AN INVESTIGATION OF THE MEDIATORS OF TALENT DEVELOPMENT IN GOLF

By

JOHN ROBERT STOSZKOWSKI

A thesis submitted to the

University of Birmingham

for the degree of

MPhil (B) SPORTS COACHING (EDUCATION)

School of Education

University of Birmingham

September 2011

UNIVERSITY OF BIRMINGHAM

University of Birmingham Research Archive

e-theses repository

ABSTRACT

The development of talent in sport is a complex process involving the interaction of physical, psychological and sociological factors. Context specific differences undeniably exist across talent development domains, yet to date, relatively little research has investigated the ways elite athletes attain their status in sport. Accordingly, this study was designed to explore the factors that differentiate between those who achieve at the elite level and those who fail to do so in golf. Eight male golf coaches with significant experience in talent development were interviewed using semi-structured interviews to elicit their perceptions of the most influential mediators in reaching excellence. A constructivist, interpretive stance was maintained throughout the research with the data that emerged from the interviews analysed inductively. The findings of this study provide support for golfing achievement being multidimensional in nature with coaches identifying a variety of physical, environmental, psychological, and sociological mediators of talent. Socio-economic mediators and 'luck' were ascertained to be the key arbitrators of those who transpire as talented and achieve excellence in golf. The connotations for applied practitioners and policy makers are discussed.

<u>ACKNOWLEDGEMENTS</u>

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ILLUSTRATIONS

Chapter 1: <u>INTRODUCTION</u>

1.1 Introduction to the Chapter

The intention of this chapter is to provide an outline of the background information that serves to provide a rationale for the current study. It will provide a brief synopsis of the present position within this field and discuss the research questions that are being asked. The methodology utilised in the study will be alluded to and an overview of how the thesis is structured will be presented.

1.2 Outline of the Study

The attainment of excellence in sports performance is one of the principal aims of National Governing Bodies of Sport (NGBs), who invest substantial resources in developmentally oriented talent programmes. For example, as part of a Whole Sport Plan for golf, The England Golf Partnership is committed to an investment of £9,315,294 specifically towards the development of golfing talent over the four year period of 2009-2013 (England Golf, 2009). The predominant aim of such programmes is to identify, train, support, and retain potentially elite performers for an extended period in the hope that eventually some may perform at an elite level (Abbott et al., 2002).

However, research has suggested that the vast majority of young people who are recruited early by a talent identification process, and then supported in talent development programmes, do not become successful elite athletes (Martindale et al., 2005; Martindale et al., 2007; Vaeyens et al., 2009). In contrast, it has also been posited that many successful elite athletes do not begin as similarly talented youngsters and did

not receive support in institutional support programmes (Martindale et al., 2005). Reliable methods for the identification and effective development of potential elite players would therefore allow resources such as those being invested by England Golf to be focused where they are most relevant and likely to achieve success. For that reason, the purpose of this study is to identify the factors that differentiate between those that achieve at the elite level in golf and those who fail to do.

1.3   Talent Identification and Development in Sport

There are few, if any, universally accepted models of talent identification and development (TID), and to date relatively little research has investigated the ways elite athletes attain their status in sport (Bailey et al., 2010). According to MacNamara et al. (2008), talent is typically perceived as the ability to perform at an elite level, with little consideration given to the capacity that individuals need to negotiate the pathway to excellence. Few talent development programmes in sport therefore recognise the distinction between the characteristics of a champion and the qualities required to become a champion (Vaeyens et al., 2009). Given that an individual is born with distinguishing physical characteristics, with a degree of genetic influence, it is often perceived that great athletes are born with a special gift (Phillips et al., 2010). As a result many traditional methods of TID have been informed by this notion of a relationship between innate ability and elite athletes (Howe et al., 1998). In addition, because these TID models (e.g. eTID in Australia; Australian Institute of Sport, 2011) characteristically select young athletes based on a narrow range of factors (typically one-off performance

and/or physical measurements), they fail to acknowledge the dynamic nature of talent development.

Reflecting this, recent expertise literature advocates a move away from talent being perceived as static, with researchers currently emphasising the development rather than the detection and identification of talent (Bailey et al., 2010; Martindale et al., 2010). Evidence has suggested that genetic make-up plays a secondary role to that of the environment (Abbott et al., 2002), and numerous authors (e.g. Singer & Janelle, 1999; Reilly et al., 2000; Johnsen, 2003; Tranckle & Cushion, 2006) assert that the process of talent development in sport comprises of a complex, dynamic and multidimensional interaction of intrapersonal, biological, psychological and sociological factors: all of which can change as a performer grows and matures. It must also be noted, that the acquisition of expertise is highly individualised and context specific differences will undeniably exist across talent development domains (Durand-Bush & Salmela, 2002; Martindale et al., 2010), thus, sport or domain specific research is therefore required.

1.4   Introduction to the Research Question

The wide-ranging, culturally diverse, interdisciplinary nature of talent development research reflects the importance placed on understanding the costs and benefits of specific talent development programmes. Research examining the developmental experiences of potentially elite young golfers and the talent development systems which serve them, could therefore help to reveal the effectiveness of talent development systems in golf and provide evidence based suggestions for programme improvement

(Holt, 2002). The coaches of athletes are uniquely placed to provide insight into the factors conducive to effective talent development (Van Rossum & Gagné, 1994). Surprisingly however, sports coaches have rarely been utilised as sources of information on factors relative to the success and failure of talent development within a given athletic domain.

Accordingly, to enable differentiation between those that achieve at the elite level and those who fail to do so to become apparent, this thesis is underpinned by the dynamic processes involved in talent development and is specifically concerned with answering the research question 'What factors do coaches perceive to play a significant role in the development of talent within golf?' The research question evolved from critical analysis of the previous literature and research cited in the area of talent development in sport. The researcher's knowledge and past employment at NGB level within the sport of golf was also an informant of the research question.

1.5   Methodological Background

The limited empirical research that does exist into coaches' perceptions of talent development has predominantly involved qualitative examination of the developmental histories of past or present elite athletes (e.g. Wolfenden & Holt, 2004) and, to a lesser extent, quantitative analyses of the attributes contributing to the development of elite athletes (e.g. Hyllegard et al., 2001).

This study seeks to add to the literature by obtaining and understanding the perceptions of golf coaches' on the factors they deem to play a significant role in the development of talent within golf. To achieve this, Johnson (1995) suggests research

4

should probe for deeper understanding of constructed realities, rather than merely examine surface features. It is therefore necessary to understand and interpret how the coaches construct the world around them (Glesne, 1999). Accordingly, a constructivist, interpretive approach is adopted utilising a qualitative research methodology, and semi-structured, in-depth interviews are engaged in to enable a coach-centred view of the development of talent in golf.

1.6   Overview of the Thesis

Chapter 2 provides a critical overview of key theoretical and empirical literature relative to talent development in sport, and includes discussion of key theoretical models and frameworks which have informed the subsequent direction of the research thesis. Chapter 3 provides an overview of the constructivist, interpretive approach taken. It gives a rationale for the qualitative research methods utilised, along with a specific outline of each stage of the research process. In Chapter 4 the thesis's findings are discussed and evaluated with links made to pertinent research and existing theoretical frameworks. The final chapter identifies implications for the process of talent development in golf, specifically in relation to coaching. Future directions for talent development research in golf are subsequently addressed.

Chapter 2: LITERATURE REVIEW

2.1 Introduction to Chapter

The purpose of this chapter is to present a critical evaluation of the empirical and theoretical literature related to the development of talent in sport, and where appropriate, golf. Insight will be provided into the multi-dimensional factors that influence the development of talent and pertinent theoretical models will be addressed. Finally, existing research utilising coaches' perceptions of talent development in sport will be analysed critically.

2.2 From Talent Identification to Talent Development

In recent years, a growing body of expertise literature has advocated a move away from talent being perceived as static, with researchers emphasising the development rather than the detection and identification of talent (Bailey et al., 2010). Unfortunately, many traditional TID systems (e.g. Sport Interactive; Sportscotland & Sports Council Northern Ireland, 1997) are focused on identifying talented performers at an early age via selection procedures based on performance 'snapshots' and/or physiological measures aligned to elite performance in specific sports (Bailey & Morley, 2006; Abernethy, 2008; Vaeyens et al., 2009). Unless the limiting factors to performance in a particular sport are anthropometric and physiological (i.e. body size or height), evidence from the expertise literature suggests that these forms of TID activities are fraught with difficulties for sports in which skill is the limiting factor (Abbott et al., 2002; Abernethy, 2008). Indeed, Bailey et al. (2010) argue that early talent identification

activities are misguided, ineffective and may even be considered as potentially unethical.

One widely acknowledged consequence of TID systems that equate to the selection of young players who are able to perform at the time of an assessment is the relative age effect (e.g. Helsen et al., 2000; Sherar et al., 2007). Specifically, the older a performer is relative to their peers, the physically more mature they are likely to be, and therefore perceived as more 'talented' when selection procedures based on performance measures and/or physical attributes are adhered to (Abbott et al., 2002; Wattie et al., 2008). This view is supported by Augste & Lames (2011), who point out that selected children are subsequently more likely to receive further coaching, support, and developmental resources, as well as access to competitive opportunities. This in turn is likely to accelerate their development further, whereas the relatively younger 'non-selected' children are denied the same opportunities and consequently find it much more difficult to progress (Helsen et al., 2000).

Consequently, the key concern here is that a considerable number of potentially talented athletes may be excluded from TID opportunities as a result of unsuitable identification methods. The facilitation of an individual's potential must be prioritised over selection procedures that predominantly focus on physical attributes and age related performance capacities (Abbott et al., 2002; Martindale et al., 2005). Numerous authors including Abbott & Collins (2002) and Vaeyens et al. (2008) state the focus of TID systems should be on understanding the dynamic processes and factors that facilitate and/or undermine the effective development of talent (Bailey et al., 2010). This shift in emphasis towards talent development is underpinned in the following sections which

critically review the factors that impact upon a child's ability to maximise their potential in sport.

2.3   Deliberate Practice

When considering the development of talent, it is difficult to overlook the significant body of literature that emphasises the role of practice in the development process. Indeed, researchers examining the accumulated effects of prolonged practice have indicated a robust positive relationship between practice time and performance improvement (Baker & Horton, 2004; Baker & Cobley, 2008). However, previous studies have also shown that quantity of practice alone cannot be used as a sole predictor of skill level (Ward et al., 2004). Ericsson et al. (1993) proposed deliberate practice as a framework for nurturing expertise; arguing that a performer's level of performance is monotonically related to the amount of 'quality' practice they accumulate. With a minimum of 10 years or 10,000 hours intensive practice needed to acquire the skills to be considered an expert within a specific domain, deliberate practice is regarded as time utilised specifically to improve performance. It is said to be effortful, involves active problem solving, is not necessarily enjoyable, and does not lead to immediate social or financial rewards (Ericsson, 2007).

Studies in sports such as field hockey, soccer, figure skating, wrestling, martial arts and middle distance running have evidenced that elite athletes can be consistently distinguished from non-elite athletes based on accumulated hours of engagement in deliberate practice (Hodges & Starkes, 1996; Starkes, 2000; Helsen et al., 2000; Côté & Fraser-Thomas, 2008). However, recent evidence also suggests 10,000 hours of

domain specific deliberate practice is not necessary to achieve expertise (Bailey et al., 2010). For example, Côté et al. (2003) and Baker (2003) highlight examples of elite athletes with a history of general and varied training types during their development.

It must also be noted, that the majority of previous studies using the deliberate practice framework have been limited to retrospective techniques that are descriptive in nature, absent of control groups and comprise of small samples (Ward et al., 2004). According to Starkes (2000), studies using retrospective techniques often result in a systematic inflation bias, i.e. when athletes overestimate time spent engaging in deliberate practice (Davids, 2000). Ward et al. (2004) support this view by suggesting that an athlete's retrospective recall of their practice history over a career provides a relatively poor reflection of the actual microstructure of practice. Ericsson et al. (1993) also concede the amount of deliberate practice an athlete can undertake is likely to be constrained by contextual factors (e.g. resources and opportunity). This view is supported by Baker & Cobley (2008), who suggest engagement in deliberate practice is also dependent on the intrapersonal factors that underpin the desire to engage in the process in the first place (e.g. motivation and dedication), again limiting claims for the framework's causative effect on expertise development.

In contrast to deliberate practice theory, researchers have also asserted that during childhood, the time spent engaged in 'deliberate play' is an important factor in the development of talent (Côté, 1999; Côté & Hay, 2002; Côté et al., 2007). This 'play' involves participation in a range of activities adapted from standardised sports and often in informal settings with minimal equipment (e.g. street soccer, backyard baseball) where the main aim is maximised fun and enjoyment. According to Côté et al. (2007), a

key characteristic of deliberate play activities is that they allow children the freedom to experiment, innovate, and improvise. For example, Araújo et al. (2010) showed that in general, elite soccer players in Brazil had widely experienced unstructured street football from a young age where the ecological constraints constantly change (i.e. irregular surfaces, field dimensions, number of players). Consequently, this flexibility and creativity that children develop through deliberate play is said to be an important factor in the development of elite athletes (Côté et al., 2003).

2.4   Early versus Late Specialisation

The deliberate practice framework proposed by Ericsson et al. (1993) suggests that if an individual's training in their respective sport does not begin early enough, they will be subsequently at a disadvantage and unable to surpass others who did enter into early deliberate practice (Côté & Fraser-Thomas, 2008). Baker et al. (2009) define early specialisation as an early start relative to age, in one sport, with a focus on both high intensity training and competition. The pressure on young people to become early specialisers is increasingly apparent, yet empirical evidence remains inconclusive and the subject is an issue of contention amongst researchers examining expertise from a developmental perspective (Baker, 2003; Bailey et al., 2010; Muir et al., 2011).

According to England Golf (2010), the average age at which both male and female elite amateur golfers turn professional has dropped significantly. This could indicate a possible trend towards early specialisation in golf, yet empirical evidence is sparse. Using a survey approach, Colclough & Toms (2010) found that the average age of 286 first year PGA assistant professionals was 23.45 years, the majority of whom

began playing golf between the ages of 10 and 13 years whilst maintaining participation in at least three other sports. However, the study does not take into account the discrepancies that may exist between a player turning professional to earn a living by playing tournament golf and a player becoming a PGA professional (which may be focused more around coaching for example).

Several studies have speculated on the negative consequences of early sport specialisation. Risk of injury (Dalton, 1992), slower rate of maturation (Caine et al., 2003), decreased sport enjoyment (Law et al., 2007), dropout (Wall & Côté, 2007), and burnout (Harlick & McKenzie, 2000) have all been alluded to relative to early specialisation. However, the generalisability of such research is problematic due to small sample sizes and inevitable context specific considerations. Longitudinal data is also essential to establish and substantiate specific cause and effect relationships (Baker et al., 2009).

Studies involving elite athletes (e.g. Soberlak & Côté, 2003; Baker et al., 2003) have revealed that early specialisation is not an essential component of elite athlete development. For example, Carlson (1988) concluded that early specialisation did not favour the development of elite players in Swedish tennis and Hill (1993) found that professional baseball players generally participated in multiple sports throughout adolescence. Similarly, these findings are supported by Côté (1999) who investigated the development of elite athletes in rowing and tennis, whilst Oldennziel et al. (2004 cited in Burgess & Naughton, 2010, p.105) discovered that 28% of Australian senior national athletes had reached elite status within four years of beginning the sport. It must be noted however, despite highlighting that early diversification and deliberate play

were important features of an athlete's early years in sport, such findings are again subject to cultural and contextual differences which limit their application to golf in England.

An interesting alternative to the early specialisation and diversification pathways is proposed by Ford et al. (2009) who suggest 'early engagement' in a primary sport is a key contributor to the development talent. During the ages of six to 12 years, soccer players in England who went on to become professional (at 16 years of age) were shown to have accumulated more hours engaged in soccer 'play', rather than practice and competition, than those who did not progress. Araújo et al. (2010) also refer to this type of early experience as 'diversification within specialisation'. Again however, it must be noted that in Ford et al's (2010) study, a relatively small sample size (n = 33) was utilised making generalisation of the results difficult. The study also failed to consider developmental activity undertaken between the ages of 13 – 15 years which will almost certainly have impacted upon the differences in attainment of the sample at 16 years of age.

2.5   Psychological Mediators in Talent Development

A large and growing body of literature has highlighted mental characteristics as consistent predictors of elite sports performance (Baker & Horton, 2004). For example, Durand-Bush & Salmela (2002) found an athlete's commitment and self-confidence was indicative of elite performance. Holt & Dunn (2004) also identified several psychological characteristics (including self-confidence, competitiveness, intrinsic motivation, commitment, determination and perseverance) that elite athletes possessed, whilst Van

Yperen (2009) distinguished between footballers who progressed to professional level and those that failed to do so based on commitment, problem-focused coping, and seeking social support. However, questions remain as to whether these factors are personality traits, or skills. There must be a distinction made between psychological factors that are characteristic of elite performance (such as in the aforementioned studies), and those that typify or are associated with talent development and successful skill acquisition. Abbott & Collins (2004) argue that the psychological skills predictive of elite performance vary from the characteristics that predict long-term development in participants. Despite this, much of the research on the mental skills of elite athletes (e.g. Baker & Horton, 2004), has been conducted using existing elite athletes; it has been cross-sectional as oppose to longitudinal and thus assumes a natural connection between being an elite athlete and becoming an elite athlete.

Due to the complicated and dynamic nature of talent development, it may well be that different psycho-behavioural skills are needed at different times during an athlete's development (McNamara & Collins, 2009). As a performer progresses they must negotiate a variety of critical transitions (e.g. injury) and Csikszentmihalyi et al. (1993) suggest it is these periods of transition that can often lead to dropout from the activity. MacNamara et al. (2008) highlight however, that the emphasis within talent development processes is currently placed on physical and performance factors, with little consideration of the psycho-behavioural characteristics necessary to cope with the dynamic environment associated with talent development.

The ability to successfully transfer between stages of development is facilitated, and indeed characterised, by an individual developing and applying a range of

psychological behaviours such as goal setting, self-reinforcement, and realistic performance evaluation (Abbott et al., 2005). Gould et al. (2002) found that elite athletes possessed a range of psychological characteristics and concomitant behaviours that enable them to cope with and maintain their presence within the talent development process. Meij et al. (1995, cited in Abbott & Collins, 2004, p.398) also revealed that high achieving individuals exhibited both higher competence motivation and were significantly more persistent than less successful individuals. The adaptability of a performer (i.e. their response to injury or non-selection) may dictate how successful they ultimately become (Button & Abbott, 2007). It can therefore be assumed that performers who are motivated to overcome the demands of prolonged engagement in deliberate practice, as well as able to negotiate critical transitions in their development, are more likely to attain excellence (Ward et al., 2004).

Orlick & Partington (1998) list several psychological characteristics of developing excellence including goal setting, realistic performance evaluations, imagery, commitment, coping with pressure, and motivation. Abbott & Collins (2004) also discuss several factors termed 'Psychological Characteristics of Developing Excellence' (PCDE's) that appear to underpin effective development by equipping developing performers with the necessary skills to cope with the inevitable challenges of the development process. Despite providing useful insights into the role of PCDE's in the realisation of potential, studies such as that by Abbott & Collins (2004) do have inherent methodological weaknesses that need to be acknowledged. Specifically, the employment of retrospective, self-report designs (MacNamara & Collins, 2009). Although there is growing evidence to support psychological characteristics as

facilitators of an individual's ability to fulfil their potential (MacNamara & Collins, 2009), Starkes et al. (2001) recommend that longitudinal and field based research should form the basis of future research in the discipline.

2.6   Sociological Mediators in Talent Development

The tendency of talent development research to focus on individual characteristics such as physiological, technical, and psychological factors infers a specific belief on how expertise emerges from the personal self (Ollis et al., 2006). According to Bailey et al. (2010) however, participant development in sport cannot be fully understood without consideration of a sociological perspective, given talent is always socially situated and constructed. Consequently, researchers are beginning to understand the role that contextual factors can play in improving or reducing an athlete's chances of attaining elite level performance (Baker & Logan, 2007). According to Collins & Buller (2003), social background is pivotal with regards to the opportunities available for success. Bailey & Toms (2010) also point out that the social and economic factors that mediate engagement, development and achievement in sport are such that it is simply not the case that children with talent automatically receive the opportunities, support and guidance they need to maximise their potential in sport.

This view is supported by The English Sports Council (1998) who commissioned the Development of Sporting Talent (DOST) report, which surveyed 924 pre-elite and elite performers across 12 individual and team sports. Results showed that 38% of elite performers were from social groups AB (professional and managerial), a figure exactly twice that among the general population. Conversely only 10% of elite athletes were

from social group DE (semi and unskilled) compared to 25% of the general population. Of the twelve sports analysed only rugby league approached the distribution of the general population (Collins & Buller, 2003). As such, these results suggest variation in the proportion of social groups is dependent upon the specific sport. Therefore, a criticism of the DOST study is that the results cannot be used to generalise as research is still needed in different sports to identify context specific imbalances. Despite this, The English Sports Council (1998) concluded that the opportunity to realise sporting potential is significantly influenced by an individual's social background.

Kay (2003) also demonstrated a direct correlation between socio-economic status and sports participation, as did Yang et al. (1996) who tracked 9-15 year olds over a twelve year period. Yang et al's. (1996) study suggests that children were more likely to achieve high levels of performance if they came from a family in a higher socioeconomic group. Once more caution is required before generalising results across sports, as although social status correlated with sports such as gymnastics, there was no correlation with boys' participation in sports such as soccer and ice hockey, again suggesting sport specific factors are of relevance to such findings (Kay, 2003).

According to Kay (2000), research has indicated that the influence of the family in the process of nurturing talent is significant and the demands placed on a family are likely to increase the older the child becomes and their level of achievement increases. As children progress in their sport, it is often their families who deal with the financial costs, provide transport to training and competitions, and finally adapt their own personal routines to further the child's sporting career (Rowley, 1992). Kay (2003) regards the most obvious demand as the financial burden of meeting the combined

costs of clothing, equipment, training expenses, competition fees, and travel expenses. The average cost of an annual golf club membership in England for a 16 year old golfer is £125.05, which then rises with age to an average of £705.93 as an 18 year old (EGU/EWGA, 2010). Low income does not only mean the direct costs of participation may not be met, but also correlates with other significant factors. For example, families on low income are less likely to have access to private transport and high-quality facilities nearby (Kay & Bass, 2011). This was highlighted in a golf setting by Colclough & Toms (2010) who found the vast majority of first year assistant PGA professionals came from a two parent family (91.6%) with at least one parent working full-time (97.6%). The majority of players also lived less than 5 miles from their nearest golf facility between the ages of 5-18.

Several studies have also reported the negative contribution that families can have on talent development. The most common being when a parent becomes 'pushy' and places unreasonable pressure on their child to achieve (Barber et al., 1999). Coakley (1992) emphasised this view by concluding parents can restrict the range of experiences available to their children and guide them into a pattern of sport involvement that allows for little or no autonomy. Young people therefore become acutely aware of the time, resources, money and effort their parents are investing in them and their sport, thus consequently don't want to let parents down which can lead to added pressure. Subsequently, a large body of existing research concentrates on the psychological pressures parents can place on developing young athletes (e.g. Lee & Maclean, 1997; Rowley & Graham, 1999; Kanters & Tebbutt, 2001).

Jowett (2000) stresses the importance of building an effective coach-athlete relationship, as the quality of this relationship is a crucial determinant of athletes' satisfaction, motivation and improved performance (Mageau & Vallerand, 2003). Bloom (1985) also discusses the significance of the mentor, teacher or coach as well as the role of the parents. Bloom's (1985) research identified that a talented individual is unlikely to attain an exceptionally high level of performance within their sport without significant others to give support, guidance, and companionship. The role and task of significant others is dependent upon the career stage of the athlete. The influence of peers on the developing athlete is also crucial, especially as the child approaches adolescence. Holt & Dunn (2004) propose that support provided by the family, including practical, emotional and informational, is taken over by friends and team-mates during adolescence. According to Hartup (1996), it is during adolescence that peers have a greater influence on behaviour compared to family members, teachers or coaches. Moore et al. (2003) highlight that simply being with peers is not always enough to facilitate development within sport, there are likely to be specific contexts with peers present that are likely to be of more benefit than others.

Adolescents who choose to increase their commitment to their talent activities may find they have decreased opportunities to invest in social relationships. Csikszentmihalyi et al. (1993) argue that adolescence is a time of possible clashes between the conditions necessary for talent development and those for maintaining satisfying peer relationships. This can lead to conflict, with concerns about friendships becoming potential barriers to the talent development process. Conversely, Patrick et al. (1999) and Abernethy et al. (2002) discovered that involvement in talent development

programmes serves to create the opportunity for those involved in sport to forge close friendships. According to Patrick et al. (1999), when adolescents had satisfying peer relationships within their talent activities, those relationships bolstered their enjoyment of, and commitment to, those activities. However, when adolescents felt that developing their talent was in conflict with engaging in peer relationships, their commitment to, and motivation for, their talent development was undermined. Indeed, Winner (1996) suggests that the possession of a gift or talent can endanger social acceptance, especially in the case of female performers. This is emphasised by Moore et al. (2003) who concluded that a lack of social contact and peer support, combined with high-intensity but isolated practice within sport may serve to de-motivate childhood performers and potentially lead to burn-out.

An additional factor that has received little attention in sport expertise research is the locality where elite athletes gain their formative experiences (Baker & Logan, 2007). Côté et al. (2006) hypothesise that this variable could have a significant influence on how athletes are initially exposed to sports, which, like relative age effect, can limit or benefit performance. Data on the 'birthplace effect' is relatively limited, although research undertaken by Carlson (1988) identified that elite tennis players predominantly came from rural areas. When investigating the birthplace size of professional athletes from baseball, basketball, ice hockey and golf, Côté et al. (2006) also showed that the optimal city size for athlete development was between 50,000 and 100,000 people, whilst in a golf-specific study, Colclough & Toms (2010) also found that 57.24% of first year PGA assistant professionals lived in what participants interpreted as rural areas.

It has been suggested that more opportunities to play with older children and adults and experiment with different types of sport and physical activity, such as those found in rural settings, could facilitate the development of sport expertise (Côté et al., 2003). Côté et al. (2006) also suggest smaller cities' less structured, more informal, spacious and safer environment might facilitate various types of sport involvement and longer hours of involvement in sports at a young age. Although informative, the qualitative nature of the aforementioned studies does not permit the identification of optimal city sizes for sport development across different sports and different sport systems (Côté et al., 2006). It must also be noted that Côté et al's. (2006) study only accounted for the athletes' place of birth and this was potentially not the location where their development in sport took place. Consequently, the results must be acknowledged in consideration of the fact that some athletes within their respective sample may have migrated to other locations.

2.7   Talent Development Pathways

As has been discussed thus far, talent development is complex, multi-factorial and dynamic in nature (Simonton, 2001; Ollis et al., 2006). Despite this, the talent development literature has continued to attempt to encapsulate the development of talent via linear pathways comprising of developmental stages and phases (Bailey et al., 2010).

Both Bloom (1985) and Côté and colleagues (Côté, 1999; Côté & Hay, 2002) devised models of talent development, that highlight three fundamental phases or stages of talent development. Although Bloom's (1985) retrospective analysis of 120

talented individuals was not intended to be sport specific; rather the phases of initiation, development, and mastery were presented across different talent domains, including science, art and sport. Consequently, it is plausible to suggest that Bloom's (1985) model is concerned with participant development rather than the development of talent *per se* (Bailey et al., 2010).

Building on the earlier work of Bloom (1985), Côté and colleagues (Côté, 1999; Côté & Hay, 2002 and subsequently Côté et al., 2007) proposed the Developmental Model of Sports Participation (DMSP) which outlines age-explicit critical stages of development from novice to elite. An emphasis on the choice to progress along a pathway of early specialisation, as advocated by Ericsson et al. (1993), or early diversification, is also integral to the DMSP. Côté & Hay (2007) argue that early diversification in several sports during childhood, in the form of a significant number of hours spent in deliberate play (where the purpose is fun and enjoyment), is important for skill development. Siedentop (2002) cautions however, that the concept of fun can be misunderstood, given it can be perceived as frivolity.

Throughout the specialising years in the DMSP, individuals partake in a similar number of hours of deliberate play and deliberate practice, before dedicating themselves to intensive deliberate practice in one sport during the investment years. However, Toms et al. (2009) found that young national athletes in the UK had engaged in a variety of sports during what would have been their investment years according to the DMSP. The DMSP also suggests that the development of expertise occurs before the individual reaches the age of 18 years. However, the role of maturation inherent to this time phase has been given insufficient attention. Consequently, the DMSP makes relatively broad

assumptions and provides a basis for generalizations (Van Rossum, 2001). Toms et al. (2009), who surveyed 1,040 sports participants in an attempt to apply the DMSP to a U.K setting, concluded that the framework was inherently linked to educational transitions and thus requires a cultural context.

Within studies that have utilised the DMSP as a framework for talent development in sports such as rowing, tennis, basketball, netball, and ice hockey elite athletes have been aligned with early sampling and deliberate play in a variety of sports and late specialisation in their chosen sport (Baker et al., 2003; Soberlak & Côté, 2003). It is essential that the stages are related to the specific sport in question and considered in relation to its social and cultural context. Given the stages of sampling, deliberate play and late specialisation may not be suited or transpire as distinct stages within all sports. They could however, be utilised and referred to in sports when the athlete reaches his/her peak at a relatively late age. The DMSP also implies that either a linear progression toward elite performance can be achieved or a choice to continue participation on a recreational basis can be made. Although in reality this may not be the case, for example, movement between elite sport progression and recreational participation can be a reciprocal process (Abbott & Collins, 2004). Bailey et al. (2010) conclude that an individual should be able to move freely between both goals, based on individual circumstances, to ensure optimal development.

Abbott et al. (2005) contributed further to the work undertaken by both Bloom (1985) and Côté (1999) by proposing a developmental pathway to expertise consisting of four macro stages. With these macro stages a successful athlete must also pass through numerous micro stages of development (e.g. dealing with injury). Whilst these

micro stages are generally of shorter duration, they are of equal significance and must be successfully negotiated to maintain progress (MacNamara & Collins, 2009). Indeed, MacNamara et al. (2008) suggest the drop-out rate from performance domains is especially prominent during these micro transitions. An important aspect of the model proposed by Abbott et al. (2005) is the suggestion that unique favourable environmental conditions exist and support required varies depending on the specific domain and the individual in question. The complex, non-linear, and highly individualised nature of development is therefore acknowledged by Abbott et al. (2005). However, longitudinal research is needed on this model in order to identify and monitor transitions, which in turn could lead to informed suggestions on interventions to facilitate an athlete's progression.

In an attempt to move away from a stage based approach and instead account for the multidimensional and multiplicative nature of talent development, Simonton (2001) proposed an emergenic model of talent development that comprises of multiple components i.e. physical, physiological, cognitive and dispositional traits that facilitate the development of expertise. The model suggests that the interaction of domain specific components contributes to talent development, and a mathematical equation that incorporates these components can be operationalised. A weakness of Simonton's approach is that practical application of the model is dependent upon identifying all of the components that contribute to expertise in a specific domain, which may prove difficult (Phillips et al., 2010). Simonton (2001) however, highlights that this merely emphasises the dynamic, complex, and individual nature of talent development (Abbott et al., 2005). A key strength of the model is that it acknowledges that the manifestation

of talent may occur in very different ways depending on an athlete's individual set of circumstances, therefore contradicting the linear and static models (e.g. DMSP) that typify current applied initiatives in TID.

2.8   The Pathway to Excellence in Golf

As part of its Whole Sport Plan (England Golf, 2009) and in common with many NGB's, England Golf has adopted a model for player development based on the principles outlined in Istvan Balyi's Long Term Athlete Development (LTAD) model (Balyi & Hamilton, 2004). The principles outlined in the LTAD model are firmly entrenched in British sports policy (DCMS, 2000; DCMS/Strategy Unit, 2002) and are a requirement in the Whole Sport Plans of all sports who wish to access state funding distributed by Sport England. Unfortunately however, the model prescribes a uni-dimensional focus on physiological factors, highlighting key chronological age-based windows of trainability, where specific physical capacities must be developed to optimise successful development towards elite performance. Although England Golf has been able to obtain significant government funding as a result of embedding the LTAD model within it's player pathway (England Golf, 2009), there is a distinct lack of longitudinal empirical evidence upon which the model is based (Ford et al., 2011) and little is known about how it is implemented in practice (Lang and Light, 2010). Balyi & Hamilton's (2004) work was originally developed for alpine skiing before being proffered as a general model for all sports and is based primarily on what they term 'empirical observations' which inherently lack scientific validity. Therefore, the application of the LTAD model poses a challenge for golf as it must implement and adapt a generic model of athlete

development. The model does not allow for individual differences in biological age between athletes and, as a result, may encourage early specialisation in golf to allow a player to take advantage of crucial development windows. According to Bailey et al. (2010) however, there is a lack of evidence to suggest failure to exploit such development windows will inhibit the subsequent development of talent. Similarly, despite numerous authors de-emphasising age group success (e.g. Martindale et al., 2007), the LTAD model's focus on chronological age groupings may also encourage golf coaches to focus on and pursue early success at the expense of long term development. Consequently, domain specific scientific examination of the LTAD model is needed to ascertain effectiveness.

The talent development pathway in English golf also reflects the traditional pyramid approach to sport development (Houlihan, 2000; Kirk & Gorely, 2000). The pyramid design (see Figure 1) comprises of a broad base of mass participation, which narrows towards higher levels of performance (played by decreasing numbers of people) and elite competition at the top. Despite the fact the pyramid model is well-established in policy; criticism exists regarding the effectiveness of the pyramid. Bailey et al. (2011) suggest the quality of performers at higher levels is dependent on the experiences and investment of resources at lower levels i.e. received during their development. Kirk & Gorely (2000) reiterate this view by declaring it is not enough to assume that more people participating at the base of the pyramid will guarantee higher standards of achievement at the top.
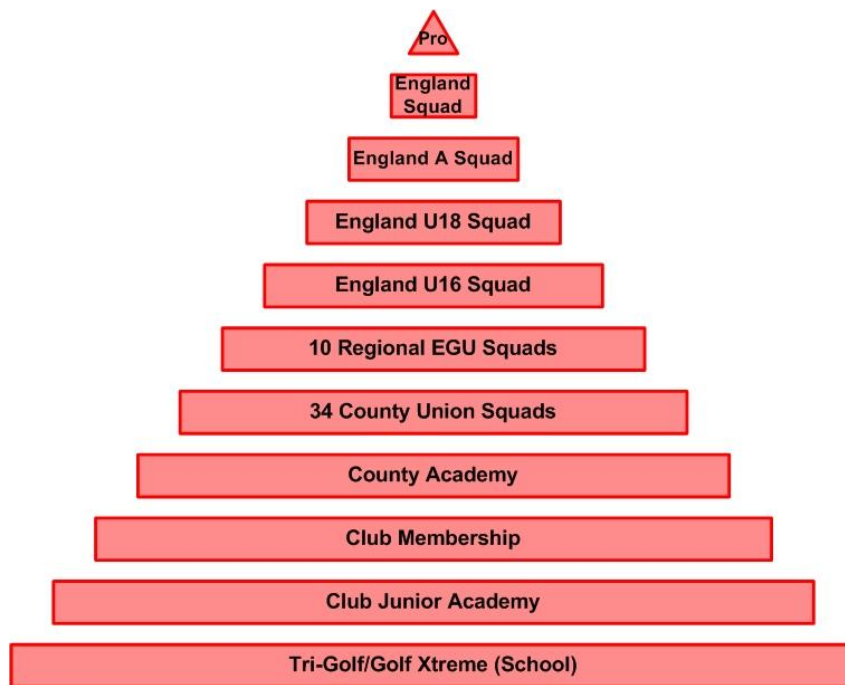
Figure 1 - The Pathway to Excellence in Golf (Adapted from England Golf, 2010, p.25)

Figure 1 reveals that the pyramid model suggests a linear pathway to expertise, with a player moving through each stage as chronological age increases. This is despite the fact that research has concluded talent development is a dynamic and non-linear process (Simonton, 1999; Abbott et al., 2002). As a consequence of the pyramid structure, the number of players that can progress to the next level is reduced at each stage. Therefore, the pyramid could arguably be referred to as a method of talent elimination as opposed to talent development (Bailey & Toms, 2010; Bailey et al., 2011). Pearson et al. (2006) reinforce this by highlighting existing talent development pathways as poor predictors of success, which can serve to dishearten young participants through a systematic non-selection process.

2.9 Coaches' Perceptions of Talent Development

It has been suggested that experienced coaches of developing athletes are uniquely placed to provide insight into the factors conducive to effective talent development (Black & Holt, 2009). Coaches obtain their knowledge from a broad range of sources including personal coaching and playing experiences as well as more explicit formal, informal and non-formal learning situations (Mesquita et al., 2010). It must be noted however, that although coaches may also have access to the generic scientific literature on talent development, as well as in their specific domain, the extent to which this is utilised is debatable. For example, Reade et al. (2008) suggest there is an inherent lack of interest in academic publications within the coaching community. Despite this, the coaches of developing young athletes do have direct access to tangible information from athletes under their technical guidance both past and present (Hyllegard et al., 2001). Surprisingly however, coaches have rarely been utilised as sources of information on the factors which make the difference between succeeding and failing in a given athletic domain, including golf. The limited existing research into coaches' perceptions of talent development has predominantly involved qualitative examination of the developmental histories of past or present elite athletes (e.g. Carlson, 1988; Thomas & Thomas, 1999; Wolfenden & Holt, 2005; Johnson et al., 2008). Quantitative analyses have also identified differences between high-level and low-level performers as well as rank ordering attributes contributing to the development of elite athletes (e.g. Van Rossum & Gagné, 1994; Hyllegard et al., 2001; Gould et al., 2006).

According to Helsen et al., (2000), coaches often take for granted that differences in 'talent' determine who will succeed. For example, Hyllegard et al., (2001) reported that collegiate coaches in swimming, volleyball, and tennis ranked a predisposition to high levels of athletic performance i.e. innate talent as the biggest causal factor of eventual performance level. However, empirical research investigating coaches' perceptions of talent development has also identified a variety of other factors coaches perceive to play a vital role in the realisation of potential. For example, Martindale et al., (2007) interviewed 16 British elite development coaches across 13 different team and individual sports in order to reveal their perceptions of effective talent development environments. Long-term aims and methods, wide-ranging support, emphasis on appropriate individualised development (not early success), and integrated holistic and systematic development were identified as primary reasons for eventual elite achievement. Thomas & Thomas (1999) also interviewed two physical education teachers about two former pupils who went on to become elite athletes as adults. They concluded factors such as practice, hard work, ability and skill were the predominant reasons for their successful development and consequent elite achievement.

Despite this, according to Van Rossum & Gagné (1994) context specific differences will undeniably exist across talent development domains and sport or domain specific research is therefore required. For example, Johnson et al. (2008) interviewed six American swimming coaches who simultaneously coached both elite and non-elite level swimmers. It was reported coaches perceived that no specific or definitive regime or linear pathway existed to facilitate athletic achievement in swimming; two athletes could therefore have very different developmental histories (Johnson et al.,

2008). However, in contradiction of this view, Black & Holt (2009) interviewed 8 Canadian ski racing coaches to identify their perceptions of athlete development. They reported that coaches perceived a consistently implemented and nationally coordinated training programme as necessary for all athletes regardless of individual circumstances.

Currently, sport specific studies on coaches' perceptions of talent development in golf are lacking. In one of few studies, Van Rossum & Gagné (1994) sampled 19 Dutch golf coaches and used a questionnaire to investigate their views on the various facets of talent development in Dutch golf. It was reported coaches' perceived the most important factors to be mental fitness, natural endowment, motor skill, quantity of training, and physical fitness. The results of Van Rossum & Gagné's (1994) study therefore suggest coaches did not consider environmental support to have a major impact on reaching levels of high performance in golf. This finding directly contradicts previous research (e.g. Bloom, 1985) that emphasises the crucial role of the immediate environment in talent development. It must be noted however, that application of findings from studies such as Van Rossum & Gagné (1994), Johnson et al. (2008) and Black & Holt (2009) to a golf setting in England are difficult due to contextual and cross-cultural differences (Van Rossum, 2001). This highlights the need for further research into the intrapersonal and environmental factors coaches perceive as relative to the success and failure of talent development within golf.

2.10 Chapter Conclusion

This chapter reviewed the existing empirical and theoretical literature relevant to the numerous factors that impact upon and influence the development of talent in sport.

It offered insight into the key theoretical models and frameworks which were identified as having relevance to the field of study. Literature pertaining to coaches' perceptions of talent development in sport was identified and analysed, to which the findings of this study can be contrasted. The following section will outline the process and methodology adhered to, which enabled coaches' perceptions of talent development in golf to be obtained.

Chapter 3: METHODOLOGY

3.1 Introduction to the Chapter

The following chapter will introduce the methodological approach utilised in this research study, provide a rationale for the research methods employed and give a detailed outline of the stages undertaken to collect, analyse, and interpret the data. It will highlight the researcher's and participants' backgrounds and consider potential related biases. Pertinent ethical considerations will be discussed and the reliability and validity of the study will be addressed.

3.2 Methodological Paradigm

The act of formulating a research question and the way in which results are construed is bound very tightly within a researcher's ontological view of reality (Smith, 2010). The researcher's epistemological stance also determines the focus of the knowledge gathering process itself and the key assumptions that direct methods of investigation. Consequently, the researcher's views on what qualifies as valuable knowledge and their perspective on the nature of reality will influence the research methods chosen in a study (Glesne, 1999). For these reasons, this chapter includes a section on the background of the researcher in order to help understand his ontological and epistemological views and how they influenced the constructivist, interpretive approach taken within the study.

According to Johnson (1995), qualitative research aims to probe for deeper understanding of constructed realities rather than merely examining surface features.

The researcher aligned himself to the basic principle of constructivism to facilitate towards that objective. Researchers using this ontological approach (e.g. Martindale et al., 2007) believe that social phenomena are in a constant state of revision, that is they are socially constructed and constantly changing (Golafshani, 2003; Bryman, 2008; Smith, 2010). An interpretive epistemological approach was also adopted as the aim of the research was to understand and interpret how the coaches under investigation construct the world around them (Schwandt, 1994; Glesne, 1999). The interpretivist paradigm assumes realities are socially constructed, complex and indivisible into discrete variables. According to Bryman (2008), the subjects involved are not inanimate objects but acted upon by a wide variety of external social forces. Interpretivists therefore believe there is a need to understand the underlying experiences, feelings and emotions related to behaviour by capturing qualities that are not quantifiable and reducible to numbers due to their complexity.

3.3   Rationale for Research Method

A research method is simply a method for collecting data; however, choices of research method must be dovetailed with the specific research question being investigated (Bryman, 2008). Rather than referring to the underlying philosophy of the nature of knowledge, the distinction between qualitative and quantitative research refers to the characteristics of the data collected. To gain coaches' perceptions of talent development in golf effectively, the researcher was interested in obtaining and examining information such as thoughts, feelings, emotions, and experiences. As these factors can be difficult to quantify, non-numerical measures collected from the viewpoint

of the participant, in a natural setting, and interpreted by the researcher to uncover meaning were therefore required and are inherent to the qualitative approach adopted (Cresswell, 1998; Glesne, 1999).

Qualitative research often relies on smaller sample sizes or case studies to provide rich and subjective data with the researcher acting as the primary data collection instrument (Smith, 2010). The researcher may then generate a theory following observations or examine an existing theory from another perspective. This approach could generally be said to use an inductive approach to reasoning where some form of inference is made from observations (Patton, 2002). According to Whittemore et al. (2001), qualitative research seeks depth over breadth and attempts to learn subtle nuances of life experiences rather than attempting to aggregate evidence. It is therefore said to be contextual and subjective and does not try to condense or reduce interpretations to a norm (Glesne, 1995).

Interviews are one of the most commonly recognized forms of qualitative research (Mason, 2002), and previous empirical research in the area under investigation has used in-depth interviews (commonly semi-structured) to obtain comprehensive qualitative information from coaches (e.g. Martindale et al., 2007; Johnsen et al., 2008). Conceptualised as a directed conversation by Charmaz (2006), interviews are appropriate for this purpose as they can provide rich data; explanation is required rather than description. As this explanation is expressed in the interviewees own words, it also allows the researcher to maintain focus on the participant and avoid merely following their own agenda (Bloom & Salmela, 2000). Interviews also allow the researcher to put responses into context, which means a sense of time and history can be developed.

According to Crouch & McKenzie (2006), semi-structured interviews allow the emergence of important themes that may not emerge from a more structured format, revealing insights into attitudes and behaviours that may not be apparent when potential responses are restricted. Patrick et al. (1999) also state that semi-structured, in-depth interviews allow exploration of how participants themselves view relevant factors, rather than have responses constrained to previously derived categories. The interview process can therefore be viewed as a method of making meaning as opposed to yielding data (Hiller & DiLuzio, 2004). In a semi-structured interview the researcher has a list of questions or relatively specific topics to be covered, to which the interviewee has a great deal of leeway in how to reply. Rather than attempting to prove or disprove a theory, this questioning allows the interviewer to gather the ways in which participants view and construct their knowledge and social world. This is a fundamental tenet of the constructivist, interpretive approach to uncovering meaning (Jones, 1993; Bryman, 2008). As the researcher is the main instrument of data collection during interviews, their background must be acknowledged as potentially influencing the interaction with the interviewee (Patton, 2002). As such, a short biographical account of the researcher is provided in section 3.6.

3.4   Pilot Study

Prior to commencement of data collection for the main study, Glesne (1999) suggests that a pilot study should be used to identify potential problems, test the language and substance of questions, and inform the researcher whether changes to the interview guide are needed. A pilot study with three golf coaches working in talent

development was conducted to test and review the interview schedule and make any adjustments necessary. In-depth semi-structured interviews took place with all interviews recorded using a digital voice recorder. It was also important to test the recording machine to ensure the interviewee's answers were captured in their own terms and didn't lack clarity due to poor recordings (Bryman, 2008).

During the transcription process the researcher was able to listen to and analyse their style of questioning, ensuring that the interview schedule was followed. The researcher was also able to ensure questions were open-ended and participants were given ample opportunity to answer each question fully, therefore supplying the required information and adding depth and breadth to responses (Patton, 2002). As a result of the pilot study, minor changes were made to the interview schedule and in line with recommendations by Patton (1990), a wider range of potential probe questions were collated for the researcher to refer to during data collection for the main study. Finally, the pilot study confirmed the sampling criterion was suitable for acquiring the required information to answer the research question (Miles & Huberman, 1994).

3.5   Research Design

3.5.1 Participants – Sampling

The researcher's aim was to ensure participants were golf coaches working in talent development who could share their personal experience and knowledge (Rapley, 2004). However, it was impossible for the researcher to study all relevant coaches intensively and in depth. Consequently, it was necessary to select a sample (Marshall &

Rossman, 1999). According to Morse et al. (2002), a well-planned approach to sampling can have a huge impact on the quality of a study, as each sample should accurately reflect the characteristics and qualities of the target population. The sample should also be broad enough to capture the many facets of the phenomenon under investigation (Kuper et al., 2008). Accordingly, it was recognised that the sampling method undertaken would be crucial for later data analysis as the researcher's choice of who would be sampled would place limits on the conclusions that could be drawn (Miles & Huberman, 1994). Bryman (2008) recommends that purposive sampling is conducted when undertaking qualitative research based on interviews. That is, qualitative researchers should select their cases purposefully, based on their relevance to the research question and ability to offer detailed insight into the topic in question (Amis, 2005). The selection of the eight coaches for this study was therefore based on the same non-probability purposive sampling methods used in the majority of qualitative studies investigating talent development (e.g. Martindale et al., 2007). Specifically, coaches were selected by matching their status, ability and experience against the sample criteria.

3.5.2 Sample Criteria

Eight coaches were identified based on their qualifications and track record of coaching developing young golfers who subsequently went on the reach elite levels of performance (county level and above). Although all coaches also had experience of coaching elite level golfers, their experience of working with developing young golfers was a pre-requisite for their inclusion. A three-fold inclusion criteria for selection was

adopted and included the following; each coach was a fully qualified member of the PGA (Level 3), had a minimum of 10 years experience of coaching developing young golfers, and was currently deployed as an England Golf County Academy Coach. The final criterion was included because, at the time of the study, County Academy Coaches were required to undergo an open recruitment process for a limited number of paid roles within each County Golf Partnership. This recruitment was based on their perceived ability to develop talented young golfers. Participants were therefore selected because of their relevance to understanding the phenomenon under investigation, and their ability to illustrate insight and opinion on a particular situation due to their experience or expertise (Bryman, 2008).

3.5.3 Coach Demographics

Demographically all eight coaches were white males of British nationality, with ages ranging from 33 to 48 years. All coaches were actively coaching both male and female developing young golfers and elite players, and apart from one, had played golf with the aim of performance excellence in high-level national competition prior to becoming a coach (Collins et al., in press). To protect their anonymity and ensure confidentiality, each coach was assigned a pseudonym which they are referred to throughout the study. To provide the study with greater context, a brief vignette of each coach's golf career is also provided in Appendix A. As the researcher had a pre-existing professional relationship with each of the coaches, no gatekeepers were required to gain access to the sample. Potential issues pertaining to this pre-existing relationship are addressed in section 3.6.1.

3.6   The Researcher

The researcher is a 31 year old white male who has participated in a variety of sports from a young age including; golf, tennis, badminton, squash and football. He became a golf club member at 14 years of age and has played since that time. Upon graduating from university with a degree in Sports Science and Coaching in 2005, the researcher founded a sports coaching business, which offered sports coaching and physical activity sessions to primary and secondary schools. He was then employed as a Regional Development Officer by the English Golf Union for one year which involved working with four county unions/associations and their affiliated clubs to development of the game of golf within the North West of England. In 2008 the researcher moved to The Professional Golfers' Association (PGA) as Regional Coaching Development Manager (RCDM). This role involved the design and delivery of a regional coach education programme and implementation of the England Golf County Academy Programme across 12 counties. In 2010 the researcher accepted a post as a lecturer in Sports Development and Coaching at the University of Central Lancashire, where he currently lectures across a range of sports development and coaching topics. Since 2004 the researcher has also obtained the UKCC Level 1 Certificate in Coaching Golf as well as the UKCC Level 1 and 2 Certificates in Coaching Football.

3.6.1 Researcher Bias

In non-positivist paradigms such as constructivism, research is often seen as a researcher-participant co-production of knowledge, where the division between

researcher and subject is blurred (Gergen & Gergen, 2000). In this study, as the researcher was the main instrument of qualitative research; making observations, asking questions, and interpreting responses, the perspective that the researcher brought to the inquiry was pivotal to the context of the findings (Patton, 2002). The researcher's background and knowledge of talent development in the sport of golf arguably facilitated the depth, morality and reliability of the interviews (Fontana & Frey, 1994). For example, problems of domain specific language and meaning were eliminated as both interviewer and respondent understood the contextual nature of the interview. According to Sands (2002) and Patton (2002), this familiarity may also permit greater levels of trust between the researcher and the participant, in-turn increasing the richness of the data.

Despite this, the researcher was equally aware that his professional and personal background, as well as pre-existing relationship with participants, may be perceived as potentially biasing the findings and affecting the trustworthiness of the study. During the researcher's previous role as RCDM, he was part of the recruitment process of County Academy coaches, often sitting on interview panels. This might be viewed, according to Karnieli-Miller et al. (2009), as a relatively high hierarchical power relationship. Despite being employed in a completely unrelated role at the time of the interviews for this study, it was noted participants may still have perceived the researcher relative to their previous role; as opposed to that of a researcher or academic.

Although Karnieli-Miller et al. (2009) state that there is no correct or optimal relationship within qualitative research, as the participants knew the researcher personally, they may have over-identified with him and in doing so begun to behave and give answers that they perceived the researcher might have expected of them.

Potentially, this could have altered their actual viewpoints on particular issues, therefore constraining effective data collection and analysis (Rubin & Rubin, 2005; Onwuegbuzie & Leech, 2007). Fontana & Frey (1994) also caution that although close rapport with respondents can open doors to more informed research, it can also create problems, as the researcher may lose their distance and objectivity and forego the academic role.

According to Onwuegbuzie & Leech (2007), researcher bias also occurs when the researcher has personal biases that he or she is unable to bracket. This is a common threat to 'legitimation' in constructivist research, as the researcher is the predominant instrument of data collection (Onwuegbuzie & Leech, 2007). If an interviewer is not neutral they may bias the interviewee and therefore 'taint' the data (Rapley, 2004). Johnson et al. (2008) suggest a study's primary investigator should also be considered a participant in the qualitative research process, as this could easily lead to potential bias. As Brinkmann & Kvale (2005) purport, during the interview process the power lies in the hands of the interviewer, as they design the project, determine the topics to be discussed, control the interview guide, and as a result, effectively rule the conversation.

3.6.2 Reflexivity

Hardy et al. (2001) define the term reflexivity as the recognition of the subjective influence a researcher brings to the research process. According to Kuper et al. (2008), reflexivity acknowledges how factors such as the researcher's values, feelings and attitudes, as well as profession and social status, may influence the research process. This therefore alerts the researcher to the nuances of the research process and

promotes understanding of how the process of doing the research has shaped its outcomes (Patton, 2002).

Rather than engaging in futile attempts to eliminate the effects of the researcher, reflexive researchers try to understand them (Hammersley & Atkinson, 1995). To ensure a critical self-awareness of his own perspective the researcher maintained detailed field notes and memos during each interview (Wolfenden & Holt, 2005). In line with recommendations by Bryman (2008), the researcher also made reflective notes on how the interview had progressed immediately after each interview (Marshall & Rossman, 1999). These field notes acted as a reflexive journal by helping to identify any personal subjectivities or assumptions that may have been unduly biasing the participant. Fontana & Frey (1994) suggest that a confessional style of reflection such as this lends a tone of realism to research, by making the reader aware of the complex nature of qualitative interviews, especially when interviewing people in their natural settings.

Rapley (2004) also purports that the process of data analysis is inextricably linked to the researcher's specific theoretical interests, which will of course have defined what sort of questions were asked in the first place. A key initial motivator for the current study was the opportunity for the research to inform the researcher's employment role and be applied in nature. Indeed, Berg & Smith (1985) suggest that a researcher's motivation to initiate a research project often includes fulfilling their professional interests. The reflexive process undertaken therefore allowed any such motivations that may have inadvertently biased the research process to become explicit to the researcher.

3.7   Ethical Considerations

Any research involving people carries with it a variety of ethical issues at different stages of the research process (Mason, 2002; Robson, 2002), with traditional ethical concerns revolving around issues of protection from harm, consent, deception, right of privacy and confidentiality of data (Punch, 1994). This study was conducted in line with the ethical guidelines laid out by the University of Birmingham (UoB) Code of Practice for Research (2010). Following ethical self assessment by the researcher, ethical approval was also granted for the study by the UoB Ethics Committee prior to the commencement of data collection.

Fifteen potential participants were initially contacted via email and invited to participate in the research. The email contained a brief outline of the aims of the research and what would be expected of participants (as well as a detailed participant information sheet and informed consent form as an attachment) (Appendices B and C). Eight participants expressed their interest in taking part in the research via email; a follow up telephone call was then made by the researcher to verbally explain the purpose of the study and to arrange a time and venue for the ensuing interview. To satisfy the 'informed' part of the informed consent process, each participant was asked to read and complete an informed consent form prior to each interview (Bryman, 2008). Attention is subsequently drawn to key ethical issues within the context they arose throughout the remainder of this chapter.

3.8   Data Collection

3.8.1   Interview Schedule

According to Robson (1993), the design of the interview schedule is key to obtaining valuable information from the interviewee. Fontana & Frey (2000) suggest the interviewer has a responsibility to develop questions that will elicit the maximum depth on the interviewee's thoughts and beliefs on a topic, as opposed to individual answers to a succession of unconnected questions (Gerson & Horowitz, 2002). To ensure questions are pertinent to the subject area, Amis (2005) also suggests it is essential the researcher develops interview questions based on previous research in the area. To maximise the potential of obtaining relevant and valuable information, a semi-structured interview guide (Appendix D) was developed with reference to relevant academic and non-academic literature (Rapley, 2004). The researcher was also aware of the need to facilitate each interview without overly leading or directing the interviewees talk (Martindale et al., 2007). Considerable attention was therefore placed on utilising non-leading questions and probes during the interviews (Fielding & Thomas, 2001), this was tested during the pilot study. The interview guide allowed the researcher to primarily ask the same questions to each coach, whilst maintaining enough flexibility to alter the sequence of the questions in order to elicit further information and add depth and breadth to responses, therefore providing much richer data (Johnson et al., 2008).

3.8.2   Data Collection Process

In an attempt to reduce the potential for external biases and to encourage participants to feel at ease, data collection took place at a time convenient to the participant in a quiet, physically comfortable and relatively private setting that allowed the interviewer and interviewee to interact without too much 'outside' interference (Rapley, 2004; Bryman, 2008). Six interviews took place face to face, four of which were at the home golf club or facility of the coach, one at the coach's home, and one in the leisure facility of a local hotel. The remaining two interviews took place using Skype, a software application which facilitates voice over internet protocol (VoIP) calls, where the coaches were located in their homes seated in front of their personal computer and web cam. Skype was used to enable the researcher to access the coaches during their busy daytime schedules. Indeed, according to Glesne (1999), a respondent's willingness to cooperate with the researcher may be contingent on how convenient it is to take part. According to Young et al. (1998) and Mann & Stewart (2002), the use of online media (such as Skype) for research allows participants to provide information at the time and place of their choosing in a comfortable and familiar environment. Online media also enables the same questions to be used as within face-to-face research, with few (if any) differences in the overall quality of the data. Indeed, the lack of physical presence may even introduce less bias and therefore help to elicit more sensitive information (Kazmer & Xie, 2008). The use of a web-cam, where the interviewer and interviewee could still see each other, still permitted nonverbal communication such as facial expressions and body postures to be picked up, much the same as in the face-to-face interview situations (Fontana & Frey, 1994).

During one of the face to face interviews, a prominent member of the 'golfing world' entered the room and recognised the researcher from his previous role at The PGA, not recognising a recorded interview was taking place. This scenario could have jeopardised the participant's anonymity and as a result the researcher momentarily paused the interview to make the individual aware it was an inappropriate time. According to Rapley (2004), it is not always possible to arrange interviews in 'private' spaces; however, the researcher must be aware of the immediate environment and how it can affect the interview process.

The researcher made a conscious effort to dress and behave in a way that would be expected within a golf club environment in an attempt to project a neutral and impartial stance. According to Rosenfeld et al. (2001), the decision on how to present oneself is extremely important as it leaves a deep impression on the interviewee and can have a major influence on the success of the study. Effective impression management therefore involves consciously seeking to manipulate the impression or perceptions others have of us, the more effectively we manage that impression, the more control we have in a social interaction (Goffman, 1959; Huczynski & Buchanan, 2007).

Before commencing each interview, the researcher adhered to the same protocol; making the same initial statements, re-clarifying the purposes of the study and spending on average five minutes engaged in informal conversation with the participant in an attempt to establish rapport and encourage a relaxed mood. These introductory exchanges also included reference to the fact that although the participant knew the researcher on a professional basis, they should still explain their views fully and not

assume the researcher understands them based on previous experience. Permission to tape record was also asked (Rapley, 2004) and issues of confidentiality and anonymity were explained.

Interviews lasted 45-75 minutes and were recorded using an Olympus VN-5500PC digital voice recorder. This meant the interviewer was able to focus fully on the interviewee's answers, as well as any verbal and non-verbal cues (Bryman, 2008). The voice recorder itself was often a topic of conversation, before, after, and during interviews. In one interview for example, it was apparent that the interviewee was uncomfortable being recorded, it seemed they were nervous about how they might come across on tape. Minichiello et al. (1995) suggest an informant may feel that a voice recorder inhibits interaction and can make them feel as if they have to be interesting or dramatic and this can alter the account they give. Arskey & Knight (1999) also suggest tape recording can influence nervousness or dissuade frankness. The respondent in question was certainly anxious to be reassured that no one but the researcher would hear the recording. In the initial stages of the interview the tape recorder obviously made them self conscious; however, as the interview progressed it seemed they became less aware of the recorder and opened up to the researcher. Bryman (2008) concludes that, although there are some individuals who agree to be interviewed who will not get over their alarm at being confronted with a microphone, most who do agree to be interviewed in a cooperative way loosen up after initial anxiety about the microphone.

Each coach responded to a set of six open-ended questions. During each interview the researcher made brief field notes, in the form of memos, to highlight relevant information where appropriate and to ensure no areas of interest were missed

that may benefit from further exploration (Gratton & Jones, 2004). This process took place until saturation was deemed to have been achieved. Although the researcher attempted to ask each question in the same order to ensure consistency, the order was changed at times depending on the particular direction or flow of the interview. Prior to finishing each interview, the researcher asked each coach whether they wished to add any further information or detail they felt relevant to the topic that had not been covered in the interview guide. Following completion of the pilot study, it became apparent that interviewees tended to carry on speaking after the researcher had formally summed up the end of the interview guide, often providing valuable material and insight. The voice recorder was therefore left to run until the interviewee made it clear they had finished.

All recorded audio files were converted to MP3 format and kept on the hard drive of a security enabled laptop requiring a password and security code to access. Each interview was played back using Windows Media Player, and in line with recommendations by Glesne (1999), transcribed verbatim into a Microsoft Word document within 24 hours of the interview taking place. Each document was then assigned a number to identify it and each line of text was also numbered individually to allow sections of text to be easily identified.

Prior to data analysis, Stake (1994) states that interviewees should receive drafts of how they are presented, quoted or interpreted, and the researcher must listen to any areas of concern. Each participant was emailed an electronic copy of the transcribed word document of their interview and given the opportunity to make any alterations they felt necessary to ensure an accurate representation of their views had been attained. One participant displayed discomfort when reading the transcription of their interview,

highlighting how poorly they perceived their verbatim speech came across, and again sought reassurance of anonymity. Interestingly, Forbat & Henderson (2005) question the issue of allowing participants to comment on their transcripts, although driven by a desire to empower participants in the process; it can also be experienced as threatening by underlining interviewee's ungrammatical style and prompting worry over how they are represented.

All participants were asked to notify the researcher of any required changes by email. No changes were required and each participant agreed the document accurately reflected the interview that had taken place. As this was conducted via email, it may have been less successful than if the researcher had met with the participant face to face. Unfortunately, time pressures meant the process of face to face participant validation as adopted by authors such Wolfenden & Holt (2005) was unrealistic in the current study.

3.9   Data Analysis

In order to commence analysis and interpretation of the data, the researcher needed to organise, manage, and retrieve the most meaningful bits of data in order to identify key themes and patterns (Marshall & Rossman, 1999). An open coding strategy was initially adopted by assigning tags or labels to the data (Coffey & Atkinson, 1996). Every line within the word document of each transcript was individually numbered, which, when combined with the first two letters of the participant's pseudonym made up the descriptive coding used to identify pertinent sections of text. For example Si-300 would represent Simon's interview, line 300.

Each transcript was then subject to the process of content analysis (Miles & Huberman, 1994). As a category was identified in a passage of text it was tagged using a descriptive code before being organized into patterns of like responses. According to Marshall & Rossman (1999), coding data is the formal representation of analytic thinking; the data was interpreted into categories and themes. For example, every time a segment of text fitting the category of 'financial support' was identified, it would be cut and pasted into a separate document (See Table 1).

Interview	Category	Content from Interview	Line
Simon	Finance	I saw him in the winter on the range and said how's it going, he said yeah I'm just going to keep going, I want it, I'm about £20,000 in the hole I'm driving for Ikea during the winter just so I can go out there and play again next summer.	Si-300

Table 1 – Example of 'tagged data' (Finance Theme)

Once this initial first-level of open coding had been achieved, the researcher was left with a collection of extracts for each code. A process of thematic analysis using pattern coding was then used to interrogate the identified categories and group them into a smaller set of themes (which were summarised to allow the researcher to report patterns). This allowed the researcher to generate meaning and allow concepts to be generated from and with the data (Seale, 1999). Memoing was used to help refine the various categories and establish relationships, identify thematic links, and begin to identify pertinent areas for attention in the discussion section of the study. This was achieved via a system of handwritten notations in the margin of each transcription,

where new leads or connections were identified to assist the researcher in refining the data analysis process.

Miles & Huberman (1994) suggest that engagement in the process of memoing can serve to facilitate and enable the empirical data to be utilised as an informant to the conceptualisation process of the data. Initially, the approach to data analysis within the current research was intended to be, and perceived as, inductive in nature, the aim being for the data to contribute to evolving theory. However, the researcher was also acutely aware that their pre-existing knowledge and comprehensive review of pertinent talent development literature would inevitably inform the data analysis process (Côté et al., 1993). As a result, a deductive approach to data analysis must also be acknowledged as a process that occurred. During this process, the extent to which the emerging themes and categories found resonance with the researcher's pre-existing knowledge and existing literature in the field was continually assessed as the data analysis progressed. Bourdieu & Wacquant (1992) have referred to this as an abductive way of knowing.

3.10 Establishing Reliability and Validity

Traditionally, qualitative researchers have tended to employ the terms reliability and validity similarly to that of quantitative researchers. Some critics have suggested, however, that because qualitative research is based on entirely different ontological and epistemological assumptions, it should be judged or evaluated according to different criteria (e.g. Guba & Lincoln, 1994; Long & Johnson, 2000; Whittemore et al., 2001).

Reliability is traditionally concerned with the question of whether a study can be replicated. This however is a difficult criterion to meet in qualitative research, as it is impossible to 'freeze' a social setting and the exact circumstances of a study in order to replicate it (Mason, 2002). Indeed, according to Marshall & Rossman (1999), qualitative research does not claim to be replicable and the researcher intentionally avoids trying to control the research conditions. Instead, concentration is focused on documenting the complexity of situational contexts and interrelations as they occur naturally.

According to Robson (1993), 'dependability' is a more appropriate term than reliability for qualitative research. Lincoln & Guba (1985) explain that dependability is parallel to the conventional measure of reliability, in that it is concerned with the stability of data over time. As the investigator is the main instrument of data collection, for an interview to be a reliable and effective research tool it requires a skilled and experienced interviewer. The pilot study that was undertaken prior to data collection for this study allowed the researcher to practice their interview technique and work on their style of questioning, especially around effective probing of answers (Blaxter et al., 1996).

Although the importance of validity has long been accepted among qualitative researchers, it has also been an area of debate (Onwuegbuzie & Leech, 2007). According to Cho & Trent (2006), traditionally, validity in qualitative research involves determining the degree to which researchers' claims about knowledge correspond to that of the reality under investigation. However, many researchers have developed what they consider to be more appropriate definitions of validity, including, quality, rigour and trustworthiness (e.g. Lincoln & Guba, 1985; Seale, 1999; Mishler, 2000; Stenbacka, 2001; Davies & Dodd, 2002).

Internal validity refers to whether there is a good match between researchers' observations and the theoretical ideas they develop, whereas, external validity concerns whether the results of a study can be generalized beyond the specific research context, which is a difficult criterion to meet in qualitative research (Bryman, 2008). To increase internal validity, and in line with recommendations by Stake (2005), a second qualitative researcher blind to the objectives of the study and with no prior knowledge of the interview schedule or data was asked to read the transcript of all 8 interviews. The second researcher was then asked to critically examine, question and corroborate the themes identified by the lead researcher as well as code 10 random data quotes into raw themes. This procedure suggested a high degree of congruence as no disparities between the researchers' views were apparent. Marshall & Rossman (1999) conclude a qualitative study's generalisability to other settings may be problematic and is traditionally regarded as a weakness in the approach. However, generalisability to populations is not a significant research goal of qualitative research (Whittemore et al., 2001).

According to Miles & Huberman (1994), a knowledgeable practitioner with conceptual interests and a multi-disciplinary perspective is often a better research instrument than an individual with a lack of familiarity or experience of the phenomenon. Therefore, the researcher's previous experiences and knowledge of talent development in golf arguably enabled them to be an effective research tool. However, it must be accepted that what was observed and heard, as well as what was focused upon; had been informed by the researcher's subjective leanings and preferences (Bryman, 2008). According to Richards (2009), qualitative methods are about interpretation and the

researcher needs to ensure they are reliably interpreting a code in the same way across time. In line with recommendations by Marshall & Rossman (1999), the researcher acknowledged his role as a participant in the qualitative research process. This was evidenced via the notes and reflective journal of the researcher. All collected data were kept in a well-organized and retrievable form. Consequently, if the findings of the study were challenged or if another researcher wanted to reanalyse the data then this could be done (Lincoln & Guba, 1985).

3.11   Chapter Conclusion

This chapter provided a rationale for employing a constructivist and interpretative approach, as well as using semi-structured interviews to collect data. The systematic methods used to analyse and interpret data within the study were also discussed, especially in relation to the trustworthiness of the findings of the study. Finally, the researcher's background and potential related bias were acknowledged and discussed alongside pertinent ethical considerations. The next chapter will discuss and evaluate the study's findings as well as identify their implications for the process of talent development in golf.

Chapter 4: <u>RESULTS AND DISCUSSION</u>

4.1   Introduction to the Chapter

The following chapter will outline and investigate the themes that emerged from the analysis of the semi-structured interviews. Quotes will be used to illustrate the data and enable the reader to appreciate the context from which the themes emerged. The emergent themes will be compared to previous research and theoretical frameworks related to talent development. The coaches' perceptions of the factors influencing effective talent development in golf will be addressed and potential implications for the creation of effective talent development environments will be analysed.

Category	Theme
• Fundamental Movement Skills • Innate Ability	Physical Mediators
• Early diversification • Late specialisation • Relative Age Effects • Appropriate Golf Club • Facilitative Competition • Deliberate Practice • Individualised Development Programme	Features of an effective pathway
• Autonomy/Ownership • Goal Setting • Motivation	Psychological Mediators
• Parental Support • High Quality Coaching • Peer Support • Phases of Progression • Finance	Sociological Mediators
• Luck	Luck

Table 2 – Emerging Categories and Themes

4.2 Physical Mediators of Talent Development in Golf

Data analysis highlighted that all 8 coaches perceived a range of physical factors as impacting on talent development. For example, a golfer's physical capabilities were emphasised as determinants of successful talent development and precursors to excellence in golf. The 'fundamental movement skills' identified by coaches included mobility, multi-limb co-ordination, stability, and strength:

> "The physical aspect is huge. The ideal one is that you've got somebody who is mobile, got some level of coordination…it's then just a matter of getting them stronger..." – (James, 03/11/2010)

This finding is in agreement with previous research by Wells et al. (2009) who identified strength, stability, flexibility, and balance as key determinants of golf performance and therefore, essential for the successful development of talent. However, data analysis also showed that all 8 coaches perceived a golfer's physical ability to be innate or genetically determined, with the suggestion that a player's genetic make-up may constrain or pre-determine the level they may eventually reach:

> "You've got to have a sporting ability...you can turn a donkey into a fast donkey but you can't turn it into a race horse...Some kids have got it and some kids haven't..." – (Robert, 25/10/2010)

This finding contradicts a growing body of evidence that suggests genetically determined physiological factors are not a viable way in which to identify potentially talented performers (Abbott et al, 2002). Accordingly, it also begs the question to what

extent were the coaches aware of a difference between performance and potential, and as such, did they view physical ability as potential *for* performance or in fact identify potential talent based *on* a golfer's performance.

4.3   Features of an Effective Development Pathway

4.3.1   Early Diversification and Late Specialisation

Interestingly, despite suggesting physical attributes or capabilities are to some extent 'god given', perhaps contradictorily 6 coaches also reported that many of the fundamental movement skills identified were in fact a result of a golfer's diversification in a variety of sports before specialisation in golf:

"Children who come from other sports, any catching, throwing, rackets, football, swimming or some kind of judo...seem to be well equipped or have talent." – (Gary, 23/11/2010)

Consequently, results are in agreement with prior studies (e.g. Soberlak & Côté, 2003; Moesch et al., in press) that suggest a need to avoid early specialisation in a sport, and instead prescribe early diversification to aid the development of a generic base of movement skills. However, it is clear a contradiction exists between the coaches' perceptions of a golfer's physical 'ability' being genetically pre-determined as well as influenced by early diversification. It is therefore necessary to elicit more in-depth information around this area in order to clarify and uncover an explanation for this apparent disconnect.

Although all 8 coaches seemed to disregard the need for early specialisation in golf (referring to burn out as a potential consequence), it was clear from the sample that there was no consensus on the exact age a player should specialise. Instead, relatively broad age ranges were suggested in order to allow talented golfers to take full advantage of opportunities on offer within the player pathway:

"I don't think you can make it in the game if you start any later than 14 or 15...if you start between the ages of 9-13, there is no reason why you can't have a career in the game." – (Michael, 3/11/2010)

Similarly to the current findings, numerous existing authors (e.g. Falk et al., 2004; Martindale et al., 2005; Bailey et al., 2010) make note of the difficulty in prescribing the exact age at which specialisation should occur in a sport due to the sheer multitude of interpersonal and context specific factors involved. Results therefore highlight the need for individualised as opposed to prescriptive age-based development opportunities in TID programmes in golf.

In agreement with existing research (e.g. Gallahue & Ozmun, 2002; McHardy et al., 2006; Wells et al., 2009), 6 coaches also perceived a physical training regimen to form a key component of a golfer's overall development programme. This was posited not only from a performance perspective but also as an injury prevention mechanism. This view is emphasised by authors including Zwick (2008) and Brewer (2011) who advocate growth specific training that is matched to a child's biological age for optimal development. Balyi & Hamilton's (2004) LTAD model (which prescribes fundamental movement skills are developed prior to specialising in any particular sport) has already

been adopted by England Golf, which might be deemed encouraging and suggest coaches are 'on message'. However, the flaws associated with the LTAD model (such as a uni-dimensional physiological focus and a lack of empirical evidence upon which it is based) have already been discussed in Chapter 2.

4.3.2 Maturation and Relative Age Effects

Although physical capabilities were identified as a key component of talent development in golf, encouragingly, all 8 coaches also reported an awareness of the effects maturation could have on the perceived physical capabilities of a developing golfer:

"Maturity is often mistaken for talent." – (Gary, 23/11/2010)

It must be noted however, that an increasing trend is evident within county golf in England for representative junior teams based on chronological age bands of one year i.e. Under 14, Under 15, and Under 16. If selection for such teams is based on performance related criteria and immediate success, as opposed to the long-term goals of talent development, this could lead to potential relative age effects in golf (Augste & Lames, 2011). Encouragingly, all coaches seemed aware of the potential implications of such scenarios:

"If you go on performance...you're then down to the more physically developed kids...which is not the ideal thing for younger players developing...That's how they get missed in the system..." – (Sam, 25/10/2010)

Despite this, it can be assumed that golf coaches may encounter an ethical dilemma if their effectiveness is judged according to the performance success of the squads under their guidance (Muir et al., 2011). Coaches may be tempted to select early maturing players with a potential performance advantage at the expense of the long term development of late maturing players (e.g. Sherar et al., 2007 in Ice Hockey and Augste & Lames, 2011 in soccer). These findings suggest that TID programmes in golf must therefore account for biological rather than chronological age, so as to avoid relative age effects where training inequalities are created and opportunities are reduced for biologically younger children (Baker et al., 2003).

4.3.3 Appropriate Golf Club and Facilitative Competition

Minimal empirical evidence exists on the role of the sports club in developing talent; however all 8 coaches in this study identified the golf club as an essential environmental component for developing talent:

"The venue that they play at is very important...the golf club itself ideally should support juniors to make it an ideal environment...they should have a junior section, the more juniors the better." – (Michael, 03/11/2010)

Coaches discussed what constituted an effective junior golf club in a generic sense, rather than making explicit suggestions, however it was clear that for a junior golfer to develop effectively, coaches felt they needed to be part of a golf club that encouraged and facilitated junior golf. These findings concur with those of MacPhail & Kirk (2006), who state there is often no set framework of talent development for clubs to

follow which means provision may often be done differently or even haphazardly from one club to the next. Zevenbergen et al. (2002) even suggest the congruity of a golfer's family background with the values of a particular golf club impacts upon their ability to 'fit in' with the culture of that golf club. It should also be noted that the individual requirements of the club environment for a developing golfer may also depend on the stage of development they are at. For example, those at the sampling stage may desire a 'fun' environment whereas those at the specialisation stage may require enjoyment through competition (Côté & Hay, 2002). As with the potential negative impact of relative age effects (which has already been discussed), golf clubs should therefore base their junior development programmes on developmental stages as opposed to the biological age of the golfers.

All coaches did however report that access to appropriate levels of competition was a vital component of the talent development environment:

"They must have regular access to competition...as the player gets better the stiffer the competition...ideally the junior section should hold regular competitions…also allowing them to enter men's [adult] competitions..." – (Michael, 03/11/2010)

This finding supports previous research by Csikszentmihalyi et al. (1993) who proposed the concept of a challenging yet supportive competitive environment. Martindale et al. (2010) also suggest that challenging competition and training environments are necessary to facilitate the development of talent. Demonstrating that competition could also have a negative impact on the development of talent, 7 of the 8

coaches in the current study also drew attention to the existence of a fine line between facilitative and debilitative competition:

"They need to play at levels that they are comfortable with... Not playing stuff that is beyond them a bit too early in age...not playing too big a tournament when they are not ready for it." – (James, 03/11/2010)

Despite this, it could be argued that these findings contradict a body of existing research which de-emphasises the importance of winning during development (e.g. Durand-Bush & Salmela, 2002; Côté et al., 2006). Consequently, it must be noted that The English Golf Union's selection policy for National Squad Coaching is predominantly based on results and rankings in leading amateur tournaments, as well as handicap attainment (English Golf Union, 2009). It can therefore be assumed that unless a developing young golfer is playing in the appropriate tournaments and performing to an appropriate level, they will be unable to make the step to national coaching – a key step on the player pathway in golf (See Figure 1).

A consequence of this system may be the increased likelihood for a golf coach to rate their own, as well as their peer's, coaching performance on the success of their athletes in competition. It may also lead to the assumption that because a golfer is 'winning' they must be developing effectively. Subsequently, organisations such as The English Golf Union may therefore need to re-conceptualise the focus on competition and performance within their selection policies, especially in the earlier stages of development. According to Martindale et al. (2010), a focus on 'playing to win' during these stages could have negative consequences for effective talent development,

including increased stress and a reduction in intrinsic motivation. At younger ages the emphasis should therefore be on player development as opposed to winning, especially as the data in this study suggests that golf is not an early specialisation sport and early diversification should be encouraged.

4.3.4 Deliberate Practice

All the coaches in this study emphasised that appropriate practice was extremely important for sustaining successful development. This theme concurs with previous literature (e.g. Ward et al., 2004), which has stated that practice is essential to attaining exceptional levels of performance in sport, and that developing athletes must invest considerable practice hours to reach expert level. However, the coaches all stressed the role of engaging in practice activities deliberately designed to improve performance rather than experience within the domain:

> "You see so many guys...who are quite talented but they practice in completely the wrong way...deliberate practice is massive...anything from practice has got to have a result..." – (Michael, 03/11/2010)

This finding has clear implications for coaches of developing golfers, as coaches normally construct a high percentage, in some cases 100 percent, of an athlete's practice time (Baker et al., 2003). Players also need guidance in identifying appropriate training activities (Ericsson, 2007). In order for coaches to design practice for the optimal benefits of their athletes, it is necessary to know what essential conditions need to be present during the developing years to improve the chances that acquisition of

exceptional skill will occur (Abernethy, 2008). The microstructure of practice has been under-researched and thus the relevance of diversity across domains, and subsequent specialisation has received limited attention (Ward et al., 2007). A more prescriptive position is therefore needed on what types of practice will, and equally will not; contribute to the development of expert performance in golf (Abernethy et al., 2003).

4.3.5 Individualised Development Programmes

Consistent with previous research (e.g. Martindale et al., 2007; Bailey et al., 2010), an oft-stated perception of the coaches was the need for individualisation of the development process to allow for fluctuations in development depending on an individual's specific needs:

> "It's flexible…you have to teach or treat them all as individual human beings...there's more than one way to skin a cat and I think people look for formulas too much..." – (Simon, 03/12/2010)

This finding also strengthens the conclusions made by Norris & Smith (2002) who suggest that the most fundamental element of an effective talent development programme is the concept of individualisation due to differing rates of individual development. It is therefore essential that developing golfers are treated with their individual needs at the forefront of any training programme in golf.

4.4 Psychological Mediators of Talent Development in Golf

Data analysis identified that all 8 coaches perceived psychological mediators as a significant theme in influencing the development of talent in golf. This is consistent with previous research across a variety of achievement settings, which has established mental characteristics as crucial to, or even causative of, elite performance and the promotion of talent (e.g. Williams & Reilly, 2000; Abbott et al., 2002).

For a long-term development agenda to be successful, coaches reported that the developing golfer needed to become autonomous and take increasing ownership and responsibility for their own development, rather than becoming dependent on their coach and/or others:

> "They've got to take charge of it…continually question yourself why, what am I doing this for…that comes from educating them early doors so they are not relying on a coach or a psychologist." – (Peter, 10/11/2010)

To facilitate this process, all coaches stressed that a systematic process of goal-setting and reviewing of progress was essential to promote change and facilitate development:

> "A 12 month pattern...2 year goal setting, 10 year goal setting, a lifetime...once you chunk things into smaller amounts then suddenly these goals become attainable." – (Peter, 10/11/2010)

This view is consistent with almost all previous talent development literature (e.g. Bloom, 1985; Csikszentmihalyi et al., 1993; Simonton, 1999), which stipulates the

importance of long term development aims and objectives. In common with existing research (e.g. Dweck & Leggett, 1988; Rhodewalt, 1994; Elliot, 2005; Chan, 2008), the coaches suggested that a learning goal orientation (i.e. a focus on mastery and improving ability) is more desirable than the setting of performance goals (i.e. a focus on winning and proving ability) to facilitate effective athlete development in golf:

"There is a huge role for the coach to say hang on a second this is tangible, 1 mile an hour onto your swing speed every 3 months and you'll get there by the time you're 20." – (Gary, 23/11/2010)

The whole sample also implied that a developing golfer's capacity for taking control and ownership of their own development was, to some extent, linked to their motivation for developing themselves as a golfer. Coaches also used words and phrases such as 'commitment', 'desire', 'work ethic', and 'single mindedness' to describe what was essentially the persistence of a player in continuing their participation and striving for excellence in golf:

"Players have got to have that desire...they've got to want it more than anything..." – (Simon, 03/12/2010)

These findings are consistent with those of Carpenter & Coleman (1998) and Abbott et al. (2002) who describe behaviours associated with commitment and motivation as those behaviours witnessed when an athlete tries harder, concentrates more, persists longer, pays more attention, chooses to practice longer and to continue to participate rather than 'drop-out' of sport. These results also corroborate the findings of

Csikszentmihalyi et al. (1993) who concluded that only a minority of those identified as potentially talented show the required effort and commitment to realise and develop this talent.

Although a significant body of existing literature on motivation and sport refers to different types of motivation (e.g. Deci & Ryan, 1985; Mageau & Vallerand, 2003), data in the current study did not explicitly refer to specific types of motivation (with all coaches referring to the concept in a generic sense), a vagueness common in sports dialogue (Quested & Duda, 2011). Coaches did however tend to discuss the concept in terms of 'the self', that is, motivation emanating from within the golfer:

> "Self motivation...how much they want it, a bit of selfishness, single mindedness...that's what I want to do and I'm doing it regardless of all the obstacles that come up..." – (James, 03/11/2010)

The coaches' assertion that 'self' motivation is an important factor in a golfer reaching their potential is in accordance with existing literature (e.g. Vallerand & Rousseau, 2001), that suggests both intrinsic motivation and self-determined extrinsic motivation are necessary ingredients for an athlete's optimal functioning. Deci & Ryan (1985 and 2000) proposed self-determined individuals fully endorse the values underlying their sport and volitionally engage in the activity. Non-self-determined extrinsic motivation occurs when the person feels pressured and obligated to engage in the activity by either external (e.g. one's coach) or internal (e.g. one's feelings of guilt) forces (Mageau & Vallerand, 2003).

From the data it could therefore be assumed that self determined, intrinsically motivated, and autonomous golfers are more likely to negotiate the talent development process successfully (Deci & Ryan, 1985; Mageau & Vallerand, 2003). TID programmes in golf should therefore systematically facilitate the emergence of autonomous learners with the ability to monitor their own development by emphasising the setting of learning goals as oppose to performance based goals (Petlichkoff, 2004). The current study also highlights the importance of creating an effective motivational environment if a talented athlete is to develop their full potential (Baker & Davids, 2007). It should be noted however, that the data showed minimal reference to the coaches' role in designing a practice environment that may facilitate intrinsic motivation and other psychological factors. As in the physical mediators theme, the coaches perceived that some psychological factors identified (e.g. motivation), are innate rather than developmental in nature. Indeed, little research has been conducted into the motivational environment and the factors that support the necessary motivation, persistence and commitment for the effective development of young athletes (Abbott et al., 2002; Holt & Dunn, 2004). Further research is therefore needed to ascertain the optimal learning and motivational activities required at the various stages of talent development in golf.

4.5 Sociological Mediators of Talent Development in Golf

Data analysis identified sociological factors as the most prominent differentiator between those that successfully negotiate the talent development pathway and achieve at the elite level in golf, and those who fail to do.

4.5.1 Parental Support

Consistent with existing research (e.g. Bloom, 1985; Côté, 1999; Kay, 2003; Colclough & Toms, 2010), the present findings suggest that the development of talent in golf is very much dependent on the support offered by the family and in particular, parents, who play a crucial facilitative role:

"They need the right parental structure in place...the right things for that would be just I guess supportive parents, parents really who are looking or tend to look at the whole picture..." – (Simon, 03/12/2010)

Wolfenden & Holt (2005) identified emotional, tangible and informational support as categories of positive support offered by family. However, the data also revealed that negative parent behaviours can inhibit development of the player. This was most notably in the form of parents being overly 'pushy' as well as exerting an excessive controlling influence over the child's participation:

"Support and not being pushed that's key...they've got to support it [the player's development] but on the other hand they can't be too pushy and force the child into things that they don't want to do." – (Michael, 03/11/2010)

This view again supports existing research (e.g. Kay, 2000; Wolfenden & Holt, 2005; Lauer et al., 2010) which highlights the potential debilitative influence family's can have on development, including the potential for parents to place excessive demands on their children to excel. Lee & MacLean (1997) and Wuerth et al., (2004) also found that adverse pressure on young athletes was associated with perceived directive and

controlling behaviours. As has already been discussed in this chapter, a lack of control and autonomy (which may result from overly controlling parents) has been suggested as an inhibitor of talent development by coaches in this study.

However, similarly to suggestions made by Coakley (2006) and Kay & Bass (2011), all 8 coaches also recognised that parents of developing golfers often meant well in their intentions; nevertheless a misunderstanding of the requirements of effective development may inadvertently influence their behaviour:

> "We did have a player at world number 1 who was a phenom [sic] from an early age...I think parents and everybody looks at that and goes that's what you need to do." – (Simon, 03/12/2010)

These findings are also in agreement with Lauer et al. (2010) who suggest a fine line exists between challenging a developing athlete and pressuring them. Further in-depth investigation is therefore needed in order to inform the provision of behavioural guidelines for parents, relative to the stages of talent development in golf.

4.5.2   High Quality Coaching

The current findings also support earlier studies (e.g. Bloom, 1985; Van Rossum, 2001; Baker & Horton, 2004) by emphasising the importance of a developing golfer having access to high quality coaching. Rather than simply offering technical guidance however, the results suggest the coach of a developing golfer must simultaneously act as a mentor, providing advice, support, and guidance to a developing golfer. The role of the coach was also described as being holistic in nature:

"The coach who's working with them who's gonna [sic] be supportive...act almost as a mentor in a holistic way...It's not just technique it's advice..." – (Sam, 25/10/2010)

This view also corroborates the findings of Henriksen et al. (2010a) and Henriksen et al. (2010b) who concluded that a holistic approach to player development is needed where a 'whole-person' view is taken by a coach, as opposed to simply concentrating on the quantity and quality of training. Martindale et al. (2010) also alludes to the importance of a coach providing an athlete with the right support at the right time. This means a coach must have knowledge of an individual's specific needs on an ongoing basis. It must be noted however, that although existing research identifies a holistic approach to coaching, there is limited research to aid the understanding of what is required of an effective coach in context specific environments (Abbott et al., 2002). Further investigation is therefore required in a golf specific context.

Data analysis also revealed that as a golfer develops, it is common for them to access an increased number of coaches as they progress. For example, they may have input from a club coach, up to 3 county coaches and several national coaches. The importance of communication between those coaches was identified by all coaches in the sample as a crucial factor in ensuring successful development of the golfer:

"There needs to be more cooperation between coaches...some of the players themselves can get a bit confused by going to 2 or 3 different coaches...those lines of communication [between coaches] I think are really important for that..." – (Sam, 25/10/2010)

This view is also evident in existing research by Burke (1997) and Jowett & Cockerill (2002) who highlight the importance of effective communication between coaches in sport. Bemowski (1996) and Martindale et al. (2005) also stress the importance of clear expectations and open and effective communication patterns between involved parties within a TID environment to allow any conflicts that may arise and impede talent development to be identified. This must be in the interests of the athlete and not individual agendas. Martindale et al. (2007) also emphasise the need for both formal and informal systems of communication to maximise their effectiveness. It is therefore recommended that educational sessions are utilised within TID programmes in golf to inform coaches, parents and other significant contributors to the talent development process of the importance of an explicit communication process; with the developing golfer as its main focus.

4.5.3 Peer Support

The current findings support work by Urberg (1999), with all 8 coaches suggesting that during the development of competence in golf, a player's 'golfing' peers are likely to exert a powerful and important influence on development:

"The people they play with are massively influential...a group of other lads who are all really motivated and want to get good...they almost get swept away with that momentum..." – (James, 03/11/2010)

These findings concur with Patterson et al. (1989), who suggest that during adolescence in particular, peers may have a far greater influence on behaviour than

families or teachers do. For example, when peers are working towards a mutual goal there is evidence that cooperation can raise the level of performance of those individuals beyond that which they may achieve on their own (Moore et al, 2003).

Despite research (e.g. Freeman, 1985; Burland & Davidson, 2002) suggesting that a developing child is best located in an educational setting where they are surrounded by like minded peers. Simply being with peers (such as within an England Golf County Academy) may not be enough to facilitate talent development, there are likely to be specific contexts that are of more benefit than others (Moore et al., 2003). This has implications for the design of TID programmes in golf; programme designers must identify the most appropriate conditions for facilitative peer relationships to develop.

5 coaches in the current study also suggested that access to appropriate role models was a key factor in the development of talent in golf. This finding concurs with the views of (Sosniak, 1990), who suggests that slightly older performers in the field can be used for setting goals and the skills to be mastered. Younger performers can identify with them, simply because they are aware that they are not alone in the amount of work they have to dedicate in the pursuit of excellence (Burland & Davidson, 2002).

4.5.4 Phases of Progression

In alignment with existing research (e.g. Abbott & Collins, 2004; MacNamara et al., 2008), the coaches in this study all emphasised the importance of a developing golfer being able to negotiate critical stages or transitions during their development. In line with suggestions by Wylleman & Lavallee (2004), these transitions included both

sporting and non-sporting factors with coaches perceiving psychosocial factors as creating the biggest potential transition:

"Outside influences from sort of 14-18...there is just so much that can go on in their lives socially at that age it's a big factor...boyfriends/girlfriends, alcohol, all those kinds of things, the trappings of life if you like." – (Simon, 03/12/2010)

Academic and work factors were also identified as an issue, for example if a developing golfer makes the decision to go to university (which according to Bailey et al. (2010) is likely to coincide with the investment years):

"I see 17/18 year olds as the biggest age barrier when university comes around...jobs come around and other interests come into their life..." – (Michael, 03/11/2010)

According to Macnamara et al. (2006), talent development pathways must consider the challenges and transitions that need to be overcome by the athlete at each stage of their development. If a developing golfer is unable to make these transitions successfully, it is unlikely they will realise their potential. Bailey et al. (2010) also suggest that some transitions are predictable, for example if they are related to a player's level of performance. However, there are also likely to be context specific transitions that occur unexpectedly and are unpredictable in nature (Petipas et al., 1997). These findings suggest the TID pathway in golf could be more facilitative if critical stages and transitions could be predicted so as to prepare a developing golfer in advance. As has already

been discussed in this chapter, the current findings concur with existing research (e.g. Baker & Horton, 2004; Abbott et al., 2007; Vaeyens et al., 2008) that attests to the need for a range of psychological characteristics to be developed in order for a developing athlete to negotiate the challenges they are likely to face at different stages in their development (Abbott & Collins, 2004). Hence, it could be hypothesised that TID programmes in golf should therefore place emphasis on the development of these psycho-behavioural characteristics to ensure potentially elite golfers possess these skills prior to encountering critical stages and transitions during their development.

4.5.5 Finance

It was clear from the narrative of all 8 coaches that access to appropriate financial support is a crucial mediator in a developing golfer's progression, especially as a player approaches an elite level:

> "It's massive…when you get to a certain level I think it is a bigger percentage than anybody will give you credit for...you have to have the money to be able to do it, and it's this vicious circle." – (Robert, 25/10/2010)

These findings support existing studies (e.g. Yang et al., 1996; Kay, 2003) that identified the financial costs of supporting a developing athlete as the main, overriding implication in that individual's development. Whilst it may be overly simplistic to suggest that the cost of participation and access to financial resources can determine the level a developing golfer may reach, it is clear from the data that finance places a key stressor and may even limit the timescale a developing golfer has to progress:

"They need a lot of cash to keep going...If their development is taking longer [than their peers] then they absolutely need that cash to keep on doing it...it's a massive block…just the actual cash side...to be competitive you've got to be full-time...you haven't got time to work…" – (James, 03/11/2010)

This finding concurs with Searle (1993) who found that 84% of athletes felt their sporting potential was limited by a need to maintain employment to fund their development. From the current data, it can thus be suggested that developing golfers from higher socio-economic status backgrounds are likely to have more opportunity, time, and support to progress. A finding supported by authors including Kay (2000), Collins & Buller (2003) and Bailey et al. (2010), who assert that there is a traditional divide between socio-economic status and participation. This finding therefore has potentially crucial implications for TID programmes in golf, as if appropriate financial resources are unavailable, it is conceivable that a developing golfer will be disadvantaged compared to individuals with access to appropriate financial resources. TID programmes in golf therefore need to cater for potentially talented participants from low socio-economic backgrounds who otherwise may be excluded due to their background.

4.6 Luck

A final theme which emerged from the data was a clear recognition of the significant role luck plays in the development of talent:

"There is no doubt in my mind that there is some luck involved as in being in the right place at the right time, there is [sic] a lot of talented players out there that have not been in the right place at the right time…" – (Simon, 03/12/2010)

Many of the mediating factors of talent development in golf that have been identified in the current study may be somewhat beyond the control of the developing golfer. It could be argued that such factors can therefore be attributed to chance or 'luck'. This finding also supports previous research by Bailey (2007) and Bailey & Ross (2009) who emphasised how children, irrespective of their ability in sport, have no choice on whether they are born in the right place, with the right parents, at the right time. This was especially evident within the data in terms of a developing player being 'lucky' enough to have access to the appropriate financial resources to support their development:

"It depends on how lucky they are if they are in a big county with a lot of money…If they are in a small county with not a lot of money they are going to have to go searching themselves for it." – (Sam, 25/10/2010)

In line with the conclusions made by Bailey & Toms (2010), it is therefore reasonable to assume that a high number of potentially talented golfers are born and brought up in non-supportive backgrounds, which are not conducive to the provision of opportunities to fulfil their potential. However, Bailey (2007) expresses caution over the use of the word 'luck' in sport as it is often used in a range of contexts. As a result, Bailey & Toms (2010) propose that there are two types of luck. Firstly, soft luck, which is

modifiable i.e. the quality of coaching. Secondly, hard luck, which cannot be modified i.e. genetic inheritance. In terms of TID in golf, it can thus be suggested that development programmes must attempt to minimise the influence of soft luck on a golfer's development to allow them to maximise their potential.

4.7   Summary of Factors Impacting upon Talent Development in Golf

The themes identified in this study provide confirmatory support for many of the factors identified in previous research as impacting upon the development of talent in sport, and outlined in Chapter 2. Encouragingly, it would therefore appear that participants in this study were aware and supportive of the multi-dimensional nature of talent development in golf and the multiple pathways through which potential can be realised.

Rather than additional factors unique to golf emerging as determinants of development, a key finding concerned the degree or weighting of importance for some factors when applied to a golf specific context. This was most apparent in the theme of financial support which was highlighted as a key determinant of whether a developing player has the opportunity to maximise their potential in golf. Since a key aim of TID programmes in golf is to provide the most appropriate learning environment to allow an individual to excel, programmes must ensure they provide widespread opportunity. It is important that the sociological factors identified in the current research (e.g. financial support) are not overlooked to allow talent development programmes to become less discriminatory toward those from low-socio economic backgrounds for example.

The coaches in this study perceived that facilitative talent development in golf must account for and monitor the holistic and multi-dimensional components that determine an individual's capacity to develop. This approach was highlighted within the current study through the coaches' perception of a need for individualised training programmes based on the specific requirements of each performer. By recognising and acknowledging the plethora of factors that influence the development of talent, the effectiveness of TID programmes in golf will be increased by excluding fewer golfers at an early stage due to unsuitable identification methods, as well as by neutralising the impact of the numerous variables that contribute towards the realisation of potential.

4.8   Chapter Conclusion

This discussion investigated the emergent themes from the findings of this study and related them to existing research and pertinent theoretical frameworks associated with talent development in sport. The factors coaches perceived to impact on the development of talent in golf were documented and analysed, with quotes used to illuminate those perceptions where possible. In the following chapter, conclusions will be made and the potential implications of this study for future TID practices in golf will be acknowledged. The limitations of the current study will be noted and potential directions for future research identified.

Chapter 5: <u>CONCLUSION</u>

5.1　Introduction to the Chapter

This closing chapter will focus on the key findings of the study. The initial research question will be re-visited and attention will be paid to the research methodology employed. The implications for future practice within golf are highlighted along with the potential directions for future research. Finally, the limitations associated with the study are addressed.

5.2　Summary of Research Findings

This thesis sought to obtain and understand golf coaches' perceptions of the factors they perceive to play a significant role in the development of talent within golf, therefore enabling differentiation between those that achieve at the elite level and those who fail to do so to become apparent. The findings of the study concluded that coaches perceived a range of physical, environmental, psychological, and sociological mediators impacted on the process of talent development in golf. These findings are concurrent with an increasing body of research in the area that espouses the complex and multi-dimensional nature of the development of talent (e.g. Abbott et al., 2002; Bailey et al., 2010; Martindale et al., 2010).

Despite the congruence of these findings with existing literature, and the apparent absence of additional factors unique to golf emerging as determinants of development, results suggest that some developmental influences need to be considered in contrast to the uniform picture that has emerged from research on talent development in other

sports. This was most notable in relation to the importance of socio-economic status and financial support for a developing golfer, especially as they approached the elite level. Although research (e.g. Kay, 2000) suggests appropriate financial support is necessary for developing athletes in all sports, the biggest single factor articulated by all coaches as potentially differentiating between those that achieve at the elite level in golf and those who fail to do so, was that of access to suitable levels of financial support.

Also evident from these results was the perception that financial support is often a consequence of 'luck'. Indeed, many of the mediating factors associated with talent development in golf that have been identified were perceived to be somewhat beyond the control of the developing golfer. It is therefore reasonable to assume that a high number of potentially talented golfers are 'unlucky' to be born and brought up in non-supportive backgrounds, which are not conducive to the provision of opportunities to fulfil their potential (Bailey & Toms, 2010).

5.3   Implications for Golf and Recommendations for Future Research

If the perceptions of the coaches are representative of reality, the findings of this study have potentially crucial implications for talent development programmes in golf. If appropriate financial resources are unavailable a developing player will be disadvantaged compared to individuals with access to appropriate financial resources. It can therefore be assumed that developing golfers from higher socio-economic status backgrounds are likely to have more opportunity, time, and support to progress in golf (Bailey et al., 2010). Correspondingly, when a developing golfer does not have access to ample financial resources, coaches also described the search for, and acquisition of,

sponsorship as a key factor in maintaining a golfers' progression. However, this time spent away from golf specific activity locating additional funds was also perceived to have a debilitative effect on development due to the time pressures already discussed. For that reason, instead of merely focusing on improving 'golfing' ability, a key consideration for TID programme designers in golf may be to help players acquire the 'soft' skills that could help them negotiate the development process more smoothly. For example, those players that do need to locate additional sponsorship to fund their development may benefit from training to help make themselves more marketable to potential sponsors or access other external sources of funding i.e. scholarship opportunities.

Encouragingly, it would appear that the participants in this study were aware of, and structured their thoughts against, the multi-dimensional nature of talent development in golf and the multiple pathways through which potential can be realised. It was interesting to note that the coaches were *au fait* with many of the constructs and categories that permeate the existing literature in the field. The researcher purposely refrained from referring to any of the common terminology in the field, yet the coaches consistently introduced several pertinent terms (e.g. deliberate practice) into the conversation. Therefore, even if this was done serendipitously, on a surface level at least it appeared the coaches were well informed on the factors that impact upon the development of talent in golf. Nonetheless, it did appear that there were some potentially important 'coherence' problems between the perceptions of the coaches interviewed and the requirements of the development system in golf. For example, all 8 coaches were aware of the possibility of relative age effects in golf and the importance of valuing

potential over performance, however, the player selection policy of The English Golf Union is heavily weighted in favour of competitive results. Consequently, it would be useful to further investigate these findings in order to determine how closely the coaches' perceptions of what factors are important mirror what they actually deliver and value in practice; the extent to which they 'walk the talk'.

Several other interesting points which emerged from the data as important in facilitating the development of talent in golf lacked explicit depth and therefore warrant further investigation. The coach's role in developing psychological skills and creating the appropriate motivational climate; the role of the coach in influencing the behaviour of parents; and the explicit nature of features of a facilitative club setting were all alluded to in the narrative of the coaches. Accordingly, further investigation in these areas would assist policy makers in developing and implementing a more facilitative pathway for the development of talent in golf.

5.4   Limitations of the Study

It must be noted that there are limitations inherent within the current study which must be considered alongside the results that emerged. A relatively small number of coaches were interviewed (n = 8) who described and outlined each of the factors in slightly different ways and to differing extents. The views expressed were their individual perceptions of the talent development process in golf. However, even though the factors outlined were 'perceived' by the coaches to be important, the very fact each member of the sample was actively employed within talent development in golf would raise questions to their suitability if the factors identified were not important in practice.

Accordingly, triangulation of the information with other important groups in the development process (e.g. parents and players) would strengthen our understanding of the requirements for effective TID in golf. This understanding would also be reinforced by undertaking longitudinal research in golf over the course of several players' development in order to help identify the factors that differentiate between those that achieve at the elite level and those who fail to do so. Finally, as in any qualitative investigation, the issue of generalisation must be considered.

5.5   Concluding Remarks

Based on the current research, it is tempting to put forward a golf-specific stage based model of talent development outlining the progression from novice to elite. Although such 'models' can be useful ways of embodying certain aspects of research in sport, no generic model can ever claim to be comprehensive. Consequently, the author is hesitant in attempting to produce such a model, especially when trying to simplify such an individualised and complex process in order to represent it graphically. Instead, it is essential that coaches and practitioners in golf are consistently made aware of the multitude of physical, environmental, psychological, and social mediators that impact upon the development of talent whilst highlighting the most significant domain specific factors influencing the process – in this case finance and luck. Practical ways of supporting developing players to successfully manage these potential mediators may then increase the likelihood of those players reaching elite performance in golf.

Chapter 6: <u>APPENDICES</u>

6.1   Appendix A: Brief Vignettes of the Coaches

6.1.1 Philip

Philip was introduced to the game when he was 10 by his father who was a keen golfer. He maintained participation in a wide range of sports until the age of 17 when he injured his knee during a county rugby trial. At this point he played off a handicap of 7 and began to specialise in golf. The following summer he got down to a handicap of 3 and decided to leave home to undertake an HND in golf studies at college, where he began to receive more coaching. He turned professional whilst at college before moving back home and accepting a job coaching at a local driving range in order to subsidise his playing career. He attempted to obtain his European Tour card as a player on several occasions whilst coaching part time before deciding to move into coaching full-time upon becoming fully PGA qualified. He now coaches across all stages of participation from beginners to elite with a particular focus on junior golf.

6.1.2 Robert

Robert joined his local golf club at the age of 12 courtesy of his father but did not actually play regularly until he was 14. At age 15 he decided to quit playing football and concentrate of golf. He got down to a handicap of 2 as an amateur without ever having a golf lesson from a coach before turning professional at age 24 in order to play full-time. At this time he was offered a job as assistant professional at his local club and also began to receive intensive coaching himself for the following 3 years. Whilst still

attempting to secure his European Tour Card he was offered a full-time teaching role at a local driving range which he accepted in order to concentrate on coaching. He now coaches golfers of all abilities with a particular focus on coaching developing young golfers.

6.1.3 Sam

Sam moved to a new area with his family at the age of 15 and having previously played football from a young age was introduced to golf by his father who was a former professional footballer. He joined his local club and began to receive junior coaching from the club's resident professional, within 18 months he had a handicap of 5. Whilst beginning to become disillusioned with playing the game, at age 18 he turned professional and became the assistant professional at a local golf club with the intention of learning how to coach as well as play in tournaments for assistant professionals. This progressed with a focus on coaching juniors until he became a head club professional. He now coaches across all levels from beginner to elite, with a particular focus on developing young golfers, and has experience of players representing county and national teams as well as becoming tournament professionals.

6.1.4 Michael

Michael was introduced to the game by his father at age 13 when he had a lesson at his local club. By age 15 he was down to a handicap of 1 and representing his county, leaving school aged 16 to work in the pro shop at his club. He won international amateur events aged 18 as well as the county championship aged 19. As well as his county he

also represented GB&I Boy's and England Men's before turning professional and playing on the EuroPro tour for 4 years. He then decided to undertake the PGA Foundation Degree and concentrate on a career in coaching. He now coaches across a range of abilities with a particular focus on coaching elite junior golfers.

6.1.5 James

James started to play golf when moving to University aged 19 to study an unrelated degree. He played and received coaching intensively, getting down to a handicap of 5 within 3 years. Whilst enjoying playing, he decided his main enjoyment was derived from coaching and as a result decided to focus on coaching golf as a career. He registered on the PGA Foundation Degree as soon as he reached the required handicap requirement of 4. He now predominantly focuses on coaching developing junior golfers, including county players.

6.1.6 Peter

Peter was introduced to the game aged 11 through a family friend and joined a local golf club soon after despite having no family that played the game. He began caddying for category 1 players at the club as well as having basic lessons from the assistant professional. Despite having a handicap of 5 at age 15, football was still his first love until he was invited to county coaching after performing well in the county boy's championship. Upon joining the elite squad and receiving regular county coaching he decided to focus on golf as his main sport. He turned professional aged 21 and completed the PGA foundation degree, offering some coaching whilst focusing on

developing his playing career. He joined the Challenge Tour before graduating onto the main European Tour where he enjoyed significant success. He now combines playing and coaching developing young golfers including elite players.

6.1.7 Gary

Gary was introduced to the game aged 13 by his parents after moving to a new country and living a 5 minute walk from their local club. He maintained a multi-sport background and with minimal golf coaching got down to a handicap of 6 by age 15. Despite then practicing regularly he had made no further progress by age 17. By age 20 he was playing off a handicap of 1 and playing in elite amateur competitions in his home country. Despite this he felt his progress was limited and decided to undertake the PGA Foundation Degree aged 21 when he began to give lessons to higher handicap players at his local club. Although he felt his initial experiences of coaching were poor, once fully qualified he sought more knowledge from established coaches on the golf swing and moved into coaching full-time. He now coaches across a range of abilities as well as tutoring within coach education.

6.1.8 Simon

Simon was introduced to golf aged 12 as a break from playing elite football and cricket. At age 14 he was told he was too small to play football, at which point he decided to focus on golf. He got down to a handicap of 4 having had no formal coaching before deciding to go abroad to study aged 19 where he played both college golf and basketball and started to receive significant coaching. Upon returning to his home

country he decided to do the PGA Foundation Degree, working as an assistant professional whilst playing on the EuroPro Tour. Upon becoming fully qualified he decided to concentrate on coaching, moving abroad to coach for 3 years before returning to start a golf coaching business. He now coaches across a range of abilities, including elite players.

6.2   Appendix B: Example Letter of Invitation to Participate in Research

You are invited to participate in a research study which will contribute to an MPhil (B) thesis conducted by John Stoszkowski and supervised by Dr. Martin Toms at the University of Birmingham. Your thoughts and opinions as a PGA Professional and England Golf County Academy Coach would be highly valuable to this research.

Purpose of Study/Procedures

The purpose of this study is to investigate coaches' perceptions of talent development in golf.

Participation would be voluntary and would involve a tape recorded interview at your facility lasting around 1 hour. Following the interview the information will be transcribed verbatim. You will then be given the opportunity to make any changes or alterations you feel necessary to ensure an accurate representation of your views and opinions.

Potential Risks or Discomforts/Confidentiality

There are no known or anticipated risks to your participation in this study. You would retain the right to decline to answer any questions and any information you provide would be considered strictly confidential. All data collected would be kept on a laptop requiring a password and security code to access. Myself as the researcher as well as my supervisor would be the only persons with access to this data for the purposes of analysis and conducting the study. All data will be preserved and accessible for a minimum of 10 years.

The names of the interviewees and of other persons mentioned in the interviews will be changed into pseudonyms to ensure anonymity. The same procedure will be used for the names of organisations/institutions and place names. Research findings will be reported in a manner which prevents identification of any participant or person mentioned in the interviews.

Participation/Withdrawal/Feedback

You would be free to withdraw your consent to further involvement in the research project at any time up until the point before interview transcriptions are finalised. You may also refuse to answer any questions you don't want to answer and still remain in the study. Information garnered from any withdrawn participants will be destroyed immediately. Once the research is complete a copy of the study will be available for those interested.

Next Steps

If you feel you would like to participate in this study please sign and return this letter and indicate your preferred method of contact for arranging a time and location to carry out the interview. If you have any questions or queries regarding this study, or would like additional information to assist you in making a decision on your participation, please do not hesitate to contact me.

6.3   Appendix C: Example of Informed Consent Form

Project Title: An Investigation into Coaches Perceptions of Talent Development in Golf.

Researcher: John Stoszkowski

I confirm that I have both read and understood the participant information sheet dated _____ for the above study and have had the opportunity to ask questions.	Yes/ No
I understand that my participation is voluntary and that I am free to withdraw at any time up to the point of data being anonymised, without giving a reason.	Yes/ No
I agree to the discussion being audio-recorded (as well as notes being taken during the discussion) and transcribed at a later date.	Yes/ No
I understand that what is said and discussed during the meeting will not be discussed with anyone else.	Yes/ No
I understand that anonymised quotes may be taken from the meeting and used to illustrate general themes.	Yes/ No
I understand that I will be able to receive a copy of the study's conclusions when it is completed.	Yes/ No
I agree to take part in the above study.	Yes/ No

-------------------------------   ------------------   ----------------------
Name of participant   Date   Signature

-------------------------------   ------------------   ----------------------
Independent Witness   Date   Signature

6.4   Appendix D: Interview Guide

1. Their background as a player

QUESTION	POTENTIAL PROBES	CONTEXTUAL FACTORS	WHAT AM I INTERESTED IN
What are your experiences of being a golfer?	• How did you get into the game? • How did your playing career develop? • What were your experiences of being coached? • How did that coaching develop? • Did you turn pro to play or to coach? • When did the transition to being a coach take place and why?	• Playing experience • Levels played at • Personal characteristics • Bio/Psycho/Social • Deliberate practice • Critical incidents • Significant others • Experience of being coached	• Were they a developing player with potential talent? • Were they an early specialiser? • What factors do they feel shaped their development? • Was becoming a coach an aim or a fall back?

2. Their experience of talent development as a coach

QUESTION	POTENTIAL PROBES	CONTEXTUAL FACTORS	WHAT AM I INTERESTED IN
What are your experiences of talent development in golf as a coach?	• What is your coaching background? • What training/guidelines have you had? • Where else has your coaching knowledge come from?	• Experience • Sources of knowledge • Levels of player worked with • Stages on performance pathway they operate	• What factors do they feel shape talent development?

3. What do they see as talent

QUESTION	POTENTIAL PROBES	CONTEXTUAL FACTORS	WHAT AM I INTERESTED IN
What factors do you feel characterise a young golfer with the potential to become elite?	• What is it you see, what stands out? • What age does a golfer have to start to have a chance and why? • Can this potential be measured, if so how? • How effective are the processes of TID in golf?	• Nature vs. Nurture • Bio/Psycho/Social • Early/Late Specialisation • Awareness of complexity • Holistic	• How much do their views match their own experiences as a player? • What do they feel characterises potential?

4. Talent Development Environment

QUESTION	POTENTIAL PROBES	CONTEXTUAL FACTORS	WHAT AM I INTERESTED IN
What would you describe as a suitable learning environment to give golfers maximum opportunity to reach their potential?	• How can you influence this environment? • What is your interaction with parents, teachers, and other coaches? • How important is competition and why? • What stages must a player go through from beginner to elite?	• Understanding • Bio/Psycho/Social • Awareness of complexity • Awareness of multidimensional and multiplicative processes • Significant others • Holistic	• What factors does the coach place value on?

5. What do they do as a coach

QUESTION	POTENTIAL PROBES	CONTEXTUAL FACTORS	WHAT AM I INTERESTED IN
Can you give an overview of what you do when coaching developing young golfers?	• What is your coaching philosophy? • What do you do at each stage? • What do you see as realistic expectations for County academy Golfers?	• Bio/Psycho/Social • Awareness of complexity • Awareness of multidimensional and multiplicative processes • Holistic	• What factors does the coach place value on?

6. Barriers to fulfilling potential

QUESTION	POTENTIAL PROBES	CONTEXTUAL FACTORS	WHAT AM I INTERESTED IN
What potential barriers do you think exist that may stop a golfer reaching their potential??	• How effective are current talent development processes in golf? • To what extent does the current system value potential or performance and how/why? • What separates those that make it to elite and those that don't? • Are late specialises catered for?	• Bio/Psycho/Social • Luck • Critical incidents/stages • Other factors/agendas • Awareness of complexity • Awareness of multidimensional and multiplicative processes • Holistic • Early/Late Specialisation	• What factors does the coach place value on? • What are the key factors that limit progression in golf?

Chapter 7: LIST OF REFERENCES

Abbott, A., Button, C., Pepping, G. J. and Collins, D. (2005) Unnatural selection: Talent identification and development in sport. **Nonlinear Dynamics, Psychology and Life Sciences,** 9, 61-88.

Abbott, A. and Collins, D. (2004) Eliminating the dichotomy between theory and practice in talent identification and development: Considering the role of psychology. **Journal of Sports Sciences,** 22, 395-408.

Abbott, A., Collins, D., Martindale, R. and Sowerby, K. (2002) Talent identification and development: An academic review. **A Report for Sportscotland by The University of Edinburgh,** Edinburgh: Sportscotland.

Abbott, A., Collins, D., Sowerby, K. and Martindale, R. (2007) Developing the potential of young people in sport. **A Report for Sportscotland by The University of Edinburgh.** Edinburgh: Sportscotland.

Abernethy, B. (2008) "Developing expertise in sport - how research can inform practice." In Farrow, D., Baker, J. and MacMahon, C. (eds.) **Developing Sport Expertise.** Abingdon, Oxon: Routledge, pp.1-14.

Abernethy, B., Côté, J. and Baker, J. (2002) **Expert Decision-making in Team Sport.** Canberra, ACT: Australian Institute of Sport.

Abernethy, A. B., Farrow, D. and Berry, J. T. (2003) "Constraints and issues in the development of a general theory of expert perceptual-motor performance: A critique of the deliberate practice framework." In Starkes, J. L. and Ericsson, K. A. (eds.) **Expert Performance in Sports: Advances in Research on Sport Expertise.** Champaign, IL: Human Kinetics, pp.349-369.

Amis, J. (2005) "Interviewing for case study research." In Andrews, D.L. (ed.) **Qualitative Methods in Qualitative Sports Studies.** Oxford: Berg Publishers, pp.104-138.

Araújo, D., Fonseca, C., Davids, K., Garganta, J., Volossovitch, A., Brandão, R. and Krebs, R. (2010) The role of ecological constraints on expertise development. **Talent Development and Excellence,** 2 (2), 165-179.

Arksey, H. and Knight, P. T. (1999) **Interviewing for Social Scientists.** London: Sage.

Augste, C. and Lames, M. (2011) The relative age effect and success in German elite U-17 soccer teams. **Journal of Sports Sciences**, 29 (9), 983-987.

Australian Institute of Sport (2011) **Calling Australia's next sporting champion** [online]. Available from: http://www.ausport.gov.au/participating/got_talent/test [Accessed 1 June 2011]

Bailey, R. (2007) Talent development and the luck problem. **Sport, Ethics and Philosophy,** 1 (3), 367-377.

Bailey, R., Collins, D., Ford, P., MacNamara, A., Toms, M. and Pearce, G. (2010) **Participant development in sport: An academic review.** Leeds: Sports Coach UK.

Bailey, R., Toms, M., Collins, D., Ford, P., MacNamara, A. and Pearce, G. (2011) "Models of young player development in sport." In Stafford, I. (ed.) **Coaching Children in Sport.** London: Routledge, pp.38-56.

Bailey, R. and Morley, D. (2006) Towards a model of talent development in physical education. **Sport, Education and Society,** 11 (3), 211-230.

Bailey, R. and Ross, G. (2009) **Participant development: Key research themes.** Leeds: Sports Coach UK.

Bailey, R. and Toms, M. (2010) "Youth talent development in sport - rethinking luck and justice." In Hardman, A. and Jones, R. (eds.) **The Ethics of Sports Coaching.** Routledge: London, pp.149-164.

Baker, J. (2003) Early specialisation in youth sport: A requirement for adult expertise? **High Ability Studies,** 14, pp.85–94.

Baker, J. and Cobley, S. (2008) "Does practice make perfect: the role of training in developing the expert athlete". In Farrow, D., Baker, J. and MacMahon, C. (eds.) **Developing Sports Expertise: Researchers and Coaches Put Theory Into Practice.** Abingdon, Oxon: Routledge, pp.29-40.

Baker, J., Cobley, S., and Fraser-Thomas, J. (2009) What do we know about early sport specializations? Not much! **High Ability Studies,** 20, 77–90.

Baker, J., Côté, J. and Abernethy, B. (2003) Sport-specific practice and the development of expert decision-making in team ball sports. **Journal of Applied Sport Psychology,** 15 (1), 12–25.

Baker, J. and Davids, K. (2007) Sound and fury, signifying nothing? Future directions in the nature-nurture debate. **International Journal of Sport Psychology,** 38 (1), 135-143.

Baker, J. and Horton, S. (2004) A review of primary and secondary influences on sport expertise, **High Ability Studies,** 15 (2), 211-228.

Baker, J., Horton, S., Robertson-Wilson, J. and Wall, M. (2003) Nurturing sport expertise: Factors influencing the development of elite athlete. **Journal of Sports Science and Medicine,** 2, 1-9.

Baker, J. and Logan, A. J. (2007) Developmental contexts and sporting success: Birth date and birthplace effects in national hockey league draftees 2000-2005. **British Journal of Sports Medicine,** 41, 515-7.

Balyi, I. and Hamilton, A. (2004) **Long-term athlete development: Trainability in childhood and adolescence. Windows of opportunity, optimal trainability.** Victoria: National Coaching Institute British Columbia and Advanced Training and Performance Ltd.

Barber, H., Sukhi, H., and White, S. A. (1999) The influence of parent-coaches on participant motivation and competitive anxiety in youth sport participation. **Journal of Sport Behavior,** 22, 162-180.

Bemowski, K. (1996) Leaders on leadership. **Quality Progress,** 29 (1), 43-45.

Berg, D. N., and Smith, K. K. (1985) **Exploring Clinical Methods for Social Research,** Beverly Hills, CA: Sage.

Black, D. E. and Holt, N. L. (2009) Athlete development in ski racing: Perceptions of coaches and parents. **International Journal of Sports Science and Coaching,** 4 (2), 245-260.

Blaxter, L, Hughes, C. and Tight, M. (1996) **How to Research**. Buckingham: Open University Press.

Bloom, B. S. (1985) **Developing Talent in Young People.** New York: Ballantine.

Bloom, G. A. and Salmela, J. (2000) Personal characteristics of expert team sport coaches. **Journal of Sport Pedagogy,** 6 (2): 56 -76.

Bourdieu, P. and Wacquant, L. J. D. (1992) **An Invitation to Reflexive Sociology.** Chicago: University of Chicago Press.

Brewer, C. (2011) "Physical and movement skill development." In Stafford, I. (ed.) **Coaching Children in Sport.** London: Routledge, pp.139-168.

Brinkmann, S. and Kvale, S. (2005) Confronting the ethics of qualitative research. **Journal of Constructivist Psychology,** 18 (2), 157-181.

Bryman, A. (2008) **Social Research Methods,** 3rd ed. Oxford: Oxford University Press.

Bullock, N., Gulbin, J. P., Martin, D. T., Ross, A., Holland, T. and Marino, F. (2009) Talent identification and deliberate programming in skeleton: Ice novice to Winter Olympian in 14 months. **Journal of Sports Science,** 15 (4), 397-404.

Burgess, D. J. and Naughton, G. A. (2010) Talent development in adolescent team sports: A review. **International Journal of Sports Physiology and Performance,** 5, 103–116.

Burke, K. L. (1997) Communication in sports: Research and practice. **Journal of Interdisciplinary Research in Physical Education,** 2, 39-52.

Burland, K. and Davidson, J. W. (2002) Training the talented. **Music Education Research,** 4 (1), 121-140.

Button, C. and Abbott, A. (2007) Nature-nurture and sport performance. **International Journal of Sport Psychology,** 38, 83-88.

Caine, D., Bass, S. and Daly, R. (2003) Does elite competition inhibit growth and delay maturation in some gymnasts? Quite possibly. **Pediatric Exercise Science,** 15 (4), 360-372.

Carlson, R. (1988) The socialization of elite tennis players in Sweden: An analysis of the players' backgrounds and development. **Sociology of Sport Journal,** 5 (3), 241-256.

Carpenter, P. and Coleman, R. (1998) A longitudinal study of elite youth cricketer's commitment. **International Journal of Sport Psychology,** 29 (3), 198-210.

Chambliss, D. F. (1989) The mundanity of excellence: An ethnographic report on stratification and Olympic swimmers. **Sociological Theory,** 7 (1), 70-86.

Chan, D. W. (2008) Goal orientations and achievement among Chinese gifted students in Hong Kong. **High Ability Studies,** 19 (1), 37-51.

Charmaz, K. (2006) **Constructing Grounded Theory: A Practical Guide through Qualitative Analysis.** London: Sage Publications.

Cho, J. and Trent, A. (2006) Validity in qualitative research revisited. **Qualitative Research,** 6 (3), 319-340.

Coakley, J. (1992) Burnout among adolescent athletes: A personal failure or social problem? **Sociology of Sport Journal,** 9 (3), 271-285.

Coakley, J. (2006) The good father: Parental expectations and youth sports. **Leisure Studies,** 25, 153-163.

Coffey, A. and Atkinson, P. (1996) **Making Sense of Qualitative Data.** London: Sage Publications.

Colclough, D. and Toms, M. (2010) **PGA Assistant professional survey: Profiling elite participants - initial findings.** EGP Development meeting, Birmingham.

Collins, D., Bailey, R., Ford, P., MacNamara, Á. Toms, M. and Pearce, G. (in press) (2011) The Three World Continuum: new directions in participant development in sport and physical activity. **Sport, Education & Society.**

Collins, M. and Buller, J. (2003) Social exclusion from high-performance sport. **Journal of Sport and Social Issues,** 27, 420-442.

Côté, J. (1999) The influence of the family in the development of talent in sport. **The Sport Psychologist,** 13, 395-417.

Côté, J., Baker, J. and Abernethy, B. (2003) "From play to practice." In Starkes, J. L. and Ericsson, K. A. (eds.) **Expert Performance in Sports.** Champaign, IL: Human Kinetics, pp.89-113.

Côté, J., Baker, J. and Abernethy, B. (2007) "Practice and play in the development of sport expertise." In Tenenbaum, G. and Eklund, R. C. (eds.) **Handbook of Sport Psychology.** New Jersey: John Wiley and Sons, pp.184-202.

Côté, J. and Fraser-Thomas, J. (2008) "Play, practice, and athlete development." In Farrow, D., Baker, J. and MacMahon, C. (eds.) **Developing Sport Expertise.** Abingdon, Oxon: Routledge, pp.17-28.

Côté, J. and Hay, J. (2002) "Children's involvement in sport: A developmental perspective." In Silva, J. and Stevens, D. (eds.) **Psychological Foundations of Sport.** Boston, MA: Allyn and Bacon, pp.484-502.

Côté, J., MacDonald, D., Baker, J. and Abernethy, B. (2006) When 'where' is more important than 'when': Birthplace and birthdate effects on the achievement of sporting expertise. **Journal of Sports Sciences,** 24, 1065-1073.

Côté, J., Salmela, J. H., Baria, A. and Russell, S. J. (1993) Organizing and interpreting unstructured qualitative data. **The Sport Psychologist,** 7, 127-137.

Creswell, J. W. (1998) **Qualitative Inquiry and Research Design - Choosing among Five Traditions.** Thousand Oaks: Sage Publications.

Crouch, M. and McKenzie, H. (2006) The logic of small samples in interview-based qualitative research. **Social Science Information,** 45, (4), 483-499.

Csikszentmihalyi, M., Rathunde, K. and Whalen, S. (1993) **Talented Teenagers: The Roots of Success and Failure.** New York: Cambridge University Press.

Curtis, J. E. and Birch, J. S. (1987) Size of community of origin and recruitment to professional and Olympic hockey in North America. **Sociology of Sport Journal,** 4 (3), 229-244.

Dalton, S. E. (1992) Overuse injuries in adolescent athletes. **Sports Medicine,** 13, 58-70.

Davids, K. (2000) Skill acquisition and the theory of deliberate practice: It ain't what you do it's the way that you do it! **International Journal of Sport Psychology,** 31, 461-466.

Davies, D. and Dodd, J. (2002) Qualitative research and the question of rigor. **Qualitative Health Research,** 12 (2), 279-289.

DCMS (2000) **A Sporting Future for All.** London: HMSO.

DCMS/Strategy Unit (2002) **Game Plan: A Strategy for Delivering Government's Sport and Physical Activity Objectives.** London: Cabinet Office.

Deci, E. L. and Ryan, R. M. (1985) **Intrinsic Motivation and Self-determination in Human Behaviour.** New York: Plenum Press.

Deci, E. L. and Ryan, R. M. (2000) The 'what' and 'why' of goal pursuits: Human needs and the self-determination of behaviour. **Psychological Inquiry,** 11, 227-268.

Doan, B. K., Newton, R. U., Kwon, Y. H. and Kraemer, W. J. (2006) Effects of physical conditioning on intercollegiate golfer performance. **Journal of Strength and Conditioning Research,** 20, 62-72.

Dorado, C., Sanchis Moysi, J., Vicente, G., Serrano, J. A., Rodríguez, L. R. and Calbet, J. A. (2002) Bone mass, bone mineral density and muscle mass in professional golfers. **Journal of Sports Sciences,** 20 (8), 591-7.

Durand-Bush, N. and Salmela, J. H. (2002) The development and maintenance of expert athletic performance: Perceptions of World and Olympic Champions. **Journal of Applied Sport Psychology,** 14, 154-171.

Dweck, C. S. (1999) **Self-Theories: Their role in motivation, personality, and development.** Philadelphia, PA: The Psychology Press.

Dweck, C. S. and Leggett, E. L. (1988) A social-cognitive approach to motivation and personality. **Psychological Review,** 95, 256-273.

Elliott, A. J. (2005) "A conceptual history of the achievement goal construct." In Elliott, A. J. and Dweck, C. S. (eds.) **Handbook of Competence and Motivation,** New York: Guilford, pp.52-72.

EGU/EWGA (2010) **2010 Golf Club Membership Questionnaire Results Book.** Woodhall Spa: The English Golf Union Ltd.

England Golf (2009) **The Whole Sport Plan for Golf Development in England 2009/13.** Woodhall Spa: England Golf Partnership.

England Golf (2010) **The Whole Sport Plan for Golf, Impact Report, April 2005 - March 2009.** Woodhall Spa: England Golf Partnership

English Sports Council (1998) **The Development of Sporting Talent 1997.** London: The Sports Council.

English Golf Union (2009) **EGU Coaching Department - Player Handbook 2009-2010.** Woodhall Spa: English Golf Union.

Ericsson, K. A. (2007) Deliberate practice and the modifiability of body and mind: Toward a science of the structure and acquisition of expert and elite performance. **International Journal of Sport Psychology,** 38, 4-34.

Ericsson, K. A., Krampe, R. T. and Tesch-Romer, C. (1993) The role of deliberate practice in the acquisition of expert performance. **Psychological Review,** 100 (3), 363-406.

Falk, B., Lidor, R., Lander, Y., and Lang, B. (2004) Talent identification and early development of elite water-polo players: A 2-year follow-up study. **Journal of Sports Sciences,** 22 (4), 347-355.

Fielding, N. and Thomas, H. (2001) "Qualitative interviewing." In Gilbert, N. (eds.) **Researching Social Life,** 2nd ed. London: Sage Publishing, pp.123-144.

Fletcher, I. M. and Hartwell, M. (2004) Effect of an 8-week combined weights and plyometrics training program on golf drive performance. **Journal of Strength and Conditioning Research,** 18, 59-62.

Fontana, A. and Frey, J. H. (1994) "Interviewing: the art of science." In Denzin, N. K. and Lincoln, Y. S. (eds.) **Handbook of Qualitative Research.** Thousand Oaks, California: Sage Publications, pp.361-376.

Fontana, A. and Frey, J. H. (2000) "The interview: from structured questions to negotiated texts." In Denzin, N. K. and Lincoln, Y. S. (eds.) **Handbook of Qualitative Research.** Thousand Oaks: Sage Publications, pp.645-672.

Forbat, L. and Henderson, J. (2005) Theoretical and practical reflections on sharing transcripts with participants. **Qualitative Health Research,** 15 (8), 1114-1128.

Ford, P., De Ste Croix, M., Lloyd, R., Meyers, R., Moosavi, M., Oliver, J., Till, K. and Williams, C. (2011) The long-term athlete development model: Physiological evidence and application. **Journal of Sports Sciences,** 29 (4), 389-402.

Ford, P., Ward, P., Hughes, N. J. and Williams, M. (2009) The role of deliberate practice and play in career progression in sport: The early engagement hypothesis. **High Ability Studies,** 20 (1), 65-75.

Freeman, J. (1985) **The Psychology of Gifted Children: Perspectives in Development and Education.** Chichester: John Wiley and Sons, pp.247-264.

Gallahue, D. L. and Ozmun, J. C. (2002) **Understanding Motor Development: Infants, Children, Adolescents and Adults.** Dubuque, IA: McGraw-Hill.

Gergen, M. and Gergen, K. J. (2000) "Qualitative inquiry: tensions and transformations." In Denzin, N. and Lincoln, Y. (eds.) **Handbook of Qualitative Research,** 2nd ed. Thousand Oaks: Sage Publications, pp.1025-1046.

Gerson, K. and Horowitz, R. (2002) "Observation and interviewing: options and choices in qualitative research." In May, T. (ed.) **Qualitative Research in Action.** London: Sage Publications, pp.199-224.

Glesne, C. (1999) **Becoming Qualitative Researchers – An Introduction,** 2nd ed, New York: Longman.

Goffman, E. (1959) **The Presentation of Self in Everyday Life,** New York: Doubleday Anchor.

Golafshani, N. (2003) Understanding reliability and validity in qualitative research. **The Qualitative Report,** 8 (4), 597-607.

Gould, D., Dieffenbach, K. and Moffett, A. (2002) Psychological characteristics and their development in Olympic champions. **Journal of Applied Sport Psychology,** 14, 172-204.

Gould, D., Guinan, D., Greenleaf, C., Medbery, R. and Peterson, K. (1999) Factors affecting Olympic performance: Perceptions of athletes and coaches from more and less successful teams. **The Sport Psychologist,** 13, 371-394.

Gould, D., Lauer, L., Rolo, C., Jannes, C. and Pennisi, N. (2006) Understanding the role parents play in tennis success: A national survey of junior tennis coaches. **British Journal of Sports Medicine,** 40, 632-636.

Gratton, C. and Jones, I. (2004) **Research Methods for Sport Studies,** London: Routledge.

Guba, E. G. and Lincoln, Y. S. (1994) "Competing paradigms in qualitative research". In Denzin, N. K. and Lincoln, Y. S. (eds.) **Handbook of Qualitative Research.** London: Sage, pp.105-117.

Hammersley, M. and Atkinson, P. (1995) **Ethnography: Principles in Practice,** 2nd ed. London: Routledge.

Hardy, C., Phillips, N., and Clegg, S. (2001) Reflexivity in social studies: A study of the production of the research subject. **Human Relations,** 54 (5), 3-32.

Harlick, M. and McKenzie, A. (2000) Burnout in junior tennis: A research report. **The New Zealand Journal of Sports Medicine,** 28 (2), 36-39.

Hartup, W. W. (1996) "Cooperation, close relationships, and cognitive development." In Bukowski, W. M., Newcomb, A. F. and Hartup, W. W. (eds.) **The Company they Keep: Friendship in Childhood and Adolescence.** Cambridge UK: Cambridge University Press, pp.213-237.

Hellström, J. (2009) Competitive elite golf: a review of the relationships between playing results, technique and physique. **Sports Medicine,** 39 (9), 723-741.

Helsen, W., Hodges, N., Van Winckel, J. and Starkes, J. (2000) The roles of talent, physical precocity and practice in the development of soccer expertise. **Journal of Sports Sciences,** 18, 727-736.

Henriksen, K., Stambulova, N. and Roessler, K. K. (2010a) Successful talent development in track and field: Considering the role of environment. **Scandinavian Journal of Medicine and Science in Sports,** 20 (2), 122-132.

Henriksen, K., Stambulova, N. and Roessler, K. K. (2010b) Holistic approach to athletic talent development environments: A successful sailing milieu. **Psychology of Sport and Exercise,** 11, 212-222.

Hill, G. M. (1993) Youth sport participation of professional baseball players. **Sociology of Sport Journal,** 10, 107-114.

Hiller, H. H. and DiLuzio, L. (2004) The Interviewee and the research interview: Analyzing a neglected dimension in research. **Canadian Review of Sociology and Anthropology,** 41 (1), 1-26.

Hodges, N. and Starkes, J. (1996) Wrestling with the nature of expertise: A sport-specific test of Ericsson, Krampe and Tesch-Römer's (1993) theory of 'deliberate practice'. **International Journal of Sport Psychology,** 27, 400-424.

Holt, N. L. (2002) A comparison of the soccer talent development systems in England and Canada. **European Physical Education Review,** 8 (3), 270-285.

Holt, N. and Dunn, J. (2004) Toward a grounded theory of the psychosocial competencies and environmental conditions associated with soccer success. **Journal of Applied Sport Psychology,** 16, 199-219.

Houlihan, B. (2000) Sporting excellence, schools and sports development: The politics of crowded policy spaces. **European Physical Education Review,** 6 (2), 171–93.

Howe, M. J. A. (2001) **Genius Explained.** Cambridge: Cambridge University Press.

Howe, M. J, Davidson, J. W. and Sloboda, J. A. (1998) Innate talents: Reality or myth? **Behavioral and Brain Sciences,** 21 (3), 399-407.

Huczynski, A. A. and Buchanan, D. A. (2007) **Organizational Behaviour,** 6th ed. Harlow: Pearson Education Limited.

Hyllegard, R., Radlo, S. J. and Early, D. (2001) Attribution of athletic expertise by college coaches. **Perceptual and Motor Skills,** 92 (1), 193-207.

Johnsen, S. K. (2003) "Issues in the assessment of talent development." In Borland, J. H. (ed.) **Rethinking Gifted Education.** New York: Teachers College Press, pp.201-204.

Johnson, S. D. (1995) Will our research hold up under scrutiny? **Journal of Industrial Teacher Education,** 32 (3), 3-6.

Johnson, M. B., Castillo, Y., Sacks, D. N., Cavazos, Javier Jr., Edmonds, W. A., and Tenenbaum, G. (2008) Hard work beats talent until talent decides to work hard: Coaches perspectives regarding differentiating elite and non-elite swimmers. **International Journal of Sports Science and Coaching,** 3 (3), 417-430.

Jones, C. (1993) "Qualitative interviewing." In Allan, G. and Skinner, C. (eds.) **Handbook for Research Students in the Social Sciences.** London: Falmer Press, pp.203-215.

Jones, G., Hanton, S. and Connaughton, D. (2002) What is this thing called mental toughness? An investigation of elite sport performers. **Journal of Applied Sport Psychology,** 14, 205-218.

Jowett, S. (2000) **The coach–athlete relationship examined: Conceptual and methodological frameworks.** Unpublished manuscript, Staffordshire University: Stoke-on-Trent.

Jowett, S. and Cockerill, I. M. (2002) "Incompatibility in the coach-athlete relationship." In Cokerill, I. M. (ed.) **Solutions in Sport Psychology.** London: Thomson Learning, pp.16-31.

Kamin, S., Richards, H and Collins D. (2007) Influences on the talent development process of non-classical musicians: Psychological, social and environmental influences. **Music Education Research,** 9 (3), 449-68.

Kanters, M. and Tebbutt, S. (2001) Sports for kids: Working with parents to get the most out of youth sports. **Parks and Recreation,** 36, 72-79.

Karnieli-Miller, O., Strier, R. and Pessach, L. (2009) Power relations in qualitative research. **Qualitative Health Research,** 19 (2), 279-289.

Kay, T. (2000) Sporting excellence: A family affair? **European Physical Education Review,** 6 (2), 151-169.

Kay, T. (2003) The family factor in sport: A review of family factors affecting sports participation. **Report Commissioned by Sport England,** Loughborough: Institute for Youth Sport.

Kay, T. and Bass, D. (2011) "The family factor in coaching." In Stafford, I. (ed.) **Coaching Children in Sport.** London: Routledge, pp.169-181.

Kazmer, M. M. and Xie, B. (2008) Qualitative interviewing in internet studies: Playing with the media, playing with the method. **Information, Communication and Society,** 11 (2), 257-278.

Kirk, D. and Gorely, T. (2000) Challenging thinking about the relationship between school physical education and sport performance. **European Physical Education Review,** 6 (2), 119–34.

Kuper, A., Lingard, L. and Levinson, W. (2008) Qualitative research: Critically appraising qualitative research. **British Medical Journal,** 337, 687-689.

Lauer, L., Gould, D., Roman, N. and Pierce, M. (2010) Parental behaviours that affect junior tennis player development. **Psychology of Sport and Exercise,** 11, 487-496.

Law, M., Côté, J. and Ericsson, K. A. (2007) Characteristics of expert development in rhythmic gymnastics: A retrospective study. **International Journal of Exercise and Sport Psychology,** 5, 82-103.

Lee, M. and MacLean, S. (1997) Sources of parental pressure among age group swimmers. **European Journal of Physical Education,** 2, 167-177.

Lincoln, Y., & Guba, E. (1985) **Naturalistic Inquiry.** New York: Sage.

Long, T. and Johnson, M. (2000) Rigour, reliability and validity in qualitative research. **Clinical Effectiveness in Nursing,** 4, 30-37.

MacNamara, Á. and Collins, D. (2009) More than the 'X' factor! A longitudinal investigation of the psychological characteristics of developing excellence in musical development. **Music Education Research,** 11 (3), 377-392.

MacNamara, Á., Holmes, P. and Collins, D. (2006) The pathway to excellence: The role of psychological characteristics in negotiating the challenges of musical development. **British Journal of Music Education,** 23 (3), 285-302.

MacNamara, Á., Holmes, P. and Collins, D. (2008) Negotiating transitions in musical development: The role of psychological characteristics of developing excellence. **Psychology of Music,** 36 (3), 335-352.

MacPhail, A. and Kirk, D. (2006) Young people's socialisation into sport: Experiencing the specialising phase. **Leisure Studies,** 25 (1), 57-74.

Mageau, G. A. and Vallerand, R. J. (2003) The coach-athlete relationship: A motivational model. **Journal of Sports Science,** 21, 883-904.

Mann, C. and Stewart, F. (2002) "Internet interviewing." In Gubrium, J. F. and Holstein, J. A. (eds.) **Handbook of Interview Research: Context and Method.** Thousand Oaks: Sage, pp.603-628.

Marshall, C. and Rossman, G. B. (1999) **Designing Qualitative Research,** 3rd ed. Thousand Oaks, California: Sage Publications.

Martindale, R. J. J., Collins, D. and Abraham, A. (2007) Effective talent development: The elite coach perspective in UK sport. **Journal of Applied Sport Psychology,** 19, 187-206.

Martindale, R. J. J., Collins, D. and Daubney, J. (2005) Talent development: A guide for practice and research within sport. **Quest,** 57, 353-375.

Martindale, R. J. J., Collins, D., Wang, J., McNeill, M., Lee, S .K., Sproule, J. and Westbury T. (2010) Development of the talent development environment questionnaire for sports. **Journal of Sport Sciences,** 28 (11), 1209-1221.

Mason, J. (2002) **Qualitative Researching,** 2nd ed. London: Sage Publications.

McHardy, A. and Pollard, H. (2005) Muscle activity during the golf swing. **British Journal of Sports Medicine,** 39, 799-804.

McHardy, A., Pollard, H. and Bayley, G. (2006) A comparison of the modern and classical golf swing: A clinician's perspective. **South Australian Journal of Sports Medicine,** 18 (3), 80-92.

Mesquita, I., Isidro, S. and Rosado, A. (2010) Portuguese coaches' perceptions of and preferences for knowledge sources related to their professional background. **Journal of Sports Science and Medicine,** 9, 480-489.

Miles, M. B. and Huberman, A. M. (1994) **Qualitative Data Analysis: An Expanded Sourcebook.** Thousand Oaks, CA: Sage Publications.

Minichiello, V., Aroni, R., Timewell, E. and Alexander, L. (1995) **In-Depth Interviewing: Principles, Techniques, Analysis,** 2nd ed. Sydney: Addison Wesley Longman.

Mishler, E. G. (2000) "Validation in inquiry-guided research: the role of exemplars in narrative studies." In Brizuela, B. M., Stewart, J. P., Carrillo, R. G. and Berger, J. G. (eds.) **Acts of Inquiry in Qualitative Research.** Cambridge, MA: Harvard Educational Review, pp.119-146.

Moesch, K., Elbe, A. -M., Hauge, M. -L. T. and Wikman, J. M. (in press) (2011) Late specialization: The key to success in centimetres, grams, or seconds (cgs) sports. **Scandinavian Journal of Medicine and Science in Sports.**

Moore, D. G., Burland, K., and Davidson, J. W. (2003) The social context of musical success: A developmental account. **British Journal of Psychology,** 94, 1-21.

Moore, P., Collins, D.J., Burwitz, L. and Jess, M. (1998) **The Development of Talent Study (DOTS)**. London: English Sports Council.

Morse, J. M., Barrett, M., Mayan, M., Olson, K. and Spiers, J. (2002) Verification strategies for establishing reliability and validity in qualitative research. **International Journal of Qualitative Methods,** 1 (2), 1-19.

Muir, B., Morgan, G., Abraham, A. and Morley, D. (2011) "Developmentally appropriate approaches to coaching children." <u>In</u> Stafford, I. (ed.) **Coaching Children in Sport.** London: Routledge, pp.17-38.

Norris, S. and Smith, D. (2002) "Planning, periodization and sequencing of training and competition: The rationale for a competently planned, optimally executed training and competition program, supported by a multidisciplinary team." <u>In</u> Kellmann, M. (ed.) **Enhancing recovery: Preventing Underperformance in Athletes.** Champaign, IL: Human Kinetics, pp.119-41.

Oldenziel, K., Gulbin J.P. and Gagne, F. (2003) **How do Elite Athletes Develop? A Look through the Rear-View Mirror.** Canberra: Australian Sports Commission.

Ollis, S., MacPherson, A. and Collins, D. (2006) Expertise and talent development in rugby refereeing: An ethnographic enquiry. **Journal of Sports Sciences,** 24 (3), 309-322.

Onwuegbuzie, A. J. and Leech, N. L. (2007) Validity and qualitative research: An oxymoron? **Quality and Quantity,** 41, 233-249.

Orlick, T. and Partington, J. (1998) Mental links to excellence. **The Sport Psychologist,** 2, pp.105-130.

Patrick, H., Ryan, A. M., Alfred-Liro, C., Fredricks, J. A., Hruda, L. Z. and Eccles, J. S. (1999) Adolescents' commitment to developing talent: The role of peers in continuing motivation for sports and the arts. **Journal of Youth and Adolescence,** 28 (6), 741-763.

Patterson, G. R., DeBaryshe, B. D. and Ramsey, E. (1989) A developmental perspective on antisocial behavior. **American Psychologist,** 44, 329-335.

Patton, M. Q. (1990) **Qualitative Evaluation Methods,** 2nd ed. Beverly Hills, CA: Sage.

Patton, M. Q. (2002) **Qualitative Research and Evaluation Methods,** 3rd ed. Thousand Oaks, CA: Sage Publications.

Pearson, D. T., Naughton, G. A., Torode, M. (2006) Predictability of physiological testing and the role of maturation in talent identification for adolescent team sport. **Journal of Science and Medicine in Sport,** 9 (4), 277-287.

Petitpas, A., Champagne, D., Chartrand, J., Danish, S. and Murphy, S. (1997) **Athlete's Guide to Career Planning: Keys to Success from the Playing Field to Professional Life.** Champaign, IL: Human Kinetics.

Petlichkoff, L. M. (2004) "Self-regulation skills in children and adolescents." In Weiss, M. (ed.) **Developmental Sport and Exercise Psychology: A Lifespan Perspective.** Morgantown, WV: Fitness Information Technology.

Phillips, E., Davids, K., Renshaw, I., and Portus, M. (2010) Expert performance in sport and the dynamics of talent development. **Sports Medicine,** 40, 271-283.

Phillips, E. and Lindsay, G. (2006) Motivation in gifted students. **High Ability Studies,** 17, 57-73.

Punch, M. (1994) "Politics and ethics in qualitative research." In Denzin, N. K. and Lincoln, Y. S. (eds.) **Handbook of Qualitative Research**. Thousand Oaks: Sage Publications, pp.83-104.

Quested, E. and Duda, J. L. (2011) "Enhancing children's positive sport experiences and personal development." In Stafford, I. (ed.) **Coaching Children in Sport.** London: Routledge, pp.123-138.

Rapley, T. (2004) "Interviews." In Seale, C., Gobo, G., Gubrium, J. F. and Silverman, D. (eds.) **Qualitative Research Practice.** London: Sage Publications, pp.15-33.

Reade, I., Rodgers, W. and Spriggs, K. (2008) New ideas for high performance coaches: A case study of knowledge transfer in sport science. **International Journal of Sports Science and Coaching,** 3 (3), 335-354.

Reilly, T., Williams, A. M., Nevill, A. and Franks, A. (2000) A multidisciplinary approach to talent identification in soccer. **Journal of Sports Sciences,** 18, 695-702.

Rhodewalt, F. (1994) Conceptions of ability, achievement goals, and individual differences in self-handicapping behaviour: On the application of implicit theories. **Journal of Personality,** 62, 67-85.

Richards, L. (2009) **Handling Qualitative Data: A Practical Guide,** 2nd ed. London: Sage Publications.

Robson, C. (1993) **Real World Research: A Resource for Social Scientists and Practitioner Researchers.** Oxford: Blackwell Publishers.

Robson, C. (2002) **Real World Research.** Oxford: Blackwell.

Rosenfeld, P., Giacalone, R. A. and Riordan, C. A. (2001) **Impression Management: Building and Enhancing Reputations at Work.** London: Thomson Learning.

Rowley, S. (1992) **TOYA and the Identification of Talent.** London: Sports Council.

Rowley, S. and Graham, P. (1999) Intensive training in youth sport: An example of unequal opportunity. **Children and Society,** 13, 119-129.

Rubin, H. J., and Rubin, I. S. (2005). **Qualitative Interviewing: The Art of Hearing Data,** 2nd ed. Thousand Oaks: Sage.

Sands, R. R. (2002) **Sport Ethnography.** Champaign, IL: Human Kinetics.

Schwandt. T. A. (1994) "Constructivist, interpretivist approaches to human inquiry." In Denzin, N. K. and Lincoln, Y. S. (eds.) **Handbook of Qualitative Research.** Thousand Oaks, California: Sage Publications, pp.118-137.

Seale, C. (1999) **The Quality of Qualitative Research.** London: Sage.

Searle, C. (1993) **The BOA athlete report: 25 ways to put the great back into sporting Britain.** London: BOA.

Sell, T., Tsai, Y., Smoliga, J., Myers, J. and Lephart, S. (2007) Strength, flexibility, and balance characteristics of highly proficient golfers. **Journal of Strength and Conditioning Research,** 21, 1166-1171.

Sherar, L. B., Baxter-Jones, A. D. G., Faulkner, R. A. and Russell, K. W. (2007) Do physical maturity and birth date predict talent in male youth ice hockey players? **Journal of Sports Sciences,** 25, 879-886.

Siedentop, D. (2002) Sport education: A retrospective. **Journal of Teaching in Physical Education,** 21, 409-418.

Simonton, D. (1999) Talent and its development: An emergenic and epigenetic model. **Psychological Review,** 106, 435-57.

Simonton, D. K. (2001) Talent development as a multidimensional, multiplicative and dynamic process. **Current Directions in Psychological Science,** 10, 39-43.

Singer, R. N. and Janelle, C. M. (1999) Determining sport expertise: From genes to supremes. **International Journal of Sport Psychology,** 30, 117-150.

Smith, M. (2010) **Research Methods in Sport.** Exeter: Learning Matters Ltd.

Soberlak, P. and Côté, J (2003) The Developmental activities of elite ice hockey players. **Journal of Applied Sport Psychology,** 15, 41-49.

Sosniak, L. A. (1990) "The tortoise, the hare, and the development of talent." In Howe, M. J. A. (Ed.) **Encouraging the Development of Exceptional Skills and Talents,** Leicester: The British Psychological Society, pp.149-164.

Sportscotland and Sports Council Northern Ireland (1997) **Sport interactive guidebook and information summary.** Northern Ireland, Sports Council Northern Ireland.

Stake, R. E. (1994) "Case studies." In Denzin, N. K and Lincoln, Y. S (eds.) **Handbook of Qualitative Research,** London: Sage Publications, pp.236-247.

Stake, R. E. (2005) "Qualitative case studies." In Denzin, N. K and Lincoln, Y. S (eds.) **The Sage Handbook of Qualitative Research,** 3rd ed. Thousand Oaks: Sage, pp.443-466.

Starkes, J. (2000) The road to expertise: Is practice the only determinant? **International Journal of Sport Psychology,** 31, 431-451.

Starkes, J.L., Helsen, W.F. and Jack, R. (2001) "Expert performance in sport and dance." In Singer, R. N., Hausenblas, H. A. and C.M. Janelle, C. M. (eds.) **Handbook of Sport Psychology.** New York: Wiley, pp.174-201.

Stenbacka, C. (2001) Qualitative research requires quality concepts of its own. **Management Decision,** 39 (7), 551-556.

Thomas, K. and Thomas, J. R. (1999) What squirrels in the trees predict about expert athletes. **International Journal of Sport Psychology,** 20, 221-234.

Toms, M., Bridge, M. and Bailey, R. (2009) "A developmental perspective of sports participation in the UK: Implications for coaching." **International Council for Coach Education Conference (ICCE). Vancouver, 12-15 November 2009.**

Torres, V., and Baxter Magolda, M. B. (2002) The evolving role of the researcher in constructivist longitudinal studies. **Journal of College Student Development,** 43 (4), 474-489.

Tranckle, P. and Cushion, C. J. (2006) Rethinking giftedness and talent in sport. **Quest,** 58, 265-282.

University of Birmingham (2010) **University of Birmingham Code of Practice for Research 2010-2011.** Birmingham: University of Birmingham.

Urberg, K. A. (1999) Some thoughts about studying the influence of peers on children and adolescents. **Merrill-Palmer Quarterly,** 45, 1-12.

Vaeyens, R., Gullich, A., Warr, C. R. and Philippaerts, R. (2009) Talent identification and promotion programmes of Olympic athletes. **Journal of Sports Sciences,** 27 (13), 1367-1380.

Vaeyens, R., Lenoir, M., Williams, A. M. and Philippaerts, R. (2008) Talent identification and development programmes in sport: Current models and future directions. **Sports Medicine,** 38, 703-14.

Vallerand, R. J. and Rousseau, F. L. (2001) "Intrinsic and extrinsic motivation in sport and exercise: A review using the Hierarchical Model of Intrinsic and Extrinsic Motivation." In Singer, R. N., Hausenblas, H. A. and Janelle, C. M. (eds.) **Handbook of Sport Psychology,** 2nd ed. New York: Wiley, pp.389-416.

Van Rossum, J. (2001) Talented in dance: The Bloom Stage Model revisited in the personal histories of dance students. **High Ability Studies,** 12 (2), 181-197.

Van Rossum, J. H. A. and Gagné, F. (1994) Rankings of predictors of athletic performance by top level coaches. **European Journal for High Ability,** 5, 68-78.

Van Yperen, N. W. (2009) Why some make it and others do not: Identifying psychological factors that predict career success in professional adult soccer. **The Sport Psychologist,** 23, 317-329.

Wall, M. and Côté, J. (2007) Developmental activities that lead to dropout and investment in sport. **Physical Education and Sport Pedagogy,** 12, 77-87.

Ward, P., Hodges, N. J., Starkes, J. L. and Williams, M. A. (2007) The road to excellence: Deliberate practice and the development of expertise. **High Ability Studies,** 18 (2), 119-153.

Ward, P., Hodges, N. J., Williams, M. A. and Starkes, J. L. (2004) "Deliberate practice and expert performance." In Williams, M. A. and Hodges, N. J. (eds.) **Skill Acquisition in Sport.** London: Routledge, pp.231-258.

Wattie, N., Cobley, S. and Baker, J. (2008) Towards a unified understanding of relative age effects. **Journal of Sports Sciences,** 26 (13)**,** 1403-1409.

Wells, G., Elmi, M. and Thomas, S. (2009) Physiological correlates of golf performance. **Journal of Strength and Conditioning Research,** 23 (3), 741-750.

Whittemore, R., Chase, S. K. and Mandle, C. L. (2001) Validity in qualitative research. **Qualitative Health Research,** 11 (4), 522-537.

Williams, M. and Ford, P. (2006) Developing expertise: The road to excellence in football. **Insight: The FA Coaches Association Journal,** Spring/Summer, 48-55.

Williams, A. M. and Reilly, T. (2000) Talent identification and development in soccer. **Journal of Sports Sciences,** 18, 657-667.

Winner, E. (1996) **Gifted Children.** New York: Basic Books.

Wolfenden, L. E. and Holt, N. L. (2005) Talent development in elite junior tennis: Perceptions of players, parents, and coaches. **Journal of Applied Sport Psychology,** 17, 108-126.

Wuerth, S., Lee, M. J. and Alfermann, D. (2004) Parental involvement and athletes' career in youth sport. **Psychology of Sport and Exercise,** 5, 21-33.

Wylleman, P. and Lavallee, D. (2004) "A developmental perspective on transitions faced by athletes." In Weiss, M. (ed.) **Developmental Sport and Exercise Psychology: A Lifespan Perspective.** Morgantown, WV: Fitness Information Technology, pp.503-524.

Yang, X., Telama, R. and Laakso, L. (1996) Parents' physical activity, socioeconomic status and education predictors of physical activity and sport among children and youths: a 12-Year follow up survey. **International Review for the Sociology of Sport,** 31, 273-291.

Young, S., Persichitte, K. A. and Tharp, D. D. (1998) Electronic mail interviews: Guidelines for conducting research. **International Journal of Educational Telecommunications,** 4 (4), 291-299.

Zevenbergen, R., Edwards, A. and Skinner, J. (2002) Junior golf club culture: A Bourdieuian Analysis. **Sociology of Sport Online** [online], 5 (1). Available from: http://physed.otago.ac.nz/sosol/v5i1/v5i1bordeau.html [Accessed 10 June 2011].

Zwick, E. B., Leistritz, L. and Kocher, R. (2008) Coaching junior golfers based on growth velocity estimates. In Crews, D. and Lutz, R. (eds.) **Science and Golf V.** UK: Human Kinetics, pp.168-175.