meant but I think deep down, I thought that I could be a part of that Olympic team one day.
>
> I chose a university that was close to my home club so that I could continue to train with my coach, but, logistically, it was an absolute nightmare. The training base and gym was on the east of the city, the university was in the centre and I lived a couple of miles away from the centre. I was always rushing around. It got to a point where I was just missing lectures and missing classes because I was so tired from training. But that shot me in the foot because, then I didn't know what I was doing and I would be even further behind. That was making the

stress even worse. I was running off five hours sleep a night and combining that with tough training. I just kept on getting ill, so my sporting performances were getting worse. I tried to talk to the university and to the sport but neither were willing to help with any kind of special arrangements. That's when I started to realise I had to make one decision. Either I carry on with university but then I have to quit sport or I carry on with my sport, but that means I have to quit university. From my competition results so far, I knew I could make it as an athlete, so I made the decision; I'm going to focus on sport and withdraw from my university course. From that point on I went from student-athlete to a professional athlete, where I began to be far more meticulous about everything: rest, sleep, nutrition and training as a whole. That was my job. I was an athlete first and foremost rather than anything else. So my social life, career development and all the rest of it; that was very much number two. But, winning medals along the way was showing me that it was all worthwhile. I did have a small income from doing some work as a coach, but it only happened if I could fit it in around training and mainly in the off-season.

Eventually, I got to the stage as an athlete where I was as good as I'd ever get. I felt like, I've ticked all the boxes I wanted to. It was really tough for me and my head was all over the place. I was terrified about retirement because I knew I didn't have a university degree to fall on to. I barely had any education or work experience. My coaching work helped a little, but it wasn't something that I wanted to do full time. I didn't really know what I wanted to do because I'd never had to think about it.

Sporting pathway interpretation.

The accounts captured in this vignette highlight the well-established concept of athletic identity as the cognitive, affective, behavioural, and social aspect of identifying with the athlete role (Brewer et al., 2000; Murphy et al., 1996; Stryker & Burke, 2000). The vignette demonstrates the strengthening of athletic identity through events such as, athletic performance (e.g., reaching or exceeding a sporting goal), or athletic recognition (e.g., coach or peer feedback). This narrative also illustrated that the development and maintenance of an athletic identity has behavioural connotations, where individuals will formulate decisions on upholding their commitment to the sporting role (e.g., in this example, selecting a university based on being able to train at their home club). This association has been shown in runners,

where sporting commitment increases with athletic identity (Horton, & Mack, 2000). In contrast to this athletic identity development, this pathway is characterised by a lack of identity development relating to their vocational career or educational pursuits (as illustrated by the following quote: "I wouldn't say I was necessarily academic").

In this pathway, participants described managing a dual career as challenging. These individuals did not have access to the high degree of social support, institutional support, or individual competencies which research, and the systematic review (chapter 3), has identified as necessary for dual career management (e.g., Aquilina, 2013; Debois, Ledon, & Wylleman, 2015; De Brandt, Wylleman, Torregrossa, Defruyt, & Van Rossem, 2017; Li & Sum, 2017, see chapter 3). These difficulties were mostly seen at significant points of transition for the individual (e.g., the transition from school to higher education or the transition from higher education to vocation; see the holistic athletic career model, Wylleman et al., 2013). Experiencing poor athletic performance was particularly problematic for individuals in this pathway because it challenged their understanding of themselves. At these points of difficulty, individuals would reassess their abilities, goals, and motivation towards these goals. The conclusion that sport and education/vocation are contradictory and a coinciding decision to commit more strongly to the sport than education/vocation characterises the sporting pathway. This is reflected in figure 6 as the deviations away from the dual career pathway.

Sporting pathway outcome: educational and vocational skills gap.

An increased commitment to the sporting role led to an increase in athletic performance and realising one's sporting goal(s) in the short-term. Yet, an increased focus on sporting endeavours also has repercussions on educational/vocational development in the long-term. Participants in the sporting pathway (who had reached athletic retirement, n = 5) went on to report difficulties with retiring from sport. This difficultly was to be expected since a high or unidimensional athletic identity has been widely reported as a barrier to athletic retirement (see Martin, Fogarty, & Albion, 2014; Torregrosa et al., 2015). The challenges in athletic retirement specific to dual career athletes are categorised and depicted in Figure 6 in two ways: first, an educational gap, where participants described possessing a discrepancy between their post-sport vocational career goal and their educational achievements (i.e., they realised a vocational goal of becoming a doctor) but they did not have an undergraduate education. This could be due to not attaining the appropriate educational level (as seen in the vignette) or due to following an educational pathway that

was no longer appropriate for the vocation they wished to pursue after sport, (i.e., they realised a vocational goal of becoming a doctor but they had an undergraduate degree in sport management). Educational status has previously been recognised as a non-athletic factor that has the potential to affect the experience of sport career termination (Cecić Erpič et al., 2004) and educational attainment in athletes has been a focus for dual career practice for a number of years (European Union Expert Group: Education and Training in Sport, 2012). Second, a vocational skills gap represents a differential between actual vocational skills and desired vocational goals, (i.e., they had the vocational goal of becoming a doctor, they had obtained a relevant medical degree, but they had no work-experience within a medical setting). To illustrate, even if individuals were able to maintain both sporting and educational pursuits (to achieve the appropriate educational requirements), individuals often had no vocational experience and, therefore, no opportunity to develop the skills required to succeed in a job role. The vocational skills gap is yet to be explored by research or addressed in practice.

4.3.1.2. Educational/Vocational Pathway. The second vignette presents a composite account of individuals who perceived a need to prioritise their educational or vocational goals and reduce their commitment to their sporting goals. This prioritisation was often accompanied by realising their sporting goal of an elite sporting career would not be achievable or not be feasible.

Educational/vocational pathway vignette.

> I went right through the talent pathways at a young age. I think, in the beginning, my efforts towards school and sport were quite evenly split. I think there was quite a lot of influence from my parents on that, they wanted me to do well in school, but also there was a lot of support for the sport-side of things as well. I think being selected at my first international age-group competition; that really spurred me on. I loved getting a taste of that and I had a really good squad as well. We had a load of success that previous groups had never had before. Towards the end of school, I wasn't ready to be a professional athlete. My ability wasn't quite there yet to step-up to the senior ranks. I also didn't have the money to travel, to play professionally, and sustain myself. I also didn't want to put all my hopes on sport. This became really apparent to me when I saw one of the older guys get injured at a training camp. He was one of the senior, full-time athletes

and that was it for him. His sporting career was over with one injury. After seeing that, I knew that I always needed to have something to fall back on.

I found the transition to the senior level hard. I had a few odd positive results, but for every positive result I probably had six negative results. I was on the edge of the squad at the time, so if I missed training or competitions it was affecting my selection later down the line. Every time I didn't do well it was having a really negative impact on my confidence and my belief in myself as an athlete. One week I'd be thinking, "Yes, I'm going to be an athlete" and then the next week I'd be thinking, "I can't do it anymore". So, because of that up-and-down there was always a plan after university that was not dependent on sport.

After university, sport became a bit of a chore. It just felt like, from a lifestyle perspective, it wasn't fitting in at all. I found managing the two really hard. There wasn't the flexibility that there was at university. I had to be at work 9 till 5 with half an hour lunch, so training had to be done in the morning or evening. Then every weekend I'd be traveling to competitions, competing and getting back late Sunday night, to do it all again Monday. It came to selection for the commonwealth and I didn't make the team. I was devastated because it had been a goal of mine, but I knew that I wanted to work my way up a career ladder and I knew that there's no money in sport anyway. So focusing on my career felt like the right option. Yes, I am a bit sad that I never managed to make anything of it and it feels a bit of a waste, all that time in sport, but I love my job now.

Educational/vocational pathway interpretation.

The educational/vocational pathway represents a similar initial athletic development to the sporting pathway, (i.e., athletic identity is developed through athletic performance and recognition). However, the educational/vocational pathway differs in the career development. Career identity is much more prominent for individuals in this pathway than the sporting pathway. As alluded to in the vignette and previous research, dual career athletes recognise that sporting success is not guaranteed and that they required an alternative focus, a back-up plan, or preparations for post-sport life (e.g., Aquilina, 2013; Li & Sum, 2017). For participants in this study, the realisation occurred after events, such as underperforming academically, deselection from talent pathways, experiencing injury, financial difficulty in maintaining a sporting career, or becoming frustrated with a lack of mental stimulation. Participants also considered any barriers in their sporting pursuits, such as a lack of

opportunities to play professional sport. These findings compliment previous research that shows athletes re-evaluate the salience of their athletic identities when they recognise that sports careers are potentially unfeasible (Lally & Kerr, 2005). As the educational/vocational pathway progresses, it is characterised by a more salient identification with and a prioritisation of educational or vocational pursuits. For these individuals, when dual career management is challenging or athletic performance is poor, they are more likely to invest time and resources into their alternative career identity. Similar to the sporting pathway, the critical point where individuals deviate away from the parallel dual career pathway often occurred around the transition out of school or the transition out of higher education (see the holistic athletic career model, Wylleman et al., 2013).

Educational/vocational pathway outcome: sporting gap.

An increased commitment to the educational/vocation role, has several repercussions for performance sport, sport management, and sport participation that are encapsulated in the sporting gap (figure 6). The sporting gap represents a dropout from elite sport or talent pathways and, therefore, a reduction in the pool of talent for performance sport. Two reasons for this dropout are particularly concerning for sport management: deselection from talent pathways and financial difficulty in maintaining elite sport. The educational/vocational vignette above present a narrative where dropout from elite sport was an inactive decision on behalf of the athlete (i.e., the decision was made for them by a coach) and it was described as a negative experience for the individual. As a result, the individuals in this study who described similar experiences (n = 3) tended to not return to sport at all. Whereas, participants who described an active decision (i.e., they felt in control of their choice, n = 2) still participated in sport at a lower level and held roles with sport, such as a coaching, managerial, or administrative role. At this stage, although confirmed with the practicing expert, the association between maintaining an active role in sport and positive or negative dropout is tentative. However, research does suggest that time spent competing in sport as an athlete is a key factor in effective coach development (Gilbert, Côté & Mallet, 2006; Lemyre, Trudel, & Durand-Bush, 2007). Therefore, a reduction in sport participation and involvement represented by the sporting gap could have repercussions for staff levels of coaches and other sport-related roles.

4.3.1.3. **Parallel dual career pathway.** Less than half (n = 6) of the participants in this study maintained their sporting and educational pursuits throughout their development.

The third vignette illustrates the simultaneous development of athletic and career identity from initial stages of a dual career to athletic retirement. Through this pathway individuals have the potential to achieve both their educational and their sporting goals.

Parallel dual career pathway vignette.

I always used to play a lot of sport. In the beginning I was just like any normal student, just doing sport on the side. Then, as I got better in sport and I began to focus more on competing, I had some special arrangements put in place at school. I had some lessons which I didn't have to take part in, maybe an hour of physical education a week. But, I still had to do the work in my own time because I had to do the same exams as everyone else. I just kept trying to do my training on the side, which worked fine since I was only training once a day. My first coach was really influential in my career because she implemented all the values that you need, like working hard, planning ahead, staying organised. She was a teacher and she always put a lot of emphasis on the education side. So from pretty much the start of my competitive sporting career I always wanted to do both. I always wanted to achieve a high level in sport, but I also always wanted to be top in academics as well.

When I went to university it was different. I had a completely different training regime. I started training a lot more and then I improved quite a lot. In some ways, university was easier to manage than school, because the academic side was less fixed, you could work a lot more in your own time, and you didn't have lessons all day, every day. On the other hand, you have to do a lot more work than you did at school and you start to train more. Sometimes it was quite draining, and I felt empty and tired. But, again, the university and sport were really great, and I just made sure I was always organised in advance. If I knew I had a big competition coming up, and I foresaw that I would be really pushed for time, then I would make sure I did the work early or I spoke to the relevant people who could move my deadlines for me. In my second year at university I managed to get a medal at the European Championships. That performance triggered that I wanted to put even more effort into sport. I decided to split my final year to give me more time to train, but I still wanted to carry on with the academic work. I thought about just focusing on sport a lot and, it could have been really beneficial for my performance, but I didn't want to put all my eggs in one basket. I knew

that you could try train as hard as you want, you could do everything you can, but, sometimes, it's just not meant to be, you could get injured or deselected, and that stopped me from dropping out of university. I was always aware that there would be a moment when I had to stop sport and do something else.

After university I had to take the decision if I would go full-time in sport and train for the Olympics. I didn't really want to do it because, you train in the morning and the evening, but you have so much free time in between. I think I'd just get bored. I also knew what job I wanted to do and that didn't change just because I had the chance to win an Olympic medal. So, I tried to find a job which would give me a lot of flexibility. I worked part-time and I think that worked well. Just to, you know, get your mind off sport a bit, in between sessions. It was a little bit more difficult with having time off than university was. My boss is really into his sport, so he was very understanding of the requirements. He gave me a few extra days off and I was able to be really flexible with my job. I could take my laptop to training and be working pretty much from anywhere. When it came to retiring from sport, I found it a lot easier than some of my peers. Sure, it was a big adjustment but I knew the job, I knew what I needed to do, so it was just doing what I'd already been doing for years.

Parallel dual career pathway interpretation.

The parallel dual career pathway represents the simultaneous development of sporting and educational/vocational identities. Participants in this pathway experienced both events that strengthened their athletic identity (e.g., athletic performance) and events that encouraged them to develop their alternative identity (e.g., experiencing injury). As a result, they would describe both roles as important to their sense of self. These findings are replicated in research: Ryba and colleagues (2017) described the styles junior athletes use to construct their future careers and observed a similar interdependent relationship of sport and education. Additionally, Chamorro and colleagues (2016) characterized youth athletes into groups based on their future ambitions. The largest of these groups held balanced perceptions of the importance of achievements in the sport, education, and private life. Several benefits, that have been identified in previous literature, were also used as justifications by participants for continuing with a dual career pathway (Aquilina, 2013). For example, a need to focus on more than sport, a belief in transferable skills, intellectual stimulation, a sense of perspective, a sense of security, and consideration for life after sport.

Less than half (n = 6) of the participants in this study maintained both their endeavours throughout their sporting and educational/vocational development. As seen in the previous systematic review, in order to manage both careers, participants in the parallel dual career pathway engaged in a number of management strategies to ease this challenge, such as selecting educational, vocational, and sporting settings that are flexible to the demands of the alternative pursuit (Gledhill & Harwood, 2015; Pink et al., 2015, 2018; Tekavc et al., 2015), communication and social skills (Ryan, 2015), an understanding support network (Aquilina, 2013), and developing effective dual career skills (Brown et al., 2015; De Brandt et al., 2017). Interestingly, participants in the parallel dual career pathway often described brief periods of time where one career was prioritised before athletes would return to a more balanced focus on both careers. This fluctuation in focus and prioritisation was utilised as a temporary coping mechanism for periods of particularly high demand on time or energy, such as spells of exams or competitions and is represented in figure 6.

Parallel dual career pathway interpretation.

When dual career pursuits were effectively managed and supported, participants were able to achieve both their sporting and career goals, and to assess the benefits of dual careers that have been described by research: as a legitimate pathway to prepare athletes for their post-sport future (e.g., Lavallee & Robinson, 2007), to protect against identity foreclosure (see Brewer, et al., 2000; Murphy et al., 1996; Taylor et al., 2005), poor athletic retirement (e.g., Knights et al., 2015), and an inability to deal with adversity in sport (Aquilina, 2013; Pink et al., 2015, 2018).

4.3.2. Section 2: Dual career development process. Section 1 of the results outlines the ‘mind the gap’ theory, which explains the possible pathways that derive from the pursuit of sport alongside an education or a vocation. The theory also suggests the advantageous and detrimental outcomes of these different pathways. However, it does not explain the mechanisms that lead to one pathway developing over another. The aim of section 2 is to fill this void.

A large focus of the ‘mind the gap’ theory was the individual’s identity. To understand the interaction between multiple identities this study referred to the model of multiple dimensions of identity (see, figure 7; Jones & McEwen, 2000; McEwen, 2003). At the center of the model is the core identity, or inner identity. Surrounding the core identity are intersecting circles that represent the different dimensions or roles that the individual

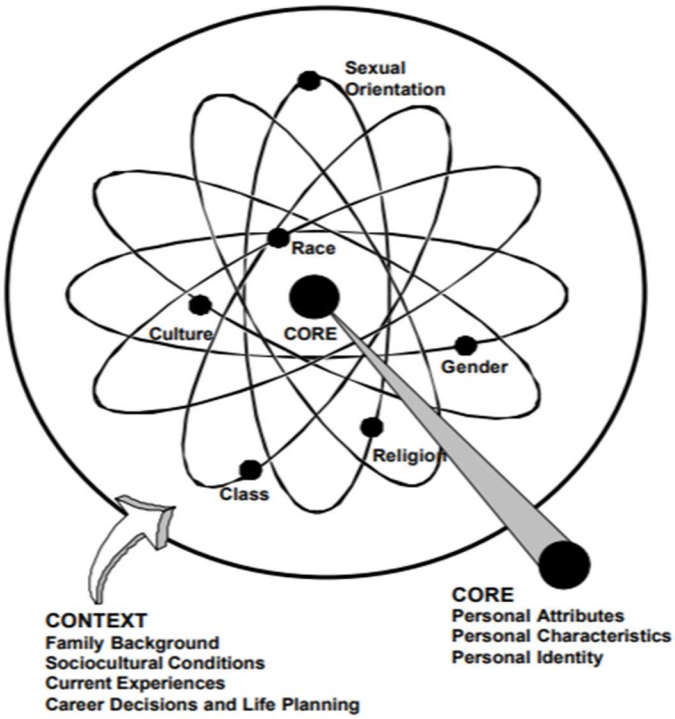


Figure 7. Model of multiple dimensions of identity (Jones & McEwen, 2000).

identifies with (e.g., race, culture, gender, sexual orientation, religion, and social class). For this study, the focus was on the individual's athletic and career identities. This model illustrated that individuals can have more than one identity at a time and that different identities can be perceived as closer or further from the individual's core-self.

The 'mind the gap' theory postulates that individuals in the sporting pathway would exhibit a stronger athletic identity, individuals in the educational/vocational pathway would exhibit stronger career identities, and those in the parallel dual career pathway would have a balanced identity. Athletic identity and its influence on behavior, including performance, has been well researched in sport psychology (see work such as: Brewer et al., 1993; Grove et al., 1997; Murphy et al., 1996). Further studies have shown student-athletes are able to invest in both an athletic identity and a career or student identity (Brown & Hartley, 1998). However, according to a critical realist perspective, identity is not recognized as a fixed entity, rather is fluid in nature. Sport psychology research has exemplified this through: the existence of stronger career identities at the end of university compared to the start (Brown & Hartley, 1998), and through the loss of athletic identity amongst recently retired athletes (Lavallee, Gordon, & Grove, 1997). Furthermore, important events, such as deselection, have shown to exert a short-term influence on athletic identity (Munroe, Albinson, & Hall, 1999).

The current analysis observed the effect of events and event appraisal on dual career athletes, in particular, the impact these events had on their self-identity, self-efficacy, and motivation towards particular goals. To illustrate, participants in this study often described a build-up of events which lead to their decision to change pathways, (i.e., commit more or less strongly to one career). Joel described experiencing success in his sport which encouraged him to commit to a sporting pathway:

> …Because I went to this race (national event), and that was at a time where I wasn't sure whether I wanted to really take it (sport) forward yet. But, I guess coming back from there, I finished fourth in my 5k… And I just had so much confidence. I'd beaten the guy that was arguably second in the country at the time…Yeah, I enjoyed that experience and it made me want to do more.

From interviews with participants it was apparent that different events and the individual's appraisal of the event as a success or failure affected their self-identity, self-efficacy, and motivation towards a goal. The appraisal of an event has a substantial impact on the emotional, and behavioral response of the individual.

The internal/external frame of reference model (Marsh, Lüdtke, Nagengast, Trautwein, Abduljabbar, Abdelfattah, & Jansen, 2015) identifies, two differing emotional responses that take place following the appraisal of an event. In the occurrence of the event being evaluated as a failure, the individual's self-concept (defined as a multi-faceted, dynamic perception of the self which includes self-identity and self-efficacy, see Markus & Wurf, 1987; Hattie, 1991) associated with the event domain will be decreased (e.g., academic failure will reduce the individual's academic self-identity and self-efficacy). Alternatively, if an event is judged as a success the self-identity and self-efficacy in the event domain will be increased (e.g., academic success increases academic identity and self-efficacy and athletic success increased athletic identity and self-efficacy). While this was model reflects the experiences of the participants in this study, the findings of this study also showed that this effect becomes more complex when we consider two domains alongside each other. To explain the effect of events on multiple identities, the dimensional comparison theory was used. This theory predicts that the response in self-efficacy and identity is mediated by the comparisons the individual makes regarding the two domains (Marsh et al., 2015). To demonstrate, when domains are considered to be opposing or contrasting, an event appraised as successful will increase the individual's self-efficacy and identity in one domain but will reduce the individual's identity and self-efficacy in the other domain (e.g., success in an academic task will increase academic identity and self-efficacy but reduce athletic identity

and self-efficacy). Likewise, a failure in one domain will result in a decrease in identity and self-efficacy in one domain but would increase the identity and self-efficacy in the other domain (e.g., athletic failure will reduce athletic self-identity and self-efficacy, but increase academic self-identity and self-efficacy). This effect has been recognized in mathematical and verbal tasks (Betz & Hackett, 1984; Marsh et al., 2015). Alternatively, when events are considered as complimentary, this effect is either reduced or individuals even experience a positive assimilation effect, where identity and self-efficacy is increased or decreased in other domain upon success or failure in the event domain. To explain, a successful event could lead to an increase in identity and self-efficacy in both the event domain and the alternative domain.

Further researchers investigating the pursuit of multiple goals similarly showed that the facilitation and interference of goals and goal demands can impact commitment to goal pursuit and psychological wellbeing (Riediger & Freund, 2004). In their definition, inter-goal facilitation occurs when the pursuit of one goal simultaneously increases the likelihood of success in reaching another goal. Whereas, inter-goal interference arises when the pursuit of one goal impairs the pursuit (or success) of another goal. Experiencing inter-goal interference (i.e., a lack of resources to cope with both goal pursuits) is associated with impairments in psychological well-being, such as positive psychological functioning, life satisfaction, affective well-being). While, inter-goal facilitation enables goal directed behavior. Finally, the research shows facilitation and interference among personal goals as two independent goal dimensions (i.e., one goal can have aspects which are facilitating and interfering with the pursuit of an alternative goal). This emotional response to an event can impact future event appraisal (e.g., if an individual already has low self-efficacy due to a past event, they could be more likely to appraise events in the same domain as a failure), and the behavioral response of the individual. The emotional response of past and current events effects the identity and self-efficacy of the individual. In turn a person's identity and self-efficacy can influence their development and motivation toward their goals.

The inductive interview data indicates that a weakened identity and low self-belief in their ability to achieve in one role can encourage dual career athletes to commit more strongly to their alternative goals (i.e., goals set in their educational or vocational role). Whereas, a strong identity and belief in their ability in both careers encouraged individuals to maintain a dual career pathway. Furthermore, previous researchers have established motivation as a factor in individual differences of dual career pathways (Aunola et al., 2018; Chamorro et al., 2016; Healey et al., 2016; Lupo et al., 2015). Therefore, it was also

important to recognize the interaction between identity, self-efficacy, and motivation. This interaction can be explained by research involving identity-based motivation (e.g., Oyserman & Destin, 2010; Oyserman & James, 2011), which suggests that identities can be motivating when the individual's environment aligns with their sense of self (e.g., an individual will persist longer with a challenging task if they feel the task reflects their sense of self, or identity). Furthermore, self-determination theory (Deci & Ryan, 2002; Ryan & Deci, 2000) postulates that in order to be motivated an individual requires confidence in one's ability to succeed, (i.e., self-efficacy), autonomy in their decision making, and connected to the environment or social group (i.e., associate it with their identity). Figure 8 illustrated the understanding of identity, self-efficacy, autonomy, and motivation that was used in this section.

With these theories of identity, self-efficacy, event appraisal, and motivation taken into consideration the grounded theory method enabled the development of the dual career development mechanism, see figure 9. The mechanism is further explained and illustrated through two examples and corresponding extracts from the inductive interview data.

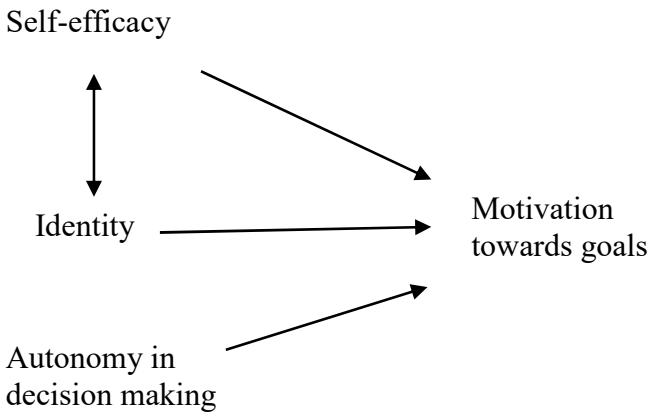


Figure 8. Model of identity, self-efficacy, autonomy, and motivation (adapted from self-determination theory, Deci & Ryan, 2002; Ryan & Deci, 2000; and identity-based motivation, Oyserman &Destin, 2010; Oyserman & James, 2011).

4.3.2.1. Development process examples. The following two extracts are taken from participant interviews that were conducted as part of this study. These extracts were selected as they illustrate examples of a pathway change within the dual career context. Figures 10 and 11 show the development process made in extract 1 and 2, respectively according to the dual development model.

Extract 1.

This extract is taken from an interview with Dominic (psydonym) who followed a dual career pathway until completing university and transitioning into the workplace. At this transition, Dominic describes it becoming increasingly difficult to manage both pursuits and the events that led to his decision to commit to a vocational pathway.

D: When I started working, it [combining sport and a vocation] then became a different matter altogether and I just didn't have as much time to commit. I was working Monday to Friday, having to then drive down to (town) on a Friday night, getting back Sunday night after a hard weekend of training, and then back to work Monday morning and doing it all again. So, it was just, it became a bit of a chore…

D: So, you know, I was also, sort of, on the edges of the squad, as well, at the time. So it wasn't like I was guaranteed [to play]. So if I missed stuff [training], it was affecting me.

I: Right, yeah, it was affecting your selection?

D: Absolutely. So I either had to say, "right, I'm fully going for it. I'm fully committing [to sport]. I'm 100% in", or "I'm not in at all" and I went down the route of, just saying right, I'm not going to do it [Sport].

I: Yeah. So, why do you think you decided that one and not, "right I'm going to quit my job, move back to (town), make it a bit easier to do sport"?

D: I think, for me, because I prioritized a career, so I know that I wanted to work my way up a career ladder, erm, that sort of thing. You know, taking a couple of years out, where there's no money in it [sport] anyway. Erm, it just felt like the right option to do, was to focus more on career than on sport - when the two no longer balanced. For me, it was the better option to choose career. It seemed more sensible, anyway… to be honest, 'cause as I said, I was sort of, on the edges anyway… I wasn't a key member of that squad… whenever squad selection came around, I was never, I was in and out. So in one squad I was in, the next I was out. I'd work hard in training, I'd then be in the next one, I'd maybe have a bad performance and then I'd be out again, and I was just a yo-yo player. I was in and out. Erm, so then, I think that also had an impact on my thinking, certainly, it played a role in the reason why, when I started working, then, I decided to drop it [sport], because, it almost became not worth it. Erm, yeah, also starting work, that probably is the biggest sort of transition really.

> Once you start on that, going from education into full time work, it's a big old jump… When you're in employment, suddenly your employer demands a lot of you, and you weren't getting those demands when you were in education. So, I think that's another key milestone really… Erm, so yeah, it is what it is, but, I enjoyed it when I was there, but, there are elements that I miss to it.
> D: I think, finishing university, I probably tipped then the other way. So the scales completely tipped and I've gone much more career side. Erm, which, hockey is a big part of that, you know, it's still part of what my career is about… I think that still stays with me and still makes a big part of my CV and who I am. But, I think, you know, it's about trying to establish myself within that sector, as opposed to, erm, my actual playing.

Extract 1 interpretation.

Extract 1 highlights the impact of events, such as not being consistently selected into a squad, can have on self-efficacy, athletic identity, and motivation towards sporting goals. Dominic perceived de-selection as a failure in the sporting domain. He also viewed the combination of sport and a vocation as unmanageable, and the two domains as conflicting, due to the inflexibility of his vocation. This meant that Dominic strengthened his career identity and self-efficacy and weakened his athletic identity and self-efficacy and, ultimately, he chose to commit to his career goals rather than his sport by following a vocational pathway. Dominic still described having an athletic identity and still engaged in sport but decided to no longer compete at a high-level. In this decision-making the perceived barriers (i.e., lack of financial gain from sport) and social expectations of both roles (i.e., new expectations to commit to his vocational role) were also considered.

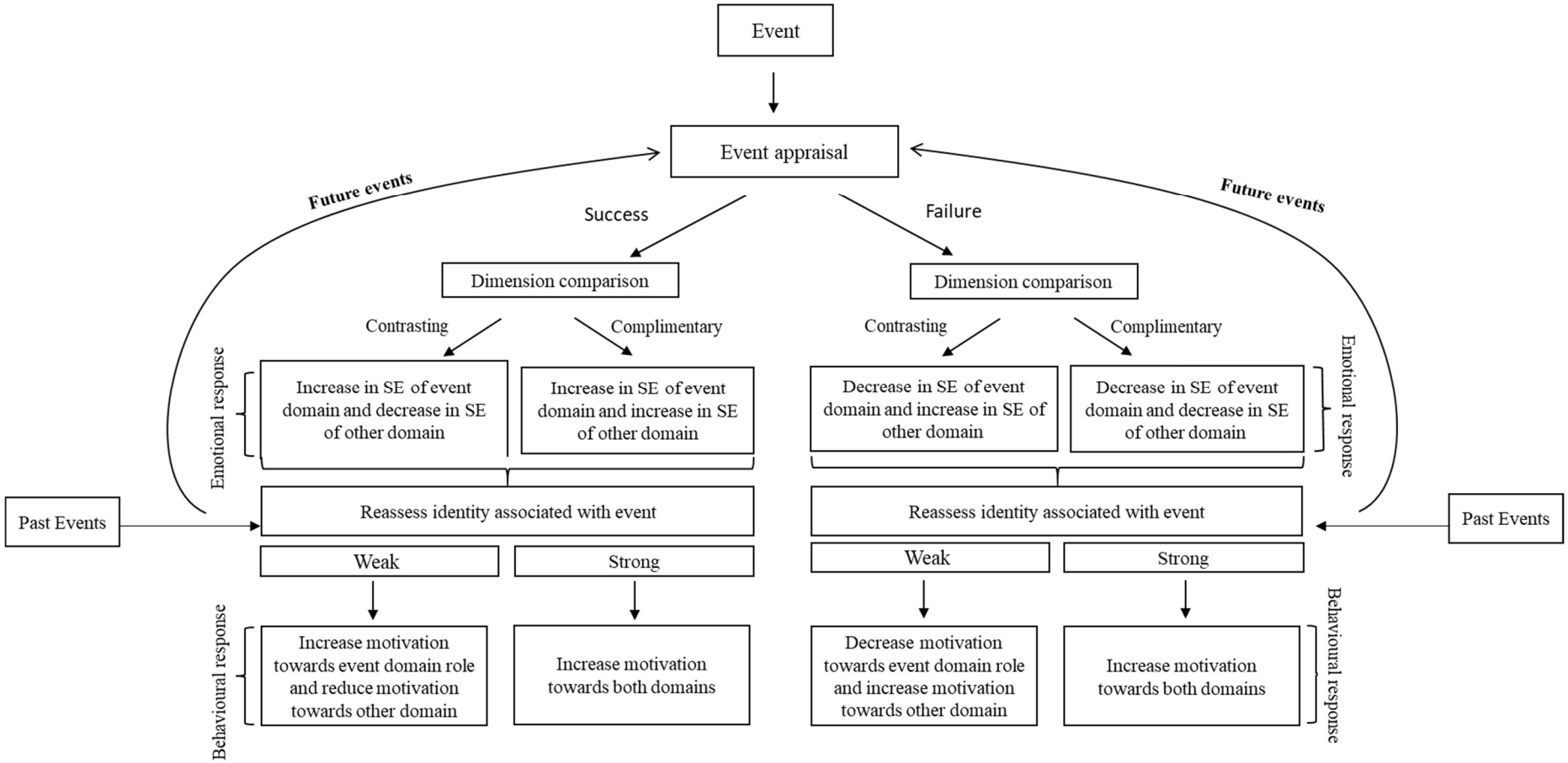


Figure 9. Dual development mechanism model

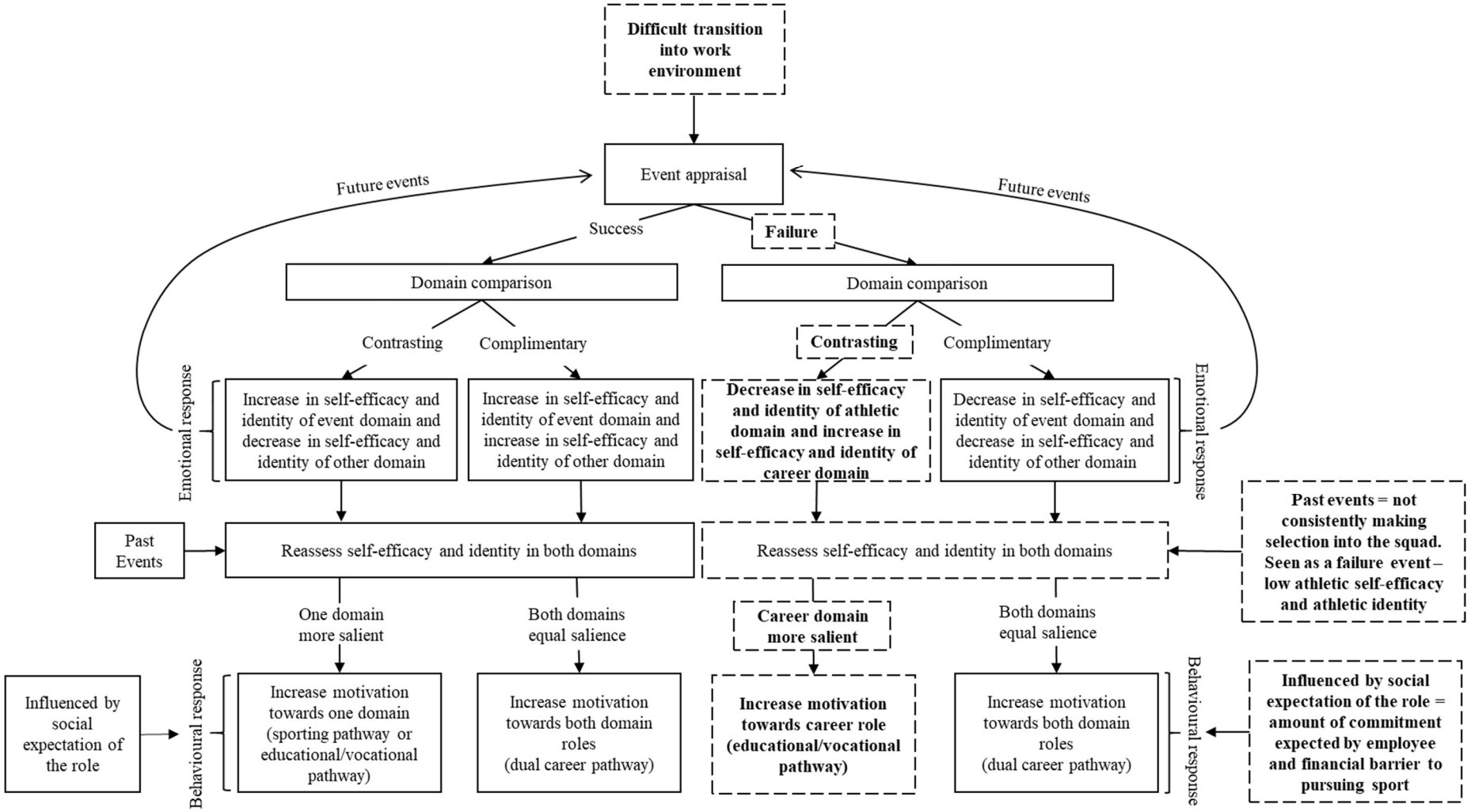


Figure 10. Dual development mechanism model for extract 1, Dominic.

N.B. dotted line illustrate decision pathways taken in extract.

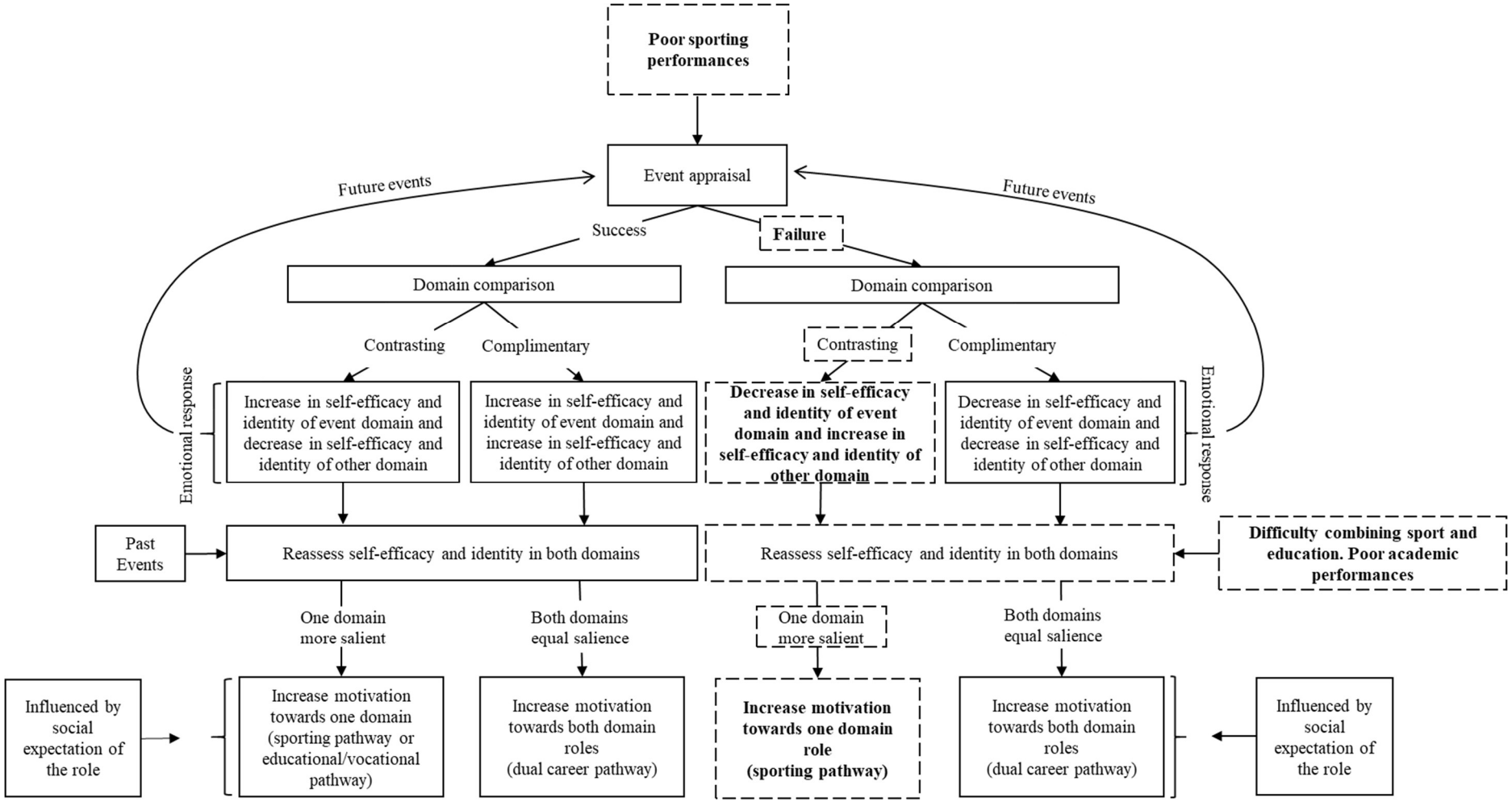


Figure 11. Dual development mechanism model for extract 2, Ronald.

N.B. dotted line illustrate decision pathways taken in extract.

Extract 2.

This extract described the experience of a dual career athlete, Ronald (pseudonym) who struggled to manage his university degree and professional sporting career. The extract describes some of the events that led to his decision to move away from a dual career pathway by dropping out of a university degree and starting his own company part-time. This decision moved him to a sporting pathway with a larger focus on sport.

R: So, my training was on the East of the city, like ten miles to the east, and then I used to use their [university] gym, which was about ten miles to the west. Erm, and the University in the centre of town and I lived a couple of miles away from the centre of town, so, logistically it was an absolute nightmare. You couldn't park in the city centres, so, you know I was always rushing around. You know, I'd be having my lunch in the car, on the way to a training session… there was no free time. Erm, and it got to a point where I was just missing lectures and missing classes 'cause I was so tired from training. But that almost shot me in the foot 'cause I would be even further behind. That was making the stress even worse, 'cause I didn't know what I was doing, erm, so yeah, it was logistically an absolute nightmare. So, at that point I knew that, I couldn't finish my degree.

I: Yeah, and what was it like making that decision?

R: It was really tough, I mean I did, I remember after [an Olympic games] I did the first semester in third year and it got to the exams, in that 12 weeks, I got ill five times, erm, just because I was working so hard at university and I was up at the crack of dawn the next morning, so I was running off five hours sleep a night. Combining that with tough training, er, I just kept on getting ill, so my [sport] performances came down and I realised, you know that was it. I'd hit my limit, erm, I either make one decision, do I carry on with university but then I have to quit [sport]. Or do I carry on with my [sport], but that means I have to quit university. So, I mean, I'm glad I carried on with my [sport], once I made that decision, it was a huge relief [I: yeah]. And consequentially, my performances went straight back up.

R: Er, yeah I guess, in 2012 I went to the World Championships, in December and that was about a week before my exams and I swam absolutely horrible. I swam so bad and I'd had such a good Olympics, it was kind of in stark contrast to how I raced at the Worlds. So it was then, that I made the decision, look, "this

> is embarrassing how bad I [raced]", you know, I'm going to focus on [sport] rather than university. So, yeah, that prompted me to make that, that decision,
> I: and what about your business venture? How have you managed to combine that?
> R: Well, it's been really flexible, to be honest, erm, 'cause we only teach on the weekends, and it's not every weekend, it's you know, one weekend or maybe two weekends out of the month. Erm, it was quite manageable. But there was times when I was doing a full week of training and then I was teaching on Saturday/Sunday and then back into a full week, so on Monday I was absolutely knackered [I: yeah]. So there were times that were really tough… But yeah, I have a partner, in that now so he can very much pick up the slack if I can't make it. So, that makes things a lot easier… that kind of [athlete] lifestyle, two hours training in the morning, an hour and a half in the gym and then another two hours in the evening, so you've got a period of three, four hours during the day so, it was quite easy for me to work on the business a couple hours each day without it taking too much energy.

Extract 2 interpretation.

Extract 2 describes multiple events that lead to Ronald showing lower academic self-efficacy, career identity, and motivation towards career goals, such as poor academic performance and poor sporting performance due to exams. He also described lack of support from educational and sporting institutions in managing a dual career and, therefore, views the two domains as contrasting rather than complimentary. As a result, Ronald deviated from the dual career pathway and pursued a sporting pathway. He maintained contact with his career identity through a part-time business that was flexible and manageable with his prioritized goal of sport.

4.4. Discussion

The thesis aims to identity the factors that facilitate positive experiences of managing a sporting career alongside an education or vocation. A systematic mixed-studies review of these factors (Chapter 3) identified two area for further research: First, due to a tendency within the research to focus on the experience of combining sport with compulsory and further/higher education, there existed a lack of research that explores the diverse pathways of dual career (i.e., the combination of sport and a vocation) and, therefore, a lack of

understanding of the entire lifespan of dual career development. Second, the research is largely underpinned by one theoretical understanding of dual career, which focuses on normative transitions of one athletic career trajectory, from school to higher education to professional sport to post-sport life. As a result, the research is unable to explain the development of the multitude of experiences that are seen in practice (see introduction). Therefore, chapter 4 aimed to address the theoretical gap and advance the research understanding of the multitude of dual career experiences, including the positive and negative outcomes of these experiences.

A small body of research within dual career has addressed this diversity and suggested the categorisation of career trajectory, based on identity (Stambulova et al., 2015), motivation (Aunola et al., 2018; Chamorro et al., 2016; Healey et al., 2015; Lupo et al., 2015), and prospective career futures (Ryba et al., 2017). While this research provides a greater understanding of the diverse pathways of dual career, the research area still lacks a theoretical perspective of the development of these pathways over the lifespan. Furthermore, these career trajectories have not been explored for individuals combining sport with a vocation. Taking the current research and the gaps in this research knowledge into consideration, this study was extends the research base which identifies and examines individual pathways of sport and education or vocational development and establishes a first grounded theory of the factors, outcomes and development mechanisms associated with different dual career pathways in sport.

In this study, the researcher used a constructivist grounded theory method to identify and examine individuals' experiences of sport and education or vocational development. The findings from qualitative interviews, discussions with a practicing expert, and analysis of the extant literature add breadth and depth to the understanding of dual career as three distinct pathways: a parallel dual career pathway, a sporting pathway, and an educational/vocational pathway. Furthermore, the three vignettes present the narratives of each of these dual career experiences. The pathways that represent these experiences are schematically presented and the interpretation sections closely link each pathway to differences in dual career outcomes. The parallel dual career pathway involves individuals simultaneously developing their sporting and educational or vocational abilities and identities throughout their athletic lifespan, resulting in reaching one's potential in both domains. Theoretically, this development could represent an equal progression in both domains; in reality, participants indicated that, on occasion, their focus fluctuated at different stages of development. The findings of this study adds to the research that suggests effectively managing sporting and

educational/vocational endeavours can develop a more multifaceted identity that ultimately protects overall wellbeing, has the potential to enable athletes to attain multiple goals, and can enable a smooth transition in to life after sport (Miller & Kerr, 2002; Taylor et al., 2005). However, as outlined in the systematic review, the parallel dual career pathway requires a high degree of social support, including the careful management of numerous institutional and individual factors. This pathway is, therefore, not always plausible.

Despite the advantages of the parallel dual career pathway in achieving both sporting and vocational career goals, this study is still tentative in encouraging practitioners to recommend this pathway for all individuals since each pathway is intricately linked with the individual's identity. There are interesting similarities between the young athletes' projected selves, their perceived importance of life spheres, their motivational profiles (Ryba et al., 2017; Chamorro et al., 2016; Aunola et al., 2018, respectively), and the retrospective narratives of dual career athletes' experiences (the current study). These studies suggest athletes construct their career styles from a young age and these constructions impact the actions they take. From an applied stand point, it is unclear whether young athletes would benefit from interventions to reduce deviations away from the parallel dual career pathway, and, therefore, avoid the gaps outlined in this study, or if an awareness of the potential outcomes of each pathway, so that athletes can make informed career choices, would be more beneficial to the individual. However, based on the dual career development mechanism, an intervention to encourage dual career individuals to view their two pursuits as complimentary, rather than conflicting, could impact their experience of dual career and, therefore, be a lucrative future direction for investigation.

In situations where a parallel dual career pathway was no longer considered to be plausible, participants reduced their focus towards one of their endeavours. This study presents these deviations as either the sporting pathway or the educational/vocational pathway. These pathways involve an acceleration in development in one domain (and corresponding deceleration in the other domain), which result in realising one's potential in one domain sooner, but ultimately failing to realise one's potential in the other domain. This study extends the research that highlights the importance of removing barriers to dual career pursuits in practice. Furthermore, the deviations away from the dual career pathway, towards a sporting pathway or an educational/vocational pathway, were commonly perceived in conjunction with athletic and academic transitions. In particular, the transition from school to further education, the transition from junior to senior athletic level, and the transition from further education to vocation were commonly perceived as critical periods for individuals in

this study. Since these developmental transitions are normative and predictable (Wylleman et al., 2013), dual career stakeholders are able to anticipate periods of difficulty and provide opportunities for athletes to develop the skills to overcome these in advance (MacNamara & Collins, 2010). Advanced preparation for transitions and increasing support with practitioners could reduce barriers to dual career management and enable the parallel dual career pathway for individuals who wish to pursue it.

While the holistic athletic career model (Wylleman et al., 2013) largely focuses on one trajectory (from compulsory education to further/higher education to professional sport to post-sport career), the developed 'mind the gap' theory is better able to illustrate the multitude of dual career experiences seen in practice and in the literature. The mind the gap model therefore, addresses what was considered to be the most poignant research gap from Chapter 3. For instance, the pathway from compulsory education to further/higher education to professional sport to post-sport career would be indicative of a sporting pathway, where sporting development is prioritised after higher education. The pathway from compulsory education to further/higher education to vocation to post-sport career, where high-level sporting pursuits are maintained, would illustrate a dual career pathway. Finally, compulsory education to further/higher education to vocation to post-sport career, where sporting pursuits are reduced, would demonstrate an educational/vocational pathway. The outcomes of each pathway are presented by the 'gaps' described in the vignettes and discussed in the interpretations. The researcher considers these gaps to have implications for research and practice; hence, the term 'mind the gap'. If we first consider the educational gap, the awareness and support of this gap has been discussed in the athlete career retirement literature (e.g., Lavallee et al., 1997; Murphy et al., 1996). Additionally, many athlete support programmes focus on supporting athletes to develop the skills to cope with sport and education (Aquilina & Henry, 2010; Brown et al., 2015; De Brandt et al., 2017). However, the support for athletes in a vocation and the evidence-base for supporting vocational skill development for dual career athletes is still lacking. This study suggests that dual career support services should consider a focus beyond the educational goals of the individual and consider supporting vocational skills' development in preparation for athletic career termination. An awareness of and preparation for this potential gap could ease the transition out of sport for retiring athletes in the sporting pathway.

The sporting gap, which represents a reduced focus towards sporting endeavours, also presents implications for sport management. First, a reduced focus on sport was often described due to deselection from talent pathways. The impact of reducing the number of

aspiring athletes available for selection needs to be considered by sport. It is true that being selective means that resources can be focused towards fewer numbers of athletes, but this presents the risk of reducing the number of athletes that can achieve at the elite level (Bailey & Collins, 2013, Green, 2005; Green & Oakley, 2001). Talent selection of a reduced number of athletes is often based on junior performance. However, junior success had not been proven to predict long-term senior success and many UK elite performers are selected via talent transfer programmes at the age of 16-25 (Rees, et al., 2016; Vaeyens, Güllich, Warr, & Philippaerts, 2009; Baker, Schorer, & Wattie, 2018). Maintaining a dual career pathway could present a solution to maintaining a wide pool of aspiring athletes who have the potential to develop into elite sport, whilst allowing these aspiring athletes to prepare a back-up plan and for life after sport. Second, there was a tendency for participants in the education/vocational pathway, particularly if they described a negative transition out of sport, to no longer participate in sport or partake in roles of sport management. Although these experiences require further exploration, this study suggests that sport systems should aim to support a positive exit from competitive sport so that individuals are still encouraged to participate either as athletes or sport administrators.

While the 'mind the gap' model bears similarities with existing research (e.g., Aunola et al., 2018; Chamorro et al., 2016; Ryba et al., 2017; Stambulova et al., 2015;), the use of the grounded theory approach enabled the researcher to add value to the current knowledge base in the following ways: first, the developed model provides further narrative accounts of the different experiences of combining sport with an education or vocation over the athletic lifespan. As a consequence, research and practice are better able to conceptualise the multitude of experiences of a dual career, as opposed to the current dominant pathway (from school to higher education to professional sport to post-sport life); further, these diverse experiences are coherently linked to potential outcomes of each pathway and, therefore, the practice and research implications of each pathway is considered; and finally, the current study develops a novel framework for the associated between identity and self-efficacy to motivation towards different dual career pursuits. This study adds a novel contribution to the research area through introducing the grounded theory method, which has enabled the theoretical development of the multitude of dual career experiences, and by the inclusion of insights from a more diverse sample of dual career athletes, including vocational athletes in the research.

With regards to the dual career development mechanism, the identity and self-efficacy of dual career athletes has been investigated before and concluded conflicted findings. A

body of research presents an understanding of student athletes as being less likely to hold substantial and deliberate career plans and as being heavily invested in their athletic role (e.g., Cosh & Tully, 2014; Murphy et al., 1996; Ryan, 2015; Ryba et al., 2015; Tekavc et al, 2015). Whereas, there exists a body of research that has shown no relationship between athletic identity and aspects of career development (e.g., Martens & Cox, 2000; Perna, Zaichkowsky, & Bochnek, 1996). Research also reports individuals sacrificing their sporting goals in favour of educational or vocational goals because it was considered unlikely for them to reach the top-level of sport and/or to financially sustain themselves through a sporting career (Brown et al., 2000; Isoard-Gautheur et al., 2015; Stambulova et al., 2015). Furthermore, the dual career research has shown that it is possible for an individual to express high athletic identity whilst also retaining a strong commitment to their student or vocational role (Brown et al., 2000; Cosh & Tully, 2014). These contradictory findings can be explained by the current study and the different dual career pathways presented in the 'mind the gap' theory. According to these theories, the difference in athletic or career identity and self-efficacy could be the result of athletes in different pathways, as a product of experiencing events and event appraisals that encourage different emotional and behavioural responses.

4.4.1. Strengths and limitations. Grounded theory is a systematic approach to theory development that maintains an intuitive process and promotes creativity (Hussein et al., 2014). It is considered a strength of this research because it enabled the research to include in-depth, information rich data and higher order concepts within the dual career context. The outcome of the data analysis is a theory grounded in the area of dual careers. At this stage, the theory does not aim to be generally applicable outside of the dual career context because it is recognised as a substantive theory (Strauss & Corbin, 1990; Weed, 2017). Furthermore, the current theory was developed from a critical realist standpoint, which outlines empirical understandings as fluid. Therefore, this theory is open to modification and adaptation upon the acquisition of further observations and might change depending on the time, context, and culture (Downward, 2005). The researcher used method-specific considerations for research quality (Burke, 2016; Smith & McGannon, 2017). Charmaz's (2006) guide for conducting grounded theory was predominately drawn upon to enhance the methodological integrity in this study. But, the core concepts of grounded theory were adhered to throughout the process (Holt & Tamminen, 2010a, 2010b; Weed 2009, 2010, 2017). To ensure the fit, work, and relevance of the theory, this study engaged with the advice of a practicing expert, utilised a constant comparison process, and embraced differences within participant experiences.

Resonating with the real-world context and encompassing the multitude of dual career experiences was a specific focus of the sampling procedure and the inclusion of input from a practicing expert. The research examines an area that requires further explanation and proposed novel conceptualisations to the research area. Finally, the use of a practicing expert ensures that emergent theory is relevant and useful to the real-world context (Charmaz, 2006; Levitt et al., 2017).

The inclusion of previous research is a core component of the grounded theory method (Charmaz, 2006; Weed, 2017), it functions to facilitate and strengthen the conclusions presented in this study. The theory highlights the importance of future research in maintaining sensitivity to different pathways in the development of sport and educational/vocational development. Future studies need to consider the pathway they wish to investigate and whether the sample they have recruited reflects this pathway. Further research to understand the characteristics of individuals in these pathways is also needed. For instance, understanding the distribution of individuals in each pathway could provide valuable information regarding the most effective division of support services. Furthermore, while the dual career development mechanism provides a novel understanding of the underlying mechanisms behind the dual career pathways, at this stage, the relationship between identity, self-efficacy and motivation is purely theoretical. It requires further examination. The grounded theory is, at this stage, a substantive theory, which is intended to reveal structures of knowledge (Glaser & Strauss, 1967). It encourages interpretive understand of the complex, interrelated explanations of one particular area, in this case dual career athletes. The inductive interviews were conducted with individuals educated in the British context, but extant literature that was included extends to the European and worldwide contexts. At this stage and without further investigation, the theory is limited to the other contexts and participants experiencing similar phenomena. The theory is able to be adapted to include participants outside of this context with further study of different kinds of substantive cases and a comparative analysis. This kind of further research would enable the development of the substantive theory into a formal theory.

4.4.2. Future directions. While the findings of this study addresses a gap in the research knowledge and presents a novel theoretical conceptualisation of different dual career development pathways, outcomes, and mechanisms, it also presents further considerations for future research. The mind the gap theory presents three dual career pathways, however it could be beneficial to research and practice to further substantiate the common characteristics

of individuals in these pathways. To expand, the theory suggests that the sporting and dual career pathway could enable dual career athletes to achieve their athletic goals; while the dual career pathway and educational/vocational pathway could enable them to achieve their educational and vocational goals. Future researchers could clarify the validity of this claim by examining the academic, vocational, and athletic achievements of the individuals in each pathway. Research of this kind would enhance our understanding of links between identity, self-efficacy, and achievement. Arguably more importantly, the wellbeing and life satisfaction, both during and post-sporting career, of the individuals in each pathway could be further explored. A better understanding of this, with reference to identity and self-efficacy, could enable practitioners to promote the dual career pathways that best suits the individual. With this in mind, a review of support service provision with the three pathways in mind could provide areas of optimisation in the distribution of support services. A review of this kind could identify the type of support that is currently provided to the individuals within each pathway and the appropriateness of this support in targeting the consequences of each pathway (i.e., the sporting gap, and the educational/vocation gap). Furthermore, with this information, future researchers could identify possible practices to better support the three pathways.

The dual career mechanism proposes that identity and self-efficacy (of the two dual career domains, athletic and vocational career) impact the dual career pathway of the individual. At present, the mechanism is a proposition based upon, what is considered to be, the most likely explanation for the development of the three pathways. As a critical realist, the researcher would recognise that this is not the only possible explanation but would seek further evidence to suggest that it is the most probable explanation. The role of identity, self-efficacy of the dual career domains and the impact this has on the dual career pathway is, therefore, considered that the most poignant area for future researcher and is the direction taken by chapter five. An additional approach to further investigation of this topic would be to consider the challenges and opportunities that impact an individuals' pathway over time. In particular, the longitudinal tracking of dual career athletes over the key transitions that were identified by the current study as common periods for deviating away from the dual career pathway.

Chapter Five:

A Cluster Analysis of Career Identity and Athletic Identity in Dual Career Athletes

The thesis aims to identify the factors that facilitate positive experiences of managing a sporting career alongside an education or vocation. A grounded theory analysis (chapter 4) was conducted to address a theoretical gap that was identified in chapter 3. The grounded theory extends the research understanding of dual career athletes as a heterogenous group with varying pathways and associates these pathways with positive and negative outcomes of a dual career. The theory also postulates that identity and self-efficacy impact the development of these pathways. The current study aims to explore this proposition empirically.

5.1. Introduction

The binary pursuit of sport and educational or vocational endeavours (i.e., a dual career) commonly occurs during late adolescence and early adulthood when aspiring sports performers are required to combine sporting pursuits with compulsory education (as seen in chapter 3 and 4). This phase of an individual's life overlaps with a formative stage of the individual's physical, psychological, and social development (Wylleman & Lavallee, 2004). Following this, many sports performers continue their sporting endeavours alongside higher or further education and/or a vocation. Late adolescence and early adulthood represents a critical period for developing pragmatic career plans (Nurmi, 1991), developing perceptions of self-efficacy (Bandura, 1986) and, in establishing a sense of personal identity (Petitpas & France, 2010). Engaging in activities such as, career exploration is recognized as an important task for career development (Blustein, 2001; Super, 1980; Zikic & Hall, 2009). Yet, identity foreclosure (i.e., the firm commitment to one identity without engaging in career exploratory behaviour) and a premature commitment to an athletic identity has been seen to be particularly prevalent for sport performers (Blodgett & Schinke, 2015; Coen & Ogles, 1993; Murphy et al., 1996). A dual career has been recognized as, amongst other benefits, protecting against the negative consequences of a one-sided or foreclosed identity (see Aquilina, 2013; Murphy et al., 1996; Petitpas & France, 2010). Therefore, it follows that understanding and enabling the concurrent development of two careers, which occurs within a dual career, is of vital importance to research and practice.

Career development is recognized as a long-life process which an individual engages with to understand their occupational motivations, interests, and capabilities (Super, 1980). Through this process of exploration and commitment to a career role the individual develops a career or vocational identity (Erikson, 1994; Flum & Blustein, 2006; Marcia, 1966 Praskova, Creed, & Hood, 2015). Similarly, athletic identity is understood as the "degree to

which an individual identifies with the role of an athlete" (Brewer et al., 1993, p. 237). To understand the interaction between multiple identities this study referred to the model of multiple dimensions of identity (see, figure 7; Jones & McEwen, 2000; McEwen, 2003). At the center of the model, the core identity is surrounded by intersecting circles of different dimensions or roles that the individual associate themselves with. This model illustrated that individuals can have more than one identity at a time and that different identities can be perceived as closer or further from the individual's core-self. For this study and the investigation of dual career individuals, the focus was on athletic and career identities. According to Super's theory, no one role can be understood without reference to the interaction and impact of entirety of the individual's roles (e.g., their role as an athlete, friend, sibling, etc.). Despite possessing multiple roles, it is likely that just a few of these roles will be of particular salience to the individual's central or core identity (Jones & McEwen, 2000).

Athletic identity and its influence on behavior, including performance, has been well researched in sport psychology (see work such as: Brewer et al., 1993; Grove et al., 1997; Murphy et al., 1996). Further studies have shown student-athletes are able to invest in both an athletic identity and a career or student identity (Brown & Hartley, 1998). However, the development and fluidity in identity is showed through the existence of stronger career identities at the end of university compared to the start (Brown & Hartley, 1998), and through the loss of athletic identity amongst recently retired athletes (Lavallee et al., 1997). Furthermore, important events, such as deselection, have shown to exert a short-term influence on athletic identity (Munroe et al., 1999). Subsequent to Super's theory, Bandura's Social Cognitive Theory (1989) includes self-efficacy as an important factor in driving career decision-making behaviours. The theory defines self-efficacy as the belief in one's capabilities to organize and execute the courses of action required to produce a given attainment (Bandura, 1986, p. 391). This theory additionally attends to the complex interaction between the individual's personal attributes, the external environmental factors, and the individual's behaviour. Consequently, to understand the parallel development of a career in sport alongside an alternative career or education, the interaction between the individual's sporting and educational or vocational roles, their identity, their self-efficacy for sporting and career related tasks, and the social context in which this arises is of critical importance for dual career researchers.

At present, studies have indicated a relationship between aspects of career development and athletic identity. From this research a stronger athletic identity has been negatively associated with: career maturity (Murphy et al., 1996), career decision-making

self-efficacy (Brown et al., 2000) and, career planning (Kennedy & Dimick, 1987). This negative association has also been extended to measures of adjustment to university (Melendez, 2009) and measures of academic success, including: perceived competence in academic tasks (Saint-Phard, Van Dorsten, Marx, & York, 1999), and grade point average (Bimper, 2014). This research presents an understanding of student athletes as being less likely to hold substantial and deliberate career plans and as being heavily invested in their athletic role to the detriment of their career roles. Concurrent to this, qualitative research shows that, particularly during periods of conflict or difficulty, dual career individuals often felt combining two careers was not plausible, and, therefore, felt compelled to compromise at least one of their pursuits (Cosh & Tully, 2014; Singer, 2008; Riemer et al., 2000; Ryan, 2015; Ryba et al., 2015; Tekavc et al., 2015).

A small body of research, investigating career development and athletic identity, does present contradictory findings to the negative association already established. For example, research has also shown no relationship between athletic identity and aspects of career development, including; vocational identity (Martens & Cox, 2000) and progress in making vocational plans (Perna, Zaichkowsky, & Bochnek, 1996). Similarly, lower career maturity scores were only seen in student athletes who indicated a career choice preference to participate in professional sports (Brown & Hartley, 1998). This research indicates that there are more factors to consider in the relationship between career development and athletic development. For example, the research also reports individuals sacrificing their sporting goals in favour of educational or vocational goals because it was considered unlikely for them to reach the top-level of sport and/or to financially sustain themselves through a sporting career (Brown et al., 2000; Isoard-Gautheur et al., 2015). Furthermore, the dual career research has shown that it is possible for an individual to express high athletic identity whilst also retaining a strong commitment to their student or vocational role (Brown et al., 2000; Cosh & Tully, 2014). Therefore, the negative association of athletic identity and career identity does not fully explain the experiences of dual career athletes.

Several studies have explored the individual differences in balancing the two career roles and the difference this represents for the two career identities as an explanation for these inconsistent findings. Stambulova and colleagues (2015), with an investigation of high school student athletes, suggested that the approaches to a dual career can be viewed as a spectrum from prioritizing sport (and higher visibility of athletic identity) at one end to prioritizing studies (and higher visibility of student identity) at the other end. Whereas, additional research (Aunola et al., 2018; Chamorro et al., 2016) used latent profile analysis or cluster

analysis (respectively) to group high school student athletes and youth athletes (respectively) according to their motivational profiles. Both studies suggested three motivational patterns in dual career athletes: a dual or balanced motivation pattern, characterized by high value placed on both education, sport, and life; a low academic motivation pattern, characterized by a high value placed on sport but a low value on education or life; and a (relatively) low sport motivated pattern characterized by a lower value placed on sport than education or life. These patterns were replicated with similar findings from a latent profile analysis of university student athletes (Healey et al., 2016; Lupo et al., 2015). Furthermore, a narrative analysis of young athletes' prospective career futures presents three similar career construction styles (Ryba et al., 2017). While this research provides a greater understanding of the diverse pathways of dual career, it does not cover the entire dual career lifespan. The research area was extended through a theoretical perspective, developed via the grounded theory method, chapter 4.

The 'mind the gap' theory, chapter 4, explains the development of different trajectories and the multitude of experiences across the lifespan which are seen in practice. While the theory identified three career pathways (parallel dual career pathway, sporting pathway, and educational/vocational pathway), it also postulated identity and self-efficacy as key factors in the development of these pathways. At this stage, this relationship between identity, self-efficacy, and dual career development requires further empirical examination. Therefore, the aim of this study is to gain a deeper understanding of the relationship between athletic identity, including self-efficacy and athletic level; career identity, including self-efficacy and educational/vocational level; and the pathway according to the 'mind the gap' theory of dual career athletes. From the 'mind the gap' theory, it can be hypothesized that individuals within each pathway will show a different pattern of athletic and career identity. More specifically, individuals within a parallel dual career pathway are likely to indicate a balance between the two identities, individuals within a vocational pathway are predicted to indicate a stronger inclination towards their educational or vocational career identity, and finally, individuals within a sporting pathway are predicted to indicate a stronger athletic identity in comparison to their educational or vocational identities. While the dual career development mechanism would suggest self-efficacy would mirror the balance of the two identities.

5.2. Methods

5.2.1. Participants. A sample of 116 dual career athletes volunteered to take part in the study. Due to not meeting the inclusion criteria (i.e., not competing at the national or international level in sport), 6 participants were removed before analysis. Some key demographic characteristics of the sample (n = 111) are shown in Table 7. The sample, consisting of 69 female participants and 42 male participants, had a mean age of 22 years (range 16 – 37 years). The participants represent a variety of different sports ranging from athletics (n = 18) to winter sports (n = 6). From the 111 participants, 7 had reached an Olympic level, but the majority (n = 60) had competed at a junior or senior international level. The remainder of the sample (n = 51) had competed at a junior or senior national level. When asked their current sporting status, 30 participants described themselves as retired from competitive sport, 33 were still competing internationally at the junior or senior level, and just 2 participants were currently competing at an Olympic level.

5.2.2. Procedure. The procedure of this study was reviewed and accepted by an ethics committee at Loughborough University before participant recruitment commenced. Information regarding the study was circulated on university, college, and school campuses, leisure centres, and sporting events via flyers, emails, and social media. The recruitment focused on individuals who had experiences of combining a sporting career with an education

Table 7.

Cluster analysis participant characteristics

	N (percent)		Mean (Range / SD)
Total	111 (100%)	Age	22.4 (16-37)
Gender (female)	69 (62%)	Athletic identity	42.0 (10.0)
Highest sporting level (Olympic)	7 (6%)	Athletic self-efficacy	31.62 (4.3)
Highest sporting level (junior or senior international)	60 (54%)	Core identity – sport	28.5 (6.8)
Current sporting level (retired)	30 (27%)	Core identity – career	20.2 (5.5)
Current sporting level (junior or senior international)	33 (30%)	Career identity	35.9 (7.2)
Current sporting level (Olympic)	2 (2%)	Career self-efficacy	42.2 (5.5)

or a vocation. A small portion of the sample (n = 24) were part recruited through a

psychology undergraduate programme and received module credits for taking part. Other participants were entered into a prize draw for the chance to win one of five £20 vouchers. Every participant was provided with an information sheet and completed an informed consent form before commencing the survey. The survey included questions to establish the demographics of the participant (including age and gender); the educational, sporting, and dual career experiences of the participants to ensure they were eligible for the study; and the dual career pathway they took. Some exclusion criteria were applied to the questionnaire, where particular responses would not allow the individual to continue further through the survey (Viz. has not competed above a regional level, had not combined sport with an education or vocation, had been educated outside of the UK system).

5.2.3. Measures.

5.2.3.1. Demographic variables. The survey included 8 questions with the purpose of understanding the individual's age, gender, sporting, and educational / vocational experiences. To establish the educational experience of the individual, participants were required to provide their current educational level (7 categories ranging from compulsory education to employment, as well as an additional "other" option) and a brief summary of their educational experience. To establish the sporting experience of the individual participants were required to provide their highest sporting level (7 categories ranging from junior national to Olympic, as well as an additional "other" option), current sporting level (7 categories ranging from junior national to Olympic, as well as an additional "other" option and a "no longer competing" option), and a brief summary of their sporting experience.

5.2.3.2. Career identity. The Utrecht-Management of Identity Commitments Scale (Crocetti, Rubini, & Meeus, 2008) assesses several aspects of career identity, which make up the three subscales of the questionnaire: identification with commitment (five items), exploration in depth (five items), and reconsideration of commitment (three items). All items are rated on a 5-point Likert scale ranging from 1 (completely untrue) to 5 (completely true), where higher scores yield greater identification and commitment with the career role. Items were adjusted to refer to both an educational and vocational domain. In previous studies the internal consistency was shown to be high across all three subscales: alpha coefficient was 0.91 for identification with commitment, 0.87 for in-depth exploration, and 0.87 for reconsideration of commitment (Crocetti et al., 2008). However, when re-tested in the current sample, the reconsideration of commitment subscale (3 items) showed poor internal consistency. The remaining 10 items showed a Cronbach's alpha score of $\alpha = 0.82$ if the

commitment subscale was removed. Therefore, the career identity measure consisted of 10 items.

5.2.3.3. Career self-efficacy. The General Self-Efficacy Scale (Sherer & Adams, 1983) was used to assess career self-efficacy in this study. The scale consists of 11 items, all rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Higher scores on this scale indicates that the individual holds a stronger self-belief that they will be able to achieve their career goals. Bandura (2006) recommends that measures of self-efficacy should be tailored to the domain of functioning that is of interest. Therefore, in this study the General Self-efficacy Scale was adapted to the vocational and educational domains (as seen in Kossek, Roberts, Fisher, & Demarr, 1998). The General Self-efficacy Scale has previously shown high internal consistency with a Cronbach alpha coefficients of 0.86. This high internal consistency score was replicated in the re-test conducted with the current sample ($\alpha = 0.83$).

5.2.3.4. Core identity – career. The Athletic and Academic Identity Scale (AAIS) is an 11-item questionnaire that was specifically designed to measure academic and athletic identity of student athletes (Yukhymenko-Lescroart, 2014). Respondents are asked to rate characteristics or qualities such as "being good at my job" on a scale of 1-6, with a 1 indicating that the item is "not central to my sense of self" and 6 indicating that it is "very central to my sense of self". The scale presents 5 characteristics related to the student role and 6 characteristics related to the athletic role. A confirmatory factor analysis supported a two-factor structure of the scale and the career subscale indicated a strong internal consistency with an Omega coefficient score of 0.92. The student subscale of the AAIS was used in this study to indicate how central the responder's career role was to their self-identity. The student subscale was adapted to include vocational aspects of an individual's career and maintained a high internal consistency of $\alpha = 0.90$.

5.2.3.5. Athletic identity. The Athletic Identity Measure Scale (AIMS) (Brewer et al., 1993) is a 10-item measure designed to evaluate the strength and exclusivity of the athletic role. Responses are given on a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). Despite AIMS being the most commonly used measure for athletic identity within the sports psychology research, there is some debate regarding the factor and item structure of the measure (Brewer & Cornelius, 2001; Visek, Hurst, Maxwell, & Watson, 2008). Therefore, the internal consistency was re-tested with the current sample. The 10-item

measure showed a high Cronbach's alpha coefficient (α = 0.85). Hence the 10-item, unidimensional version of AIMS is used in this case.

5.2.3.6. Athletic self-efficacy. Similar to career self-efficacy, this study used The General Self-Efficacy Scale (Sherer & Adams, 1983) and adapted it to the sporting domain (Bandura, 2006). The scale consists of 11 items, all rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Higher scores on this scale indicate a stronger self-belief in the individual to achieve their athletic goals. The General Self-Efficacy Scale has previously shown strong internal consistency with a Cronbach's alpha coefficient of 0.86. The adapted version to assess athletic self-efficacy showed high internal consistency was replicated in the current sample, exhibiting a Cronbach's alpha coefficient of 0.86.

5.2.3.7. Core identity – sport. The sporting subscale of the Athletic and Academic Identity Scale (AAIS) was used in this study to assess the salience of the individual's sporting role to their core identity (Yukhymenko-Lescroart, 2014). Respondents are asked to rate characteristics or qualities such as "being athletic" on a scale of 1-6, with a 1 indicating that the item is "not central to my sense of self" and 6 indicating that it is "very central to my sense of self". The scale presents 6 characteristics related to the athletic role, which indicated a strong internal consistency with an omega coefficient score of 0.94.

5.2.4. Data analysis. The data analysis strategy for this study consisted of an initial preliminary analysis of the variables, followed by a principle component analysis (PCA), a cluster analysis, and finalised with an analysis of criterion validity. All statistical analyses were performed in IBM SPSS statistics package version 24.0. The cluster analysis method was selected for this study because the techniques aim to group objects (in this case dual career athletes) based on the selected variables (Hair, Black, Babin, & Anderson, 2013). This data reduction process condenses the information from the entire sample to more concise information about specific, manageable groups that are more useable in practice. It is, therefore, argued that this method is well suited for the present research question which seeks to profile individual's athletic and career development. With the research question in mind, the central focus of this study was on the experiences of individuals and, therefore, on the differences between cases on all variables rather than relationships between scores on variables that might more commonly be seen in sport psychology literature.

Cluster analysis has previously been criticised for its dependence on the variables which are input into the analysis, the subjective nature of the cluster solution, and for creating

clusters regardless of the existence of logical groups. This study used a combination of hierarchical and non-hierarchical clustering methods, commonly employed in the sport literature (e.g., Harwood, Cumming, & Fletcher, 2004), to provide increased confidence in the stability of the cluster solution (Hair et al., 2013). First, a hierarchical clustering method was used to determine the number of clusters. Second, a k-means clustering method was used to refine the clusters. A between groups linkage method with correlation coefficients as a measure of distance was used to determine the number of cluster groups. The questionnaire responses where standardized by z-score to create data that was comparable between scales. The six stages of the cluster analysis decision process were also adopted to reduce the subjective influence in selecting a cluster solution (see Hair et al., 2013). Eight clustering variables were used: age, gender, highest sporting level, current sporting level, current educational/vocational level, career identity, career self-efficacy, core identity - career, core identity - sport, athletic identity, and athletic self-efficacy. The cluster groups were then examined for their difference on the variables and labelled according to the participants that they represented.

5.3. Results

5.3.1. Preliminary analysis. All variables showed typically normal distributions. Although, two variables showed a slight skew towards higher values. These variables were athletic identity and core identity - sport. Since this is an athlete population, this skew towards a higher athletic identity is to be expected. A correlation matrix (table 8) was conducted to assess the factorability of all 11 variables (age, gender, highest sporting level, current sporting level, current educational / vocational level, career identity, career self-efficacy, core identity - career, core identity - sport, athletic identity and athletic self-efficacy). Gender was shown to have poor correlation to the majority of variables and, therefore, it was removed from the analysis. The internal correlation of the career variables was considered to be strong, with career identity correlating significantly with rho values of 0.35 and 0.33 for career self-efficacy and core identity - career, respectively. Similarly, the athletic identity variable was strongly internally correlated to athletic self-efficacy and core identity - sport, with rho values of 0.31 and 0.48, respectively.

Table 8.

Partial correlation matrix for cluster analysis, between the sporting and career variables, and age. Only Spearman's rho values that were significant to P<0.05 are shown.

Variable	Age	Current educational / vocational level	Career identity	Career self-efficacy	Core identity - career
Age	-	0.78	-	0.28	-
Highest sporting level	0.31	-	-	-	-
Current sporting level	-0.23	-0.40	-	-	0.20
Core identity - sport	-	-	-	-	0.22
Athletic identity	-0.31	-0.29	-	-	-
Athletic self-efficacy	-	-	-	0.20	0.24

5.3.2. Principle component analysis. A principle component analysis was conducted before the cluster analysis because it allows the researcher to understand the correlation between the variables and the validity in using all the variables selected. A sample size of 111 was considered as sufficient for PCA with 10 variables because it allows for a more than 10 rows per variable. The appropriateness of PCA is confirmed by a moderate KMO value of 0.63 (Kaiser, 1974) and a significant Bartlett's test of Sphericity (Bartlett, 1954). The PCA identified 3 components with Eigenvalues of greater than 1, which together explained 63% of the variance. Table 9 shows the rotated factor loadings of each variable on the 3 components (with a cut off level of 0.30, representing a significant contribution of that variable to the component). The first component consists of age, current educational / vocational level, career self-efficacy, highest sporting level, and athletic identity, which accounts for 26.8% of the variance. The second component contains highest sporting level, current sporting level, core identity - sport, athletic identity, and athletic self-efficacy, which was negatively associated with educational/vocational level. This component accounts for 21.3% of the variance and seems to represent a sporting component. The third component is driven by negative associations with highest and current sporting levels, loadings from career identity, career self-efficacy and core identity - career and, interestingly, athletic self-efficacy. This component accounts for 14.7% if the variance and seems to represent a career component.

Table 9.

Variance explained and rotated factor loadings of the three principle components. Significant values with at least 0.3 are highlighted.

Variable	PC1	PC2	PC3
Percentage variance explained (%)	26.8	21.3	14.7
Age	0.88	-0.20	0.04
Highest sporting level	0.52	0.44	-0.38
Current sporting level	-0.26	0.64	-0.43
Current educational level	0.82	-0.28	0.07
Career identity	-0.04	0.04	0.75
Career self-efficacy	0.50	0.13	0.54
Core identity - career	0.01	0.12	0.76
Core identity - sport	-0.12	0.72	0.29
Athletic identity	-0.33	0.73	0.02
Athletic self-efficacy	0.19	0.55	0.35

5.3.3. Cluster analysis. Sample size in cluster analysis is not guided by a specific test or rule, instead the researcher judged the sample size to be sufficiently large to represent all the relevant groups of this population (Hair et al., 2013). First, a hierarchical cluster analysis was undertaken to identify the number of clusters that are most appropriate for a non-hierarchical, k-means analysis. From considering the dendrogram and agglomeration schedule, as outputs from initial cluster analysis, a five cluster solution was considered to produce the optimal cluster size for detailed groups while still maintaining meaningful differences between the clusters. A correlational measure of similarity was used in this case because it focused on the patterns of responses for each participant over the variables measured (Hair et al., 2013). The non-hierarchical k-means analysis was then used to split all participants into five clusters. The five clusters are described in detail below and summarized in Table 10. To illustrate the characteristics of the clusters further, box plots of all the input variables are shown in figure 12.

Clusters 2, 3, and 4 (18/111, 19/111 and 40/111, respectively) showed similar levels of highest sporting level (all cluster members were most likely to have reached an international level), and educational/vocational level (all cluster members were most likely to

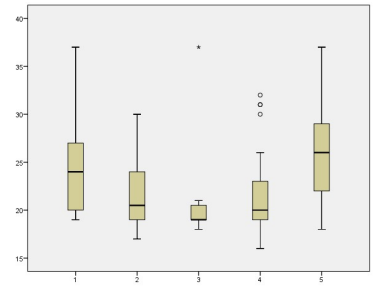
be studying at the undergraduate level). Though, the groups were distinct on the their current sporting level (cluster 2 was most likely to be competing internationally whereas, clusters 3 and 4 were more likely to be competing at the senior national or university national level), career measures (cluster 2 showed the lowest career identity, career self-efficacy and core identity - career scores whereas, cluster 3 showed some of the highest career scores, and cluster 4 showed intermediate career scores), and athletic measures (cluster 2 showed intermediate athletic identity, athletic self-efficacy and core athletic identity scores. Again, cluster 3 showed some of the highest athletic measures scores, whereas, cluster 4 showed some of the lowest athletic measure scores) – see figure 12 for the box plot diagrams that outline the mean differences for each variable. From these characteristics, it was concluded that: cluster 2, with the highest current sporting level and high athletic measure scores compared to low career measure scores, represents dual career athletes that prioritised athletic pursuits over vocational ones and is labelled ‘athlete-student’ (see figure 13), or in the vocational setting ‘athlete-employee’. Cluster 3, with high athletic measures scores and high

Table 10.

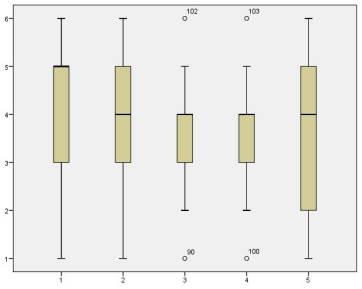
Cluster solution and cluster characteristics summary.

Cluster	Label	Characteristics
1	Vocational athlete	High Highest Sporting Level but lower Current Sporting Level. The highest career measure scores but low-intermediate scores. Likely to be past undergraduate education and in further study or employed.
2	Athlete-student	High Highest Sporting Level, including a high Current Sporting Level. Some of the lowest career measure scores and some of the highest athletic identity scores. Most likely to be in undergraduate education.
3	Dual career athlete	High Highest Sporting Level, but lower Current Sporting Level than Athlete-Students. High career measure and athletic measure scores. Most likely to be in undergraduate education.
4	Student-athlete	High Highest Sporting Level, but lower Current Sporting Level than Athlete-Students. High career measure and athletic measure scores in comparison to Athlete-Student and dual career Athlete. Most likely to be in undergraduate education.
5	Retired athlete	High Highest Sporting Level but very low Current Sporting Level, most likely to be not competing. Low-intermediate career measure scores but some of the lowest career measure scores. Likely to be past undergraduate education and in further study or employed.

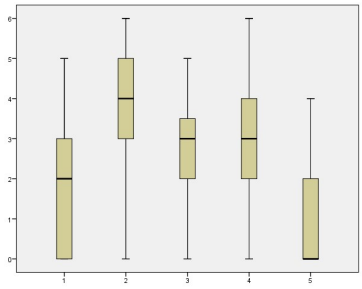
Age



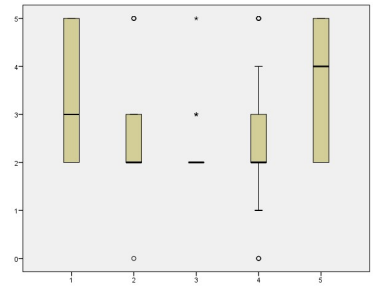
Highest Sporting Level



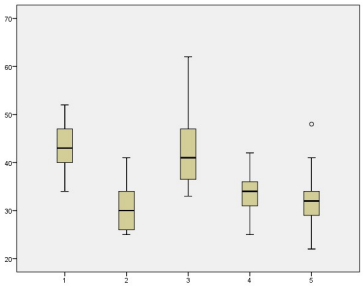
Current Sporting Level



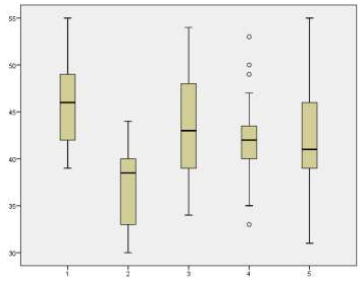
Current Educational Level



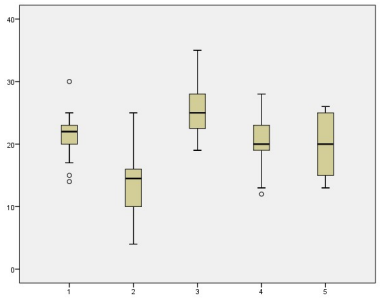
Career Identity



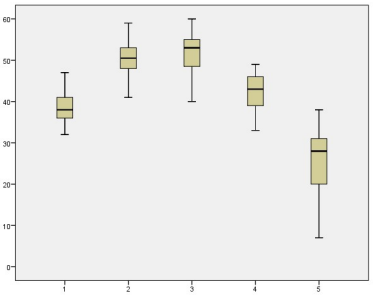
Career Self-Efficacy



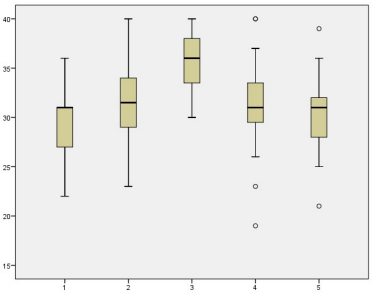
Core Career Identity



Athletic Identity



Athletic Self-Efficacy



Core Sporting Identity

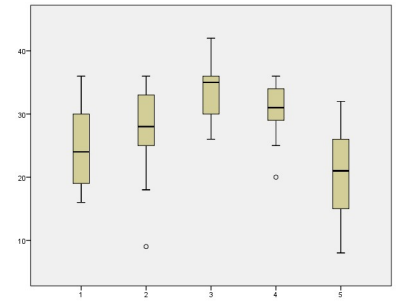


Figure 12. Box plots of score on each of the variables input into the cluster analysis, grouped by cluster memebership (cluster number indicated on the x axis).

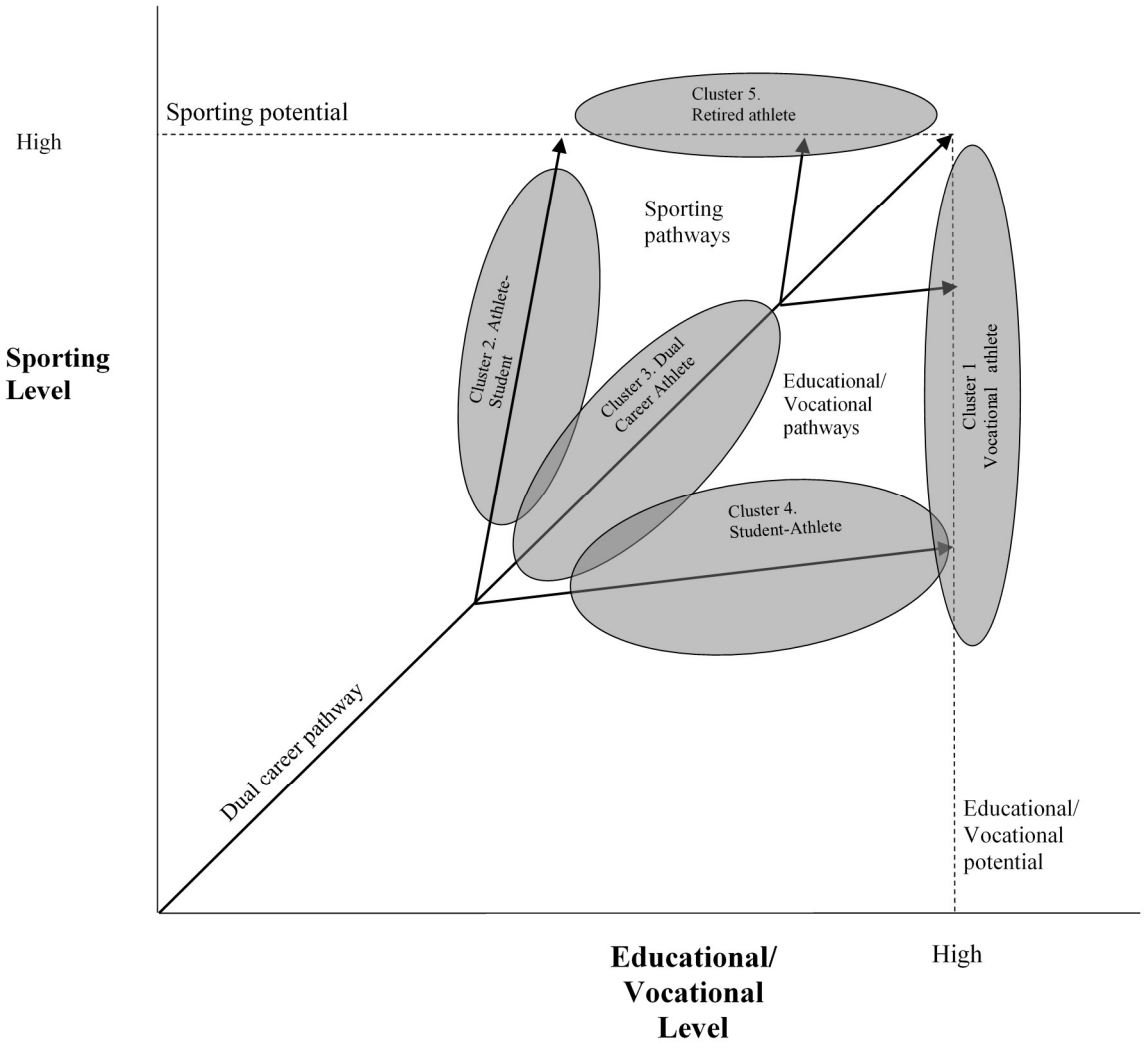


Figure 13. Representation of cluster solutions according to the 'mind the gap' theory of dual career pathways in sport.

career measures scores represents dual career athletes who have a strong confidence in their ability to achieve in both sport and their careers, and is therefore labelled 'dual career athlete/student' (see figure 13), or in the vocational setting 'dual career athlete/employee'. Finally, cluster 4, with intermediate career scores and the lowest athletic identity scores of the three clusters in question, represents dual career athletes with an increased commitment to their career goals as opposed to their athletic ones. With this in mind, this cluster is labelled 'student-athlete' (see figure 13), or in the vocational setting 'employee-athlete'.

The two remaining clusters presented distinctive characteristics. Cluster 1 (17/111) showed the highest mean scores on the career measures: career identity, career self-efficacy

and core identity - career. All individuals in this cluster where either undergraduate students, postgraduate students, Ph.D. or doctorate candidates, or employed. In contrast, cluster 1 showed lower scores on athletic identity, athletic self-efficacy, and core identity - sport. The mean sporting level of this group was senior international, but their current sporting level was much lower. Participants in this cluster were more likely to be competing at a senior national, regional level, or no longer competing at all. These characteristics suggest the cluster represents individuals who value their career goals greater than their athletic ones and are labelled as vocational athletes (see figure 13). In opposition to cluster 1, cluster 5 (17/111) showed some of the lowest career identity, career self-efficacy, core identity - career scores. Individuals in this group were most likely to be postgraduate students or employed. Interestingly, cluster 5 also showed some of the lowest athletic identity, athletic self-efficacy scores, and core identity – sport scores. When looking at the sporting level of this group, the cluster members showed they had often reached an international level, but that they were likely to be no longer competing. This cluster also showed the highest mean age scores (25 years). From these characteristics, it is suggested that cluster 5 represents high-level athletes who have since retired from competitive sport and are labelled 'retired athletes' (see figure 13).

5.3.4. Criterion validity. Most commonly, a cluster solution is tested for criterion validity by selecting variable(s) not used to form the clusters but known to vary across the clusters. The variable(s) used to assess predictive validity should have strong theoretical or practical support because they become the benchmark for selecting among the cluster solutions. In this study, no currently measurable variables are available to predicting cluster membership that have not already been used in the analysis. However, the survey did ask participants to give a summary of their dual career experiences so far. These summaries were analysed by the researcher and coded with a pathway according to the 'mind the gap' model. The researcher's assessment of pathway and the cluster analysis group attribution were then compared for likeness. Both the researcher's assessment and the cluster solution agreed 69% of the time.

5.4. Discussion

The thesis aims to identify the factors that facilitate positive experiences of managing a sporting career alongside an education or vocation. A grounded theory analysis (chapter 4) postulated the role of identity and self-efficacy in the development of the different dual career pathways. The current study aimed to explore this proposition empirically, and therefore

confirm the role of identity and self-efficacy in the experience of a dual career. Much of the current research presents an understanding of student athletes as being less likely to hold substantial and deliberate career plans and as being heavily invested in their athletic role to the detriment of their career roles. (e.g., Bimper, 2014; Brown et al., 2000; Cosh & Tully, 2014; Kennedy & Dimick, 1987; Melendez, 2009; Murphy et al., 1996; Saint-Phard et al., 1999; Singer, 2008; Riemer et al., 2000; Ryan, 2015; Ryba et al., 2015; Tekavc et al., 2015). However, several studies have explored the individual differences in balancing the two career roles and the difference this represents for the two career identities and motivations (Aunola et al., 2018; Chamorro et al., 2016; Healey et al., 2016; Lupo et al., 2015; Ryba et al., 2017; Stambulova et al., 2015). The understanding of dual careers as a heterogenous group was extended across the athletic lifespan in this thesis through the theoretical development, in chapter four, which presents three dual career pathways. To further understand the pathways that were theorised in chapter four, the current study investigated the interaction between the individual's sporting and educational or vocational roles, their identity, and their self-efficacy for sporting and career related tasks.

In this study, the researcher used PCA and cluster analysis to gain a deeper understanding of the relationship between athletic identity, athletic self-efficacy and athletic level; career identity, career self-efficacy and educational/vocational level; and the pathway according to the 'mind the gap' theory of dual career athletes. From the 'mind the gap' theory (chapter 4), it was theorized that individuals within each pathway will show a different pattern of athletic and career identity. The current study supports this theory and extends the evidence-base to support an understanding of dual career athletes in three profiles. To expand, clusters 2, 3, and 4 (respectively) showed individuals with a stronger athletic identity in comparison to their educational or vocational identities, indicating the sporting pathway; individuals with a balance between the two identities, indicating a dual career pathway; and finally, individuals with a stronger inclination towards their educational or vocational career identities, indicating a vocational pathway. The inclusion of retired dual career athletes provided us with two further clusters (1 and 5). Both clusters 1 and 5 showed individuals who had previously competed at a high-level but who had now dramatically reduced the level they were playing/competing at. Yet these two clusters differed on career identity, with cluster 1 showing much stronger career identity scores than cluster 5. Cluster 1 was identified as representing individuals who were further along the Educational/Vocational pathway than Cluster 4 (student-athlete or employee-athlete) and were more likely to have completely ceased their competitive athletic pursuits. Whereas, Cluster 5 was identified as representing

retired athletes. This clustering solution was unable to identify if the individuals had followed a sporting pathway or a parallel dual career pathway before retirement, but it is likely, due to the relatively low career identities that the individuals followed a sporting pathway.

The analysis shows significant correlations between measures of career development and measures of athletic development. This correlation is to be expected because of the co-development of the two careers that occurs in a dual career. The current analysis showed gender as having poor correlation with the other factors. Additionally, gender was not seen to differ between clusters. This finding is unexpected due to previous research that suggests athletic identity and career identity scores are commonly different for male athletes and female athletes (e.g., Melendez, 2009; Sturm et al., 2011; Houle & Kluck, 2015; Murphy et al., 1996). Much of this research was conducted with student-athletes within an American collegiate scholarship system, whereas, the current study used a UK based sample from a variety of dual career environments. Hence, the social context, in particular the gender opportunities in sport, could be mediating the influence of gender on career and athletic development.

The results of this study extend the evidence to support the understanding of dual career athletes as a heterogenous group as proposed in chapter 4 and previous research (Aunola et al., 2018; Chamorro et al., 2016; Healey et al., 2016, Lupo et al., 2016; Ryba et al., 2017). Furthermore, it presents one explanation for the inconsistent findings of previous studies which investigated athletic identity and aspects of career development. The inverse relationship between athletic identity and career maturity (Murphy et al., 1996), career decision-making self-efficacy (Brown et al., 2000), career planning (Kennedy & Dimick, 1987) would be consistent with the understanding of the 'athlete-student' or 'athlete-employee' cluster of this study. Whereas, research which has shown no relationship between athletic identity and vocational identity (Martens & Cox, 2000) or vocational plans (Perna et al., 1996) could be understood as the 'dual-career athlete/student' cluster within this study. This study offers empirical evidence to support the 'mind the gap' theory and dual career development mechanism as a framework for the role of identity and self-efficacy in the prioritisation of the two careers. The investigation of athletic self-efficacy and career self-efficacy has received limited attention within the dual career research so far. This study showed that, in general, the self-efficacy of the individual reflected their identity (i.e., an individual with a strong athletic identity would also show a strong athletic self-efficacy). However, when investigating individual scores further, this was not always the case. On occasion, an individual could show an identity dissonance, where they had strong athletic

identity yet also showed a weak athletic self-efficacy. This presents an interesting consideration for the research and an area for further investigation in future research.

5.4.1. Strengths and limitations. This study is considered to advance the current research knowledge because it provides evidence for identity and self-efficacy as factors associated with dual career pathway, where previously only motivational profiles have been considered in this way. Second, this study uses a diverse participant sample, and, therefore, extends the understand of dual career pathways over the lifespan, as opposed to a previous focus on high school athletes, youth athletes, or higher education athletes. While the aim of this study was to provide breath in understanding, the research area could still benefit from a more detailed understanding of these factors from an empirical perspective. For instance, the stability of identity, self-efficacy, and motivation towards dual career goals over key transitions; an examination of identity, self-efficacy, and motivation towards dual career goals from a longitudinal perspective, over the dual career lifespan; and an understanding of identity, self-efficacy, and motivation towards dual career goals from different sports and different dual career environment. Furthermore, this study was conducted in the UK context and so, the generalisability is limited without further investigation in different contexts.

This study is based on a critical realist understanding of identity (see *critical realism implications for studying identity* section*)*. More specifically, the study follows Super's (1980) theory and the model of multiple dimensions of identity (Jones & McEwen, 2000) which state that every individual possesses multiple identities of differing salience to the individual's core self. This investigation focused on, what is presumed through the literature to be, the two most salient roles to a dual career individual (their athletic and their career roles). However, the current study did not consider the interaction and impact of the entirety of the individual's roles (e.g., their role as friend, sibling, parent, ect.). The impact of additional roles such as these could be a fruitful line of inquiry, particularly as these roles adapt or are introduced over time. This study also focused on a cross-sectional understanding of dual career individual's career and athletic roles. As understood through Super's theory, identity is a life-long process that is susceptible to change. Therefore, understanding the stability of the career and sporting roles over time within each pathway is of vital importance for future research.

5.4.2. Practical and research implications. The current study presents an understanding of dual career athletes through three profiles, who attribute varying values to

their athletic and career roles and hold varying beliefs about their ability to achieve within those roles. This, therefore, presents some important and novel considerations for those practicing within the dual career area. First, it is important for practitioners to consider the support provisions provided to each of the dual career athlete profiles. Currently, all dual career athletes are supported via similar provisions, however, the current research (and research conducted in chapter 4) would suggest that dual career athletes need to be supported according to their pathway. To expand this point, the 'mind the gap' theory (chapter 4), suggests that each dual career pathway has its benefits and consequences while the current study suggests that individuals within each pathway exhibit distinct identity and self-efficacy profiles; The athlete-student, following a sporting pathway, shows a higher athletic identity than career identity and are likely to prioritise their sporting role to the detriment of their career goals. Therefore, the athlete-student requires support to prepare for their post-sport career where possible during their sporting career (e.g., part-time study and distance learning techniques) but is likely to require the most support in their transition out of sport (e.g., support with the loss of athletic identity and starting a new career). In addition, the results of the current study showed that retired athletes still showed some of the lowest career identity and career self-efficacy scores. This provides evidence for the education/vocational skills gap of the 'mind the gap' theory and highlights the importance of supporting athlete's transition out of sport. The parallel dual career pathway allows dual career athletes to achieve both their career and sporting goals, however, this pathway, as seen in chapter 3 and 4, requires substantial amounts of support and flexibility from sport and education/vocation. The third pathway, educational/vocational pathway, suggests student-athletes are likely to reduce their commitment to or dropout from competitive sport. This pathway becomes problematic due to the large amount of talent loss this represents for sport, (i.e., the sporting gap). Further evidence for this gap is seen in that Cluster 4 (retired student-athlete or employee-athlete) were more likely to have completely ceased their competitive athletic pursuits. This finding illustrating that the need for sporting stakeholders and organisations to encourage individual to maintain a positive relationship with sport after dropout from competitive sport, (i.e., sport as a hobby as opposed to a career).

The results of the current study also present considerations for conducting research with dual career athletes. Explicitly, each dual career type showed distinct characteristics and are suggested to pursue dual careers in different ways. Therefore, it is no longer applicable to recruit all dual career athletes. Future research must consider the type of dual career experience the research question is directed towards and ensure that the sample is

representative of this group (e.g., ensuring athlete-students are recruited when looking at dual career athletes who prioritise their sporting career). If it is assumed that samples of dual career athletes in previous studies show a similar spread of the three dual career types, (i.e., the largest cluster was the student-athlete group), conclusions drawn from these studies could be called into question. Therefore, understanding the identity and self-efficacy profiles of the dual career athletes within the sample is recommended for research in future. In addition, the current study aimed to understand these profiles from a range of sporting, educational, and vocational backgrounds. The understanding of the dual career types in a context specific manor (i.e., for a particular sport or education) could provide greater insight into their development. For example, it is the development trajectories of dual career identity, self-efficacy and motivation could be quite different for early specialisation sports, such as gymnastics, compared to late specialisation sports, such as rowing.

Chapter Six:

Discussion and Conclusions

The following section presents a discussion of the main points that run throughout the entirety of this thesis. While each of the research chapters (3, 4, and 5) have discussed the points which are most relevant to each research question, this chapter aims to reflect on the significance, reach and impact of the thesis as a whole. Finally, the main conclusions of the thesis are drawn and future directions for this research area are outlined.

6.1. Thesis Aim.

The justifications for a research focus on the combination of sport and an education or a vocation is highlighted through the undeniable impact dual career athletes and alumni have upon the recent national sporting success at major sporting events (such as, Rio Olympic Games, 2016; Gold Coast Commonwealth Games, 2018; and PyeongChang Winter Olympics, 2018). If we consider this combination from a practical standpoint, it becomes clear that a dual career is likely to commence during compulsory education, can cover the entire athletic career lifespan, and can appear quite different depending on the educational or sporting decisions made by the individual. The importance of this topic is also highlighted by the wider debate on athlete mental health with sport and within athletic retirement (e.g., Orchard, 2017; Professional Players Federation, 2018; Ramsay, 2018; Youde, 2018) and the duty of care role that sporting organisations hold for the welfare of athletes (Grey-Thompson & Department for Digital, Culture, Media & Sport, 2017). Research in sport psychology has presented the pursuit of dual careers as mitigating the risks of an exclusive focus on sport, which include identity foreclosure, poor athletic retirement, and an inability to deal with adversity in sport (e.g., injury; Brewer et al., 2000; Lally, 2007; Knights et al., 2016; Murphy et al., 1996; Park et al., 2013; Petitpas & France, 2010; Stambulova et al., 2015). However, much of the research shows that the pursuit of a dual career as challenging and associated with stress, overwhelm, burnout or leading to a dropout from sport or education/vocation (e.g., Cosh & Tully, 2014; Singer, 2008; Tekavc et al., 2015). Moreover, the current body of literature in dual career derives from different contexts (e.g., transition, Stambulova, 2003; holistic athletic career model, Wylleman & Lavallee, 2004; Wylleman et al., 2013; and athletic retirement literature Knights et al., 2016;). However, this research does not address the multitude of dual career experiences that are seen in practice, and instead tends to focus on the pathway outlined by Wylleman and colleagues (2013), from compulsory education to higher/further education to professional sport to post sport career.

As a result of the tendency of research to focus on one pathway, this thesis sought to explore and examine the diverse experiences of dual career experiences in sport, including

the different pathways. Chapter 3 aimed to comprehensively review and synthesise the evidence which addresses the factors that facilitate positive experiences of managing a sporting career alongside an education or vocation, including research from a variety of contexts and methodological standpoints. The results of the review add to the research base that presents a dual career can be a legitimate pathway to prepare athletes for their post-sport future, and protect against identity foreclosure, poor athletic retirement, and an inability to deal with adversity in sport. It also adds to the research that identifies factors that impact the experience of a dual career, such as: the academic environment, sporting environment, personal resources, and social support. However, the systematic review conducted in this thesis has a wider reach than previous reviews in this area because of the inclusion of a wider spread of research (i.e., the inclusion of qualitative and quantitative research) and the inclusion of research worldwide. The current systematic review, by including both literature from the North American context and the European context, adds value to the research literature by enabling the comparisons between two of the largest contributors to the dual career literature and two approaches to promoting dual career in practice. Both the European sport model and the North American model hold similarities to one another, but we must also recognise the differences, including the professionalisation of the American colligate system compared to the, largely, sub-elite nature of the university system in Europe. This is of particular interest due to the increase in and promotion of European universities as hubs for elite sport. For example, the links between UK universities and national governing bodies. The American system has been criticised for its treatment of student-athletes as exclusively athletes and the negative impact this can have on the individual's life satisfaction and ability to succeed in their education (Singer, 2008). Therefore, it is important for European universities, in developing relationships with sport, to maintain a balance between the focus on performance sport and educational development.

The review was also beneficial because it outlines the gaps in the current research knowledge, which were: (a) a diversification of the sample characteristics and an expanded focus from the experiences of university student-athletes is required by future studies to obtain a whole picture of the dual career lifespan; and (b) a theoretical as opposed to empirical perspective of the different experiences. Chapter 4, and subsequently chapter 5, goes on to address this gap via a grounded theory approach. The purpose of this study was to identify and examine individual pathways of sport and education or vocational development, and to create a first grounded theory of the factors and outcomes associated with different dual career pathways in sport. The results of the qualitatively-derived theory extend the

research base that presents three types of dual career experience: the dual career pathway, the sporting pathway, and the educational/vocational pathway, which have yet to be understood across the athletic lifespan. The study also extends this knowledge by associating the pathways with varying outcomes, which are outlined as the educational gap, vocational skills gap, and the sporting gap The 'gaps' are novel conceptualisation of the challenges presented by the different prioritisations of a dual career and present important considerations for practice. To expand, the educational and vocational skills gaps derive from a prioritisation of the individual's sporting career, resulting in a more difficult transition out of sport for the individual. The understanding and recognition of this gap by practitioners, and dual career athletes themselves, could enable the development of better coping mechanisms to be put in place. This is an area for future research to consider: the development of effective interventions to reduce the experience of educational or vocational skills gap. In terms of the sporting gap, this represents the reduction of individuals within sporting talent pathways due to aspects such as deselection, injury, and the elite performance narrative. A greater awareness and reduction of these barriers to sports pursuits could enable late developing athletes to reach the elite level, enable talent transfer between sports and enable more individuals to maintain a positive relationship sport in general. This chapter also advances the current research by outlining a novel mechanism for the development of these pathways. The mechanism links identity, self-efficacy, and motivation towards dual career goals with the dual career pathway. While chapter 4 presents this mechanism, chapter 5 examines the proposition that individuals within different dual career pathways will exhibit a different identity and self-efficacy profile.

Chapter 5 concludes the research aspect of this thesis and presents a cluster analysis that identified five heterogeneous groups of dual career athletes who exhibit different identity and self-efficacy scores and is consistent with the hypothesis developed in Chapter 4. More specifically, individuals within a parallel dual career pathway showed a balance between the two identities, individuals within a vocational pathway demonstrated a stronger inclination towards their educational or vocational career identity, and finally, individuals within a sporting pathway displayed a stronger athletic identity in comparison to their educational or vocational identities. Retired athletes represented a further two groups and provide evidence for the sporting and educational/vocational skills gap. The study advances the research knowledge through confirming the interaction between identity and self-efficacy with dual career pathways in this way. In doing this, identity and self-efficacy development can be targeted for future research (e.g., the exploration of identity and self-efficacy over time)

including the factors that impact it. Further, an understanding of identity and self-efficacy as factors in dual career development enables practitioners to promote the dual career pathway that best suits the individual, whilst implementing support to reduce the impact of negative consequences of the chosen pathway. For example, through recognising that a dual career athlete might have a much stronger athletic identity than a career identity, practitioners working with that individual will be aware that the individual is likely to prioritise their

<table>
<tr><td>Age</td><td colspan="6">10 15 20 25 30 35</td></tr>
<tr><td>Athletic Level</td><td>Initiation</td><td colspan="2">Development</td><td colspan="2">Mastery</td><td>Discontinuation</td></tr>
<tr><td rowspan="6">Academic/
Vocational Level</td><td rowspan="6">Compulsory education</td><td>Further education</td><td>Higher education</td><td colspan="2">Vocation</td><td rowspan="6">Post-athletic career</td></tr>
<tr><td>Further education</td><td colspan="3">Vocation</td></tr>
<tr><td colspan="4">Vocation</td></tr>
<tr><td>Further education</td><td>Higher education</td><td colspan="2">Professional sport</td></tr>
<tr><td>Further education/ vocation</td><td colspan="3">Professional sport</td></tr>
<tr><td colspan="4">Professional sport</td></tr>
<tr><td>Psychological Level</td><td>Childhood</td><td colspan="2">Adolescence</td><td>Young adulthood</td><td colspan="2">Adulthood</td></tr>
<tr><td>Psychosocial</td><td>Parents
Siblings
Peers</td><td colspan="2">Peers /teammates
Coach
Parents</td><td colspan="2">Partner
Coach/Support staff
Peers/ teammates</td><td>Family
Peers</td></tr>
<tr><td rowspan="2">Financial Level</td><td rowspan="2">Family</td><td rowspan="2">Family
Sport governing body</td><td colspan="3">Sport governing body</td><td rowspan="2">Employer</td></tr>
<tr><td>Family</td><td colspan="2">Employer</td></tr>
</table>

Figure 14. *Holistic athletic career model, Adapted from Wylleman et al., (2013) for the UK education and sport system.*

N.B. developmental stages that represent a dual career are highlighted in bold.

Red box outlines the pathways explored in this thesis.

sporting goals. Dual career support provision can then be targeted to empower the individual maintain their education or vocation such as, distance learning techniques, selecting flexible study programs, or part-time work.

In the introduction an adapted version of the holistic athletic career model (Wylleman et al., 2013; figure 1) was presented. The adapted version demonstrates the specific UK education and sport systems which this thesis relates to. It also highlights the gaps in the research knowledge regarding the different pathways that individuals take in practice. For instance, there was little research focus on the combination of sport and vocation at either the developmental stage or the mastery athletic stage. Figure 14 presents the same figure, with the pathways explored in this thesis highlighted. While the holistic athletic career transition model focuses on the pathway from compulsory education to further/higher education to professional sport, this thesis has addressed the prioritisation of sport through the experiences of the sporting pathway; the experiences of maintaining a dual career through the entire lifespan, including a vocation; and the experience of prioritising an alternative career through the educational/vocational pathway. This thesis is, therefore, better able to address the multitude of experiences seen in practice and advances the dual career research knowledge.

6.2. Critical Realist Methodology.

As outlined in the methodology section, this thesis adopted a critical realist perspective which understands reality as existing across three domains: the empirical (what can be experienced), the real (the mechanisms and structures that produce the empirical events), and the actual (the consequences of the real mechanisms or structures). The findings of this study address the empirical and real domains of reality. According to the research conducted in this thesis, there are three categories of dual career experience, which are outlined as the three pathways in the 'mind the gap' model. The thesis also develops the understanding of the real domain, which is the purpose of scientific enquiry according to critical realists (Blaikie, 2007). Chapter 3 outlines four environmental and individual factors that influence an individual's experience of dual career. Furthermore, the dual career development mechanism, presented in chapter 4, outlines identity, self-efficacy, and motivation as one possible explanation for the development of these different experiences. This explanation is further supported by empirical evidence of identity and self-efficacy patterns in a cluster analysis (chapter 5).

The combination of various research methods and research strategies is often contested by researchers but is accepted within critical realism (McEnvoy & Richards, 2006).

In fact, using a diverse set of methods and research strategies to gain the most complete understanding of the phenomena is central to critical realism. First, by synthesising the qualitative and quantitative findings of the research in a systematic mixed-studies review (chapter 3), the thesis was able to gain a comprehensive understanding, as opposed to a method-specific understanding, of the research conducted within dual careers. The thesis then engaged with qualitative research in order to further understand the experiences of dual career athletes in a grounded theory (chapter 4). The grounded theory method involves both an inductive research strategy and a retroductive research strategy. Through the inductive strategy, the researcher gathered data to understand the phenomena (dual career experiences) and draw a general conclusion (there are three types of dual career experiences). This was furthered by retroduction, whereby, the researcher proposes an explanation or mechanism (identity and self-efficacy) that is capable of producing the phenomena (dual career experiences). Finally, the research section of this thesis concluded by testing the premises (identity and self-efficacy is a mechanism that influences dual career experience) of the developed theory via a hypothetic-deductive process and returning to a quantitative method. As a consequence of this approach, this thesis has comprehensively explored the dual career area, using the most appropriate research tools to address the research question at hand.

6.3. Research Implications.

The thesis has highlighted several further considerations for the research area of dual careers in sport. First, a focus on sporting endeavours over educational or vocational endeavours was highlighted in the mixed-studies review as a pitfall many research articles have fallen into. Research that uses dual career athletes as participants but focuses on the sporting aspect of that dual career fails to fully engage with the complex demands of the dual career population. In more recent research, there has been a shift in focus to gaining a holistic perspective of athletes (e.g., Gledhill & Harwood, 2015; Wylleman et al., 2013). Despite this shift, there is still a focus within the dual career literature on athletes in education, as opposed to employment, which can be seen throughout the research literature in this thesis. In response and to extend our understanding of the multitude of dual career experiences, this thesis has aimed to include a variety of dual career experiences, including all forms of education, vocational skills training, and employment. The findings of this thesis, particularly chapter 4 and 5, can provide a framework for future researchers to better understand the dual career approach they wish to investigate, the demands of that pathway, and types of individuals that might populate that pathway.

Another area for consideration for research is the terminology used to describe dual careers in sport. This thesis proposes the following definition: A dual career is defined as the pursuit of sport alongside education or vocational endeavours. The main drive for redefining dual career was to ensure the definition encapsulates the variety of experiences that are seen in practice and addressed by this research. However, it is also argued that the term *dual career athlete* focuses on the athletic career of the individual and makes no reference to their alternative pursuit. It, therefore, fails to encapsulating the variety of dual career experiences in two ways: First, the term labels the individual as an athlete, suggesting that either their alternative career is less important or non-existent. Second, the term fails to give the reader sufficient information on the alternative career the individual is embarking on. To address this, the terms dual career individual or dual career person could be used. However, these terms both risk being mistaken for the pursuit of multiple vocational careers, neither of which include sport. Therefore, this thesis suggests using terms such as dual career athlete-student, dual career student-athlete, or dual career athlete-employee to retain clarity in both aspects of the dual career and highlights the various ways to prioritise the two careers.

Although this thesis makes a significant contribution to the research area, there is still some areas for future research that arise directly from this thesis. First, while this thesis has extended and advanced the research that views dual career athletes as a heterogeneous group, the new framework for understanding individuals who combine sport with an education leads to a foray of research that can be conducted to shed more light on the processes that are important in different dual career pathways. For example, an investigation of the distribution of individuals in different pathways, an investigation of the presence of and development of skills and competences of individuals in the different pathways and, an exploration of the differences in transitions for dual career individuals in the different pathways). Second, a point that has already been discussed is the lack of research on dual careers in sport and a vocation. While this thesis goes someway to addressing this, the specific exploration of the combination of sport and a vocation is still required, including an investigation into the specific support needs for athletes in a vocation and the effectiveness of support mechanisms or environments that support employee-athletes. Additionally, chapter 4 suggested that for athletes in a vocation, the management of a sporting career alongside employment is a highly challenging stage of a dual career, particularly due to the lack of support systems available. Therefore, further investigation of the transition from education to vocation and the adjustment from a supportive environment to no dual career support is required.

The current thesis investigated the dual career experience over the lifespan from a empirical and theoretical perspective. While the interviews, in chapter 4, took a lifespan approach, they were conducted retrospectively. Furthermore, chapter 5 investigated this from a cross-sectional approach. To extend our understanding of the different pathways and the most appropriate ways to support the three dual career profiles, it is important research also considers a longitudinal perspective. For example, the longitudinal tracking of dual career athletes' identity, self-efficacy and motivation towards their two careers over key transitions or developmental periods. The findings for chapter 4 suggest that some key transitions would include the transition from school to university and the transition from junior to senior or elite level sport. This thesis developed and test the theory in one context, that covered a spread of different sports and vocational careers. To be able to extend the approach to wider cultural contexts further research would be required. However, investigations into more specific context could also provide a clearer understanding of the development of the different pathways and dual career profiles. For example, investigations into the dual development of individuals in an early specialisation sport, such as gymnastics, might present different considerations to an investigation within a late specialisation sport, such as rowing. This could also be said for sports that are funded or professional compared to those that aren't.

6.4. Practical Implications

The research findings of this thesis could be applied by practice in a number of ways. First, the identification of identity and self-efficacy as factors in the development of the dual career pathways could be seen as an opportunity to predict the pathway young talented athletes are likely to embark upon (i.e., predict the individuals that are likely to pursue a sporting pathway and focus support on them). This, however, is not considered as a beneficial use of the research because it reduces individual agency and the ability of athletes to select their pathways for themselves or switch pathways part way through their development. This use of the findings is also assuming that there are no exceptions to the premise of identity and self-efficacy patterns in each pathway, which is not what the theory is claiming. Second, practice could use the research findings to develop interventions which encourage individuals to pursue the dual career pathway, or a parallel focus on both their careers. Although the parallel dual career pathway is beneficial because it is associated with the individual attaining both their sporting and career goals and is not associated with any of the gaps outlined in the 'mind the gap' theory, the pathway is not without its flaws. The current findings from the systematic review in chapter 3 clearly indicate that the parallel dual career pathway is

challenging for individuals to manage and requires complex negotiation of factors between the individual and multiple stakeholders. This thesis, therefore, considers the most beneficial interpretation of the findings for practice is to increase the awareness of the different pathways and adapt support provision based on the risks and benefits of each pathway. It is argued that, in doing this, practitioners could enable dual career individuals to understand the different pathways, in the context of their educational goals, educational system, sporting goals, and sporting system, they will be able to understand the benefits, risks, and (most likely) outcomes of each pathway and make informed decisions about their futures based on their own identity, self-efficacy, and motivation towards different goals. Therefore, the findings help to support the argument towards a more person-centred approach to support and career planning for dual career individuals. The different considerations and practical recommendations are outlined according to each of the pathways. The findings of this thesis were developed via a lifespan perspective, therefore, it is important for practitioners to recognise each pathway as extending across the athletic lifespan of the individual. In particular, practitioners working with dual career individuals should consider the pathway the individual has taken so far and the projected pathway the individual is intending to take in the future. By gaining an understanding of this, the practitioner can consider the type of dual career the individual is likely to have, which can give an indication of the support they might need, to cope with their current situations but also to prepare them for future challenges and opportunities. The specific support needs of each pathway and the organisations that are responsible for these are outlined.

6.4.1. The sporting pathway. Athlete-students in the sporting pathway, characterised by a prioritisation of sport pursuits over educational or vocational pursuits, in the UK system are likely to be supported by sporting organisations with the aim to produce athletic performance, including world class performance programs or professional sports clubs. This thesis makes the following recommendations to these organisations:

1. Remove or reduce the prominence the elite performance narrative from the organisational culture. The findings of chapters 3 and 4 indicated that individuals were often encouraged to sacrifice their educational or vocational career goals due to the understanding that: to succeed in sport, you must sacrifice everything else (i.e., the elite performance narrative; Carless & Douglas, 2013). This intolerance for a dual career or life outside of sport risks developing a cohort of athletes that have an exclusive identity and, therefore, find it difficult to cope with life outside or after sport.

2. Promote the development or exploration of life outside of sport. As an alternative to the elite performance narrative, the sporting pathway as developed in this thesis, where sport is prioritised but an identity outside of sport is maintained can enable athletes to reach the required focus on sport for elite performance, whilst not risking the development of an exclusive identity.

3. Focus support on preparing athletes for, during, and after athletic retirement. While the sporting pathway enables the development of an identity outside of sport, the results from chapter 5 indicated that this identity was much lower than individuals in the alternate pathways. Furthermore, Chapter 3 outlined the education and vocational skills gap (i.e., a discrepancy between their actual education and vocational skills and those needed for their desired post-sport career) that is likely to be experienced by individuals in this pathway. Therefore, dual career athlete-students or athlete-employees are likely to still require support in coping with athletic retirement and adjusting to life after sport, in particular in accessing the appropriate education, gaining vocational experience, and developing vocational skills.

6.4.2. The educational/vocational pathway. Student-athletes or employee-athletes in the educational/vocational pathway, characterised by a prioritisation of educational or vocational pursuits over sport pursuits, in the UK system are likely to be supported by educational or vocational institutions. This thesis makes the following two recommendations to these organisations and one recommendation to sporting organisations:

4. Promote an organisational awareness of the benefits and demands of a dual career. The findings of this thesis, in particular chapter 3 and chapter 4, highlight the importance of teachers, lectures and staff members of an educational or vocational institution in supporting a dual carer. This includes an awareness of the demands of a dual career and willingness to be flexible to the demands of sport. In doing this, more individual's will be able to pursue a dual career throughout education and a vocation, as opposed to dropping out from sport due to a lack of flexibility from educational or vocational institutions.

5. Develop support networks and provisions for vocational athletes. Currently, in the UK system, as outlined in the introduction and confirmed in the experiences of dual career athletes in chapter 4, there is only a small number of organisations that support combining sport with a vocation. This, and the development of links between sport and vocational organisations, is an area for

future practice to consider. In doing this, dual career athletes would be better able to develop the vocational skills and work experience that is needed for a smooth transition into their post-sport careers.

6. Support talent development, rather than promoting early talent selection. The educational and vocational pathway, which is outlined in chapter 4 and further confirmed in chapter 5, represents a reduction in the number of aspiring athletes committing to their sporting goals. Chapter 4 identified barriers to continued competitive sport such as, deselection. This deselection for many individuals, due to a narrow pyramid model in sport, occurred early in their sporting careers. This model of sport does not recognise the possibility of late developing sport performers or allow for talent transfer. The educational/vocational and dual career pathways enable the individual to continue their sport development, allow for more individuals to be available for selection, and promote continued participation in sport.

6.4.3. The dual career pathway. The findings of this thesis, in particular chapter 3 and 4, confirm the complex challenges faced by dual career athletes that pursue a parallel focus between their educational/vocational careers and sporting careers. Based on this, the following recommendations are made to dual career support providers:

7. Understand and support the factors that facilitate a dual career. A particular aim of chapter 3, was to identify the factors that promote positive experiences of a dual career. These factors include, having a support network that supports both aspects of a dual career, having the skills and competencies to cope with a dual career, and selecting educational and sporting environments that are supportive of a dual career. By practitioners having an awareness of these factors they can: promote the benefits of a dual career to the individual's support network and outline their roles and responsibilities in supporting a dual career; support individuals to develop competencies such as time management, vocational skills development, responsibility, and proactive planning; and support individuals to select environments that are open to a dual career and that will support the type of dual career pathway they chose.

6.5. Conclusion.

In conclusion, this thesis aimed to further explore the multitude of dual career experiences that are seen in practice. The thesis maintained this broad focus throughout and,

therefore, addressed a greater reach of individuals than previous research. The thesis has addressed the research from an empirical, theoretical, qualitative, and quantitative standpoint so that the conclusions can be made comprehensively. Finally, the thesis maintained close links with practice throughout to ensure the resonance and relevance to the real-world context. The findings of this thesis present seven recommendations for future practice, including a greater awareness of the different pathways to a dual career and the different consequences and support needs that pathways have.

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