A proposed model of perceived motivationally-relevant social agent influence during athlete development.

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A PROPOSED MODEL OF PERCEIVED MOTIVATIONALLY-RELEVANT SOCIAL AGENT INFLUENCE DURING ATHLETE DEVELOPMENT

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Abstract

This thesis aimed to extend knowledge of the perceived motivationally-relevant influences of coaches, parents and peers during athlete development in sport. In doing so this thesis addressed existing limitations in research to date exploring social agent motivationally-relevant influences. The thesis employed a mixed methods methodology whereby the findings from all studies contributed to answering the thesis' aims. Study 1 retrospectively explored perceptions of coach, parent and peer motivational influence across athlete development. Four investment stage football players (*M* age = 18.5 years, *SD* = 0.6) with an average of 13 (*SD* = 1.4) years footballing experience, and four of their parents, were interviewed to investigate their perceptions of coach, parent and peer motivationally-relevant influence during the athletes' sampling, specialising and investment stages of development. Inductive analysis of the interview transcripts identified five categories of perceived social agent motivationally-relevant influence that were consistent amongst each social agent and across each development stage. Each social agent was perceived by participants to play a role in each of the following motivationally-relevant categories of social agent influence: relationship factors, interpersonal interactions, support for development, support for performance, and feedback and evaluation. The categories were somewhat supportive and reflective of those outlined in other models of motivationally-relevant social agent influence, and the categories were configured into a proposed model.

Study 2a aimed to determine the structural nature of the proposed model of perceived motivationally-relevant social agent influence in sport, specifically to determine whether social agents were perceived to provide independent or combined influences. Two hundred and twenty-nine athletes from a wide range of sports, and representing either the sampling, specialising or investment stages of athlete development, participated in the study. Participants completed a range of psychometric measure subscales, adapted to reflect each of the three social agents, and which had been identified as relating to the categories of perceived motivationally-relevant social agent influence within the model proposed in Study 1. Using confirmatory factor analysis methods, a range of structural models were compared to determine which best fit the collected data regarding the perceived motivationally-relevant social agent influences in sport. The model which best fit the data consisted of 18 variables demonstrating that coaches, parents and peers had distinct perceived motivationally-relevant influences across 6 categories, including the splitting of the interpersonal interactions category into two distinct variables: relationships, conflict, conflict resolution, support for

development, support for performance, and feedback and evaluation. Study 2a demonstrated that within, the context of the proposed model of perceived motivationally-relevant social agent influence, coaches, parents and peers have distinct but similar categories of influence.

Study 2b aimed to extend the findings of Studies 1 and 2a by exploring differences in perceptions of the social agent motivationally-relevant influence between participants in the sampling, specialising and investment developmental stages. The data from the same 229 participants from Study 2a was used to explore differences between participants in each developmental stage in relation to each category of perceived motivational influence. Results identified some significant differences between developmental stages, with coaches in particular perceived to have larger motivationally-relevant influences amongst athletes in the sampling stage than those in the specialising and investment stages. The findings of Study 2b also suggested that some variables of perceived social agent motivationally-relevant influence in sport within the proposed model may not have accurately reflected the underlying constructs for some social agents, such as perceived relationship quality, support for development and support for performance with parents, or perceived conflict with the coach.

In line with the mixed methods methodology, the discussion chapter considered the findings from all studies within the thesis to clarify the proposed model of perceived motivationally-relevant social agent influence during athlete development. The final model was proposed to consist of 18 latent variables representing coach, parent and peer influences in each of the following categories: relationship factors, negative interactions, positive interactions, support for development, support for performance, and feedback and evaluation. The thesis concluded with a critical consideration of this proposed model within the context of existing literature and proposals for future research directions and applied implications.

Keywords: Motivation, Sport, Social Agents, Coaches, Parents, Peers, Athlete Development

For Jenny.

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Chapter One - Introduction

1. Introduction

1.1. Thesis Background

Sport participation offers positive psychosocial health and wellbeing benefits across our lives (Eime, Young, Harvey, Charity, & Payne, 2013; Fraser-Thomas, Côté, & Deakin, 2005; Neely & Holt, 2014). Sport requires different levels of social engagement depending on the type of activity and level of participation. The importance of significant social agents, such as coaches, parents and peers, has been researched within sporting contexts due to their influential role in facilitating positive sporting experiences and outcomes (Jowett & Poczwardowski, 2007). Relationships between coaches and athletes have been identified as complex and multidimensional with various positive and negative performance and wellbeing outcomes (Jowett, 2007). Parents on the other hand provide social, emotional, tangible and informational support for their children (Gledhill, Harwood, & Forsdyke, 2017; Sheridan, Coffee, & Lavallee, 2014). Peer acceptance and friendships in sport can have positive outcomes including increased enjoyment and reduced stress (Smith, Ullrich-French, Walker, & Hurley, 2006; Weiss & Smith, 2002). Given the benefits of participating in sport, many of the interpersonal correlates and factors of sport participation have been considered in relation to athlete motivation.

1.2. Definitions

A criticism of much of the literature in psychology is the multiple definitions that researchers and publications use for similar words. In order to add clarity to the present thesis it is, therefore, important to provide definitions of key terms that are used and discussed. The present thesis focusses on the development of motivation amongst athletes, and therefore within the context of this thesis the term 'athlete(s)' relates to any individual participating in sport regardless of their level of participation. Despite extensive use of the term in literature, there is not specific or agreed upon definition for the term 'social agent'. Despite this lack of agreed definition, for the purposes of this thesis the term social agent will refer to any individual who plays an active role in the context of an athlete's participation in sport. The social agents considered within the thesis were parents, coaches and peers. Parents were considered as athletes' mothers, fathers and/or guardians. Coaches were considered to be individuals who took on the primary technical development of athletes within the context of

sport. Peers were considered to be athletes' teammates, clubmates and/or training partners within a sporting context.

The present thesis aimed to better understand the role social agents play in developing athlete motivation. Throughout the thesis existing motivational theories are considered and critiqued, and a proposed model is developed. Within this context, theories are considered to be a set of statements or general statement that explains a phenomenon, whereas models are abstractions of reality that illustrate and provide structure.

1.3. Dominant Theories of Motivation

Motivation is considered to be an internal construct with behavioural, affective and cognitive outcomes (Hagger & Chatzisarantis, 2007). Social-environmental factors have consistently been proposed to influence motivation (Harwood, Keegan, Smith, & Raine, 2015). Despite a range of theories of motivation being developed and proposed, research investigating the motivational role of social agents in sport have been dominated by two theories of motivation: self-determination theory (SDT; Deci & Ryan, 1985) and achievement goal theory (AGT; Nicholls, 1984). SDT and AGT value the role of others in individuals' developed and maintained motivation for behaviour, including sporting contexts. SDT, for example, hypothesises that extrinsic forms of motivation for behaviour can be derived from others in various ways, including perceived pressure, threat of punishment or incentivisation through rewards. SDT places interpersonal factors at the centre of the process of internalising behaviours such as relatedness (i.e., the need to develop meaningful relationships with others), one of three basic psychological needs incorporated into the theory (Ryan & Deci, 2017). AGT on the other hand focusses on the motivational climates that are perceived by athletes to be created by influential social agents. These motivational climates can influence the goal pursuits of athletes in given situations (e.g., task vs. ego), and these goal pursuits have distinct performance and wellbeing outcomes (Nicholls, 1984).

1.4. Reliance on Cross-Sectional Research

Much of the literature concerning the role of social agents on athlete motivation has focussed on the climates social agents create within sporting contexts. These climates have been contextualised as mastery or competitive (i.e., AGT; Nicholls, 1984), or as supporting or thwarting autonomy, competence or relatedness needs (i.e., SDT; Deci & Ryan, 1985).

Some conceptualisations of motivation incorporate global, contextual and situational levels (e.g., Vallerand, 1997). For example, coaches have been found to create different motivational climates in training and competition settings as measured objectively by trained observers (Smith et al., 2016) and cross-sectional studies may not, therefore, capture the dynamic nature of motivational climates in sport. Furthermore, research has identified that coaches, athletes and trained observers perceive the coach-created motivational climate differently (Smith et al., 2016).

Despite the dynamic nature of motivation, a recent systematic review of studies investigating the correlates of motivational climate perceptions in sport (Harwood et al., 2015) identified that much of the research measured perceptions of motivational climate at the contextual rather than situational or global levels. This focus on contextual motivational climates may, therefore, only provide insight into one of many dimensions of motivation. Many studies included within the systematic review also measured perceived motivational climates infrequently (often just once) and did not consider within-group differences or changes over time. The overreliance on cross-sectional study design, and measurement of more generalised forms of the motivational climate, therefore, clouds current understanding of the motivational roles of coaches, parents and peers, and their interaction, in sport. In addition, such approaches to research, guided by dominant theories of motivation such as AGT and SDT, simply reinforce these theories rather than extend knowledge and understanding.

1.5. The Role of Social Agents

In addition to the overreliance on cross-sectional research and the measurement of more generalised levels of other-created motivational climates, there has been limited research to date that considered the concurrent motivational influence of coaches, parents and peers. Athletes maintain relationships with many social agents simultaneously (Ullrich-French & Smith, 2006) and combinations of relationships with these social agents may predict participation in sport more than individual relationships (Ullrich-French & Smith, 2009). However, many of the studies that have explored the motivational influence of more than one social agent have considered these influences independently rather than together (e.g., Davies, Stellino, Nichols, & Coleman, 2016). The few studies that have investigated the combined influence of social agents within sport contexts have identified additive and interactive effects on athlete basic need satisfaction, perceived social environments, tangible

and informational support, perceived pressure, stress, enjoyment and motivation (Garcia Bengoechea & Strean, 2007; Riley & Smith, 2011; Sheridan et al., 2014; Vazou, Ntoumanis, & Duda, 2006). These studies, however, have tended to consider the combined role of social agents within adolescent sport, and further research is therefore required to consider other developmental stages.

1.6. Models of Athlete Development

Researchers have not explained clearly how interpersonal interactions influence motivation during an athlete's development and transition through sport. Models of sport development proposed by Côté (1999) and Wylleman and Lavallee (2004) contextualise athlete development within the wider context of their lives and propose that the relationships athletes form in sport are transient and dynamic as they progress through different stages of development. The overreliance on cross-sectional and correlational research which measures perceptions of social climates at the contextual level may have limited explanatory ability of much of the research to date towards the dynamic nature of changes in motivational climate and perceived social agent influence as athletes develop within their sport.

1.7. Dominant Research Paradigms

Considering the aforementioned limitations of existing literature on the motivational role of coaches, parents, peers in sport, new research approaches are required to provide a broader and deeper understanding of the socio-motivational nature of sport. Existing approaches are representative of what has been identified as a research paradigm, whereby specific theories (e.g., SDT and AGT) dominate research by guiding research questions and the tools to answer them (Kuhn, 1967). Kuhn argued that such research paradigms will dictate most research within a discipline through the adoption of methods which confirm rather than test theories, and through ad hoc explanations of erroneous findings. Within such paradigms, progress will be incremental but slow, and the paradigm will dominate until a crisis results from a critical level of findings which cannot be explained by dominant theories. The current dominance of SDT and AGT as theories guiding research on motivation in sport, and in particular relating to the role of coaches, parents and peers in the development and maintenance of athlete motivation, could be considered as examples of research paradigms (Hassmen, Keegan & Piggot, 2016). Developing competing theories, and then developing studies that attempt to falsify (rather than confirm) existing and new theories, is proposed as

an alternative to research paradigms which might progress knowledge more effectively (Lakatos, 1970; Popper, 1969).

1.8. Bringing it all Together

During the development of the current thesis, a series of studies had been published which responded to the paradigmatic dominance of SDT and AGT in socio-motivation research in sport. Adopting a qualitative approach, the perceived social agent influences on athlete motivation were investigated during the sampling (Keegan, Harwood, Spray, & Lavallee, 2009), specialising (Keegan, Spray, Harwood, & Lavallee, 2010) and investment (Keegan, Spray, Harwood, & Lavallee, 2014) stages of athlete development. The findings of these studies demonstrated that social agents had both shared and distinct motivational roles during each stage of development, but these roles were dynamic. For instance, parents' roles changed from providing multiple types of motivational support (e.g., technical development, tangible support) to becoming more focussed on providing practical support as athletes progressed from sampling to investment stages of development. On the other hand, peers became increasingly important for athlete social support as athletes developed. Following these individual studies, Keegan, Spray, Harwood, and Lavallee (2014) conducted a meta-synthesis of research exploring the socio-motivational influence of social agents during athlete development, and proposed a model of motivational atmosphere which expands the understanding of the topic area beyond that of AGT and SDT.

The work of Keegan et al. (2009, 2010a, 2014a, 2014b) directly informed the present thesis as an example of adopting methods to better understand the socio-motivational context within which athletes develop and maintain motivation during their development in sport. Within the same spirit, the present thesis sought to address the aforementioned limitations of existing research into the motivational influence of social agents on athlete motivation by developing, refining and testing a proposed model of perceived social agent influence on athlete motivation across athlete development.

1.9. Thesis Aims and Objectives

With athlete motivation being associated with positive and negative performance and wellbeing outcomes (Ryan & Deci, 2017), and social agents being influential in the development and maintenance of such motivation, the importance of understanding the motivational role of these social agents is clear. With a lack of literature considering the simultaneous motivational role of coaches, parents and peers, and considering how such roles might change as athletes transition between developmental stages, there is a need to better understand the dynamic nature of social agent motivational influence. There is also a need to develop and test new theories that can compete with the dominant theories that reflect the current research paradigms in sport motivation research.

In light of the above, the studies reported in this thesis were conducted to consider the broader motivational influence of coaches, parents and peers beyond that posited by SDT and AGT. The overall purpose of the thesis was to explore the motivational role of coaches, parents and peers across all stages of athlete development. The primary aim of the thesis, therefore, was to develop a proposed model of perceived social agent motivationally-relevant influence which reflected the role of coaches, parents and peers across all stages of athlete development. The secondary aim of the thesis was to determine whether the levels of perceived motivationally-relevant influence of coaches, parents and peers differed from one another and between developmental stages.

To achieve the aims of this thesis a mixed methods methodology was adopted, combining qualitative and quantitative methods. This mixed methods methodology aligned to the critical realist ontological and critical rationalist epistemological position adopted by the researcher. The aims of the thesis were achieved by completion of the following objectives. The primary aim of thesis was achieved through Objectives 1, 2 and 4. The secondary aim of the thesis was achieved through Objectives 5 and 6. Objective 3 addressed the primary and secondary aim of the thesis.

1. To explore the perceptions of investment stage athletes and their parents regarding the motivationally-relevant influence of parents, coaches and peers during athletes' development in sport
2. To develop a proposed model of perceived motivationally-relevant influence across athlete development

3. To adapt valid and reliable adapted psychometric measures that concurrently measure the motivational influence of coaches, parents and peers

4. To determine the structure of the proposed model of perceived motivationally-relevant social agent influence using confirmatory factor analysis methods

5. To explore the similarities and differences between the motivational influence of coaches, parents and peers during athlete development

6. To examine changes in social agent motivational influence between athlete developmental stages

1.10. Overview of Thesis

Following this introductory chapter, Chapter 2 provides a comprehensive overview of the literature relating to dominant theories of motivation in sport and their conceptualisation of the role of social agents in developing and maintaining athlete motivation. Chapter 3 provides a detailed discussion of the philosophical position of the current thesis and how this informed the mixed methods methodology adopted for this body of research. Chapter 4 reports a qualitative study with investment-stage soccer players and their parents that explores their perceptions of the motivational roles of coaches, parents and peers during each stage of the players' development. The findings from this study inform a proposed model of perceived social agent influence on athlete motivation during development. Chapter 5 is a quantitative study which corroborated the findings of Study 1 by applying confirmatory factor analysis to determine and refine the structure of the proposed model of perceived social agent influence on athlete motivation developed in Chapter 4. Chapter 6 is a quantitative study in which the refined model of perceived social agent influence is applied. This chapter explores the similarities and differences of the concurrent motivational influence of coaches, parents and peers, as well as similarities and differences between developmental stages. Finally, Chapter 7 concludes the thesis by considering the contribution of the research programme to the existing body of literature on the topic and applied practice, as well as suggesting routes for future research.

Chapter Two - Literature Review

2. Literature Review

2.1. Introduction to Chapter

This literature review will explore social agent influence on athlete motivation during athlete development. The discussion begins by introducing a range of motivational theories commonly applied within sport research and practice, before reviewing the two most prominent motivation theories in sport psychology research: self-determination theory (SDT; Deci & Ryan, 1985) and achievement goal theory (AGT; Nicholls, 1984). Next, the role of key social agents in sport (i.e., coaches, parents and peers) are examined and their independent and combined influences on athlete motivation considered. Models of athlete development are then considered to help understand how perceived social agent motivationally-relevant influences might change over time as athletes develop and experience transitions within and outside sport. Finally, the recent literature exploring the role of coaches, parents and peers across athlete development are reviewed to inform the thesis.

To facilitate the literature review a search strategy was developed and updated throughout the duration of this project. Searches were conducted in appropriate databases including ScienceDirect and SportDiscus with combinations of the following terms and their derivatives, alternatives and Boolean versions: motivation, coach, parent, peer, sport, achievement goal theory, self-determination theory, and athlete. As the literature review developed, the search strategy was refined to identify studies which investigated the motivational role of two or more social agents simultaneously.

2.2. Introduction to Motivation

Motivation is a widely studied yet ill-defined construct in research and real-life contexts (Roberts, 2012). The plethora of definitions and applications of motivation have led to the concept at times being misunderstood and misconceived within the context of sport (Moran & Toner, 2017). Motivation relates to the 'why' of behaviour (Gill, Williams & Reilfsteck, 2017) and has been proposed to be a process rather than an outcome or construct. For the purposes of this thesis motivation is considered an "internal state that energises and drives action or behaviour and determines its direction and persistence" (Hagger & Chatzisarantis, 2007, p.xi). To understand motivation, one must understand the processes, antecedents and consequences of motivation (Weiss & Amorose, 2008). Early theories

considered motivation as being unitary, such that the amount or strength of the construct was investigated (Ryan & Deci, 2017). Contemporary theories put more emphasis on differentiated views of motivation such that different types and qualities of motivation exist (Ryan & Deci, 2017), and motivation represents a process rather than an individual entity (Maehr & Braskamp, 1986; Roberts, 2012; Weiss & Amorose, 2008). Motivation has been one of the most commonly researched topics within sport and exercise psychology literature. In preparing their recent text, Hassmen, Keegan and Piggot (2016) surveyed editors of the most popular journals in the discipline seeking their opinions on the dominant concepts, theories and methodologies of articles submitted for publication. The most dominant concept guiding research in articles submitted for review was motivation.

2.3. Motivation Theories

The dominant motivation theories in sport and exercise psychology are behavioural, cognitive and social cognitive in nature (Gill et al., 2017). Social cognitive theories of motivation such as self-determination theory (SDT; Deci & Ryan, 1985), and achievement goal theory (AGT; Nicholls, 1984), consider humans to actively influence their motivation through their interpretation of, and interaction with, situations and the social environment. SDT and AGT are prominent theories driving contemporary motivation research in sport, with specific components and sub-theories being applied in particular, such as motivational climate (Nicholls, 1984) and basic needs theory (Ryan & Deci, 2000).

Given the dominance of motivation as a research topic within sport and exercise psychology, a large number of motivation theories have been developed and applied within this domain. A detailed discussion of each motivational theory developed and applied within sport and exercise psychology research is, however, out with the scope of this narrative review. Motivation theories which consider the social context of motivation, such as competence motivation theory, expectancy value theory, and attribution theory, will be briefly introduced to help position this thesis within the broader context of motivation research. AGT and SDT have been the most prominent motivational theories applied to sport in recent years, particularly when considering the motivational role of social agents (Gill et al., 2017; Hassmen et al., 2016; Roberts, 2012). As such, a detailed conceptual overview of these theories will be provided along with a critical discussion of some of the research in sport driven by these theories. Focussing on AGT and SDT as the dominant theories of motivation in contemporary sport and exercise psychology also aligns with the philosophical

position of the current thesis in proposing an alternative model of social agent influence on athlete motivation (see Chapter 3 for a full discussion).

2.3.1. Competence Motivation Theory.

Harter's (1978, 1981) competency motivation theory posits that individuals are motivated to influence their environment and in doing so engage in mastery attempts to demonstrate their competence. Where individuals are able to demonstrate competence, they will experience positive emotions and continue to engage in the activity. Competence motivation theory also proposes that competence motivation will change between different domains in which individuals attempt to demonstrate mastery (e.g., social, physical, etc.) as a result of the dynamic nature of perceived competence, perceived autonomy and perceived reinforcement and support from others within each of these domains. Competence motivation is, therefore, considered to be multidimensional and dynamic in nature (Harter, 1978, 1981). As the theory proposes that individuals put effort into demonstrating mastery within domains they perceive themselves to be competent in, competency within certain domains may determine differences in participation. For example, participation in sport may be higher amongst those who perceive themselves to be competent within this domain (e.g., Feltz & Petlichkoff, 1983; Roberts, Kleiber & Duda, 1981). On the other hand, as individuals have different motives for participation in sport, such as socialising or enjoyment, low perceptions of physical competence may not predict participation as much as perceptions of competence in socialising (e.g., Klint & Weiss, 1987).

Competence motivation theory proposes that the types and domains of competence motivation change as individuals develop (Harter, 1990, 1998). For example, young children (aged 4-7 years) perceive competence both in general and social terms. General competence combines a range of domains (e.g., education, sport), and social competence considers perceived acceptance by important others (Harter & Pike, 1984). As individuals progress in age (e.g., 8-13 years old) the general competence domain becomes more disparate and can include competence in academia, sport, physical appearance, behaviour, etc. (Harter, 1982, 1985). The domains continue to grow in later years to include competence in friendships, romantic relationships and employment (Weiss & Amorose, 2008). Competence motivation theory places importance on the role of social agents in children's development, specifically in supporting positive self-perceptions, emotions and motivational orientations. Social agents, especially parents and coaches, should support mastery attempts rather than successful

outcomes, reinforcing effort and improvement with social support influencing individual self-perceptions (Harter, 1990).

2.3.2. Expectancy Value Theory.

Eccles and colleagues (Eccles, 2007; Eccles et al., 1983) developed the expectancy-value model of motivation which considers achievement choices and behaviours as being multidimensional in nature. The theory considers the variables related to individual choice, persistence and performance of activities, especially amongst children and young people. Achievement behaviours are predicted to be influenced by individuals' expectations of success and the value they place on the activity itself. These antecedents are in turn influenced by a range of factors including self-schemas, goals for the activity, perceptions of task difficulty, and social-contextual factors.

The expectancy value theory has a specific developmental focus in that the conceptualisations of success expectancies and subjective task value are proposed to change over time with age. A range of studies have demonstrated that beliefs about sport competence, and the value placed on sport, decrease during childhood (e.g., Jacobs et al., 2002; Rodriguez, Wigfield & Eccles, 2003; Wigfield et al., 1997). Social agents are also theorised to have a significant influence on expectancy-value constructs during development. Specifically, social agents' general beliefs guided by the domain-specific culture and the specific beliefs about the domain-specific ability of a child combine to influence the amount and type of interaction between social agent and child (e.g., encouragement, feedback; Horn & Newton, 2019). These interactions will, in turn, influence the child's own perceptions and interpretations within this domain, including expectations of successful performance, engagement and achievement-related behaviours.

2.3.3. Achievement Attribution Theory.

Building on the work of Heider (1944, 1958), and Jones and Davis (1965), Weiner (1979, 1985, 1986) developed the achievement attribution theory. Attributions are considered as explanations for performances (positive and negative), and individuals use these explanations to help them understand situations and develop mastery opportunities (White, 1959). According to Weiner (1986, 1992, 2000), the attributions that people make will influence their subsequent performance through emotional responses and expectations of

future success. Weiner argued that the attributions athletes make fall into one of four categories: ability, effort, luck, and difficulty of the task. The personal meaning that individuals assign to their attribution is theorised to be of more importance than the actual attribution (Biddle, Hanrahan & Sellars, 2001; Weiner, 1979) and is proposed to be the main source of motivation. Achievement attribution theory proposes three categories of attribution which reflect the importance that individuals place on their attribution. First, the locus of causality reflects whether the cause of the performance was internal (e.g., ability, effort) or external (e.g., weather, competitors) to the athlete. Second, stability reflects whether the cause is likely to change over time, being either stable (e.g., talent) or unstable (e.g., injury). Third, controllability reflects whether the causes of performance are internal and controllable by the athlete (e.g., effort) or internal but uncontrollable (e.g., illness). Individuals tend to attribute successes to internal factors and failures to external factors (Gill et al., 2017). Each dimension within the categories of attribution are proposed to have specific affective and motivational outcomes.

Athlete attributions are also proposed to have a social dimension as attributions are often made within social contexts (Hardy & Jones, 1994). Social agents may provide opportunities for athletes to reflect on performance on an informal or formal basis and can help athletes identify adaptive attributions through social and emotional support (Rees & Hardy, 2000). Perceptions of controllability can also influence athletes' emotions towards others, as perceiving someone to have not been successful in a performance because of a factor we feel is internal (e.g., their lack of effort) might result in a more negative reaction than perceiving their failure to be due to a factor that is external to them (Gill et al., 2017).

2.3.4. Self-Determination Theory.

Self-determination theory (Deci & Ryan, 1985) is a macro-level theory of motivation integrating research and expanded mini-theories which attempt to explain human personality, emotion and motivation in social contexts (Vansteenkiste, Niemiec & Soenens, 2010). This theory provides a broad yet comprehensive theoretical framework with which to understand human behaviour in various contexts (Deci & Ryan, 2017). SDT is dialectical because it hypothesises that motivation results from the interaction between the social context and individual personality factors (Weiss & Amorose, 2008). SDT suggests that some behaviours can be completely volitional, whereas others can be controlled by external forces even in the absence of any individual desire to undertake the behaviour (Ryan & Deci, 2017). SDT

conceptualises the motivation for individual behaviours (e.g. sport participation) on a continuum of self-determination. This continuum ranges from intrinsic motivation (i.e., behaviours that are undertaken for their inherent interest and enjoyment; Gill et al., 2017) to extrinsic motivation (i.e., behaviours undertaken for rewards or to avoid punishment; Gill et al., 2017). Motives for behaviour can, therefore, differ in source, magnitude, behavioural outcomes, behavioural persistence, and associated cognitive and affective responses (Ryan & Deci, 2017). SDT consists of six connected mini-theories: cognitive evaluation theory, organismic integration theory, causality orientations theory, basic psychological needs theory, goal contents theory and relationships motivation theory.

2.3.4.1. Cognitive Evaluation Theory.

Cognitive evaluation theory (CET) is a mini-theory of SDT which focuses on how intrinsic motivation is influenced by factors related to the social context. According to CET, intrinsic motivation is facilitated by perceived autonomy and competence, and undermined when autonomy and competence are threatened (Deci & Ryan, 2000). The influence of social-contextual factors depends on the controlling and informational nature of these factors and their influence on autonomy and competence. For instance, events which lead to the perception that behaviour is influenced externally (i.e., reduces the perception of autonomy) will decrease intrinsic motivation, whereas events that demonstrate an individual's sense of control will increase autonomy (Weiss & Amorose, 2008). Similarly, events that provide positive feedback regarding competence will enhance intrinsic motivation, while information that highlights a lack of competence will negatively influence intrinsic motivation (Weiss & Amorose, 2008). Much of the research into CET has investigated the influence of rewards and their relationship with motivation. CET hypothesises that behaviours in which an individual seeks a reward (e.g., financial or esteem benefits) will be maintained as long as a reward is present, but this behaviour will stop when the reward is removed (Hagger & Chatzisarantis, 2008). This undermining effect of rewards on intrinsic motivation can be reduced where rewards provide competence information to the individual (Moran et al., 2017), although this depends on whether the individual perceives the reward as an indicator of competence or a controlling feature (Weiss & Amorose, 2008).

Amorose and Horn (2000) investigated the applicability of CET in sport settings by exploring the relationship between intrinsic motivation and scholarship status, gender and behaviours. Three hundred and eighty-six United States collegiate athletes representing a

variety of sports completed measures to determine their scholarship status, perceived behaviours of their coaches (i.e., leadership and feedback), intrinsic motivation, and perceptions that their participation in sport was a personal choice. Results demonstrated that participants receiving sport scholarship had significantly higher levels of perceived competence and lower perceived pressure than did athletes not receiving scholarships. Furthermore, athletes with higher levels of intrinsic motivation perceived their coaches to provide feedback frequently and demonstrate leadership qualities reflective of democratic coaching styles. The study was correlational in nature, and it was therefore not possible to determine the directions between variables. For instance, it was not clear whether the democratic coaching style led to intrinsic motivation, or whether intrinsically motivated athletes are more likely to perceive coaches as democratic. Other studies applying CET within sport contexts have also been cross-sectional in nature (e.g., Ferrer-Caja & Weiss, 2000), although some experimental studies found support for some of the central tenets of the theory within team sports (e.g., Fransen et al., 2018). The relationship between perceived democratic coaching styles, including emphasising effort and providing positive feedback, and intrinsic motivation would therefore suggest that coaches play a role in promoting and maintaining intrinsic motivation through positive coaching behaviours.

2.3.4.2.   *Organismic Integration Theory.*

Building on the basic distinction between intrinsic and extrinsic forms of motivation, the second mini-theory of SDT – Organismic Integration Theory (OIT) – relates to the mechanisms through which individuals internalise and integrate externally regulated behaviours (Hagger & Chatzisarantis, 2007). OIT considers the behaviours that humans engage in which are not inherently intrinsically motivating, but which are undertaken owing to extrinsic factors (Ryan & Deci, 2017). Ryan, Connell and Deci (1985) highlighted the process of internalisation in which individuals begin to incorporate the behaviour-specific values and beliefs within their own behavioural systems. All motivationally-relevant behaviours are proposed to vary in their causality (i.e., perceived as being controlled by internal or external factors) and their regulation (i.e., whether the behaviour is initiated internally or externally; Deci & Ryan, 1985, 2000).

OIT (Figure 1) illustrates how motives for a behaviour lie on a self-determination continuum, and each type of motivation suggested by SDT has specific learning, performance and wellbeing consequences (Hein & Hagger, 2007; Ryan & Deci, 2017). Intrinsic

motivation is the most self-determined form of motivation, in which an individual engages in an activity purely for the satisfaction derived from the act of participation. Extrinsic motivations are not focussed on the behaviour itself but on the potential or expected outcomes, such as rewards and social factors (Jõesaar, Hein & Hagger, 2011), and can be further broken down into different regulations. Integrated regulation relates to behaviours that align with an individual's sense of self (e.g., playing sport because it is part of an individual's identity; Weiss & Amorose, 2008). Identified regulation relates to behaving in ways to obtain benefits seen as being valuable by the individual (e.g., participating in sport for health reasons; Ryan & Deci, 2000). Introjected regulation involves behaving in certain ways to protect positive or avoid negative feelings (e.g., playing sport so as to not let others down; Weiss & Amorose, 2008). The external regulation construct is the least self-determined form of extrinsic motivation and involves behaving in certain ways owing to external requirements (e.g., participating in sport to gain rewards or avoid punishments). Amotivation represents a lack of any intention towards a behaviour, and individuals would either not undertake this behaviour or would behave without any desire (Ryan & Deci, 2000).

Type of Motivation	Amotivation	Extrinsic Motivation				Intrinsic Motivation
Type of Regulation	*Non-Regulation*	*External Regulation*	*Introjected Regulation*	*Identified Regulation*	*Integrated Regulation*	*Intrinsic Regulation*
Degree of Autonomy	*Non-Self-Determined*	←			→	*Self-Determined*

Figure 1: Illustration of the self-determination continuum

Along with intrinsic motivation, identified regulation and integrated regulation are autonomous types of extrinsic motivations (Deci & Ryan, 2017) and have been found to have more positive adherence, performance and learning outcomes than the more controlling extrinsic categories introjected and extrinsic regulation (Hagger & Chatzisarantis, 2007). The motives individuals attach to behaviours are often influenced by societal expectations or significant others, and therefore OIT posits that internalisation is more likely when individuals perceive relatedness with others. In addition, perceptions of autonomy and competence are also important for the internalisation of behaviours, although the social context that behaviours occur in is important in ensuring that these needs are met (Hagger & Chatzisarantis, 2007). Autonomy-supportive behaviours from social agents such as coaches, PE teachers and parents have been found to influence internalisation of behaviours and the development and maintenance of intrinsic motivation (Amorose, Anderson-Butcher, Newman, Fraina, & Iachini, 2016; Cheon, Reeve, Lee, & Lee, 2015; Parish & Treasure,

2003; Pelletier, Fortier, Vallerand & Briere, 2001). Within SDT, autonomous motivation, controlled motivation and amotivation are proposed to mediate the relationship between the social context within which behaviour occurs and the performance and wellbeing outcomes associated with the behaviour (Ryan & Deci, 2017). For instance, a systematic review by Li, Wang, Pyun and Kee (2013) of 18 studies and 3549 participants identified that intrinsic motivation, autonomous regulation and amotivation all predicted athlete burnout. Furthermore, a longitudinal study by Stenling, Ivarsson, Hassmen and Lindwall (2017) identified that perceptions of coach controlling behaviour were positively related to athlete-controlled motivation amongst youth elite skiers. The non-correlational nature of these studies strengthens the support for the tenets of OIT, and the role of the social context in internalising motivation.

2.3.4.3. *Basic Needs Theory.*

Basic Needs Theory (BNT; Ryan & Deci, 2000) is a sub-theory of SDT which proposes that motivation derives from the satisfaction of three basic psychological needs: relatedness, competence and autonomy. Relatedness refers to the need to interact with others and feel acceptance in social contexts. Competence refers to the need to generate proficiencies and attain desired outcomes. Autonomy relates to an individual's desire to be the instigator of his or her actions. The need for autonomy can be broken down into three further aspects: perceived choice, internal perceived locus of causality (IPLOC) and volition (Ng, Lonsdale & Hodge, 2011; Reeve, Nix & Hamm, 2003). Reeve et al. (2003) suggested that perceived choice represents an individual's feeling of having flexibility in making decisions; IPLOC represents an individual's perception that his or her actions are controlled by him or her; and volition represents an individual's perception that he or she engages in an activity through willingness and not pressure. Researchers investigating need satisfaction in sport have differentiated these elements of autonomy within their research (e.g., Reinboth & Duda, 2006). Satisfaction of basic psychological needs is proposed to encourage more self-determined forms of motivation (Ryan & Deci, 2000). Relatedness has been found to influence the internalisation of extrinsically motivated behaviours (Deci & Ryan, 2000) such that individuals begin to internalise the goals, values and motives of those with whom they have a positive relationship (e.g., parents, friends).

BNT suggests that autonomy-supportive environments (i.e., environments in which individuals are provided with opportunities to determine their own destinies) can increase

self-determined motivation as a result of satisfying the needs for autonomy, relatedness and competence (Deci & Ryan, 1985). Coaches, parents and peers providing autonomy-support in sporting contexts have been demonstrated to promote intrinsic motivation and lead to positive performance and wellbeing outcomes through cross-sectional (Amorose et al., 2016), experimental (Lemos, Wulf, Lewthwaite, & Chiviacowsky, 2017) and longitudinal studies (Adie, Duda, & Ntoumanis, 2012). For example, Standage and Gillison (2007) reported that the perception by students of their PE teachers providing an autonomy supportive climate was linked with basic need satisfaction. Similarly, Shen, McCaughtry and Martin (2008) found that perceived competence and autonomous motivation fostered in a physical education setting can promote physical activity behaviours in leisure time. Adie et al. (2012) tracked basic psychological need satisfaction and positive psychological well-being of young people participating in a soccer programme during two competitive seasons. They found that need satisfaction and psychological well-being increased during this period, which suggests sport can offer consistent opportunities for personal development. Ntoumanis (2005) reported that PE students who reported high levels of basic need satisfaction were more likely to engage in PE classes that were optional. It has been suggested, though, that the nature of the engagement process, rather than the activity itself, is most important in determining the efficacy of sport and physical activities in developing positive development amongst young people (Sanford et al, 2006; Sandford et al, 2008; Danish et al, 2005). Therefore, the antecedents of basic psychological needs satisfaction within sport, and their subsequent influence on motivation, may be of great interest.

Ntoumanis (2001) examined the role of PE in satisfying basic psychological needs, and the subsequent influence on motivation and intention to exercise in the future using a cross-sectional design. Results suggested that PE environments that offer young people the opportunity to cooperate, improve skills and choose their activities are associated with increased levels of relatedness, competence and autonomy respectively. The results also demonstrated a strong relationship between feelings of competence and intrinsic forms of motivation, though similar relationships were weak and non-existent for relatedness and autonomy respectively. These results could be explained by Deci and Ryan's (1985) suggestion that the influence of each individual need on motivation may depend on the functional significance of the situation (i.e., in certain situations, perceptions of one basic need might be more pertinent and significant and thus have a greater influence on motivation). Therefore, in this PE setting competence may have been the most salient basic psychological need. However, the items used by the researchers to measure relatedness and

autonomy, having been created for the purposes of the study, had not been tested for reliability or validity thus the results linked with these basic needs can be questioned. Nevertheless, the study did demonstrate that perceived competence and subsequent autonomous motivation positively predicted intention to participate in sport after graduating from school. Creating environments that support basic psychological need satisfaction appears to be central to the use of sport as a behaviour engagement tool with young people. Much of the research relating to the role of basic psychological needs in sport have, though, been conducted in young athletes in school, further or higher education level, and further research may wish to consider psychological needs across developmental stages.

2.3.4.4.   Causality Orientations Theory.

Where CET and OIT consider how intrinsic motivation is influenced by social and contextual factors, Causality Orientations Theory (COT; Deci & Ryan, 1985) considers how these factors might result in individuals having different orientations about their environments (Deci & Ryan, 2017). Deci and Ryan (1985) described three general causality orientations: autonomy orientation, controlled orientation, and impersonal orientation. These orientations are motivational and are proposed to mediate how individuals interpret and interact with their environment (Ryan & Deci, 2002), and each orientation is predicted to have specific antecedents and consequences. Individuals who are autonomy orientated behave in line with their personal values and interests and seek out experiences that are informational and challenging (Vansteenkiste et al., 2010). Those with a controlling orientation are by contrast proposed to behave in response to the self- or other-influenced pressures or contingencies (Deci & Ryan, 2017) rather than for their own interests. Individuals displaying an impersonal orientation reflect the dispositional manifestation of amotivation in which individuals perceive the environment, and their behaviour within it, as being out of their control resulting in experiences of helplessness and passivity (Deci & Ryan, 2017).

The three general causality orientations are posited to have different health and wellbeing outcomes. For instance, Hagger and Chatzisarantis (2011) investigated the influence of causality orientation on the association between intrinsic motivation and rewards. The researchers assigned 80 student participants to either autonomy- or control-orientation groups which reflected their causality orientation as measured by the General Causality Orientations Scale (GCOS; Deci & Ryan, 1985). Participants then completed a

puzzle under a randomly assigned condition (i.e., reward or no reward). Free time spent solving the puzzle when no longer required determined intrinsic motivation levels. Autonomy-orientated participants spent significantly longer voluntarily completing the puzzle than control-orientated participants. An interaction showed control-orientated participants in the reward condition spent significantly less time completing the puzzle than control-orientated participants in the non-reward condition, but there was no significant difference identified for the autonomy-orientated participants in the two conditions. The results suggested that autonomy-orientation moderates, and therefore may buffer against, the effect of rewards on intrinsic motivation.

Although COT considers individual differences in intrapersonal motivation orientations, it is a valuable theory in the context of interpersonal interactions and interactions between individuals and the environment. Deci and Ryan (1985) proposed that individuals are not solely one orientation or another but rather differ in their relative levels of autonomy-, controlled- and impersonal-orientation. These relative orientation levels therefore contribute to individuals having a propensity to react to specific environments in ways that represent each orientation to greater or less degrees (Deci & Ryan, 2017). The individual differences in causality orientation results in some individuals acting contrary to the dominant environmental motivational context (e.g., acting autonomously in a controlling environment, or responding with amotivation in an autonomy-supportive environment). The interaction between causality orientations and the motivational environment also has implications for interpersonal interactions, with autonomy-orientated individuals proposed to interact with others in a more open and tolerant manner than control-orientated individuals (Hodgins and Knee, 2002). In addition, development acts as an antecedent and outcome of causality orientations. For instance, children who have been provided with autonomy-supportive environments during childhood are more likely to develop a strong autonomy orientation (i.e., an outcome). The motivational environments created by important social agents (e.g., parents, teachers) will, therefore, influence an individual's causality orientation and, by extension, their future motivational development and interpretation of environments (Deci & Ryan, 2017). Research has also considered the motivational orientation of social agents within the physical domain. For instance, Van den Berghe et al. (2013) investigated the influence of autonomous and controlling motivational orientations amongst PE teachers in 79 PE classes. Despite being a cross-sectional study, the researchers identified that those PE teachers who had controlling orientations were more likely to thwart pupil needs, be more controlling, and use less need-supportive strategies. Whilst the cross-sectional nature of the

study does not allow for causation to be determine, consideration of the role of motivational orientations from the perspective of a social agent emphasises the importance of considering their motivational roles.

2.3.4.5.   *Goal Contents Theory (GCT).*

The fifth SDT mini-theory, goal contents theory (GCT; Kasser & Ryan, 1996), considers the association between the goals individuals set and related outcomes such as motivation, need satisfaction and psychological health and wellbeing. GCT distinguishes between intrinsic goals (e.g., goals related to growth, knowledge, relationships, etc.) and extrinsic goals (e.g., rewards, financial, status), with these different types of goals leading to different outcomes. For instance, GCT proposes that where individuals favour extrinsic over intrinsic goals their wellbeing will be lower, whereas intrinsic goals being favoured over extrinsic goals will lead to enhanced wellbeing. The relationship between goals and wellbeing is also proposed to be mediated by the satisfaction (intrinsic goals) or undermining (extrinsic goals) of basic psychological needs (Deci & Ryan, 2017).

Studies investigating GCT have considered the interpersonal factors influencing, and being influenced by, the types of goals individuals set. For example, individuals may be inclined to set intrinsic or extrinsic goals when the context they are exposed to either supports or thwarts basic psychological needs (Vansteenkiste et al., 2010). Furthermore, the type of goals individuals set might mediate their relationships with others. Specifically, those who set extrinsic goals have been found to perceive close relationships more negatively than those with intrinsic goals and aspirations (Kasser and Ryan, 1996), possibly leading to conflict and mistrust in relationships. GCT also proposes that individuals whose basic psychological needs are thwarted, perhaps by social-contextual influences, are more likely to adopt extrinsic goals, resulting in negative wellbeing outcomes (Deci & Ryan, 2017). In contrast, social influences can encourage individuals to adopt intrinsic rather than extrinsic goals, which can lead to higher levels of self-esteem, and the relationship between intrinsic goals and self-esteem was mediated by basic need satisfaction (Deci & Ryan, 2017). The goals that individuals set, therefore, have an influence on psychological health and wellbeing, and understanding the socio-cultural context in which individuals develop their goals may allow for interventions aimed at promoting positive rather than negative goal types.

2.3.4.6.   Relationships Motivation Theory.

Relationships motivation theory (RMT) is the sixth mini-theory of SDT and relates to the motivational characteristics and outcomes of relationships with others. RMT posits that relatedness as a basic psychological need is intrinsic such that participants seek out relationships with others for the value of that relationship (Deci & Ryan, 2017). Relationships with others, particularly with those closest to an individual (e.g., family, friends, spouse) can satisfy the basic need for relatedness when the agents in the relationship are engaged in that relationship for autonomous (e.g., not for personal gain) rather than extrinsic (e.g., status) reasons and lead to positive wellbeing outcomes for individuals involved in a relationship dyad. Furthermore, RMT proposes that relationships that facilitate satisfaction of all three basic psychological needs (i.e., relatedness, competence and autonomy) further promote wellbeing and satisfaction with that relationship (Deci & Ryan, 2017). On the other hand, relationships that thwart basic needs result in poor quality relationships and negative wellbeing outcomes. Regarding social agents, RMT also considers the notion of conditional regard, in which the social context promotes satisfaction of one psychological need at the expense of others. For example, a friend who will only be a friend (i.e., offering relatedness) if one agrees to do whichever activities the friend wants to do (i.e., relinquishing autonomy) will result in poorer quality relationships and poorer wellbeing outcomes (Deci & Ryan, 2017).

2.3.4.7.   Bringing the SDT Mini-Theories Together.

The six mini-theories that make up SDT provide a theoretical framework with which to understand and explore individual motivation (CET). This framework includes the internalisation of externally influenced behaviours (OIT), the basic psychological needs which promote intrinsic forms of motivation and wellbeing (BNT), the motivational traits that influence interpretation and engagement with different environments (COT), the goals that individuals set (GCT), and the importance of relationships (RMT). Common across each mini-theory is the influence of the social context or environment on motivation, the internalisation of behaviours, the development of motivational orientations, the setting of goals, and the quality of relationships.

Vallerand (1997) and Vallerand and Ratelle (2002) proposed the Hierarchical Model of Intrinsic and Extrinsic Motivation (HMIEM) which integrated SDT research at three levels

of generality. The HMIEM incorporates five proposals regarding the antecedents, outcomes and structure of intrinsic and extrinsic motivation as well as amotivation. First, the model considers the need for consideration of, and distinguishing between, intrinsic motivation, extrinsic motivation and amotivation to fully understand motivational processes. Second, these three types of motivation are proposed to exist in a multidimensional manner at a global, contextual and situational level. The global level relates to an individual's motivational orientation, similar to that outlined by COT whereby an individual's goal orientation predisposes them to a specific motivation in certain environments. The contextual level relates to the way in which an individual is motivationally orientated within specific contexts, such as their job, sport, education, and so on. An individual's contextual motivation predisposes them to a specific type of motivation in that typical context but not in others (e.g., an athlete who is intrinsically motivated to take part in sport but not as a student at university). The situational level of motivation relates to an individual's motivation when engaging in a specific activity and in that specific moment, whereby motivation is experienced in a state-like fashion, and has been identified in a multi-wave, multi-cohort study amongst adolescent sport participants (Bioche, Sarrazin & Chanal, 2015).

The third postulate of the HMIEM is that an individual's motivation is determined by a) social factors, b) the influences of social factors are mediated by an individual's perception of basic psychological need satisfaction, and c) the influence of a more general motivation level (i.e., a higher level as proposed by the model). With regards to social factors, Vallerand (2007) proposed that these were also related to the level of motivation. For example, situational factors relate to influences experienced at a given moment in time (e.g., encouragement from a peer during a football match), contextual factors reflect influences that are routinely present within specific situations (e.g., autonomy-supportive coaching behaviours), and global factors reflect influences across different life domains (e.g., parents, who have an influence across multiple life domains). The mediation of these social factors by perceptions of basic needs satisfaction incorporates the predictions of CET, such that global, situational and contextual factors are proposed to lead to more autonomous forms of motivation when an individual perceives these psychological needs to be met. Motivation at each level is also predicted to be influenced by motivation at a higher level, and motivation at a lower level can therefore be predicted on an intrapersonal level (Deci & Ryan, 2017).

Whilst the third proposal of the HMIEM suggests a top-down influence of motivation levels, the fourth proposition suggests that lower levels of motivation can over time influence

higher levels. For example, being intrinsically motivated when practicing a specific sporting skill (i.e., situational level) may lead to increases in intrinsic motivation to participate in a sport (i.e., contextual level), which may in turn influence an individual's global motivation (Deci & Ryan, 2017). Therefore, social factors have the ability to influence motivation across all levels of generality from a top-down and bottom-up perspective. The final proposals for Vallerand's (2007) HMIEM relate to the behavioural, cognitive and affective outcomes of motivation. First, positive outcomes (e.g., performance, wellbeing) are predicted to decrease as an individual's motivation moves from intrinsic to extrinsic motivational types. Second, the outcomes of motivation happen at the same level of generality as the motivation that causes them. For instance, an individual intrinsically motivated towards a sporting skill (i.e., situational level motivation) will experience positive outcomes within that situation (e.g., concentration, enjoyment, performance).

The HMIEM proposes a hierarchical model for the understanding of motivation which has been extensively applied in sport and integrates many elements from the SDT mini-theories. Crucially, it delineates between interpersonal and intrapersonal influences on motivation across different levels of generality and can be used to predict and explain individual differences in motivation and changes in motivation over time.

2.3.5. Achievement Goal Theory.

In contrast to the organismic SDT, Achievement Goal Theory (Nicholls, 1984) is a social-cognitive theory which assumes that individuals are rational, deliberate and goal directed (Roberts, 2012). A large volume of motivational research in sport has applied the tenets of AGT theory (Keegan et al., 2014b). AGT proposes that to understand an individual's motivation one must first understand the purpose and significance of the achievement behaviour to the individual, and the goal of any action. Individuals assign meaning to their behaviours based on their goals, and once adopted the behaviour goal will influence the thoughts, beliefs, behaviours and level of engagement (Roberts, 2012). Specifically, AGT specifies the kinds of goals individuals will have for behaviours, and highlights that there may be multiple goals for action (Maehr & Braskamp, 1986) and that these goals will dictate the amount of effort, time, and talent invested by an individual in an activity (Roberts, 2012). Developing and demonstrating competence, and avoiding demonstrations of incompetence, is therefore assumed to be the overarching aim of action and behaviour (Nicholls, 1984).

Nicholls (1984) argued that there are two types of conceptions of ability in achievement contexts. Individuals with an undifferentiated concept of ability do not differentiate between effort and ability, either because of they are incapable of doing so (e.g., young children) or they simply choose not to. Individuals with a differentiated concept of ability on the other hand do differentiate between ability and effort. Individuals with an undifferentiated view of ability will become 'task-involved', in which the goal of behaviour is to develop and improve skills and learn new things and ability is demonstrated by self-referenced improvements. In contrast, individuals with a differentiated view will be 'ego-involved', in which the goal of action is to demonstrate their ability in reference to others and, in particular, to outperform others. For ego-involved individuals, ability is demonstrated in reference to others, and exceeding the performance of others is seen as success, especially in circumstances in which they have had to use less energy (Nicholls, 1984; Roberts, 2012).

AGT (Nicholls, 1984) explains motivation and behaviour through the concepts of goal orientation and motivational climate. The theory assumes that individuals, in-line with their personal theory of achievement, are inclined to act in either an ego- or task-involved manner. Individual differences in this goal orientation may be the product of socialisation in important achievement contexts (e.g., home, school, physical activity settings, etc.). In proposing the concepts of motivational climates, (Ames, 1992) attempted to ensure that these reflected the perceptions of individuals within climates, such that it is possible for an individual to be in an ego climate yet maintain a mastery orientation. Motivational climate refers to the situational determinants of task and ego involvement which are influenced or created by others acting in that situation (e.g., parents, coaches, teachers). Specifically, the context within which an individual undertakes action can have task or ego criteria, and the individual will take on adaptive behaviours (e.g., hard work, persistence, seeking challenges, etc.) in the climate they feel most comfortable (Nicholls, 1984; Roberts, 2012). The motivational climate has been shown to be positively related to individual achievement goals, such that those who perceive climates as being task-involving tend to also be mastery-orientated, and those who perceive climates as being ego-involved tend to be ego-orientated (Roberts, 2012). Perceptions of the motivational climate are proposed to relate to cognitive, behavioural and affective outcomes. For instance, Harwood et al. (2015) conducted a systematic review of 104 studies that investigated motivational climates and their intrapersonal correlates and identified that perceptions of mastery climates were related to

positive outcomes (e.g., perceptions of competence, self-esteem) whereas perceptions of ego climates led to negative outcomes (e.g., amotivation, negative affect).

Elliot (1999) sought to expand the dichotomous distinction between task and ego orientations by considering that motivation can be either approach or avoidance (Atkinson, 1964, 1974). Elliot (1999) proposed a 2x2 achievement goal model (Figure 2) which included mastery and performance goals that were approach focussed (i.e., individual focussed on demonstrating competence) and avoidance focussed (i.e., individual focussed on avoiding incompetence). The 2x2 framework therefore led to four distinct goal types: mastery-approach, mastery-avoidance, performance-approach and performance-avoidance. Elliot, Murayama and Pekrun (2011) further expanded their goal theory to become the 3x2 achievement goal framework by considering intra- and inter-personal goals for behaviour. The subsequent framework, therefore, considered six distinct goal types: task-approach goal (i.e., mastering a task), task-avoidance goals (i.e., trying to not incorrectly execute a task), self-approach goals (i.e., doing better on a task than before), self-avoidance goals (i.e., avoiding being worse on a task than before), other-approach goals (i.e., doing better than others), and other-avoidance goals (i.e., avoiding being worse than others).

AGT has been used extensively to investigate motivation in sport and physical activity settings, including those involving young people (e.g., Bartoli, Bertollo and Robazza, 2009; Cumming, Smith, Smoll, Standage, & Grossbard, 2008; Duda & Ntoumanis, 2003; Hanrahan & Cerin, 2009; Papaioannou, Ampatzoglou, Kalogiannis, & Sagovits, 2008; Sit & Lindner, 2005; Stuntz & Weiss, 2009). Bartoli et al. (2009) investigated the role of dispositional goal orientations and motivational climate on psychobiosocial (i.e., emotion, cognition, communication, etc.) outcomes within youth sports. 473 athletes aged 13-14 completed questionnaires, with results indicating that task-orientations and mastery-involved climates were positively related to most psychobiosocial elements, although the design was correlational and therefore causality could not be determined. Papaioannou et al. (2008) investigated the role of parents, coaches and best friends in creating motivational climates amongst youth athletes, and the subsequent effect of these climates on achievement goals, sport satisfaction and academic achievement. Mastery climates were found to positively correlate with satisfaction and, to a lesser extent, with academic performance, whereas performance related goals had a negative relationship with satisfaction and academic performance. Much of the research into to the social influences in AGT mentioned above has

considered youth sport populations, and further consideration is required to the AGT postulates across developmental stages and contexts.

		Definition of Competence	
		Mastery (Self-Referenced)	Performance (Normative)
Valence of Competence	Approaching Competence	Mastery-approach Goals	Performance-approach Goals
	Avoiding Competence	Mastery-avoidance Goals	Performance-avoidance goals

Figure 2: Elliot & McGregor (2002) 2x2 Achievement Goal Framework

Motivational climates created by different social agents in sport and physical activity settings have been explored by many researchers in relation to positive and negative consequences (e.g., Cumming, Smoll, Smith, & Grossbard, 2007; Curran, Hill, Hall, & Jowett, 2015; Hogue, Fry, & Fry, 2017; Olympiou, Jowett, & Duda, 2008; Smith, Smoll, & Cumming, 2007; Zourbanos et al., 2015). For instance, García-Calvo et al. (2014) conducted a longitudinal study investigating the long-term influence of coach- and peer-created motivational climates on team cohesion and athlete satisfaction. Three hundred and seventy seven players from 20 third division Spanish football clubs completed measures of perceived coach motivational climate, perceived peer motivational climate, group cohesion, and participation satisfaction at three points during a competitive season. Group cohesion was found to be positively predicted by coach- and peer-created task motivational climates, and negatively predicted by coach- and peer-created ego motivational climates, although only coach-created climates predicated sport satisfaction. An interaction effect was also identified between coach- and peer-created motivational climates suggesting that these climates may not act independently but may have a combined or overlapping effect on athlete motivation. Although longitudinal, the study was still correlational and, therefore, causation cannot be determined (e.g., whilst the climates were related, it is unclear whether one climate influenced the creation and maintenance of the other). Furthermore, the findings are limited to one sport, and may not be applicable in other sports or sporting types (e.g., individual sports).

In a systematic review of 104 studies investigating the intrapersonal correlates of perceived motivational climates within sport and physical activity, Harwood et al. (2015) identified a wide range of positive and negative outcomes. Specifically, results indicated that perceived mastery climates were associated with many positive and adaptive behavioural,

cognitive and affective outcomes such as psychological need satisfaction, effective training strategies, and objectively measured performances, whilst being negatively associated with maladaptive outcomes such as negative emotions, as well as poor training and competition strategies. Perceived ego/competitive motivational climates were conversely negatively related to the previously mentioned adaptive outcomes, and positively related to maladaptive outcomes. However, contrary to some research, the review also identified a small positive relationship between perceived ego/competitive motivational climates and some adaptive outcomes such as autonomy and relatedness. A perceived task/mastery climate was associated with more outcomes (24) and some relationships demonstrated large effect sizes, whereas there were fewer (15) correlates of an ego/competitive climate and with no large effect sizes, suggesting that the influence of ego-competitive motivational climates are either not as strong or are perhaps moderated by other factors (Harwood et al., 2015).

Researchers have sought to expand AGT to consider the social goals that individuals set. Allen (2003, 2005) proposed a social motivation framework which extended the tenets of AGT to consider the simultaneous pursuit of competence/mastery goals and social goals within achievement contexts (Urdan & Maehr, 1995). Studies have demonstrated moderate relationships between goals for social affiliation and interest and enjoyment in sport (Allen, 2005; Sage & Kavussanu, 2010). The nature of social goals may mean that interactions with peers play an important role in assisting athletes to achieve their social goals, yet the research into social goals is equivocal at the moment. For instance, studies have shown that only goals related to social status predicted effort in sporting contexts (e.g., Garn, Ware & Solomon, 2011), whereas Garn et al. (2011) identified a strong relationship between social recognition goals and effort but no significant relationship between social status and effort. Garn and Wallhead (2013) conducted a longitudinal study investigating the relationship between social gaols and basic needs satisfaction amongst a cohort of 287 high school students and identified that social facilitation goals were related to perceptions of relatedness, and goals related to social recognition were related to perceptions of competence. Despite there appearing to be support for social motivation within sporting contexts, many of the studies in this area have relied on cross-sectional and correlational study designs within school children, reducing the insight into how social motivation may change over time or between different age groups. The fact that social motivation and basic needs appear to be related, however, both highlights a relationship between SDT and AGT but also suggests that neither fully explain the social-motivational context.

2.3.6. Comparing SDT and AGT.

Although organismic theories, such as SDT (Deci & Ryan, 1985), have been experiencing a resurgence within motivation research in recent years, social-cognitive approaches have been dominant within the sport and exercise psychology literature for the last 35 years with AGT (Nicholls, 1984) being the most popular and researched (e.g., Duda & Whitehead, 1998; Harwood, Spray & Keegan, 2008). Harwood et al. (2008) state that AGT has *"...triggered a penetrating wave of research into the personal and environmental influences on athlete behaviour in achievement settings"* (p. 158). Although these two approaches have been extensively researched, it is still unclear from the literature whether AGT or SDT better explain the determinants and outcomes of motivation in sport and physical activity.

AGT and SDT have been used to explore youth engagement and personal development in sport and physical activity settings (Adie et al, 2012; Ntoumanis, 2005, 2012; Roberts, 2012; Treasure & Roberts, 2001), with similar areas of interest. For instance, using an SDT approach it has been proposed that basic psychological needs can be satisfied in physical education settings in which young people are provided opportunities for working together, improving their skills and making choices (Ntoumanis, 2012). Similarly, AGT-based research has suggested that in PE and sport settings the creation of a mastery climate is important in promoting positive responses (e.g., sportsmanship, persistence, perseverance, etc.) and protecting against negative responses (e.g., overtraining, self-handicapping; Kuczka & Treasure, 2005; Standage, Duda, & Ntoumanis, 2003).

During early research into AGT, the concept of social orientation (Maehr & Nicholls, 1980) was promoted in which individuals determine their success or failure in a task with reference to their relationships with others. Stuntz and Weiss (2009) investigated social orientation and motivational outcomes in a youth sport setting by assessing 303 teenagers' orientations, enjoyment, competence and motivation. Results indicated that individuals with high levels of task, social and ego goal orientation, as well as those with high social and low ego goal orientation, demonstrated higher perceived competence, enjoyment and intrinsic motivation. This social orientation element of AGT may be similar to the notion of relatedness within SDT, and the findings of Stuntz and Weiss (2009) suggest that individuals might consider more types of success that are intrinsic.

Similarly, the GCT suggests that needs satisfaction can encourage a shift from the pursuit of extrinsic to intrinsic goals (Vansteenkiste et al, 2010). Intrinsic goals include those related to personal growth, contributions to the community, and physical health and wellbeing. Extrinsic goals include those related to wealth, fame and image. It has been suggested that intrinsic goals can encourage an inward orientation and therefore continued satisfaction of basic psychological needs, whereas extrinsic goals encourage outward orientations focussing on external validation and attainment through comparisons with others, thus reducing need satisfaction (Vansteenkiste et al, 2010). Given the similarity between intrinsic/extrinsic and task/ego goals, this may conceptually suggest a relationship between basic need satisfaction and goal orientation, and by developing a task orientation one would also satisfy basic psychological needs, or by satisfying basic psychological needs one would encourage the development of task-orientation.

Neither AGT nor SDT provide full understanding or explanation of motivational processes within physical activity settings (Moreno, Gonzalez-Cutre, Sicilia & Spray, 2010). Integration of these two perspectives, however, may provide greater insight into motivation in this area (Hagger & Chatzisarantis, 2008). Researchers have drawn from these theories to design and understand findings within youth sport and exercise participation research (e.g., Hein & Hagger, 2007; Keegan et al., 2009; Keegan et al., 2010; Reinboth & Duda, 2006; Standage et al., 2003; Vazou, Ntoumanis, & Duda, 2005). For instance, Keegan et al. (2009) conducted focus groups with 40 7- to 11-year-old athletes from various sports to investigate the influence of coaches, parents and peers on athletic motivation. Although the researchers were predominantly interested in the types and differences in motivational climate created by the three types of 'important other', they found that the motivational climates were similarly related to satisfaction of basic psychological needs. Specifically, coaches and parents were found to create motivational climates which satisfied the need for autonomy (e.g., through utilising collaborative leadership styles), and relatedness (e.g., by facilitating establishment of friendship and groups). The age of participants in this study may have limited the accuracy of the results as some of the younger participants may have had an undifferentiated view of ability, and therefore may not have fully understood some of the questions being asked about the role of parents, coaches and peers on their motivation. Despite these concerns, the results of this study do suggest there is merit in considering an integration of elements of the theories. As has been mentioned previously, however, there is an overreliance on youth sport populations and a lack of clarity in the generalisability of findings across developmental stages and ages.

Although SDT and AGT have been investigated extensively within physical activity, sport and youth settings, there is no clear body of evidence to support the adoption of one approach over the other. Choosing one approach over the other would resonate with Roberts (2012) assertion that many researchers focus on their favoured theories of motivation and neglect to consider the evidence proffered by alternative theories and models. Although SDT and AGT sit on different points along the continuum of motivation theories highlighted by Ford (1992) they have complementary explanations as to the processes that determine human motivation. The theories are concerned with the role of goals, be they intrinsic/extrinsic or task/ego. Similarly, the theories place importance on the role of the motivational climate or environment created by others, be it autonomy supportive or task/ego. Given the volume of evidence outlining the efficacy of the theories in understanding youth sport and physical activity participation in particular, it would be of most benefit to consider elements from the theories, either as theoretical foundations upon which research questions, hypotheses and designs are created, or as ways of exploring and explaining results. What is striking, though, is the overreliance of studies exploring and applying both AGT and SDT to youth sport populations, limiting the generalisability of findings to other age categories and contexts. Furthermore, the fact that neither theory, despite their theorised explanatory power, nor the other theories discussed in this chapter, can explain all facets of motivation in sport, may suggest the need to consider alternative theories and models of the motivational context in sport.

2.4. The Role of Social Agents in Sport Participation

Relationships are a ubiquitous factor within human functioning (Jowett & Lavallee, 2007). Given the importance of the social environment and interpersonal influences on motivation as conceptualised by motivational theories such as SDT and AGT, consideration is worthy of the primary social agents of influence within sport. Studies have explored the wide range of social influences in sport and physical activity settings, such as coaches, parents, peers, PE teachers and sporting heroes (Carr & Weigand, 2002; Gavin, Mcbrearty, & Malo, 2016; Papaioannou et al., 2008; Weigand, Carr, Petherick, & Taylor, 2001). Although sport provides opportunities for a wide range of social agents to influence athlete motivation, a consideration of the breadth of social influences within the present thesis would result in a relatively shallow understanding of the social context of motivation in sport. This thesis, therefore, required a more focussed investigation. Of the relevant social agents in sporting

contexts, coaches, parents and peers are the most consistently identified and researched in relation to most models of motivation within sporting and physical activity contexts due to the large amount of time shared within these contexts (Côté & Erickson, 2016; Horn, 2008). As such, the following sections summarise the general research pertaining to the influence of each of these social agents within sport contexts before moving on to a discussion of the large body of research examining the role of social agents in athlete motivation.

2.4.1. The Role of the Coach.

Given the amount of time that athletes dedicate to their sport (approximately 10,000 hours over ten years to become an elite level athlete; Ericsson & Chaness, 1994), athletes are likely to spend a significant amount of time with coaches during their development (Knowles, Shanmugam & Lorimer, 2015). Coaches are, therefore, an important social agent for athletes within sport, but their influence may extend beyond the sporting context depending on the level of athlete participation (e.g., the contextual level of motivation influencing the global level as outlined in the HMIEM; Vallerand, 1997). Coaches influence athlete participation and development in sport through translation of sport-specific technical and tactical knowledge and development of requisite skills for performance (Lyle, 2007). Coaches also have a leadership role in sport settings. For instance, Vella, Oades, and Crowe (2012) undertook a cross-sectional study with 455 adolescent recreational athletes who played team sports, exploring the influence of coach transformational leadership on positive youth development. They found that the best predictor of athlete development of social, personal, goal setting and initiative skills was the combination of transformational leadership behaviours and perceived positive coach-athlete relationship, highlighting the importance of coaches within the context of team sport. The quality of the interaction between coaches and athletes can mediate the effectiveness of coaches to develop athletes. Relationships are proposed to be formed owing to the social exchanges between partners in that relationship, and individuals commit to relationships for the benefits that they can derive from them (Kelley et al., 1983). Jowett and Poczwardowski (2007) defined the coach-athlete relationship as "*a situation in which a coach and athlete's cognitions, feelings and behaviours are mutually and causally interrelated*" (p.4). Much of the recent research into the role of coaches in sport has considered and examined the coach-athlete relationship (e.g., Antonini Philippe & Seiler, 2006; Davis & Jowett, 2014; Thelwell, Wagstaff, Chapman, & Kenttä, 2016).

Jowett and Poczwardowski (2007) proposed an integrated model of coach-athlete relationships (Figure 3) in an effort to bring together existing theories and propose a framework for further research, which included proposed antecedents, qualities and outcomes. Antecedents of the coach-athlete relationship included the coach's and athlete's individual differences (e.g. age, gender, experience), the sporting context (e.g., level of competition) and the relationship characteristics (e.g., duration of relationship). These antecedents are proposed to influence the quality of different dimensions of the coach-athlete relationship, such as coach and athlete emotions, thoughts and behaviours within the relationship. Outcomes of the coach-athlete relationship include intrapersonal (e.g., levels of satisfaction, performance), interpersonal (e.g., relationship stability, conflict) and group outcomes (e.g., team cohesion, team performance). Although an attempt to simplify and structure subsequent research, this model indicates the complexity involved within the coach-athlete relationship, and the difficulties in accurately investigating such relationships and their outcomes.

Coach & Athlete		
Individual Difference Characteristics	Wider Social-Cultural-Sport Context	Relationship Characteristics

Interpersonal Communication

Coach and Athlete's		
Feelings	Thoughts	Behaviours

Interpersonal Communication

Coach and Athlete's		
Intrapersonal Outcomes	Interpersonal Outcomes	Group Outcomes

Figure 3: Jowett & Poczwardowski (2008) Integrated Model of Coach-Athlete Relationships

The most widely applied model of the coach-athlete relationship is the 3+1C model (Jowett, 2007), which conceptualises the relationship as comprising four elements: closeness, complementarity, commitment and co-orientation. Closeness reflects the emotional qualities associated with the coach-athlete relationship, including the amount of mutual liking and trust within the relationship. Complementarity is the behavioural element of the relationship and reflects the level of cooperation between the athlete and coach, and the degree to which their respective behaviours within the relationship are reciprocal (e.g., mutual effort levels during

training). The commitment construct reflects the cognitive qualities of the relationship and describes the perceptions of the coach and athlete regarding their dedication to that relationship in the long term. Finally, the co-orientation dimension of the coach-athlete relationship reflects the amount of agreement in perspective regarding the quality of the coach athlete relationship (Jowett, 2007), with the level of similarity in perspectives indicating higher levels of interdependence within the coach-athlete relationship (Jowett & Poczwardowski, 2008).

Jowett's (2007) 3+1C model has been used as a framework to investigate the antecedents, quality and outcomes of the coach-athlete relationship. For instance, effective coach-athlete relationships have been linked to satisfaction amongst coaches and athletes (Davis, Jowett, & Lafrenière, 2013; Lorimer & Jowett, 2009), and athlete performance (e.g., Jowett, 2009). On the other hand, low levels of closeness, complementarity, commitment and/or co-orientation have been related to interpersonal conflict (Jowett, 2007). Mediating factors regarding the quality of the coach-athlete relationship include length of relationship, with athletes in an established relationship (i.e., over 3 years in length) reporting higher levels of relationship quality and competence than those in less well-established relationships (Jowett, 2008). In addition, athletes who participate in individual sports report higher levels of satisfaction in the relationship with their coach than those in team sports (Rhind, Jowett & Yang, 2012).

2.4.1.1. *Coach Influences on Athlete Motivation.*

In addition to the above-mentioned dimensions of the coach-athlete relationship, coach influence in the development and maintenance of athlete motivation has been of great interest to researchers in sport. Coaches are important social influencers in the sporting context and coach motivational influences have been shown to be consistent across cultures (e.g., Alfermann, Geisler, & Okade, 2013) and between different contexts such as working with underserved young people (e.g., Gould, Flett, & Lauer, 2012). In relation to competence motivation theory, coaches are proposed to play a significant role in athletes' perceptions of competence motivation through their feedback and reinforcing responses to performance (Weiss & Amorose, 2008). Studies have shown a relationship between athlete competence motivation and coach praise and/or criticism, and this relationship is positive where coaches provide information about how to improve performances alongside their feedback (Black & Weiss, 1992; Horn, 1985; Allen & Howe, 1998).

Various studies have demonstrated the importance of coaches in supporting athletes' need for autonomy (e.g., Adie et al., 2012; Cheon et al., 2015). Adie et al. (2012), for example, investigated basic psychological need satisfaction and positive psychological well-being of adolescent footballers across two competitive seasons. Using a range of measures, they tracked perceived coach autonomy support, basic psychological need satisfaction, and well/ill-being outcomes amongst 91 male adolescent footballs players. Despite the study being correlational and limited to youth male soccer participants, Adie et al. (2012) identified that need satisfaction and psychological well-being were predicted by player perceptions that the coach provided autonomy support. Similarly, Cheon et al. (2015) explored the role of autonomy-supportive coaching behaviours within elite Paralympic sport over 12 weeks leading up to the London 2012 Paralympic Games. The researchers assigned coaches and athletes to an experimental or control group, with coaches in the experimental group receiving a multi-part autonomy support training programme. Following the training programme, the control group perceived the coaches as negative and controlling, whereas those in the experimental group perceived coaches as being more autonomy supportive. Furthermore, the athletes coached by those in the experimental group did not experience a deterioration in motivational levels or engagement with training as was seen in the control group. In addition, athletes coached by those who had undertaken the autonomy-supportive training had greater medal success during the Paralympics. The experimental nature of Cheon et al.'s (2015) study, as well as the objective measures of success (i.e., winning medals) suggests that coach-support for autonomy can lead to positive outcomes at elite level amongst adult athletes.

In addition to autonomy-supportive coaching behaviours, research into motivational processes in sport has also considered the role of perceived coach-created motivational climate. Research has indicated that this perceived motivational climate influences various outcomes including cohesion (e.g., Eys et al., 2013; Mclaren, Eys, & Murray, 2015), mental toughness (e.g., Nicholls, Morley, & Perry, 2016) and anxiety (e.g., Smith et al., 2007). Researchers have investigated interventions aimed at assisting coaches in providing mastery climates in sport, applying Epstein's (1989) six-factor approach which consists of the task, authority, recognition, grouping, evaluation and time (i.e., TARGET) developed in education. For instance, Hassan and Morgan (2015) investigated the effectiveness of an intervention based on the TARGET approach aimed at enabling four coaches to create optimal motivation climates in sport when coaching their collective 43 student-athletes. The coaches undertook a

programme of training using the TARGET approach, and their coaching sessions were then observed using a measurement process based on identifying TARGET (i.e., mastery climate supporting) behaviours. The researchers also measured athletes' pre- and post-intervention perceived motivational climate and perceptions of success. Although they did not test for significant differences between observed mastery-climate supporting behaviours, Hassan and Morgan (2015) identified an increase in the percentage of coaching behaviours that applied TARGET principles following the intervention. In addition, athletes perceived the climate created by the coach to be significantly less ego-orientated and more mastery orientated post-intervention compared with pre-intervention. Whilst this study involved a small sample size and was limited to student-age athletes, the results do suggest that coaches are able to adapt their coaching behaviour to become more mastery-orientated, and athletes are influenced by such changes in motivational climate.

The precise mechanism through which coaches influence athlete motivation has been investigated about the coach-athlete relationship. For instance, Olympiou et al. (2008) investigated the relationship between motivational climate and coach-athlete relationship amongst 591 athletes who participated in team sports. The cross-sectional study explored associations between elements of the motivational climate and coach-athlete relationship through canonical correlation analysis and identified that there was a relationship between the perceived coach-created motivational climate and direct and indirect coach-athlete relationship. Specifically, perceptions of a task-involved climate were positively related to perceptions of closeness, complementarity and commitment within the coach-athlete relationship. Olympiou et al.'s (2008) study was, however, cross-sectional and therefore inferences regarding causality are not possible. Furthermore, the sample was not equally representative of different types of sport (e.g., open vs. closed) and participants completed questionnaires at different points in their respective seasons. Given the dynamic nature of perceptions of coach-athlete relationships and motivational climates, more longitudinal research including a more representative sample is required to provide further insight into the direction and consistency of any interaction between coach-athlete relationship and perceived motivational climate.

Based on CET (Deci & Ryan, 1985) and the HMIEM (Vallerand, 1997, 2007), Mageau and Vallerand (2003) proposed a sequential motivational model of the coach-athlete relationship. Within this model, a coach's orientation toward coaching, the context within which they coach, and their perceptions of athlete behaviour and motivation, are all proposed

to influence their behaviours in coaching. These coaching behaviours are then proposed to manifest as autonomy-supportive behaviours, provision of structure, and involvement which in turn influences athletes' satisfaction of autonomy, relatedness and competence. Satisfaction of these psychological needs is then linked to athlete's intrinsic and extrinsic motivation.

Riley and Smith (2011) expanded upon Mageau and Vallerand's (2003) model by investigating the model's predication that athlete basic need satisfaction mediated the relationship between the coach-athlete relationship and athlete intrinsic motivation. Contextualising the coach-athlete relationship in line with the 3+1C model (Jowett, 2007) rather than simply autonomy-related behaviours, Riley and Smith identified that basic need satisfaction partially mediated the relationship between coach-athlete relationship and athlete intrinsic motivation amongst 211 youth athletes. The cross-sectional nature of this study again limits causality and does not include the temporal and dynamic nature of coach-athlete relationships and motivation levels, yet the results do indicate that within youth sport athlete perceptions of closeness, complementarity and commitment with their coach may lead to more self-determined forms of motivation by providing them with opportunities to partially satisfy their basic psychological needs within a sporting setting.

Building on the findings of Riley and Smith (2011) and other research demonstrating how perceptions of the coach-athlete relationship might predict basic need satisfaction and wellbeing amongst athletes (e.g., Felton & Jowett, 2013, 2017), Jowett et al. (2017) investigated an expanded motivational coach-athlete relationship model and tested its relevance across cultures. Grounded in SDT and building on the HMIEM (Vallerand, 2007), the study used structural equation modelling to test a theoretical model of coach-athlete relationship and motivational outcomes. Results indicated that the proposed model fit the data of 756 adult athletes from five countries, and specifically that athlete basic need satisfaction was predicted by perceived quality of their relationship with their coach. Need satisfaction also predicted athlete intrinsic motivation and wellbeing, and this model was applicable across the five cultures tested (i.e., British, Greek, Chinese, Spanish and Swedish). Despite using more complex statistics to determine the relationships between variables within this study, the study itself was again cross-sectional, and the theoretical model of coach-athlete relationship would benefit from further testing through longitudinal research to determine whether the predictive qualities of perceive coach-athlete relationships for motivational outcomes persist or vary across time.

Research on the role of coaches on athlete motivation highlights the importance coaches have in creating optimal motivational climates for athletes whilst also satisfying important basic psychological needs through provision of autonomy support and quality coach-athlete relationships. The wealth of literature exploring the motivational role of coaches suggests they have a multidimensional and dynamic role within athlete development and performance, but that such influence is not exerted within a socio-contextual vacuum. Indeed, there is a need to further understand the role that other significant social agents may have on athlete motivation.

2.4.2. The Role of Parents.

Parents are proposed to be integral to their children's initiation and development in sport (Partridge, Brustad & Stellino, 2008), and have been suggested to mediate their children's continued involvement (Bailey, Cope, & Pearce, 2013). Despite parental involvement in sport being a complex, multifaceted and dynamic area of investigation (Harwood, 2016; Knight, Berrow & Harwood, 2016), the role of parents in sport has become an increasingly researched area in recent years (Holt & Knight, 2014). Recent studies have identified that parents are influential in their children's socialisation in sport (Dorsch, Smith, & McDonough, 2015), enjoyment of sport (McCarthy, Jones, & Clark-Carter, 2008; McCarthy & Jones, 2007), experience of perfectionism (Appleton, Hall & Hill, 2010), anxiety in sport (Bois, Lalanne, & Delforge, 2009), perceived pressure (Dorsch, Smith, & Dotterer, 2016), and the skills necessary to cope with the demands experienced in sport (Neely, McHugh, Dunn, & Holt, 2017; Tamminen & Holt, 2012).

Systematic reviews have reported the leverage of parents in youth sport. A systematic review of 73 studies investigating social support in youth sport (Sheridan et al., 2014) reported findings for parent social support relating to 467 participants, and identified that parents provided support for athletes' motivation, participation in elite sport, development within sport, physical activity levels, and athlete drop out. Similarly, Gledhill et al. (2017) conducted a systematic review of literature related to the psychosocial influences on talent development within football. This review identified that parents were involved in providing emotional, technical, tangible, informational, and reflective support for athletes, with this support being facilitated through the climate the parents set and their supporting of healthy perfectionist behaviours.

Further studies have explored the role of parents from the athletes' perspective. For example, Knight, Boden and Holt (2010) conducted focus groups with 42 high performance junior tennis players (M_{age} = 13.5 years, SD = 1.2 years) and identified that athletes would prefer encouragement and effort support more than technical and tactical advice during competitions. Knight, Neely and Holt (2011) similarly conducted individual interviews with 36 female athletes and identified preferred positive parent behaviours before (e.g., helping the athlete physically prepare, understanding the mental preparation required for competition), during (e.g., encouraging all team members, focusing on hard work rather than success, being positive during interactions and controlling own emotions) and after competition (e.g., providing positive feedback). Negative parenting behaviours to be avoided included parents drawing attention to themselves or their child and parents coaching their children during performances. Whist the findings of Knight et al. (2010, 2011) provide insight into athletes' preferred parental support during competition, participants in both studies are junior athletes. The influence of parents in sport, and life in general, is proposed to change as individuals develop (Wylleman, Rosier & De Knop, 2016), and therefore models which take into account the role of parents across the spectrum of athlete development may provide further insight and assist parents in providing optimal support throughout their child's involvement in sport.

Building on research regarding athletes' preferred parental support during competition, researchers have provided guidance to optimise parental involvement in sport. Harwood and Knight (2015) reviewed existing literature and proposed six ways in which parents could provide their children with the best support in sport, namely: a) provision of access to activities and social support; b) adoption of appropriate parenting styles; c) understanding of the emotional context of competition and acting as emotional role models; d) maintenance of positive relationships with others in the sporting context; e) management of the demands placed on them within sport; and f) adapting their involvement depending on developmental stage of the athlete. Models of parental involvement in youth sport have been proposed to better understand and optimise the support that parents provide their children. For example, Knight and Holt (2014) proposed a grounded theory of optimal parental involvement in youth tennis. Through semi-structured interviewing, and adopting a Straussian grounded theory methodology, their grounded theory proposed three categories of involvement. First, parents and athletes should share their goals for tennis participation and communicate these during involvement in the sport. Second, parents should endeavour to establish an understanding of the emotional climate within which their child participates in

tennis, including the performance demands and influencing factors within the environment. Third, parents should engage in enabling and enhancing strategies such as meeting their child's needs in the sport, developing their ability to cope with competition and managing their own emotions as parents. This theory is grounded in the experiences of tennis players, parents and coaches and recognises the unique social and contextual nature of the sport and those social agents who function within it. Knight and Holt (2014) applied many of the principles used to ensure quality when adopting grounded theory methodologies such as theoretical sampling, iterative processes of collecting and analysing data (Corbin & Strauss, 2008; Holt & Tamminen, 2010b; Strauss & Corbin, 1998), suggesting that the model developed is appropriately grounded in, and reflective of, the culture and context of parenting in tennis.

2.4.2.1. *Parent Influences on Athlete Motivation.*

Parents are proposed to be a vital source of support for athlete motivation and participation in sport (Weiss & Amorose, 2008). The importance of parents' role in athlete motivation has been identified in the context of positive and negative sporting behaviours (Lavoi & Stellino, 2008; Wagnsson, Stenling, Gustafsson, & Augustsson, 2016), parent feedback (Gershgoren, Tenenbaum, Gershgoren, & Eklund, 2011), confidence (Maree, Marcen, Gimeno, & Mez, 2013) and enjoyment (Sánchez-Miguel, Leo, Sánchez-Oliva, Amado, & García-Calvo, 2013). Parents' reactions to success and failure are proposed to influence children's' perceptions of their own competence (Heyman & Dweck, 1998). Achievement motivation theorists consider that goal orientations amongst children are developed through socialisation experiences, which are proposed to be heavily influenced by parents (Nicholls, 1989; Roberts, 2001).

Competence motivation theory proposes parents to be one of the most important social influences on competence motivation during development (Harter, 1978, 1981). Specifically, they are proposed to provide competence information to their children through a range of methods such as modelling and reinforcement. For example, Brustrad and Weiss (1987) identified that athletes who perceived less performance pressure from parents had higher levels of enjoyment in sporting contexts. Furthermore, Babkes and Weiss (1999) examined the relationship between parent appraisals of their child's competence, children's perceptions of their parents' appraisal of their competence, and children's own self-appraisal of competence amongst youth footballers. Babkes & Weiss (1999) identified that athletes'

perceptions of their parents' competence appraisals mediated the relationship between parent appraisals and athlete self-appraisals, demonstrating that perceptions of parent influence can play an important role within competence motivation in sport.

The expectancy value theory of motivation places parents as important influencers of young athletes' behaviours and beliefs about their ability (Eccles, 2007). The importance of parents was reflected by Eccles et al. (1998) who expanded the expectancy value model to specifically consider the motivational role of parents. According to this expanded theory, parents are proposed to influence their children's' motivation by acting as role models, and providing access to, and interpretation of, relevant beliefs and behaviours within specific domains. This parent-specific model has been used to investigate the relationship between parent beliefs and child motivation in sporting and physical activity contexts. Brustrad (1993, 1996) identified that parents who perceived physical activity as enjoyable were more likely to promote physical activity with their children, which in turn increased their children's perceived competence and motivation towards physical activity.

Lavoi and Stellino (2008) investigated the relationship between parent-created sporting climates and positive and negative sporting behaviours amongst 259 youth hockey players. Participants completed measures of their goal orientation, the perceived parent-initiated motivational climate, their perceptions of their parents' influence on their sport, and their positive and negative sporting behaviours. Results indicated that athletes were more likely to engage in positive sporting behaviours (e.g., graciousness, concern for opponents) when parents provided a positive sporting climate. Two of the subscales used by Lavoi and Stellino (2008), however, did not meet criteria for internal reliability and, therefore, some of the relationships between parent-created climate and sporting behaviours should be considered with caution. In a longitudinal study, Gagné, Ryan and Bargmann (2003) investigated the effect of perceived parental support on need satisfaction, motivation and wellbeing amongst 33 adolescent female gymnasts. Results indicated that parental autonomy support was related to athlete autonomous forms of motivation and attendance at training, although findings also indicated that parent autonomy support also related to more controlled types of motivation. Parental autonomy support may, therefore, influence motivation when not perceived as being pressuring.

2.4.3. The Role of Peers.

Like coaches and parents, athletes spend a significant amount of time with peers within sport contexts (Knowles et al., 2015) and peers may, therefore, influence athlete motivation. Indeed, peer relationships have been found to influence athlete satisfaction (Hoffmann & Loughead, 2015), persistence (Joesaar et al., 2011), and identity development (MacPherson, Kerr, & Stirling, 2016) in sport. Peer relationships, however, differ from those of parents and coaches because peers tend to compete for resources and have an equal standing within the sporting context (Smith, 2007). Peer relationships are proposed to incorporate various dimensions, including acceptance, friendship development, friendship quality and peer victimisation (Partridge et al., 2008), whilst also occurring at different levels of closeness (e.g., peer friendships vs. peer relationships).

Friendships are an important type of peer relationship within sport due to their benefits for psychosocial development (Partridge et al., 2008), and the quality of friendships between peers and teammates has recently been investigated in relation to sport (Boiché, Sarrazin, & Chanal, 2015; Carr, 2009; Moran & Weiss, 2006; Weiss & Smith, 1999; Weiss & Theeboom, 1996). Friendships developed within physical activity contexts have been related to enjoyment and effort (Smith, 1999). To develop and refine definitions of friendship within sport, Weiss, Smith and Theeboom (1996) carried out a qualitative study consisting of interviews with adolescent male and female sport participants. Twelve positive dimensions of friendship were identified, including companionship, pleasant play, enhancement of self-esteem, help and guidance, prosocial behaviour, intimacy, loyalty, things in common, personal qualities that were positive, emotional support, the absence of conflict, and conflict resolution. Negative dimensions of friendship included conflict, inaccessibility, betrayal and unattractive personal qualities.

2.4.3.1. *Peer Influences on Athlete Motivation.*

A wide range of research has been conducted into the role of peers in athlete motivation, much of it framed by AGT and SDT conceptualisations of motivation (Knowles et al., 2015). Peer motivational climate has, for instance, been related to perceptions of burnout in adolescent athletes (Smith, Gustafsson, & Hassmén, 2010), and attachment (Carr, 2009). Peer-influenced mastery climates have been found to be related to positive outcomes for athletes such as fun and commitment to sport (Ullrich-French & Smith, 2009; Weiss &

Smith, 2002). In addition, studies have consistently demonstrated the strong positive relationship between perceived acceptance by peers, peer friendships and competence motivation (e.g., Adler, Kless & Adler, 1992; Kunesh, Hasbrook & Lewthwaite, 1992), and a range of associated positive outcomes such as enjoyment and intrinsic motivation (Smith, 1999; Ullrich-French & Smith, 2006).

Smith et al. (2006) investigated the role of peer relationships in predicting youth sport motivation. Using a cluster-analysis, 243 adolescent participants were grouped into one of five peer-relationship groups based on measures of peer relationship quality, conflict and acceptance: isolate, reject, survive, thrive and alpha. They then compared groups on motivational outcomes including competence, enjoyment, anxiety, self-presentation and self-determined motivation, identifying that those in the adaptive relationship groups (i.e., thrive and alpha) experienced important positive motivational outcomes.

Vazou et al. (2005) conducted a qualitative study into the peer-created motivational climate in youth sport. Using focus groups with adolescent male and female athletes who participated in individual and team sports, the researchers identified 11 dimensions of the peer-created motivational climate in youth sport: cooperation, effort, improvement, mistakes, intra-team competition, intra-team conflict, equal treatment, normative ability, autonomy support, evaluation of competence and relatedness support. Some of these dimensions were found to differ from those identified in adult-created motivational climates, suggesting that investigations into peer-created climate provide a broader and more nuanced understanding of the overall motivational climate that athletes encounter within sport. The findings, however, may only be applicable within youth sport owing to the young participants used within the study. Furthermore, Vazou et al. (2005) adopted an inductive and deductive content analysis approach that was guided by tenets of AGT and research into motivational climates, therefore it is unsurprising that many of the findings supported previous studies regarding motivational climate as researchers were seeking evidence of existing theory within their analysis.

Similarly, Smith, Balaguer and Duda (2006) investigated dispositional achievement goal orientation profiles amongst 223 male youth soccer players. Using cluster analysis, they classified participant goal orientation profiles that yielded four goal orientation groups similar to previous research (Hodge & Petchlikoff, 2000): high ego/low task, low ego/high task, high ego/moderate task and moderate ego/low task. Participants grouped in the low ego/high task

group reported significantly higher levels of peer acceptance, enjoyment and satisfaction, and lower levels of conflict, than those in the high ego/low task group. These results suggest that athletes who have low levels of dispositional task-orientation are less likely to develop effective relationships with peers or benefit from other adaptive outcomes. The cross-sectional nature of this study does not, however, allow causality to be determined.

The role of peers on the athlete motivation factors outlined in the SDT have also been investigated. For instance, Joesaar et al. (2011) investigated the role of peer-created motivational climates on persistence over the course of a year amongst youth team sport participants. Measures of peer-created motivational climate, basic psychological needs satisfaction and intrinsic motivation were taken at the start of the season, and persistence was measured by attendance at training over the course of a year. A confirmatory factor analysis was used to test different theoretical models of the relationship between variables. Results demonstrated that the task-involving peer motivational climate predicted athletes' basic need satisfaction, which in turn predicted intrinsic motivation. The final step of the model demonstrated that intrinsic motivation positively predicted persistence across the year, and therefore the task-involving peer motivational climate had an indirect effect on persistence amongst athletes. Although the study was prospective and tracked attendance across a year, it may have been beneficial to track changes in perceived peer motivational climate, need satisfaction and intrinsic motivation levels to better understand the complex relationship between these factors and their interaction to influence persistence.

2.5. Independent and Combined Social Agent Influences on Athlete Motivation

The preceding sections have outlined the individual role of coaches, parents and peers within sport generally and specifically about athlete motivation. Research has also considered independent and interactive influences of these social agents but so far is inconclusive about which approach best explains the social climate in sport. For example, Riley and Smith (2011) identified that perceptions of the coach-athlete relationship and peer friendships independently predicted basic need satisfaction, suggesting an additive motivational effect of relationships with multiple social agents in sport. As such, Riley and Smith highlighted the complexity of investigating social agent influence on motivation in sport and conceptualising this influence in parsimonious and meaningful ways that can inform practice. On the other hand, a systematic review by Sheridan et al. (2014) relating to social support in youth sport

identified that coaches, parents and peers interact in their creation of the social environment within which athletes participate in sport.

Table 1 summarises the literature which has simultaneously considered the role of coaches, parents and peers on athlete motivation in sport. These studies will be discussed in relation to independent and interactive perceived social agent influences

Table 1: Summary of Studies Investigating All 3 Social Agents Simultaneously

Paper	Study Aim	Dominant Theory	Design	Sample	Independent or Interactive Social Agent Influence
Atkins et al. (2015)	Investigated association between peer-, coach- & parent-created task motivational climate on intention to continue and associated outcomes.	AGT	Cross-Sectional	405 youth athletes	Interactive
Bengoeachea & Strean (2007)	Explored adolescent athletes' perceptions of interpersonal context in sport.	AGT, SDT	Qualitative	12 youth athletes	Interactive
Caglar et al. (2017)	Explored the role of coach-, parent- and peer-influenced motivational climate on flow.	AGT, flow	Cross-Sectional	220 youth athletes	Interactive
Chan et al. (2012)	Assessed relative impact of coaches, parents & peers on youth athlete motivational patterns & performance outcomes.	AGT	Cross-Sectional	408 youth swimmers	Interactive
Davies et al. (2016)	Assessed relationship between coach-, parent- & peer-influenced motivational climate on good & bad behaviour in youth sport.	AGT	Cross-Sectional	244 youth ice hockey players	Interactive
Fraser-Thomas et al. (2008)	Explored role of social agents in adolescent swimmers' participation patterns.	Côté's (1999) development model	Qualitative	20 youth athletes (10 engaged,10 dropout)	Independent
Gardner et al. (2016)	Examined relationship between latent profiles of social climate & enjoyment & intention to continue in sport.	Not explicit, but implied AGT.	Cross-Sectional	393 youth athletes	Interactive
Harwood et al. (2015)	Systematic review of achievement goal literature & motivational climate	AGT	Systematic Review	104 studies	Independent & interactive
Hein & Joesaar (2015)	Examined relationship between youth athletes' perceptions of parent & coach autonomy support & motivation via motivational climate.	AGT, SDT	Cross-Sectional	662 youth athletes	Interactive
Joesaar & Hein (2011)	Examined differences in psychological and motivational variables between athletes who maintain and dropout from sport.	AGT, SDT	Cross-Sectional	659 youth athletes	Independent

Keegan et al. (2009)	Explored the motivationally-relevant influences of coaches, parents & peers during sampling stage of athlete development	Theoretically Agnostic	Qualitative	40 sampling stage youth athletes	Interactive
Keegan et al. (2010)	Explored the motivationally-relevant influences of coaches, parents & peers during specialising stage of athlete development	Theoretically Agnostic	Qualitative	79 specialising stage youth athletes	Interactive
Keegan et al. (2014a)	Explored the motivationally-relevant influences of coaches, parents & peers during investment stage of athlete development	Theoretically Agnostic	Qualitative	28 investment stage athletes	Interactive
Keegan et al. (2014b)	Qualitative synthesis of research investigating the social motivational influences across athlete developmental stages.	Theoretically Agnostic	Qualitative meta-synthesis	45 studies	Interactive
Le Bars et al. (2009)	Explored similarities & differences in motivational factors between those who continue & dropout from sport, & whether these change over time.	AGT	Cross-Sectional (Study 1), Longitudinal (Study 2).	104 youth athletes (52 persisting, 52 dropout)	Independent & interactive
Leo et al. (2015)	Examined relationship between athletes' anti-social behaviour & perception of social agent antisocial behaviour and motivational climate.	AGT	Cross-Sectional	1867 youth athletes	Interactive
Robinson & Carron (1982)	Examined relationship between motivational & situational factors and maintenance/dropout in youth athletes	Achievement Motivation	Cross-Sectional	98 youth athletes	Independent
Sheridan et al. (2014)	Systematic review of studies investigating social support in youth sport	Social support theories	Systematic Review	73 studies	Independent & interactive
Vaz et al. (2014)	Explored association between youth soccer players' achievement goals & sportsmanlike behaviours, & pressure from social agents.	AGT	Cross-Sectional	118 youth athletes	Independent

Key: AGT = Achievement Goal Theory, SDT = Self-Determination Theory

2.5.1. Independent Coach, Parent and Peer Influences on Athlete Motivation.

Athletes maintain simultaneous relationships with social agents requiring integration of collective influences (Ullrich-French & Smith, 2006), and some research has considered social agents' collective influence or the possible interaction effects between different types of support (Fraser-Thomas, Côté, & Deakin, 2008; Jõesaar & Hein, 2011; Le Bars, Gernigon, & Ninot, 2009; Robinson & Carron, 1982; Vaz et al., 2014). This section will summarise the literature that has simultaneously investigated the independent motivational influence of coaches, parents and peers.

Much of the research investigating the simultaneous independent motivational influence of coaches, parents and peers has considered these roles in relation to athletes' persistence in sport participation. Social agents can influence athlete participation in a range of ways. For instance, perceived pressure and lack of encouragement from parents has been associated with athletes dropping out of sport (Fraser-Thomas et al., 2008; Robinson & Carron, 1982). When athletes perceive social agents as pressuring or controlling, as not providing them with support and encouragement, and as not creating high ego-involved, or low task involved, motivational climates, they are more likely to dropout from sport (Fraser-Thomas et al. 2008; Joesaar & Hein, 2011; Le Bars et al. 2009; Robinson & Carron, 1982), and potentially demonstrate more antisocial behaviour (Vaz et al., 2014). On the other hand, when athletes perceive their social agents as caring and supportive, and as providing autonomy-supportive and task-involving climates, they are more likely to persist in their sport (Fraser-Thomas et al., 2008; Joesaar & Hein, 2011; Le Bars et al., 2009; Robinson & Carron, 1982) and demonstrate pro-social behaviours in sport (Vaz et al., 2014).

Similar to much of the research conducted into the motivational role of significant others in sport, research which has considered the simultaneous influence of coaches, parents and peers has relied on cross-sectional studies (e.g., Joesaar & Hein, 2011; Robinson & Carron, 1982; Vaz et al., 2014). The reliance on cross-sectional research may limit the insight into the motivational role that these social agents have by considering just one moment in time. For instance, Vaz et al. (2014) investigated the influence of achievement goals on sportsmanlike behaviour amongst youth athletes and identified that after accounting for differences in social agent pressure, athletes may become more ego-oriented as they progress in sport. Cross-sectional studies may, therefore, not be the most appropriate method to consider the influence of goal orientations due to these orientations changing over time.

Despite the limitations of cross-sectional studies in this area, studies adopting alternative study designs have demonstrated similar findings in relation to independent perceived social agent influence on athlete motivation. For instance, Fraser-Thomas et al. (2008) qualitatively investigated adolescent athletes' perspectives of social agent influence on participation in swimming. The researchers conducted interviews with 20 participants (10 engaged, 10 dropout) and identified a range of findings relating to each social agent. Coaches providing supportive and caring behaviours was identified as being consistent across both groups. Parents supporting athletes in practical and tangible ways supported persistence unless this support was perceived as controlling or pressuring. Relationships with peers was important for persistence, specifically having a close peer group or friend in swimming. The researchers enhanced trustworthiness by allowing participants to review transcripts and ensuring consistency in interpretation through engagement of an independent researcher. The collective results of Fraser-Thomas et al.'s (2008) study suggest that parents and peers have a more important role than coaches in differentiating between adolescent athletes who withdraw from or persist in sport.

2.5.2. Interactive Coach, Parent and Peer Influence on Athlete Motivation.

Although research has considered the independent nature of coaches, parents and peers influence on athlete motivation within the same studies, there have been calls to consider the combined and interactive roles that these social agents may play in sporting contexts (Garcia Bengoechea & Strean, 2007).

2.5.2.1.   *Interaction of the Influence of Two Social Agents.*

A number of studies have considered the interactive nature of more than one social agent on athlete motivation (e.g., Ullrich-French & Smith, 2006; Van Yperen, 1995; Vazou et al., 2006). For instance, Van Yperen (1995) found perceived parental support moderated the relationship between youth soccer players' individual performance levels and perceived interpersonal stress. Specifically, when athletes received low levels of parental support their individual low levels of performance predicted interpersonal stress, but this relationship did not occur when parent support was perceived to be high. Vazou et al., (2006) conducted a study investigating the independent and additive influence of coach- and peer-created motivational climates on various outcomes amongst 493 youth athletes. Their findings

supported existing research relating to the independent positive and negative influences of coach- and peer-created motivational climates but did not identify an interaction between these climates. Vazou et al. (2006) suggested that the lack of an interaction may have been owing to congruence between the intra-team scores for both motivational climates, which were broadly high across their sample, although the cross-sectional nature of the study may also limit understanding of any interaction as motivational climates may change over time and interactions may become more salient. Furthermore, studies have identified differences between participants in perceptions of the same peer and coach motivational climates (Vazou, 2010) suggesting that cross-sectional research that does not take into account team differences (e.g., using multilevel modelling analysis techniques) may not be sensitive enough in their interpretation of variations in motivational climates between and within contexts.

Carr (2009) investigated the relationship between adolescent-parent attachment and friendship quality in sport. They found that youth athletes with higher levels of attachment to their parents were more likely to have positive sport friendships, which contradicts the results of the current study which identified high sport friendships and few relationship factors within parents. Jowett and Timson-Katchis (2005) identified a more peripheral role for parents when qualitatively exploring 15 coach-athlete-parent triads but identified that parents still indirectly influenced the quality of the coach-athlete relationship by providing supportive or disruptive behaviours, demonstrating the complex social context within which athletes operate.

Ullrich-French and Smith (2006) conducted a study investigating the combined influence of parents and peers on motivational outcomes with 186 youth soccer players. Participants completed measures of friendship quality, relationship quality with mothers and fathers, peer acceptance, enjoyment of soccer, stress, competence, and motivation. The independent influences of the quality of relationships with peers and parents were found to be positively related to adaptive outcomes such as self-determined motivation, enjoyment and lower stress levels. Furthermore, results indicated that the combination of parent and peer relationship quality predicted higher levels of self-determined motivation, enjoyment and perceived competence. The results of Ullrich-French and Smith's (2006) study suggest that social agents can have an additive and combined influence on athlete motivational outcomes. Furthermore, the study adapted measures of sport friendship quality to measure parent

relationship quality, thereby allowing a direct comparison of the individual and combined influences of similar rather than different theoretical constructs.

2.5.2.2.   *Interaction of the Influence of Three Social Agents.*

A number of studies (Table 1) have addressed the call for the consideration of interactions between the relative influences of coaches, parent and peers (Garcia Bengoechea & Strean, 2007) by exploring how the motivational influence of these social agents may complement or interact with one another, and the implications for athlete persistence in sport (Atkins, Johnson, Force, & Petrie, 2015; Gardner, Magee, & Vella, 2016), flow (Çağlar, Aşçi, & Uygurtaş, 2017), performance outcomes (Chan, Lonsdale, & Fung, 2012), good and bad behaviour in sport (Davies et al., 2016; Leo, Sánchez-Miguel, Sánchez-Oliva, Amado, & García-Calvo, 2015), and athlete motivation (Hein & Jõesaar, 2015). Many of these studies have investigated the social agent-influenced motivational and autonomy supportive climates as perceived by participants (Atkins et al., 2015; Caglar et al., 2017; Davies et al., 2016; Hein & Joesaar, 2015; Leo et al., 2015). Findings of such research generally suggest that when the social agent roles are considered as interactive (i.e., their influence is simultaneously considered within regression analysis or structural equation model analyses), task-involved or autonomy-supportive motivational climates created by coaches, parents and/or peers generally result in more positive performance and wellbeing outcomes. For example, in a study to investigate the effect of other-initiated motivational climates on positive and negative sporting behaviour in youth hockey, Davies et al., (2016) simultaneously measured the relative influence of the perceived coach-, parent- and peer-created motivational climates. Findings indicated that younger players were more responsive to the motivational climates provided by parents and coaches than peers when behaving in sport, whereas older athletes were more influenced by peers than younger athletes. The usefulness of these results is strengthened by considering the role of all three social agents within multiple regression analyses, as well as considering how these influences might differ depending on the age of the athletes. Despite this, Davies et al. do not make it clear the order in which social agent influences were loaded onto the regression models and, therefore, the relative influence of social agents at different ages may have been influenced by this ordering.

As with literature discussed previously, literature exploring the concurrent influence of social agents has relied on cross-sectional methods (Atkins et al., 2015; Caglar et al., 2017; Chan et al., 2012; Gardner et al., 2016; Hein & Joesaar, 2015; Leo et al., 2015) that are

limited in their usefulness in determining the nature of any relationship between variables. Despite these criticisms, qualitative studies have demonstrated similar findings about the combined influence of coaches, parents and peers. For instance, to explore youth athletes' perspectives of the interpersonal contexts in sport, Garcia Bengoechea and Strean (2007) conducted interviews with 12 athletes aged 13-17 years who participated in a variety of sports. Interpretive analysis of interview transcripts identified a wide range of interpersonal influencers on athlete motivation (e.g., parents, relatives, friends, teachers, teammates, coaches, professional athletes, etc.), and five categories of social agent influence: a) support; b) exerting pressure and control; c) socialisation and achievement orientation; d) providing information relating to competence; and e) being role models. The transferability of Garcia Bengoechea and Strean's (2007) results may be limited due to the lack of information about athlete developmental stage and the focus on teenage athletes. Despite this, the variety of influencers and categories of influence suggest a complex and dynamic process of social agent influence within sport.

Systematic reviews investigating interpersonal contexts in sport have also demonstrated interactive influences between coach, parent and peer motivational influences in sport. For example, in a systematic review of studies investigating social support in sport, Sheridan et al., (2014) identified that coaches, parents and peers provided distinct types of social support for athletes, but many of the ways in which they support athletes overlap and interact within one another in relation to athlete motivation and performance. Similarly, Harwood et al. (2015) conducted a systematic review of literature investigating intra-individual factors relating to achievement goals in sport. Harwood et al. identified that coach-created motivational climates were overrepresented in the research, and that few studies had investigated concurrent social agent influences on athlete motivation. Systematic reviews provide a strong source of evidence by considering the overall findings of multiple studies, yet their applicability is limited to the purpose of their studies. Social support and achievement goals are just some examples of the areas in which social agents may influence athlete motivation, but these studies still provide helpful insights supporting the motivational importance of all three social agents, the overlap between these influences, and the limited of research which considers these influences concurrently. One of the challenges in researching respective social agent influences is the use of measures in studies which are developed in relation to just one social agent. Such an approach has been used in many studies reviewed in this section. For example, many studies have used similar social agent-specific measures of

motivational climate (Atkins et al., 2015; Caglar et al., 2017; Davies et al., 2016; Gardner et al., 2016; Hein & Joesaar, 2015; Joesaar & Hein, 2011; Leo et al., 2015).

2.6. Models of Athlete Development

Much of the research into the role of coaches, parents and peers in sport has focussed on specific age groups. As demonstrated in Table 1, a large number of studies have focussed on youth sport participants when considering the role of all three social agents on athlete motivation despite evidence that social agent influence is dynamic (Chan et al., 2012; Davies et al., 2016). For instance, Davies et al. (2016) identified that parents and coaches dominated motivational influences during childhood, but peers became increasingly important when athletes were older. In addition, research suggests that social agent influences on athlete motivation change over time (e.g., Keegan et al., 2014a), yet much of the research in this area has failed to state the developmental stage of athletes when exploring social agent motivational influences, making it difficult to fully contextualise and compare results.

Models of athlete development have been proposed to better understand the psychosocial and technical development of athletes within sport. The developmental model of sport participation (DMSP) was developed by Côté (1999) through a series of extensive retrospective interviews with athletes from a range of sports. Côté (1999) investigated the role of family members during athlete talent development through a series of interviews with three rowers and one tennis player and their families. Following a thematic analysis, three distinct chronological stages of sport participation were identified. Côté (1999) proposed that the sampling stage occurred generally between the ages of six and 13 years and is characterised by that athlete having fun. The specialising stages was proposed to occur between the ages of 13 and 15 years and is characterised by an increase in commitment to one or two sports and focussing more on technical and tactical development. The investment stage represents the final stage of athlete development and is characterised by dedication to one sport and an increase in commitment to that individual sport. The initial development of Côté's (1999) model may have been limited by the fact that athletes within the study were only 18 years old and may not have gone through all of the predicted stages of development; however, the model has subsequently been used by researchers to explore athlete development and has been demonstrated to distinguish between athlete motivational outcomes and social agent influences (e.g.., Keegan et al., 2009, 2010, 2014a).

The DMSP proposes that the relationships with others in sport and the activities undertaken during development determine individuals' participation, performance and development in sport (Côté et al., 2018). The DMSP was updated to delineate between three possible developmental trajectories in sport (Côté & Fraser-Thomas, 2016). Trajectory 1 would see athletes continue to participate in sport recreationally, whereas trajectory 2 would see athletes focus on one sport during their adolescence thereby progressing to the aforementioned specialising and investment stages. Young athletes who participate in the sampling years are proposed to have greater physical and psychological health. On the other hand, athletes following trajectory 3 and participating in sports that require early specialisation (e.g., gymnastics), thereby engaging in deliberate practice almost immediately on commencing participation in a sport, risk negative outcomes and a lack of enjoyment (Côté et al., 2018).

In addition to the DMSP (Côte, 1999), Wylleman and Lavallee (2004) developed a lifespan model of athlete career transitions that considers similar stages of athletic development within a more holistic context. The model proposes four levels of transition that interact with one another: athletic, psychological, psychosocial and vocational. For instance, an 18-year-old rugby player in the investment/mastery stage of athletic development will have entered adulthood, will be studying at university and will have moved away from home (i.e., changing relationship with parents) and will have different developmental challenges than a 14-year-old swimmer. The latter is in the specialising/development stage of athletic development, entering the adolescent phase of psychological development, and will have recently commenced secondary school, and will be forming new friendships with peers in school and sport (Collins & MacNamara, 2018). Wylleman and Lavallee's (2003) model suggests that as athletes develop within their sport the social agents that dominate fluctuate in importance and role. Wylleman, Alfermann and Lavallee (2004) encourage that consideration be given to the fluctuating role of social agents during athlete developmental transitions.

Considering the evidence that athletes have different demands during their development, and that social agent influences may depend on the age and developmental stage of athletes, much of the existing research literature is limited by its overreliance on youth sport participants.

2.7. Coaches, Parents and Peers – Combined and Independent Influences on Athlete Motivation During Development

The following section will discuss research that explores the similarities and differences in social agent influence on athlete motivation during different developmental stages.

Guided by models of athlete development (Côté, 1999; Wylleman & Lavallee, 2003), researchers have inspected the combined and distinct motivational influences of coaches, parents and peers during different states of athlete development. In line with trajectory 2 of the DMSP (Côté, 1999), Keegan and his colleagues conducted a series of qualitative studies investigating the influence of parents, coaches and peers on the motivation of early career athletes (Keegan et al., 2009), specialising athletes (Keegan et al., 2010) and advanced athletes (Keegan et al., 2014a). To navigate the complex and, at times, contradictory motivational theory landscape, Keegan and colleagues adopted a theoretically agnostic critical approach within their studies by conducting analyses informed by grounded theory. Results from inductive content analysis demonstrated that motivation within sport at each developmental stage was reconcilable with existing theories of motivation (e.g., AGT and SDT) as well as offering practical opportunities to inform and intervene in the surrounding motivational atmosphere (proposed as an overarching combination of motivational climates).

Results from each of Keegan et al.'s (2009, 2010a, 2014a) studies demonstrated that social agent influence on motivation fluctuated depending on the athletes' developmental stage. For example, Keegan et al (2014a) compared the findings of their study of investment/mastery stage athletes (aged 15-29 years) to those from sampling/initiation stage (aged 7-11 years; Keegan et al., 2009) and specialising athletes (aged 9-18 years old; Keegan et al., 2010a). Keegan et al. (2014a) reflected that although there were consistent sources of motivational influence at each developmental stage, there were clear qualitative changes in the nature of the influence. For example, the role of parents in sport became less important for developing sport skills, and the role of peers increased in providing social support.

Building on their research into social agent influence across different stages of athlete development, Keegan et al. (2014b) conducted a qualitative synthesis of 45 studies investigating the motivational influences of parents, peers and coaches on athletes during an athlete's career in sport. They created a novel interpretation of the motivationally-relevant

social milieu in sport, describing motivational atmosphere (Keegan et al., 2010a) as a way of understanding the complex and multifaceted combined influence of others on athlete motivation, and incorporating Vallerand's (1997) identification of global, contextual and situational influences on motivation. Using a meteorological analogy, Keegan et al., (2014b) suggested that a momentary motivational profile would be shaped by the global motivational atmosphere, which is in turn formed from contextual motivational climates (e.g., competition climates, training climates, etc.), and themselves created by situational characteristics (e.g., competition conditions, training conditions, etc.). This model suggests that motivational climates, and by extension the social influencers of motivation, should not be investigated in isolation from one another, as one motivational climate can influence the other. Keegan et al. (2014b) also proposed that this model may enable the prediction of motivation based on the varying motivational influences at different stages in development in the same way that measuring various meteorological indicators can allow predictions of the weather. Although complex, this analogy may allow researchers to better understand the complex and potentially competing situations and contexts within which social agents influence athlete motivation.

Whilst Keegan et al.'s (2009, 2010a, 2014a, 2014b) series of studies advanced understanding of the social agent influence on athlete motivation in important ways, the studies did not identify potential reasons why social agent influences change over time or the specific developmental points at which they change. Investigating temporal fluctuations in these influencers may help progress understanding of the complex process of motivation development. Retrospective and longitudinal studies investigating perceived influences of social agents on athlete motivation over the course of an athlete's development in sport have been called for by researchers in the area to further progress understanding (e.g., Jowett & Wylleman, 2006; Sheridan et al., 2014).

2.8. Conceptual and Methodological Concerns with Existing Literature

The preceding review of literature demonstrates a plethora of motivational theories and approaches that have been applied in investigating the social influences on athlete motivation. Many of these are guided by conceptualisations of motivation as being related to achievement goals (e.g., AGT; Nicholls, 1989) and self-determined forms of motivation (e.g., SDT; Deci & Ryan, 2000). AGT and SDT are theories and approaches to understanding human behaviour that endeavour to provide parsimonious conceptualisations of complex psychosocial and developmental phenomenon. Keegan et al. (2014b) reflected on the

challenges of motivation literature in adopting such parsimonious models that may oversimplify complex social interactions. In addition, Keegan et al. (2014b) suggest that researchers adopting and applying such parsimonious models of motivation may rely on specific approaches to research which limit progression of understanding. Adoption of such theoretical positions in research may lead to researchers answering only questions related to their guiding theory, may limit the variety of methods used to answer questions, may place an overemphasis on confirmatory cross-sectional and correlational analysis methods, and may, therefore, only identify findings that support the theories being tested (Keegan, Harwood, Spray, & Lavallee, 2010b; 2014b). To fully understand the complex social environment within which athletes develop and maintain their motivation, Keegan et al. (2014b) suggested adopting theory-informed yet theoretically agnostic approaches to develop new theories that better reflect reality. The current thesis meets the challenge set by Keegan et al. (2014b) to progress knowledge and understanding of social agent influence on athlete motivation. Chapter Three will provide a more detailed discussion of how the methodology of the current thesis addresses this challenge.

Methodologically, much of the research presented in this literature review discussing motivational theories and the perceived role of social agents has been overly reliant on cross-sectional research designs and youth populations. Whilst the motivational influences of social agents may be particularly important in earlier development stages, the main body of literature is limited in its understanding of which motivational roles social agents play across all developmental stages in sport. Cross-sectional and correlational study designs reinforce this challenge by providing insight whether social agent motivational influences are dynamic and which factors may influence any changes in motivational influence.

2.9. Summary

As reviewed above, the literature and evidence relating to motivation in sport is dense, complex and at times unclear. What appears consistent is the importance of social influences in developing and maintaining athlete motivation throughout developmental stages. Despite a growing body of literature exploring coach, parent and peer influences on athlete motivation, much of the knowledge to date is limited to dominant theoretical approaches (e.g., AGT, SDT), mainly considers the role of social agents individually rather than concurrently, is focussed on young populations, and does not consider the fluctuating influences of social agents across athlete transitions in sport. As is discussed in the

subsequent chapter, theories are determined to be degenerative when they are bolstered by correlational studies which attempt to extend rather than refine predictions, and many of the theories of motivation developed and applied in sport appear to be degenerative in nature as evidenced above. The theories do not appear to fully explain the individual and interactive motivational influences of dominant social agents in sporting contexts, nor do they provide clarity as to the consistency of these influences at different stages of athlete development. So as to ensure any new proposed theories reflect the nature of perceived social agent motivational influence as accurately as possible it is, therefore, important to develop and refine a novel model that is informed, but not guided, by existing motivational theories.

Chapter Three - Methodology

3. Thesis Methodology

3.1. Introduction to Chapter

This chapter sets out the philosophical considerations which underpin the methodological approach adopted and decisions made within this thesis. The dominant research paradigms which explicitly and implicitly underpin contemporary sport and exercise psychology research and practice are discussed. First, an overview of the philosophy of science is provided to justify the need to consider the implications of research paradigms and contextualise a critical discussion of those paradigms which permeate current research. Second, the dominant research paradigms which have been developed and/or applied within social science research are explained and discussed within the context of philosophical considerations such as ontology, epistemology, axiology and methodology. Third, the implications of these dominant research paradigms within sport and exercise psychology research and practice are discussed, including how paradigms influence the interaction between research and practice. Fourth, examples of how research paradigms have influenced contemporary research into motivation (i.e., SDT and AGT) are briefly critiqued. Fifth, the ontological, epistemological, and methodological perspectives and methods of the current thesis are set out and justified within the context of preceding discussion.

3.2. The Philosophy of Science

Consideration of the nature of truth and knowledge has been debated and discussed by philosophers reaching back to ancient Greece (Johnson & Gray, 2010). More recent philosophical discussion and debate has focussed specifically on the nature of science and the scientific method. Keegan (2016) argued that if we assume that sport and exercise psychology is embodied by the application of scientific research then it is vital to understand the scientific process, as well as the assumptions and decisions that have informed this process. Much of the debate relating to the philosophy of science in the last 100 years has been dominated by the positions put forward by two of the most prominent research philosophers: Karl Popper and Thomas Kuhn (Fuller, 2004). Popper and Kuhn provided influential perspectives on scientific progress and the processes by which science should be conducted.

Popper's (1969) central thesis regarding science is best considered through his notion of fallibility; he argued that no amount of evidence can ever prove a theory to be correct, yet it is much easier for a theory to be proven to be incorrect. In addition, induction is not possible because observation is always preceded by theory and therefore one can never truly investigate a phenomenon without pre-existing knowledge. This philosophical approach to research – known as critical rationalism – argues that although theories can never be definitively proven to be correct, scientists should develop and implement studies which specifically try to disprove theories (Popper, 1969). Theories which are tested in such a manner and placed under scrutiny will either be disproven or have errors removed and better reflect the truth. Theories that are disproven will be either discarded or put to one side in favour of theories which have more 'truth content' (i.e., they explain known facts and accurately predict new ones; Hassmen et al., 2016). Popper argued against scientific approaches which aim to verify existing theories or protect those theories through ad hoc explanations of contradictory findings (Magee, 1973).

In contrast to the philosophy of science put forward by Popper, Kuhn (1962) proposed a dramatically different position. Kuhn argued that 'normal science' was typified not by the critique of existing theory but by research paradigms. These paradigms are world views which encompass specific theories and methods of testing them, and essentially define the question worth answering and the methods of answering it. In essence, researchers are trained and cultured within these paradigms, and those working within the accepted paradigms do so dogmatically by defending pet theories through verification research and ad hoc explanations of inconvenient or unexpected results (which Popper referred to as pseudoscience). Protection of paradigms may also lead to falsification studies not being published due to researchers and publishers not wishing to publish negative results (Chambers, 2017). Despite the possible negative outcomes associated with this paradigmatic approach, Kuhn (1962) did argue that scientific progress was still made possible through the accumulation of unexplainable anomalies within existing theories which would eventually lead to a crisis and a shift towards a new paradigm.

Popper and Kuhn were followed by other prominent philosophers who attempted to continue and refine the debate and the positions of their predecessors, the most well-known of whom were Imre Lakatos and Paul Feyerabrand (Hassmen et al., 2016). Lakatos (1970) tried to find a middle ground between Popperian and Kuhnian perspectives by proposing science as a series of research programmes which are either progressive or degenerative

Where Popper and Kuhn attempted to demarcate science and pseudoscience, Lakatos (1970) proposed criteria to identify good and bad examples of research. Progressive programmes reflect those in which scientists adhere to some of the tenets of Popperian falsification by applying theories which are better able to predict facts and stand up to robust testing. Degenerative research programmes, on the other hand, reflect what Kuhn (1962) referred to as normal science and would see researchers try to 'save' their theories by adding ad hoc hypotheses as a means to explaining findings not explained by the theory.

In stark contrast to other philosophical positions, Feyerabrand (1975) proposed an approach described as epistemological anarchism (Hassmen et al., 2016). Feyerabrand argued that as all evidence cannot be approached in the absence of theory (i.e., incommensurability), the approaches proposed by Popper, Kuhn and Lakatos would limit the generation of new knowledge. New theories and ideas should be developed and compete with one another, and theories that are disproved should be improved rather than disposed. The attempts by preceding philosophers to specify methods of generating knowledge were considered by Feyerabrand to be inhibitive due to them not leading to new alternative ideas and theories, and therefore the only solution is for an 'anything goes' approach to generating knowledge. Science should therefore aim to generate new theories and knowledge by comparing theories and bringing in content from a broad spectrum of sources.

The preceding discussion demonstrates the importance of considering philosophy of research as different philosophical positions have implications for knowledge development and application. Despite this, there is a lack of engagement with, or discussion of, philosophical assumptions within sport and exercise psychology research. For instance, of the 19 articles considering the simultaneous influence of coaches, parents and peers summarised in Table 1 only four explicitly stated their philosophical position (i.e., Keegan et al., 2009, 2010a, 2014a, 2014b).

3.3. Research Paradigms

The nature of truth and knowledge has long been debated and has repercussions for research in science (Guba & Lincoln, 1994). Paradigms are worldviews or metaphysics which illustrate how researchers view the world and the role of individuals within it (Guba & Lincoln, 1994). Paradigms regulate research such that they guide researchers in using accepted research methods and making specific assumptions without critical reflection

(Sparkes & Smith, 2014). Research paradigms are beliefs which cannot be proven, and therefore have led to significant debate amongst philosophers of science, and they influence how research is conducted and reported (Creswell, 2007).

Research philosophy has been characterised by a growing number of research paradigms, and conflict between researchers adopting different paradigmatic positions (Denzin & Lincoln, 2013). Kuhn (1962) described how research paradigms dictated research throughout history, with dominant paradigms (i.e., worldviews, methodologies and theories dogmatically adopted by researchers) shaped discourse and guided discovery until a discipline reached a crisis point and new paradigms were developed and became dominant. Burke and Johnson (2010) described how a positivist paradigm (which could crudely be described as "quantitative') dominated science until the emergence of constructivist perspectives in the early 20th Century. Following the so-called paradigm wars between (broadly speaking) proponents of quantitative and qualitative paradigms in the 1970s and 1980s (Gage, 1989; Denzin & Lincoln, 2013), more research paradigms were developed and adopted by researchers across subjects. Denzin and Lincoln (2013) described four dominant interpretive paradigms: positivist-postpositivist, constructivist-interpretive, critical, and feminist-post structural. Blaikie (2007) described and offered critique of ten different research paradigms adopted within social enquiry, arranging these into two categories: (a) classical (i.e., positivism, critical rationalism, classical hermeneutics, and interpretivism); and (b) contemporary research paradigms (i.e., critical theory, ethnomethodology, social realism, contemporary hermeneutics, structuration theory, and feminism).

Although not an exhaustive list, Guba and Lincoln (1994) highlighted the four dominant competing paradigms that have taken prominence in scientific approaches to knowledge. Influenced by early endeavours in what might be referred to as the 'harder' sciences, paradigms have been adopted to verify (i.e., positivism), and falsify (post-positivism) theories and models of knowledge. Competing with these, social science approaches have developed alternative paradigms which seek to approach knowledge by viewing inquiry through specific values or lenses, such as feminism and materialism (i.e. critical theory). Completing this grouping is the notion of developing knowledge through individual constructions (i.e., constructivism). Research paradigms are characterised by the ontological and epistemological assumptions about reality that distinguish them, and their implied methodologies for understanding reality (Blaikie, 2007) as well as axiological

assumptions (Guba & Lincoln, 2008). These concepts will now be explored to provide context for the philosophical position of the present thesis.

3.4. Ontology, Epistemology, Axiology and Methodology

The ontological question relates to reality and what we can understand about it. If one assumes that a 'real' world or reality exists, then scientific enquiry can lead to accurate knowledge of this reality and how the world functions within it (Creswell, 2013). On the other hand, if one assumes reality to be relative to those perceiving it, then the pursuit of knowledge changes and reality is researched only in relation to those experiencing it. If these two positions were considered as diametrically and philosophically opposed, then many paradigms might be thought to adopt positions between them (Hassmen et al., 2016).

The epistemological question relates to the nature of knowledge and how it is possible to gain knowledge about reality and it is argued to be aligned to an inherent ontological position (Lincoln, Lynham & Guba, 2013). This question relates to the role of the researcher in research, and the relationship the researchers have with the phenomenon being researched. Epistemological positions might include ones in which the researcher is objective and not directly influencing the phenomenon of interest, as opposed to other positions in which the process of research inherently influences what is being researched (Blaikie, 2007).

Once a researcher has adopted a specific ontological and epistemological perspective, this should ultimately lead to the method the researcher would then adopt to answer his or her research question (Lincoln & Guba, 1994). The methodological question is related to the 'how' of research, and the ways in which knowledge can be gained. Specific research methodologies (e.g., empiricism, grounded theory) have been generated from, or aligned to, specific ontological and epistemological positions (Hassmen et al., 2016). Research methodologies influence the specific methods that researchers then use to gather information and generate knowledge.

Guba and Lincoln (2008) updated their consideration of research philosophy to include axiology, and argued that this may underpin researcher ontological, epistemological and methodological positions and decisions. Axiological considerations traditionally relate to religion, but in the context of science they broadly encompass ethics, spirituality, morality and the position of science within these. As such, axiological concerns are inherently part of

research paradigms and influence how researchers generate knowledge (Lincoln et al., 2013). Researchers engaging with axiological considerations would be aware of the role of values in participants and their own interpretations and, crucially, how to account for these value-influenced interpretations within the research narrative (Creswell, 2007; Rogers & Willig, 2017). To address questions of value and subjectivity in research, qualitative researchers have increasingly adopted reflexive methods (e.g., reflexive journals, engaging 'critical friends') to account for any researcher subjectivity in interpretation of information (Sparkes & Smith, 2014).

3.5. Dominant Research Paradigms

Following an understanding of the concepts which distinguish research paradigms, Figure 4 provides a summary of the dominant research paradigms suggested by Guba and Lincoln (1994).

	Positivism	**Post-Positivism**	**Critical Theory**	**Constructivism**
Ontology	Naïve realism	Critical Realism	Historical Realism	Relativism
Epistemology	Dualist/Objectivist	Modified Dualist/ Objectivist	Transactional/ Subjectivist	Transactional/ Subjectivist
Methodology	Experimental / Manipulative	Modified Experimental / Manipulative	Dialogic / Dialectical	Hermeneutical / Dialectical

Figure 4: Summary Lincoln & Guba's (1994) Metaphysics of Alternative Inquiry Paradigms

Positivism is perhaps the most prominent and dominant paradigm in research, especially within sport and exercise psychology (Brustad, 2008; Hassmen et al., 2016). Positivism's dominance as a paradigm stems from its roots as the approach adopted within traditional or 'hard' sciences such as physics and mathematics, and its proponents argue that there is a single reality which is external to human perception (i.e., a naïve realism ontological position; Blaikie, 2007) which can be objectively measured by researchers to make generalizable theories (i.e., objectivist/dualist epistemology; Lincoln et al., 2013). Measurement is at the heart of this paradigm, with a quantitative methodology being

employed (Guba & Lincoln, 1994). Researchers will use methods where the independent variables can be controlled, extraneous variables accounted for, and the researcher can objectively measure relationships between variables, and reduce complexities of reality to simple explanatory rules, theories and models about the interaction between variables.

Post-Positivism retains positivism's belief in an external reality but posits that researchers can never fully or accurately measure this reality (i.e., a critical realism ontology; Lincoln & Guba, 1994). Observations about reality are never truly objective in the way suggested by positivism, and instead are dependent on the time and context within which observations are made (i.e., a modified dualist/objectivist epistemology; Hassmen et al., 2016). Post-positivistic research has a more flexible methodology that primarily relies on quantitative methods but can employ rigorous qualitative methods where relevant to the research question (Creswell, 2007). Validity, reliability and/or trustworthiness of observations are important due to the types of measurement used by post-positivistic researchers where falsification of hypotheses is a goal.

Critical theory is a summary term for many overlapping paradigmatic positions which are influenced by ideology (i.e., a historical realism ontology; Hassmen et al., 2016). This position suggests that observations and findings about reality are inherently influenced by values and can therefore never be considered unbiased or objective (i.e., transactional/subjectivist epistemology; Guba & Lincoln, 1994). Positivist and post-positivist perspectives are considered by critical theorists as reinforcing negative social barriers and structures such as gender, socioeconomic status or cultural background (Blaikie, 2007). Critical theorists attempt to challenge the status quo and fundamentally carry out research to improve the wellbeing of the population and are interested in how societal or power structures influence society and individuals (Hassmen et al., 2016).

Constructivism (also often referred to as interpretivism; Hassmen et al., 2016) differs completely from positivism, proposing that reality is not objective, but rather is constructed by individuals, implying that there are therefore as many realities as individuals (i.e., a relativist ontological position; Lincoln et al., 2013). Shared realities can be created in which shared environments and society can play a role in the realities that individuals create (i.e., broader transactional/subjectivist epistemology). Constructivists are, therefore, interested in interpreting the realities individuals experience (Creswell, 2007). Constructivist researchers adopt qualitative methods to gain knowledge about individual realities, and the interaction

between the individual and the researcher is vital to better understand this reality (Creswell, 2007).

The history of research in sport and exercise psychology has been dominated by positivist and post-positivist approaches (Hassmen et al., 2016; Keegan, 2016; Smith & Sparkes, 2014). Many of the theories applied within the discipline have, therefore, been generated and tested through quantitative methods, with a great deal of research being conducted using psychometric questionnaires (Tenenbaum, Eklund & Kamata, 2012). A recent shift towards more constructivist/interpretivist research which uses more qualitative methods has been seen such that there is healthy debate in the literature regarding methodology in sport and exercise science (Hassmen et al., 2016; Keegan, 2016; Smith & Sparkes, 2014; Schinke, McGannon & Smith, 2016). There have been calls amongst researchers for greater debate and discussion regarding the philosophy of research in the discipline to ensure that the quality of evidence is appropriately judged and to promote greater intra- and inter-disciplinary knowledge generation and dissemination (Hassmen et al., 2016; Keegan, 2016; Smith & Sparkes, 2014; Schinke, McGannon & Smith, 2016).

There is debate in the literature about the necessity of adopting approaches to research which rigidly adhere to specific and distinct paradigms (Teddlie & Tashakkori, 2010). Dogmatic adoption of specific paradigms, distinguished along ontological and epistemological lines, would infer the application of specific methodologies and methods of research. Research paradigms traditionally lead researchers towards either quantitative or qualitative methods (Hassmen et al., 2016), but the development of more pragmatic paradigms has led to mixed method approaches to answering research questions where the epistemological positions of positivism and constructivism are not diametrically opposed but rather constitute the two ends of a continuum of epistemological positions (Cresswell, 2007). Such a perspective allows many methods to be considered, and methods are selected to be flexible in meeting the needs of the research question (Morgan, 2007; Yardley & Bishop, 2017) rather than being aligned to a single paradigm (Creswell, 2007). This approach may be considered as a pragmatic paradigm for research, but despite its flexibility towards research methods there are several competing representations of 'pragmatism' within research (Creswell, 2007). Discussion of these competing versions of pragmatism are, however, out with the scope of this thesis.

3.6. Position of Philosophy in Sport and Exercise Psychology

In their text proposing a rethink of approaches to sport and exercise psychology research and practice, Hassmen et al. (2016) considered the development of the discipline from psychophysics, mainstream psychology, and early experimental psychologists focussing on topics related to sport. They identified that the development of sport and exercise psychology has, much like other areas of science and psychology, broadly focussed on a positivist paradigm using psychometric questionnaires and experimental procedures aimed at testing hypotheses. It is not possible to consider existing knowledge, or develop new knowledge, within sport and exercise psychology without recognising the influence of positivist knowledge generation approaches from within the discipline and adjacent ones such as sport and exercise science (Brustad, 2008).

Vealey (2006) considered the development of the sport and exercise psychology profession and described a dominant, positivist approach which resembles Kuhn's (1962) concept of paradigms in science. Vealey proposed that since the mid-1990s the discipline is beginning to diversify in paradigms, epistemologies and methodologies, no longer relying solely on positivist approaches to knowledge generation. She challenged researchers and practitioners to ask themselves "What are we trying to discover?" (p.150) to contest preconceptions and their paradigms. Echoing some of the critical rationalist suggestions by Popper (1972) and Lakatos (1970), Vealey argued for a more problem-focussed approach to research that would explore real-life contexts and provide solutions, rather than research processes which confine researchers to the trappings of specific theoretical paradigms.

Despite the diversification of research approaches in recent years, Hassmen et al (2016) argued that there are still dominant paradigms adopted by groups of researchers, especially regarding dominant theories such as SDT (Deci & Ryan, 2000) and AGT (Nicholls, 1984), as well as methodologies such as grounded theory. Hassmen et al. described Kuhnian paradigms in which researchers adopt theories and advance them in small steps by applying them to different groups rather than testing the theory and opening it to falsification in line with Popperian views. Anomalous findings are explained based on the context or the methods used rather than indicating faults with the underlying theory, and research does not advance these theories but rather simply reinforces them with cross-sectional, correlational evidence. Indeed, Roberts (1989) argued for a unifying conceptual paradigm within sport

psychology to drive the discipline forward whilst being open to different paradigms used in other disciplines of psychology and beyond.

Notwithstanding Hassmen et al.'s (2016) arguments about dominant paradigms within sport and exercise psychology research, researchers within the discipline have called for the acceptance of diverse paradigms within knowledge generation (e.g., Biddle, Markland, Gilbourne, Chatzisarantis, & Sparkes, 2001). Despite this request, Brustad (2008) argued that earlier alternative methods of theory generation in sport and exercise psychology, such as qualitative approaches, were limited in their ontological and epistemological diversion from positivism. Giacobbi, Poczwardowski and Hager (2005), in proposing a pragmatic research philosophy for applied sport psychology, argued for researchers to create knowledge that addresses issues that are relevant to society and that is accessible to those who might be able to use it (e.g., practitioners, coaches, athletes, parents). This argument for pragmatism would infer that for researchers to create useful and usable knowledge within sport and exercise psychology there needs to be greater awareness of, and alignment between, paradigms adopted within research and applied practice in the discipline. Philosophical alignment between researchers and applied practice in sport psychology might, however, be a challenge for a discipline which has historically struggled to bring these two groups together (Hardy, Jones & Gould, 1996; Kontos & Feltz, 2008).

Poczwardowski, Sherman and Ravizza (2004) highlighted the importance of applied sport and exercise psychology practitioners understanding their personal and professional philosophies to deliver effective psychological support for clients. Given that the purpose of generating knowledge in science is generally to apply it, it might be worth considering the implications of alignment between research and professional philosophies. Practitioners apply knowledge, but they may not consider how that knowledge was generated. Poczwardowski et al (2004) reviewed the sport and exercise psychology literature to develop their proposed model of professional philosophy but identified at least six different categories or dimensions of professional philosophy. The diversity of research and applied philosophies within the discipline makes it harder to align them in meaningful ways.

Keegan (2016) illustrated what he considered as traditions employed within sport and exercise psychology which encompass philosophies of research and science (Figure 5). Not one of these traditions is seen as being 'correct', but rather they are a useful method of

viewing the overlap between philosophies of research and practice and identifying opportunities for alignment.

	Certaintism	*Construalism*	*Pragmatism*	*Fallibilism*
Compatible Philosophies of Science	Positivism Empiricism	Interpretivism Constructivism	Pragmatism	Critical Rationalism Critical Realism
Compatible Philosophies of Practice	Practitioner-Led, cognitive, behavioural, sophist	Client-led, humanistic, counselling, Socratic	Eclecticism	Eclecticism

Figure 5: Summary of Keegan's (2016) Traditions of Sport and Exercise Psychology

Certaintism aligns with philosophies of science such as positivism and empiricism, and places importance on the generation of models, theories and laws from accurate and repeated observations (i.e., induction; Keegan, 2016). Reality exists independent of those who perceive it and can be measured objectively to create well supported theories. Adopting a practitioner-led, scientist-practitioner intervention strategy, a certaintist will be confident in their evidence-based strategies (e.g., cognitive-behavioural) that employ standardised measurement and intervention tools (Keegan, 2016).

Construalism differs from Certaintism, reflected in the alignment with interpretivist/constructivist philosophical positions that reality is created by individuals, therefore focussing more on the individual's needs (Keegan, 2016). Keegan (2016) described how, in contrast to a Certaintist practitioner who would use existing and established psychological theories to frame a diagnosis of athlete symptoms, Construalist practitioners would create a working partnership with the client to jointly interpret their experiences. This approach resonates with the well-established client-led and Socratic philosophies of practice aligned to Maslow's (1968) humanistic theory and Rogers (1961) person-centred approaches to counselling.

Pragmatism reflects practitioners who interact with their clients and focus on 'doing' rather than theorising (Keegan, 2016). Practitioners establish an effective and interactive working relationship with clients where results matter and the methods to gain these results can be varied. This varied nature of practice (i.e., eclecticism) resembles some of the

pragmatic philosophy of research in so much as the latter also focussed on solving problems and encourages multiple research methods to do so.

Fallibilism reflects the perspective that an objective 'truth' or reality may well exist, but that it is likely too complex to fully understand, and therefore researchers and practitioners should attempt to reduce errors by adopting critical approaches (Keegan, 2015). This approach is heavily influenced by paradigms such as critical realism and critical rationalism. Practitioners are still able to adopt eclectic methods of service delivery as long as they are evidence based and considered in a critical manner to determine their appropriateness.

The relation between research and practice, therefore, is an important one to consider for researchers and practitioners, particularly in the development of research and professional skills (Keegan, 2016). Contemporary sport and exercise psychology practitioner development programmes in the UK, for example, place importance on practitioners developing their research or 'science' skills alongside their skills in applying sport and exercise theories and models. The British Psychological Society's Qualification in Sport and Exercise Psychology (BPS QSEP) and the British Association of Sport and Exercise Science (BASES) Supervised Experience training programmes expect candidates to demonstrate the development and application of research skills as an integral part of their professional development.

The integration of research within such development programmes suggests a desire within the profession (or, at least the professional and regulatory bodies) for the sport and exercise psychology workforce to adopt a scientist-practitioner model (Keegan, 2016). Keegan (2016) related the aforementioned traditions of sport and exercise psychology to the contemporary discussion of the scientist-practitioner model and identified that traditional representations of this model are grounded in positivist/certaintist philosophy. If true, the approach by professional bodies to develop scientist-practitioners my lead to situations where neophyte sport and exercise psychologists develop and apply their skills within the dominant positivist paradigm, or struggle to commensurate their philosophies for research and practice.

Understanding and engaging with these traditions of sport and exercise psychology are considered vital to enhance practice and deliver effective services to clients (Keegan, 2016; Poczwardowski et al., 2004; Poczwardowski & Sherman, 2011). Applied practitioners and researchers, however, face challenges in engaging with these traditions given the

increasing paradigmatic perspectives being proposed. Ensuring, therefore, that researchers and practitioners within the discipline are better aware of one another's philosophical positions may enhance the quality and usefulness of knowledge generated. Knowledge generated by researchers who have engaged with research philosophy, and have explained their ontological, epistemological, methodological and axiological positions, will allow practitioners to better contextualise the knowledge and use it in ways which align to their own philosophies of practice.

3.7. A Reflective Aside

The present discussion regarding the tension between paradigms within sport and exercise psychology, their influences on the readiness of practitioners, and the usefulness of generated knowledge resonates strongly with my own experiences as a neophyte practitioner. My own progress through the BPS QSEP qualification resulted in a great deal of soul searching in which I better understood and developed my professional philosophy and railed against the positivist paradigm I had initially been trained in during my undergraduate and postgraduate experiences. The challenges I faced are summarised by Collins and McCann (2015), but my own struggles with philosophy were broadly limited to professional practice rather than research. These struggles have continued during this PhD journey during which I have attempted to reflect on how my professional philosophy fits within the dominant paradigms in our discipline. The outcome of this reflection is a desire to be clear about philosophical assumptions underpinning my research so as to better allow others to contextualise the methodology adopted and be critical about the contribution this thesis may make.

3.8. Dominant Research Paradigms in Contemporary Sport and Exercise Psychology

In their thought-provoking discussion of the role of research philosophy within contemporary sport and exercise psychology and practice, Hassmen et al. (2016) considered the paradigms which dominate discourse in the discipline. Hassmen et al. (2016) considered each of these philosophical views of science about sport and exercise psychology research and identified that some of the most prominent contemporary theories may reflect Kuhnian paradigms and limit the expansion of knowledge in the field. Armed with an understanding of the philosophy of science and research, the following section will consider the implications

of the research paradigms that have come to dominate sport and exercise psychology research and practice. This discussion will then frame and justify the philosophical approach being adopted for the current thesis.

To establish the focus of their discussion, Hassmen el al. (2016) contacted the editorial boards of the most prominent sport and exercise psychology journals to review the preceding 5 years of published output to identify, a) the most frequently considered phenomenon of interest, b) the most frequently applied theory used within published articles, and c) the most common methodological approach applied within the articles published within these journals. The most prominent phenomenon of interest was motivation, the most frequently applied theory being SDT, and regression analysis (including correlation studies) the most frequently applied methodology employed.

3.8.1. Self-Determination Theory.

As the preceding chapter demonstrated, the dominant theories relating to motivation in sport and exercise psychology are SDT (Deci & Ryan, 2000) and AGT (Nicholls, 1984), with each being applied in various contexts and to explain different motivation-related phenomena. Adopting appropriate methods of systematic reviews, Hassmen et al. (2016) conducted a brief review of regression studies investigating SDT in sport and exercise from 2010 to 2015, specifically addressing a) the role of theory within each article, and b) the reporting of about theory. Hassmen et al., (2016) concluded that the studies they reviewed represented SDT being applied in a manner similar to a Kuhnian paradigm, in that SDT guided the research question and the tools for researchers to answer these questions. Furthermore, researchers did not test the theories but rather tried to apply the theory to new population groups, anomalous results with ad hoc assertions (e.g., cultural differences) or through methodological inconsistencies or inaccuracies. Hassmen et al., (2016) also categorised SDT literature as reflecting a Lakatosian degenerative research programme due to a) the lack of competing theories; b) the lack of new predictions (rather than applying theories to new populations or situations); and c) removing focus from results that are inconsistent with theory with post hoc hypotheses.

Despite Hassmen et al.'s (2016) review of SDT literature, considering SDT research in sport and exercise psychology as a Kuhnian paradigm should not come as a surprise. In their recent text summarising the key tenets of, and evidence for, SDT, the theory's

cofounders Ryan and Deci (2017) stated in the first sentence of the text that they *"...began the project of developing self-determination theory...with a particular paradigmatic concern in mind"* (p.vii). They go on to state in the preface that *"The publication of this volume represents...a further touchstone in providing a general paradigm for researchers and practitioners who are interested in active functioning and wellness"* (p.vii). The researchers responsible for the development of SDT as a meta-theory of human motivation always intended it to have the role of a research paradigm rather than simply a theory, and this is not an unknown fact. In the same volume, Deci and Ryan (2017) spend considerable time providing a (non-exhaustive) list of contemporary researchers who have contributed to the SDT paradigm. Furthermore, Deci and Ryan (2002) called for researchers to *"extend and refine the tenets of SDT...applying the concept to new domains"* (pp. 432-433), suggesting that researchers applying the theory to other settings are doing what they are supposed to within this paradigm.

Despite SDT being considered by its creators as a paradigm as Kuhn (1962) defined the term, the concern is that researchers using or applying this paradigm have not been explicitly aware that they are working within this paradigm. In the previously mentioned review of recent SDT research conducted by Hassmen et al.'s (2016), it was noted that researchers either referred to SDT as a framework to be used to conduct research, or as a theory from which hypotheses can be developed and tested. Researchers were not consistently explicit in which of these approaches (if any) they were taking with their research, suggesting that in some cases they might be naïvely working within this paradigm. From a Kuhnian perspective this approach reflects 'normal science' and expanding theories in such a small way could be considered progress. On the other hand, this approach does not align with scientific progress as judged by Popperian and Lakatosian standards. Kuhn (1962) would argue that the predominant paradigm (e.g., SDT) will continue to make progress until such a time that anomalies confound one another and reach crisis (Hassmen et al. 2016). The challenge with this approach is that Kuhn (1962) did not clearly set out the process by which such a crisis point is reached, and implicit (and, to an extent, explicit) adoption of a paradigm reduces the likelihood that anomalies (e.g., unexpected results) are viewed as such.

3.8.2. Achievement Goal Theory.

As the other dominant theory of motivation within contemporary sport and exercise psychology research and practice, AGT is open to the same level of scrutiny when considering the process of knowledge generation. Much of the criticisms of SDT – paradigmatic approaches involving theory verification rather than testing, ad hoc hypotheses for unexpected results – can also be considered within the context of AGT research. Harwood et al. (2015) conducted a systematic review of studies which investigated the intrapersonal correlates of perceptions of motivational climates. The results of this systematic review suggested a tendency within AGT literature to a) produce more articles than are required to demonstrate a relationship between variables theorised within AGT (i.e., correlational studies), and not enough studies exploring causality relationships; b) an overreliance on subjective measures (e.g., questionnaires) rather than objective ones (e.g., performance indicators); c) too little investigation of social agents other than coaches; d) too little investigation of the concurrent or interactive influences of multiple social agents; e) an overreliance on school- or college-aged participants; f) an overreliance on team sport athletes; and g) a tendency by researchers to make suggestions for practice based on correlational findings. Harwood et al. (2015) summarised the literature they reviewed as focussing on verifying or expanding AGT theory rather than testing it, which may reflect Kuhn's (1962) normal science or Lakatos' (1970) degenerating research programme.

Further evidence that AGT research may be considered a Kuhnian paradigm is the idea that AGT theorists and researchers have consistently railed against alternative theories or modifications of the central tenets of AGT. For instance, Hassmen et al. (2016) discuss the process by which researchers investigating AGT in sport and other disciplines have proposed expansions of the original AGT dichotomous framework (discussed in the preceding chapter). The conceptualisation of the achievement context as being a 2x2 framework (Elliot & McGregor, 2002; Pintrich, 2000), and more recently a 2x3 framework (Martin, 2006) have been dismissed by prominent AGT theorists and researchers purely due to the risk to parsimony (e.g., Roberts, 2012). Defence of theories on the grounds of parsimony in favour of greater explanatory power reflects Kuhnian paradigms. In addition, this approach contradicts the view that parsimony is only one of many measures of theory robustness and applicability within science rather than the only principle to adhere to (Courtney & Courtney, 2008; Hassmen et al., 2016).

3.9. Positioning the Current Thesis

The preceding discussion has highlighted the current philosophical challenges within sport and exercise psychology, and motivation research in particular. Much of the literature reviewed in Chapter 2 relating to AGT and SDT was developed as part of Kuhnian research paradigms, potentially limiting the effectiveness of findings and progression towards a greater understanding of the role of social agents on athlete motivation during athlete development. Even attempts to generate new theories that might be able to compete with those adopted within these paradigms (an approach which would have been favoured by Popper and Lakatos), such as grounded theory, have themselves become paradigmatic in their application and contribution to knowledge.

Recent attempts have been made to try and to navigate the aforementioned challenges. In their series of papers investigating the role of social agents on athlete motivation across different developmental stages, Keegan and colleagues (Keegan et al., 2009, 2010a, 2014a) attempted to develop a new and emergent theory which was grounded in the data (although not through wholesale adoption of a specific grounded theory methodology). By being 'theoretically agnostic', they endeavoured to not be influenced by dominant motivational theories such as SDT and AGT in their pursuit of a better understanding of the role that coaches, parents and peers have on athlete motivation. The results of these studies then informed a new and radical approach to conceptualising athlete motivation – the motivational atmosphere – supported by an extensive synthesis of extant literature (Keegan et al., 2014b). Keegan et al. (2014b) proposed that the motivational atmosphere conceptualisation of motivation could subsequently be tested in a wide variety of factors, but that such research should be *"…philosophically grounded, theoretically and empirically informed, and…more methodologically suitable for the study of social-motivational processes"* (p. 26).

The current thesis attempted to meet Keegan et al.'s (2014b) aspirational approach to progressing understanding of the social-motivational processes within sport, and how these might change during athlete development. The preceding discussion regarding the science of research, research philosophies and paradigms, and the research and applied challenges within sport and exercise psychology as a discipline, provide a justification for the methodology employed within this thesis. The following sections will outline the philosophical position of this thesis.

3.9.1. Ontology: Critical Realism.

Critical realism is a research paradigm developed by Bhaskar (1979) in deviation from both positivist and constructivist perspectives. Bhaskar (1998) argued that positivist and constructivist perspectives limited advancement in knowledge due to reducing ontology to epistemology. Specifically, both ontological positions limit what is known to either knowledge gained through objective measurement and scientific experiments (i.e., positivism) or the knowledge and experiences of humans (i.e., constructivism). Reality from both positivist and constructivist perspectives, therefore, is defined only by human knowledge (Fletcher, 2016). Critical realism combines elements of both positive and constructivist approaches (Fletcher, 2016) but argues instead that a reality exists independent of human perceptions of it (Denzin & Lincoln, 2013) but reality is too complex for humans to fully understand (Guba & Lincoln, 1994). Critical realism proposes three levels of reality from an ontological perspective: the real, the actual and the empirical (Blaikie, 2007). Real structures have actual consequences, knowledge of which can be gained through empirical observation (Blaikie, 2007). Considered another way, at the real level, causal structures contain mechanisms which cause events at the actual and empirical level. At the actual level, events occur whether they are observed or not. At the empirical level, events are observed and experienced, and therefore understood through interpretation (Fletcher, 2016). This stratified ontology allows for the understanding of a social reality or structures through social activity between social agents (Blaikie, 2007). Critical realist researchers gain knowledge through developing theories which become increasingly 'truth-like' (Fletcher, 2016).

Critical realism suggests a reality exists but understanding of it can always improve. This position differs from positivist perspectives as it proposes that knowledge of reality must be continually critiqued to become increasingly accurate (i.e. a Popperian critical rationalist epistemology). The Critical realism view of reality can be further split into transitive and intransitive types of knowledge. Intransitive dimensions include psychological, social and physical phenomena, whereas scientific observations and theories are transitive. The methods of understanding reality (i.e., transitive knowledge) are, therefore, separated from reality itself, allowing researchers to develop, refine and improve their theories of reality (Blaikie, 2007). Knowledge can be gained about reality, but this knowledge is open to change based on critical discussion and debate through research (Blaikie, 2007). Critical realism also suggests a shift from positivist attempts to test predictive hypotheses and strives to better understand the reality rather than predict it (Denzin & Lincoln, 2013; Fletcher, 2016). Within this

context, our understanding of reality can always be improved and critiqued, including our knowledge of the socio-motivational influences in sport.

3.9.2. Epistemology: Critical Rationalism.

From an ontological position of critical realism, the role of science is to improve existing, fallible knowledge of an external reality, rather than the pursuit of an absolute 'truth' (Blaikie, 2007). This fallibility of our knowledge of reality, and researchers' pursuit of improving understanding, is similar to a critical rationalist epistemology such as that proposed by Popper (1974). Popper argued against Kuhn's (1962) thesis that science progresses through periods of 'normal science' and dogmatically accepted research paradigms before reaching a crisis and adopting a new – and possibly improved – paradigm. Popper (1974) argued that induction from multiple observations was not a viable method of generating knowledge as all observations are theory-informed and can always be falsifiable. Developing novel theories and making them easy to falsify is a more robust way of generating and enhancing knowledge (Hassmen et al., 2016). Looking for verification of theories is a waste of effort as evidence against a theory is more useful and efficient. Popper was interested in truth in that scientific progress can be determined by an "increase in truth content" (Popper, 1974; p.1102), such that theories explain existing facts and predict unknown facts better than rival theories. Within this context, the current thesis aimed to develop a proposed model of perceive social agent influence on athlete motivation during athlete development. Such a model would act as the starting point to developing, testing and falsifying a new theory regarding this phenomenon to compete with traditional theories, with specific suggestions for falsification in line with a critical rationalist epistemology.

3.9.3. Methodology: Mixed Methods.

Taking into consideration contemporary discourse on the philosophy of science, the current state of play within sport and exercise psychology research and practice and the dominating paradigms that frame theories and research of athlete motivation, this thesis adopted a critical realist ontological, and critical rationalist epistemological, stance. Lincoln and Guba (1994) suggest critical realism and other post-positivistic approaches to research focus more on understanding reality in natural settings and generating theories through triangulation or multiple methods, thereby allowing quantitative and qualitative approaches. This approach shares some similarities with a pragmatic paradigm, an overlap of ontological,

epistemological and methodological considerations that has been identified elsewhere for mixed methods of research (e.g., Maxwell & Mittapilli, 2010; Moran, Matthews, & Kirby, 2011; Sparkes, 2015).

Aligned with what Keegan (2016) identified as a Fallibilism tradition in sport and exercise psychology, the thesis aimed to generate a new model of perceived social agent influence on athlete motivation and outline the ways in which it can be falsified. Such ontological and epistemological positions are proposed to align with a mixed methods methodology (Maxwell & Mittapilli, 2010), which combines qualitative and quantitative methods to falsify theories or hypotheses and/or generate new theories. Mixed methods research is a growing area with a great deal of discussion on its philosophical underpinnings and commensurability with specific research paradigms (see Tashakkori & Teddlie, 2010). Despite this debate, Maxwell and Mittapalli (2010) argued that a critical realist ontological position offers researchers opportunities to adopt this approach to answer research questions whereby qualitative and quantitative methods can be used together to corroborate research findings. Such an approach allows for the flexible use of different methods (i.e., qualitative and quantitative) to provide answers to questions which are posed and has been proposed as providing advantages in relation to corroboration through triangulation (Moran et al., 2011).

3.9.4. Methods.

Aligned to the above epistemological, ontological and methodological positions, the studies outlined in subsequent chapters perhaps best reflect the first steps of a Lakatosian research programme. Specifically, the studies in this thesis corroborated one another in order to develop a novel proposed model of perceived motivationally-relevant social agent influence on athlete motivation. Study 1 employed qualitative methods to generate a proposed model of perceived social agent influence on athlete motivation during athlete development that was grounded in the experiences of athletes and their parents. Study 2a then adopted quantitative techniques (i.e., confirmatory factor analysis) to test, corroborate and refine the theoretical model developed in Study 1 (Schumacker & Lomax, 2016). Study 2b then used the proposed model to explore differences in perceived social agent influence between stages of development. Collectively these studies allow for a new proposed model to be developed and hypotheses proposed with a view to developing a new theory to challenge existing theories (Harwood et al., 2015) and improve understanding of the perceived influence of social agents on athlete motivation.

3.10.   Summary

In summary, this chapter outlined the philosophy of science, the dominant research paradigms within sport and exercise psychology, and the implications of these for interpreting and applying dominant theories and approaches to knowledge generation in the discipline. Within the context of this discussion the philosophical assumptions of the present thesis were then presented. This thesis adopted a critical realist ontological position in which reality is argued to be independent of human perception and our understanding of reality can always improve. This position leads to critical rationalist epistemological position in which research should attempt to improve the understanding of reality through knowledge generation based on falsification. Following a critique of the extant literature relating to the motivational role of social agents in sport, the need for a new theory to compete with the current dominant theories was clear. In order to address the aim of this thesis, and aligned with the ontological and epistemological positions outlined, the methodology of the thesis was mixed methods in which qualitative and quantitative approaches are implemented together in order to corroborate and enhance findings. Therefore, Study 1 adopted a qualitative method to create a proposed model of perceived social agent influence on athlete motivation. Studies 2a and 2b then adopted quantitative methods to test the proposed model on a wider sample across a number of sports thereby corroborating both the content and structure of the model. This methodological approach strengthened the transferability of the findings of this thesis (Morgan, 2007). Subsequent chapters present the research conducted within this thesis and in line with these philosophical assumptions.

Chapter Four - Study 1

A Retrospective Investigation of the Perceived Influence of Coaches, Parents and Peers on Talented Football Players' Motivation during Development

4. Study 1: A Retrospective Investigation of the Perceived Influence of Coaches, Parents and Peers on Talented Football Players' Motivation during Development

4.1. Introduction to Study 1

As demonstrated in the literature review (Chapter 2) research has investigated the independent and combined influence of coaches, parents and peers on athlete motivation. For instance, the series of studies by Keegan and colleagues (Keegan et al., 2009, 2010a, 2014a, 2014b) identified that that coaches, parents and peers provided specific types of support consistently during each stage of development (e.g., feedback). Coaches were also found to consistently support their athletes through leadership styles and technical development, whereas peers provided support through relationships, competition and collaboration across each developmental stage (Keegan et al., 2014a). There were some changes in perceived social agent influence between developmental stages, including parents becoming less involved in supporting athletes (e.g., transporting them to training and matches; Keegan et al., 2014a). Peers were also found to become more involved as athletes developed and even to provide some of the support that was previously provided by parents (Keegan et al., 2014). The changing nature of athletes' involvement in sport may provide some insight into these changes as they move away from participating for enjoyment (i.e., mastery stage) to become an independent and competitive athlete (i.e., investment stage).

Keegan and colleagues (Keegan et al., 2009, 2010a, 2014a) work also identified the potential benefits of a theoretically agnostic approach to understanding athlete motivation development in sport (Keegan et al., 2014b) in which researchers resist the tendency to let a single dominant theory dictate the question to be answered and the ways to answer it. Whilst this approach advanced understanding of socio-motivational drivers during athlete development in important ways, the series of papers did not identify the reasons for changes in perceived social agent influence over time or the stages at which they occur. Investigating temporal fluctuations in these influencers may enhance understanding of the complex process of motivation development and maintenance. Longitudinal and/or retrospective studies tracking perceived motivationally-relevant social agent influences may provide insight into these fluctuations and have been called for by other researchers (e.g., Jowett & Wylleman, 2006; Sheridan et al., 2014). Keegan et al.'s (2014b) proposed model of motivational atmosphere suggests transient boundaries between the global, contextual and situational levels of socio-motivational influences, and therefore focussing on one sport in studies may

enhance understanding of motivation in the sporting context by involving participants within a similar motivational atmosphere.

In summary, coaches, parents and peers have been found to influence athlete motivation in different ways at different stages of athletes' careers. Much of the research has been guided by existing theories of motivation, but more recent approaches grounded in the experience of athletes (e.g., Keegan et al., 2009, 2010a, 2014a) have begun to shed some light on the dynamic role of social agents during different stages of athlete development and within the complex social milieu that athletes experience. Retrospective and longitudinal studies are required to better understand the mechanisms of combined perceived social agent motivationally-relevant influence, and how these change over time (Harwood et al., 2015). Such approaches may also allow for the development of proposed models which consider each stage of athlete development. This study, therefore, aimed to identify the perceived motivationally-relevant influence that coaches, parents and peers had across all stages of investment-stage athletes' development. The objectives of the study were:

1. To explore the perceptions of investment stage athletes and their parents regarding the motivationally-relevant influence of parents, coaches and peers during athletes' development in sport

2. To develop a proposed model of perceived motivationally-relevant influence across athlete development

4.2. Methods

4.2.1. Study Design.

This study examined the perceived motivationally-relevant behaviours and influences of social agents during the three athlete developmental stages. Aligned to a critical realist ontology, a qualitative approach using one-to-one interviews was selected as motivation development in sport is complex (Keegan et al., 2014) and can be perceived differently by similar individuals (e.g., Cumming et al., 2007). Ritchie (2003) proposed that qualitative methods provide the opportunity to explore social phenomena by interpreting how participants experience them, and qualitative research has been promoted within sporting contexts to investigate complex realities (Côté, Salmela, Baria, & Russel, 1993). Despite calls for longitudinal study designs to investigate social influences on athlete motivation (e.g., Harwood et al., 2015) such studies investigating development across all developmental stages would need to take place over potentially 15-20 years. Retrospective methods, therefore, may provide similar insight in a more time-effective manner. In addition, retrospective interviews have been proposed as a primary method of gaining insight into the development of expert performers (Côté, Ericsson, & Law, 2005).

Interviews provide detailed insight into individual perspectives and experiences of phenomena (Ritchie, 2003) and have been used in previous research investigating the development of motivation (e.g., Johnston, Harwood, & Minniti, 2013). Retrospective interviews based on eliciting concrete examples of behaviours and experiences can be more effective in assisting with participant recall than generalised questionnaires (Côté et al., 2005), though recall can reduce over time (Bahrick et al., 1994). Gathering opinions and perceptions about phenomena from various individuals allows triangulation of information and provides a clearer picture of the phenomena (Lewis & Ritchie, 2003). The qualitative nature of the study allowed for an in-depth exploration of a unique performance environment in sport. The transferability (Lincoln & Guba, 1985), or naturalistic generalisation (Stake, 1995), of the findings of this study was then enhanced through the detailed description of participants' context.

4.2.2. Researcher Description

The researcher had experience working within a football context and had provided sport psychology workshops to players and coaches on the football programme from which participants were recruited. The researcher had, though, never worked or interacted directly with any other participants prior to this study. The researcher's experience in this setting did not influence or guide participant interviews or data analysis but did allow them to better contextualise and interpret participant perspectives provided during interviews. The researcher also had experience in conducting interviews and analysing qualitative data.

4.2.3. Participants.

Following institutional ethical approval from Robert Gordon University's School of Health Science School Research Review Group (SRRG Reference No. SHS1421, appendix A) players were purposively sampled from a Scottish elite football programme. The four-year programme provided players with ten hours per week of individualised football training and sport science support integrated within their secondary school curriculum. Players on the programme were considered to represent Côté's (1999) investment stage of development in line with trajectory 2 of the DMSP (i.e., players were dedicated to achieving the highest performance level possible within one sport). Conducting the research within one sport allowed for an in-depth exploration of the perceptions of participants within one specific sporting context. The eight players who completed the elite football programme were approached to participate. Where players agreed to participate, their parents were also approached to take part in the study. Eight participants were recruited for the study: four male football players (M age = 18.5 years, SD = 0.6) with an average of 13 (SD = 1.4) years footballing experience; and four parents (1 female, 3 male) who were recruited to triangulate findings as they were present during athlete development (Coulter, Mallett, & Gucciardi, 2010). The sample size limited the opportunity for saturation but allowed for an in-depth exploration of the unique experiences of these participants.

4.2.4. Data Collection.

Gatekeeper approval was provided by the Performance Development Manager at the Scottish Football Association to approach players who had completed the Performance School programme and met the inclusion criteria. Information about the study was e-mailed

(Appendix B) to eligible players and their parents with appropriate information sheets (Appendices C and D). Participants were made aware that confidentiality would be ensured but that anonymity might not be possible from their parent/son in any publication of the data as quotes may be triangulated between the two. Participants were informed that their interviews would be recorded for analysis purposes, and that electronic versions of interview audio files and transcripts would be retained and stored in a password-protected computer system only accessible to the research team. Once made aware of this information, participants were asked to provide informed consent to participate in the study.

When individuals identified their willingness to participate, a date and time was arranged via email or telephone calls for the researcher to conduct a telephone interview, an approach which has been used in other studies (e.g., Gould, Jackson, & Finch, 1993; Podlog et al., 2013). Due to the large geographical distance between participants and the researcher, telephone interviews were a practical way to provide flexibility to participants for timing of interviews, although they did not allow for observation of body language which may have enhanced interpretation of interview content.

At the beginning of all interviews, participants were provided with a verbal explanation of the study and reminded about the voluntary nature of the study and issues relating to confidentiality and anonymity. All participants provided informed consent verbally due to the interviews taking place via telephone (Appendices E and F). At the beginning of each interview the researcher explained each of the three stages of Côté's (1999) athlete development model. Participants were asked to identify the time period that represented them (players), or their child (parent), being in this stage to contextualise subsequent questions relating to each stage (Lauer, Gould, Roman, & Pierce, 2010).

Interviews lasted between 35 and 65 minutes and followed a pre-prepared semi-structured interview guide (Appendices G and H) informed by previous research (e.g., Côté, 1999; Keegan et al., 2009, 2010a, 2014a) and the purpose of the study. Although the purpose of the study was to develop a novel proposed model of perceived social agent influence on athlete motivation, interview questions were informed by motivational theories in determining the types of behaviours that might be considered motivationally-relevant. Questions were grouped by developmental stage, and participants were asked about the role of the athlete's coach, parents and peers during the sampling, specialising and then investment stages of athlete development. Questions related to the influence of these social

agents on motivation-related behaviours (Keegan et al., 2009) such as encouraging effort, focussing on performance, and developing new skills. The semi-structured nature of the interviews allowed questions to be followed up and emerging themes from earlier interviews to be explored further. Through reflexive critical discussions with supervisors and peers, the researcher attempted to ensure that their understanding of motivational theories did not guide questions, follow up probes or analysis of participant perspectives. All interviews were recorded using two Dictaphones and were transcribed verbatim. Transcripts were uploaded to QSR N-Vivo10 software programme for analysis.

4.2.5. Data Analysis.

Analysis commenced immediately following the first interview with the researcher considering participant responses and noting initial reflections and emerging themes. Thus, subsequent data collection focussed on emerging themes. Informed by the theoretically agnostic methods adopted by Keegan et al. (2009, 2010a, 2014a), a seven-step procedure for analysing data was adopted: 1) interviews were transcribed verbatim, resulting in 150 single spaced pages; 2) the researcher familiarised himself with the content by repeated reading of, and listening to, interview transcripts and audio; 3) quotes were divided into those relating to each social agent (i.e., coach, parent, peer) and developmental stage (i.e., sampling, specialising, investment); 4) an extensive inductive content analysis was performed using QSR N-Vivo10 software, which involved open coding (i.e., tagging content), and focussed coding (i.e., categorising codes; Côté et al., 1993); 5) internal member checks were carried out during interviews to determine accuracy of interpretations, in which the researcher summarised responses back to participants to ensure accurate interpretation; 6) research supervisors critically commented on and questioned the integration of codes into categories throughout the analysis process; 7) peer debrief was conducted throughout and at the end of the analysis with fellow researchers. This analysis process produced 707 raw codes which were then refined and grouped into 235 focussed codes. Categories were then developed by refining focussed codes into themes and higher order themes, adopting a constant comparison method to ensure that each category accurately reflected the codes within it. The previously mentioned methods (i.e., member checking, critical questioning by supervisors, peer debriefing) were used to ensure that codes were representative of the participants' interpretation of the motivational influences of social agents, although in places some codes were named after existing concepts in the literature where these accurately reflected the

implied meaning (Keegan et al., 2009). Example transcripts can be found in Appendix I (Player 1) and Appendix J (Parent 1).

4.3. Results

Transcript analysis allowed comparisons of perceived social agent influence across each stage of athlete development. Table 2 summarises the key categories of perceived social agent influence across the sampling, specialising and investment stages of athlete development. Five categories of perceived social agent influence on athlete motivation during development emerged from the data: (a) relationship factors; (b) interpersonal interactions; (c) support for development; (d) support for performance; and (e) feedback/evaluation. All social agents were involved in each category of influence at some point during athlete development, though influences changed over time. Subsequent discussion will describe how perceived social agent influence changed across athlete development for each of these categories.

The following sections will consider each category of perceived social agent influence, and describe the themes within each of these categories, social agent roles represented by these themes, and how these influences were perceived to change over time. To differentiate between participants, they will be described as 'players' and 'parents' when presenting themes and quotes.

Table 2: Descriptions of categories and higher order themes of perceived social agent influence on athlete motivation

Category	Description	Higher Order Themes	Description
Relationship Factors	*Indicators of the quality of relationships between athletes and social agents*	Friendships	*Positive relationships a constructive influence within football setting*
		Role Models	*Players looked up to social agents and aspired to be like them*
		Group Factors	*Encouragement to feel belonging to a team*
		Closeness	*Players established close and personal relationships with social agents*
		Similarity	*Social agents had similar experiences and passions as players*
		Selective Relationships	*Players chose which social agents to interact with*
		Continuity	*Coaches being a constant presence during development important*
Interpersonal Interactions	*Behaviours demonstrated by social agents during interactions with players*	Supportive Behaviours	*Behaviours which matched the needs and goals of players*
		Engendered Positive Feelings	*Behaviours that made players feel good about themselves*
		Negative Influence	*Explicit and implicit behaviours which reduced player motivation*
		Promoting Intrinsic Motivation	*Behaviours which promoted player enjoyment and autonomy*
Support for Development	*Behaviours which contributed to players' sport development*	Technical Development	*Assisting the development of players' technical skills*
		Psychological Development	*Assisting the development of players' psychological skills*
		Support for Development	*Contextualising player experiences as developmental opportunities*
		Prepare for Performance	*Helping players prepare for competitive performance*
Support for Performance	*Behaviours which facilitated and supported sport performance*	Practical Support	*Logistical and lifestyle support*
		Social Support	*Emotional and interpersonal support for development*
		Providing Access to Sport	*Social agents acting as gatekeepers to sport participation*
		Effort Support	*Support to maintain high levels of effort*
		Support for Performance	*Providing access to performance opportunities (e.g., team selection)*
Feedback & Evaluation	*Behaviours which helped players evaluate competencies*	Reflection	*Helping players understand and learn from developmental experiences*
		Praise	*Providing positive comments and encouragement for performance*
		Forward Planning	*Helping players put experience into perspective of long-term development*

Table 3: Relationship Factors Category for Each Social Agent Across Each Developmental Stage

Sampling Stage	Specialising Stage	Investment Stage
Friendships	**Friendships**	**Friendships**
Developing Friendships (C, Pe)	Developing friendships (Pe)	Developing Friendships (Pe)
		Friendships Changing (Pe)
Closeness	**Closeness**	**Closeness**
Positive Relationship (C)	Positive Relationship (C, Pe)	Positive Relationship (C, Pe)
Respecting Social Agent (C, Pe)	Respecting Social Agent (C, Pa, Pe)	Respecting Social Agent (C, Pe)
Role Models	**Role Models**	**Role Models**
Parental Role (C)	Role Model (Pe)	Parental Role (C)
Role Model (C, Pe)		Role Model (C, Pe)
Group Factors	**Group Factors**	**Group Factors**
Learning from others (C, Pe)	Learning from others (Pe)	Learning from others (C, Pe)
Motivated to be part of the team (C, Pe)	Motivated to be part of the team (Pe)	Developing group cohesion (C, Pe)
Perceived pressure in team environment (Pe)	Developing group cohesion (C, Pe)	Perceived pressure in team environment (C, Pe)
	Perceived pressure in team environment (C, Pe)	
Similarity	**Similarity**	**Similarity**
Shared passion for the game (C)	Seeking attention of social agent (Pe)	Shared passion for the game (C)
Seeking attention of social agent (C)	Shared interests and experiences (Pe)	Shared interests and experiences (C, Pe)
Shared interests and experiences (Pe)		Understood how they think (C, Pe)
	Selective Relationships	**Selective Relationships**
	Other supporters (Pe)	Choosing those who influence (C, Pa, Pe)
		Other supporters (Pa)
		Continuity (C)

Key: C = Coaches; Pa = Parents; Pe = Peers

4.3.1. Relationship Factors.

Players reflected on the importance of the quality of the relationships they have with social agents during their development, and this was a consistent factor during all stages of development. Table 3 illustrates the higher order themes (HOTs) of motivationally-relevant relationship factors for social agents across each developmental stage. These higher order themes will now be discussed in turn.

4.3.1.1.   Friendships.

Friendships were a recurring HOT throughout each stage of development, primarily about peers. During the sampling stage this was a reason for, and an outcome from, participation in sport, with players establishing relationships that were not exclusive to the sporting environment. Player 4 highlighted that having friends made him *"...happy to go, 'cause you are like 'oh, yes I am goin' to see my pals tonight'...it made it more enjoyable to go"*, demonstrating that friendships motivated players to attend training. Friendships continued to be important as players progressed into new situations such as football academies or secondary schools. Player 2 commented that *"...the football part was the way to sort of link up with people, because you didn't have any sort of prior knowledge of each other or know what anyone had did or what anyone was like..."*, highlighting the positive role that developing friendships had in a football setting. In the investment stage, friendships appeared to change as players joined clubs and saw their friends who they had developed with not progress to this level. Parent 4 commented that *"...I think [it] is having more of an effect on him 'cause he has built up long relationships with some of these boys and some of them are just not going to make it..."*, showing that relationships are changing at this stage, however they further highlight the positive influence of new relationships when stating *"...he has got used to the fact that...new players come in and out, and he is quite excited if a new player comes in..."*.

4.3.1.2.   Closeness.

Closeness in the relationship with social agents – particularly coaches and peers – were important across all stages of development. About coaches during the sampling stage, Player 2 commented that *"...them having a sort of close personal connection with myself made me work harder for it"*, showing that this perception of closeness led to players putting

effort into training. Important in this closeness was the idea of respect between the social agent and the athlete. During the specialising stage, Player 2 commented that his coach was *"...quite firm, but at the same time he was...he was a nice guy"*. At the same stage, Parent 1 commented that their son *"looked at the coaches as kind of mentors, that they knew what they were talking about and for him to proceed on he was better to listen to them as they knew what they were talking about"*. As players progressed into the investment stage the importance of this closeness continued and having close relationships with peers and coaches was important for enjoyment, confidence and performance at this high level. For closeness amongst team members, Player 3 highlighted that *"...it keeps...morale high, it keeps you sort of happy...it keeps everyone a lot happier, keeps everything a lot smoother...it just keeps your confidence when you're playing"*. The importance of this closeness with peers at this stage was highlighted by Player 1: *"...we all cared for each other and had a little bit of a wee bond and that on the go. 'Cause we just respect each other. So we all kind of cared and wanted the best for each other"*.

4.3.1.3.   Role Models.

Social agents acting as role models had an influence on players during their development. This role was consistent for peers during all stages of development, with players explicitly comparing themselves to their teammates and learning from their behaviours. Despite being consistent during development, Player 2 described the importance of having teammates that act as role models:

> *If you've got someone to look up to that's nice and cool and collected, that makes you want to be like that, and then show other people that you can be like that as well so they think you are cool and collected.*

Coaches were also seen to adopt parental roles during the sampling stage when players were new to the football environment, as highlighted by Player 2 stating *"I think they were all quite like father figures...more like really good guys, always having a laugh and making you feel, like, good about yourself"*. This was mirrored when players were at the investment stage, with Parent 4 commenting that: *"...the coach becomes...like a secondary parent if you like, as a good coach will become sort of the next most important person in their life"*.

4.3.1.4.   Group Factors.

The HOT Group Factors was an important one throughout all stages of development and involved the influence of coaches and peers at each stage. Belonging to a group was consistently referred to as being important for players, though this was for a variety of reasons. Being motivated to be part of a team with peers and coaches was important at the sampling stage, with Parent 4 stating about their son that *"…it was quite important to him because generally kids like to belong to something…to feel a part of something…"*. This factor was important at the specialising stage, but coaches contributed to this by developing a sense of cohesion as illustrated by Parent 4 when referring to their child's coach: *"…he was quite good at bringing the boys and getting them to work as a team and bringing out the good points in them"*. As this idea of cohesion developed into the investment stage there was a clear perception that this was equally influenced by peers and coaches at the same time, as described by Player 3: *"…the environment is created by the standard of play, so like if everything is going well and the coach is having some banter…then you know everyone is working hard and doing well"*.

A positive team environment also provided players with the opportunity to learn from peers and coaches as they developed. In the early stages of their involvement in football Player 2 felt he *"…wanted to improve and take their advice on and use it"*, when considering peers and coaches. As players progressed into the specialising and investments stages and joined higher performing teams they actively sought to learn from those with more experience or skills, as evidenced by Player 3 commenting that:

> *There are some players that are better than you and some that are not so good…the ones who are better than you, they sort of motivate you to…be as good, if not better than them…and the ones you are better than sort of gave you that confidence…to keep pushing on, just to sort of be better.*

Although the team environment provided many positive influences for the players, it did also lead to perceptions of pressure from coaches and peers. Part of this was to do with pressure to perform well enough to maintain your place in the team, even as early as the sampling stage, as evidenced by Player 3 commenting that *"…you don't want to be the friend who gets, like, released, or the friend who, like, doesn't play anymore"*. Though players had established friendships and enjoyed being part of the team they were competing with one another for positions. This perceived pressure was also related to performance levels of the

team when reaching the investment stage as illustrated by Player 3 who commented that *"...if there wasn't a fun environment and...everyone was sort of snapping at each other...you would know yourself that it is not a sort of good standard"*.

4.3.1.5. Similarity.

The similarity HOT reflected the importance of coaches and peers having similar passions and shared interests with athletes and was evident at all stages of development. This similarity progressed from a perception that coaches were *"engendering a sort of passion for football from quite an early age at the club"* (Parent 2), during the sampling stage, by sharing their own passion for the sport with young people. During the specialising stage players started to gain support from the similarity of experience their peers were having, and using this to help transition, for example, into a new school. In the high-performance environment of the investment stage, Player 3 commented that their coach was *"...an ex pro himself and he just sort of knew exactly what you needed"*, when referring to how their coach having had a similar experience enhanced their influence.

4.3.1.6. Selective Relationships.

Additional relationship factors became important during the specialising and investment stages of development. During these stages players commented that they would be selective in allowing specific social agents to influence their development. Siblings were seen to play a role in supporting players to achieve their goals in sport during the specialising stage, and during the investment stage athletes highlighted that they would choose to not allow their peers from out with their sport influence their choices. For example, Player 3 described that his friends outside of sport *"...go out every...well, most weekends, and you don't wanna be the guy who is just sort of living for the weekend"*, demonstrating his choice not to allow his friends to influence his performance in sport.

4.3.1.7. Continuity.

Continuity of coaches was identified by players as being important during the investment stage of development. Coaches being with athletes extensively, getting to know them and forming lasting relationships with them was identified as being important for success at higher levels of performance.

4.3.1.8. *Relationship Factors Across Stages of Development.*

Relationships between players and social agents were motivationally important, with perceived social agent influence fluctuating during player development. The changes in perceived social agent influence will now be discussed for each of the three developmental stages.

4.3.1.8.1. *Sampling Stage.*

Indicators of relationship quality related to coaches and peers but not parents. Establishing friendships with peers and coaches was important in this new environment, as was the degree of closeness within these relationships. Coaches and peers acted as role models to players. Players enjoyed belonging to a team, with coaches and peers creating a team environment, which was further enhanced by perceived similarity with coaches and peers in terms of interest and passion.

4.3.1.8.2. *Specialising Stage.*

Players' relationships with peers increased in importance during this stage. Similarity of experience and friendships with peers progressing through to football academies helped players thrive in this new setting. Moving to football academies provided access to more talented peers who became role models for players as *"…they wanted to be as good as them…they were fantastic football players…gifted players"* (Parent 2). Players exercised their choice of relationships with peers, choosing facilitative peer relationships, which helped them as a player. The team environment was influenced by coaches. *Closeness* in the relationships with influential social agents was important, as illustrated by Player 2 who commented that his coach *"...was a nice guy…you've got that respect, but you can kind of open up to him"*.

4.3.1.8.3. *Investment Stage.*

Players' relationships with coaches and peers dominated during this stage with closeness in relationships with social agents important. Coaches and peers acted as role models to players, and Player 3 illustrated the importance of coach awareness of performance

demands in commenting that his coach was *"...an ex pro himself and he just sort of knew exactly what you needed"*. Coaches and peers adopted a professional approach during training and competition in which all players worked hard and got on well with one another in a positive team environment. Although players valued this team environment, it led to perceptions of pressure due to competition for places. Players again exercised their choice of the relationships to ensure that relationships facilitated development and performance. Despite the changing personnel within professional clubs, players got *"...quite excited if a new player comes in…"* (Parent 4) and grasped the opportunity to establish new friendships. Participants also deemed having continuity and lasting relationships with coaches as important.

Table 4: Interpersonal Interactions Category for Each Social Agent Across Each Developmental Stage

Sampling Stage	Specialising Stage	Investment Stage
Supportive Behaviours	**Supportive Behaviours**	**Supportive Behaviours**
Allowed players to be themselves (C)	Allowed players to be themselves (C, Pa)	Allowed players to be themselves (C, Pa)
Promoting fun and enjoyment (C, Pa, Pe)	Promoting fun and enjoyment (C, Pa, Pe)	Promoting fun and enjoyment (C, Pa)
Serious approach to training (C)	Serious approach to training (C)	Serious approach to training (Pe)
Providing players with rewards (Pa)	Communicating (C, Pe)	Communicating (Pe)
	Providing players with rewards (C, Pa)	
Engendering Positive Feelings		**Engendering Positive Feelings**
Made player feel good about self (C)		Made player feel good about self (C)
Made them feel comfortable (C)		Made them feel comfortable (C, Pe)
		Created special moments (C)
Negative Influence	**Negative Influence**	**Negative Influence**
Negative social influence (C, Pe)	Negative social influence (C, Pe)	Negative reactions following performance (C)
Negative reactions following performance (C)	Perception of pressure (Pa, Pe)	Perception of pressure (Pa)
Demotivating influence (C)		
Perception of pressure (C, Pa, Pe)		
Intrinsic Motivation	**Intrinsic Motivation**	**Intrinsic Motivation**
Player motivating self (C, Pa)	Player motivating self (C)	Player motivating self (C, Pa)
Love of football motivating (C, Pe)	Love of football motivating (Pa, Pe)	Love of football motivating (Pa, Pe)

Coaches; Pa = Parents; Pe = Peers

4.3.2. Interpersonal Interactions.

As well as identifying influencing factors relating to the quality of their relationship with social agents, participants highlighted specific behaviours and interpersonal interactions that influenced their motivation at different stages of development. Table 4 illustrates the higher order themes of motivationally-relevant interpersonal interactions for social agents across each developmental stage. These higher order themes will now be discussed in turn.

4.3.2.1.   Supportive Behaviours.

One of the most important social agent interpersonal interactions was supportive behaviours, which broadly encapsulated behaviours that players perceived as being helpful during their development. All social agents demonstrated these behaviours in different ways during each stage. During the sampling stage, all three social agents were involved in creating a positive environment that "*wasn't about winning or anything, it was just about enjoying yourself*" (Parent 4). Behaviours experienced were all about creating a positive and enjoyable atmosphere about football training where coaches and parents encouraged athletes to be themselves. As players progressed into the specialising stage these supportive behaviours continued despite training taking on a more serious focus. Coaches and peers were creating such a positive atmosphere that players *"…didn't want to come off the pitch sometimes at night because they were enjoying themselves"* (Parent 3). Despite the emphasis on fun, coaches were focussed on developing athletes to the point that this seriousness encouraged athletes further, as evidenced by Player 2 commenting that his coach *"didn't give out compliments that much, so you were always trying to impress him to get that compliment out of him".* As players progressed into the investment stage of development, these behaviours continued and ensured that, even with additional pressures of performing at a higher level and committing more resources to their sport, the interaction they had with social agents was positive. Parents and coaches continued to allow athletes to have autonomy and ownership over their choices, and peers came to behave in more serious ways in this new, professional environment. For instance, about their son's peers when he signed a professional contract for a club, Parent 4 commented that:

> *The older boys looked after him. They still expected a certain performance from him*
> *so I think he had to kind of keep his standards kind of as high as he could knowing*
> *that, you know, this wasn't kind of playing around anymore. This was real stuff, this*

was fans coming to see him and they expect a lot from you, so everything kind of
became a lot more serious in that respect.

4.3.2.2.   *Engendering Positive Feelings.*

The higher order theme engendering positive feelings referred to social agent behaviours that made players feel good about themselves about their sport participation, in particular during the sampling and investment stages. Players reported coaches being the main source of such behaviours during the sampling stage and behaved in ways that made players feel positive about themselves and comfortable in their environment. In discussing a match in which their son had come on as a substitute, Parent 1 stated that *"…we seen the head coach going up to him and speaking to him, and you could see his [the player] wee face lighting up, a big smile on his face…",* highlighting the ability for the coach to make players feel positive at this stage. These positive feelings continued into the investment stage, with coaches providing what Parent 2 describes as *"magical moments"* for players and behaving in ways that allow players to feel comfortable in this higher-performance environment.

4.3.2.3.   *Intrinsic Motivation.*

Players highlighted different social agent behaviours which facilitated players' feelings of intrinsic motivation. Parent 4 highlighted that during the sampling stage they did not force their son to participate in football but encouraged him to be independent, commenting that *"he would always be ready to go, he would always get his own stuff ready to go…there was nothing that would put him off going out to train".* Social agent behaviours demonstrating passion for football assisted this, with peers during the sampling stage as highlighted by Player 4 commenting that *"…we…all enjoyed football and, eh, playing games",* about his team mates. This shared passion for the sport continued into the specialising stage, with Player 4 this time describing that players would demonstrate their passion for the sport by *"…doing it with your feet instead of saying it".* Player 3 reflected on how social agents perhaps played less of a role in this area during the Investment Stage, commenting that whilst interactions with social agents were important *"…you need to be self-motivated, you can't rely on other people as much. It just sort of, like, comes from yourself, just like knowing you need to dig in…".*

4.3.2.4. *Negative Influence*.

Whilst most interpersonal interactions reported by social agents were positive or helpful, some were reported to have a negative influence on athlete motivation during their development. These behaviours were either explicit (e.g., poor reactions to performance or unhealthy behaviours) or implicit (e.g., perceived pressure). For instance, during the sampling stage peers who were getting involved in less healthy behaviours had the potential to negatively influence players, as highlighted by Parent 1 who commented about their son during the sampling stage: *"...there were his other pals that he was at school with...they were starting to drink, smoke and so on".* Parent 1 highlighted that as their son became more serious about the sport during the specialising stage he *"...wasn't keeping in touch as much with the other friends who were smoking and drinking..."* until this influence was no longer a factor during the investment stage. Coaches were highlighted as having at times negative reactions to poor performance during the sampling and investment stages of development. For example, during the investment stage Player 3 explained that, about his coaches, *"...if you weren't doing too good they would give you, like, a rollicking, a kick up the arse",* commenting further that the implications of this are that *"...it is not happy all the time in football...".*

The most prominent perceived negative influence from social agents across all stages of development was not an obvious behaviour, but rather perceptions that social agents expected certain performance levels, which led to feelings of pressure. During all stages of development players highlighted feeling a need to not let others down, such as Player 1 stating the he always wanted to *"...impress him [father] because he has always, like, put in the time and effort and that, and I didn't want to disappoint him"* (Player 1). Player 2 highlighted the feeling of pressure about peers and performing well for the team during the Sampling stage when commenting *"...there's nothing worse than...somebody has let the team down through a personal mistake and everybody sort of goes in a bad mood with them".*

4.3.2.5. *Interpersonal Interactions across Stages of Development.*

Interactions with social agents influenced player motivation and were contextualised by the developmental stage and the situation. The changes in perceived social agent influence will now be discussed for each of the three developmental stages.

4.3.2.5.1. *Sampling Stage.*

Social agents demonstrated positive and supportive behaviours which created an environment focussed on fun and enjoyment. This environment promoted players' intrinsic motivation and coaches in particular engendered positive feelings in players by creating fun training experiences. Social agents did, however, have a perceived negative influence whereby players felt pressured to develop their skills or perform in games.

4.3.2.5.2. *Specialising Stage.*

Social agents continued to provide supportive behaviours during this stage, encouraging player enjoyment whilst helping players adjust to the professionalism of football academies. Academy coaches increased demands on players, with one coach described as being *"…very controlled…very highly qualified… and it was the discipline he was trying to instil in them…"* (Parent 2). Social agents still contributed to player intrinsic motivation, yet some interactions had a negative influence, including new unhealthy behaviours like smoking and drinking amongst some of the players' peers.

4.3.2.5.3. *Investment Stage.*

Each social agent demonstrated supportive behaviours during this stage. Social agents continued to promote intrinsic motivation, yet players were becoming more self-sufficient in this respect. Peers and coaches provided *"magical moments"* (Parent 2) in the performance environment, which engendered positive feelings. Coaches and parents continued to have a perceived negative influence due to some challenging behaviours, such as intimidating coaches who generated a *"…fear factor that made you work harder"* (Player 2).

Table 5: Support for Development Themes for Each Social Agent Across Each Developmental Stage

Sampling Stage	Specialising Stage	Investment Stage
Technical Development Developing Understanding of Wider Game (C, Pa) Skill Development (C, Pa)	**Technical Development** Developing Understanding of Wider Game (C) Skill Development (C, Pa, Pe)	**Technical Development** Developing Understanding of Wider Game (C) Skill Development (C)
Psychological Development Developing psychological skills (C)	**Psychological Development** Developing psychological skills (Pa, Pe) Helped players cope with demands of playing (C)	**Psychological Development** Developing psychological skills (C, Pa) Helped players cope with demands of playing (C, Pa, Pe)
Support for Development Focus on Development not performance (C) Focus on developing them as player (C, Pe)	**Support for Development** Focus on Development not performance (C, Pe) Focus on developing them as player (C, Pa, Pe)	**Support for Development** Focus on Development not performance (C)
Prepare for Performance Competitive situations (C, Pe) Opportunities to experience success and failure (C)	**Prepare for Performance** Competitive situations (C, Pa, Pe) Opportunities to experience success and failure (C) Preparing players for professional game (Pa, Pe)	**Prepare for Performance** Competitive situations (C, Pa, Pe) Preparing players for professional game (Pa)

Key: C = Coach, Pa = Parent, Pe = Peer

4.3.3. Support for Development

Players described behaviours that related to support for development and assisting them in becoming professional football players. These behaviours ranged from assisting the players develop their physical and psychological skills, but also facilitating environments where players could focus on the development of skills and experience performance situations. Table 5 illustrates the higher order themes of motivationally-relevant support for development behaviours for social agents across each developmental stage. These higher order themes will now be discussed in turn.

4.3.3.1.   Technical Development.

Technical development was a higher order theme that recurred across all stages of development, with coaches being a consistent source of such support. During the sampling stage of development, coaches and parents provided behaviours supportive of athletes developing their technical footballing skills and knowledge of the sport. Parent 4 demonstrated the willingness for parents at this stage to provide such support to her son, commenting that *"I would go out and kick a ball with him, if my husband wasn't working he would do the same…kick a ball, or throw a ball, practice headers, that kind of thing"*. As players began to get more serious about their training in the specialising stage so too the support from coaches became more focussed, as highlighted in Player 3's comment about his coach that:

> They always just sort of work on your main things, like your awareness or first touch, your pass and the technique of the pass, and your weaker foot…they sort of work on the things that every sort of modern player needs.

Highlighting the transition from parents providing support for developing skill during the sampling and specialising to this being a role solely fulfilled by the coach at the investment stage, Parent 4 summarised:

> I can only hope as a parent to give my son values…and hope that they become a good person or, you know, live their life as a good human being. I can't give them skills that I don't have to pass on…you need to get somebody that kind of knows what they are talking about, knows where he should be when the ball is played, just general knowledge of football is so important to [Player 4], obviously the person with the best set of skills for that is going to become more important than me in that respect.

4.3.3.2.　Psychological Development.

Alongside supporting physical and skill development, social agents were involved in the promotion of important psychological skills during development. Coaches were involved at the sampling stage in promoting confidence, with Player 4 providing the example that their coach referred to him as having the *"heart of a lion"* which developed his confidence in his abilities. In the specialising stage all three social agents became involved in offering such support, with Parent 1 demonstrating their role regarding their son during this stage as *"keeping his confidence up and keeping him going…keeping him focussed all the time"*. Peers implicitly adopted a similar role at this stage with Player 3 describing how the better players in his team *"…gave you that confidence…just to…to keep pushing on, just to sort of be better"*. During the investment stage there was an increasing role amongst social agents in assisting players to develop their skills to handle the more intense nature of training at this higher level. Player 3 explained that his parents helped him cope with the added pressure of training and competing at a higher level, commenting that they would be *"keeping you grounded…keeping you on the right track, so if you ever get a bit stressed about whatever, just making you think in the long run and just keeping you positive"*. Coaches worked with the athletes to help them control their anxiety to replicate training performances during matches, as evidenced by Player 4 highlighting that:

> A few of my managers have said, like, 'just go take them on and do your stuff', like they see me in training and I can take players on, and they want me to just carry that into the game, and it helps my confidence, lets me relax and play my own game.

4.3.3.3.　Support for Development.

To facilitate technical and psychological development, participants reported that social agents also provided environments and support which facilitated development. Player 2 described the coach-created environment during the sampling stage as *"…kinda going forward a few steps, they would knock you back a step. You would go forward two steps, they would knock you back a step"* highlighting the way in which coaches were focussing on highlighting progression but also areas for development. This developmental environment was not always explicit, with Player 3 commenting about this environment that there was *"…nothing really, like, set in stone or serious about winning, it was all just about making yourself better as a player…"*. Moving in to the specialising stage, this developmental

environment became a little more explicit as highlighted by Parent 3's description of the support his son received from coaches: *"...there is a huge difference with the word training and the word coaching...it was always coaching, it was always coaching, it was always technique and stuff like that...".* During the investment stage, Player 4 highlighted the importance of the overall developmental environment his coach created within a professional team: *"...he made my debut...kind of turned me into a man, like, you start to realise a lot more things about the game and you learn a lot more..."* demonstrating that even when playing competitively the focus from the coach was still about the learning from that situation and the development as a player.

4.3.3.4. *Prepare for Performance.*

Although social agents provided a developmentally-orientated environment, it was the ambition of all participants to become professional footballers and there was therefore a requirement to develop the necessary skills to perform highly in competitive situations. This developmental need required support from social agents to develop these skills by providing competitive situations and supporting the players to learn in these. During the sampling stage coaches created competitive opportunities but players experienced competitive behaviours from their peers. Player 2 illustrated this competition between friends and teammates by commenting: *"Everyone wanted to be best...It makes you work harder. It makes you work a lot harder, and makes you sort of want it more".* During the specialising stage coaches would create opportunities for all players to experience competitive situations equally and gain the necessary performance-related skills, as explained by Parent 4:

> *It is good to compete, but it is also nice to win, and I think it is that winning mentally...seeing the reactions that you got from that from, obviously, your teammates, and then your manager or your coach...and then, you know, your parents...you would take it all in a bit more.*

Players at this stage were gaining opportunities to experience successes and failures, and to deal with in such a way that they were being prepared for professional football. When reaching the professional environment in the investment stage, players would experience a new competitive environment from the new situation or direct competition. Player 3 highlights the presence of talented peers as meaning that *"...you want to be the best, you don't want to be the worst...",* with Player 4 highlighting the demand this placed on players by describing that *"...it was just more intense I would say. It was five days a week and*

obviously harder…you were playing with professional footballers and that, so a better standard all round…".

4.3.3.5.   Support for Development across Stages of Development.

Players described social agent behaviours that assisted them in becoming professional football players. The role of each social agent fluctuated across each developmental stage as players approached this career ambition. The changes in perceived social agent influence will now be discussed for each of the three developmental stages.

4.3.3.5.1.   Sampling Stage.

Each social agent demonstrated motivationally relevant behaviours relating to support for development. Coaches and parents provided players support to develop their technical skills. Coaches and peers provided players with environments containing developmental and performance dimensions. A perceived coach- and peer-created environment was important to provide players with support for development and preparation for performance. Coaches supported players' psychological development by promoting confidence and concentration skills.

4.3.3.5.2.   Specialising Stage.

Each social agent was instrumental in support for development as players progressed into football academies. Coaches provided technical development, preparing players for future professional careers. Parents and peers supported players with these technical elements at home and in training respectively. Players gained support from social agents for their psychological development to assist them to cope with the demands of football academies. Social agents continued to provide environments with support for development but increasingly contributed to experiences which provided preparation on performance.

4.3.3.5.3.   Investment Stage.

Coaches supported technical development, as players had progressed past their parents' level of football competency and were in competition with peers. Coaches created environments which had a support for development, and players respected the contribution

coaches made to prepare them for professional football. Social agents supported players' psychological development, with parents helping players cope with being professional footballers. Each social agent supported players' preparation for performance.

Table 6: Support for Performance Category for Each Social Agent Across Each Developmental Stage

Sampling Stage	Specialising Stage	Investment Stage
Practical Support	**Practical Support**	**Practical Support**
Practical Support (C, Pa, Pe)	Practical Support (C, Pa, Pe)	Practical Support (Pa)
Provision of Routine (Pa)	Provision of Routine (Pa)	
Social Support	**Social Support**	**Social Support**
Consistent Support (C, Pa, Pe)	Consistent Support (C, Pa)	Consistent Support (C, Pa, Pe)
Social Support (C, Pe)	Social Support (C, Pe)	Social Support (C, Pa, Pe)
Kept player grounded (Pa)	Kept player grounded (Pa)	Kept player grounded (Pa)
Effort Support	**Effort Support**	**Effort Support**
General Motivation (C, Pa, Pe)	General Motivation (C, Pe)	General Motivation (C, Pa, Pe)
Encouraging athlete to push themselves (Pa, Pe)		Encouraging athlete to push themselves (C)
		Support to learn from mistakes (C)
Providing Access to Sport	**Providing Access to Sport**	**Providing Access to Sport**
Provided access to resources for performance (Pa)	Sacrificed to help player develop (C, Pa, Pe)	Sacrificed to help player develop (Pa)
Gave player opportunities to participate in sport (Pa)	Provided access to resources for performance (C)	Provided access to resources for performance (C, Pa)
	Supported player during key moments (Pa)	
		Support for Performance
		Gatekeeper for performance opportunities (C)
		Supported player during key moments (C)

Key: C = Coach, Pa = Parent, Pe = Peer

4.3.4. Support for Performance.

Participants highlighted many behaviours from social agents which directly related to facilitating and supporting their performance in football during development. Table 6 illustrates the higher order themes of motivationally-relevant support for performance behaviours for social agents across each developmental stage. These higher order themes will now be discussed in turn.

4.3.4.1. Practical Support.

The higher order theme practical support represents support provided by social agents which was related to logistics and a lifestyle facilitative of performance. During all stages of development parents were involved in providing this type of support, predominantly about providing logistical support for their sons to attend training and matches. At this stage players were young and possibly involved in various sports, and Player 3 illustrated how vital this support was when highlighting that his parents would be *"…taking me into training every night…making, feeding me the right things…just massive like every kids development"*. This support continued during the specialising stage when training was increasing and matches were being played more frequently and further away from home. Parent 1 highlighted how such support became part of a routine during this stage when highlighting that:

> *He [didn't] have to worry about anything…it was like military precision! He came in from school, his dinner would be lying on the table the minute he walked in the door. He got all that done, did his homework – we gave him a hand with his homework if needed. Then bundled into the car, up to [training] for 7 o'clock.*

During the investment stage parents were still providing this support, despite the fact that some of the players had signed professional paid contracts with their clubs. Parent 3 highlighted the importance of continuing to provide this support even during this high-performance period:

> *Although he is a fulltime professional, the money that they are paying him is absolutely ridiculous from a parent's point of view…they expect him to get to training and have a car, and pay expenses and eat properly and pay…they've got a professional football player on their hands and it is still up to the parents to provide them with all the necessary needs to make him still feel comfortable and so that he is just concentrating on his football.*

4.3.4.2. Social Support.

One of the most important types of support offered by social agents during development was social support in which social agents were there to support the athlete emotionally and provide this in a consistent and reassuring manner. Players being able to take it for granted that this support was there was important. Parent 1 illustrated this consistent support when commenting: *"...we were just always there for him. If he needed anything or wanted anything, or advice...always trying to keep him grounded, to show him that although he was good he could always be better"*. This support continued into the specialising stage, with coaches and parents ensuring that as the players became better at football and committed more time to it they were still focussing on other important requirements such as school. Player 3 described the social support from parents at this stage as being important *"...so you're nae getting too confident with yourself and think you were the main man, and you didnae try as hard or whatever just '(be)cause you thought you had already made it when you were only barely starting"*. During the investment stage social support became increasingly important due to the more stressful and pressurised situation of having a professional contract or playing at a high level. For example, about their son recovering from an injury, Parent 1 illustrated how *"…the head coach had always said to him he wanted him to still feel part of the team, and to come along to training if he wanted"*. This emotional support following a traumatic injury was not limited to coaches, as Parent 1 commented further that:

> *Some of his teammates were very supportive...the first night, eh, at training* [following injury] *they all made a big fuss of him and were all round about him, and the first time that...he came back on and actually played...a lot of his teammates applauded him as he came on, which we thought was really nice of them.*

4.3.4.3. Effort Support.

In addition to providing emotional support to players, social agents also assisted them in maintaining and enhancing their effort during development. Participants reported social agents as having a generally motivating role to push the athlete to work hard and do their best. For example, Parent 3 described themselves during the sampling stage as having to *"...encourage him and sometimes train a bit harder away from...the academy, and do some more running"* demonstrating that when not at training they had to motivate their son to put

in additional effort. Peers played a role at this stage too, with Player 1 highlighting that *"…it's no' just one player in a team, so like…kinda motivate yourselves and that…to, kinda, do the best you could"*. During the investment stage peers continued to be important for encouraging players to continue to be motivated during increasingly difficult and tiring sessions as illustrated by Player 1 who commented: *"We all motivated each other and that, like, if a couple of people were like 'I cannae be bothered the day' we were like 'come on'…we just obviously had to keep everyone motivated"*, highlighting the importance of everyone sharing the same experience and working together to get through these tough training sessions. The personal experiences coaches had of playing football at this level was important in enhancing their influence in keeping players motived. For example, about his coaches Player 3 commented that they:

> *Remember when they were starting out in their football career, they remember it sort of like yesterday, so they keep telling us, they sort of keep you motivated, keep you on the right track, sort of keep telling you what to do, what not to do, giving you advice on the pitch and stuff like that.*

4.3.4.4.   *Providing Access to Sport.*

The higher order theme providing access to sport reflected the support that social agents provided which facilitated player participation in football and other sporting activities. Parents acted as the main gatekeeper to sport in the sampling developmental stage, with Parent 2 highlighting the philosophy that they had for their son about sport that was commonly described by participants:

> *My wife and I adopt the same attitude that our parents adopted with us…we give our kids all of the opportunities that are there, so that whenever something came up, or a new opportunity…then it was kind of 'let's go and try that' or 'let's go and try this'…So, no door was closed, you could try new things and see how you get on.*

This type of support continued into the specialising stage, but as players became more focussed and invested in their sport, parents needed to sacrifice their own time and resources to facilitate this. For example, Parent 1 described how he gave up his own coaching role to provide support to his son:

> *I was ready to sit my level four [coaching qualification] before he got signed to the academy. But at academy level I coudnae afford to go and start doing academy football as well as I would miss…I felt I was missing out on him at the weekend.*

During the investment stage coaches became more important in this area, facilitating access to sport science and other support that would assist the athletes at this high level. For example, Parent 2 highlighted that the club brought in sport psychologists as well as *"…the dieticians and tried to give them a flavour of all the attributes that you needed to become a professional sports person"*.

4.3.4.5.   Support for Performance.

During the investment stage, participants talked about the importance of the coach in acting as the person who provided them access to performance situations, as reflected by the support for performance higher order theme. Player 4 commented that the importance of his manager in his professional team was *"…massive, 'cause he gave me my debut and all that…kind of turned me into a man"*. For players who have spent a long time pursuing a dream of becoming professional players or playing at such a high level, it is clear that the social agents providing them with support to achieve this ambition have a lasting and meaningful influence on their motivation.

4.3.4.6.   Support for Performance Across Stages of Development.

Participants highlighted social agent behaviours, which facilitated and supported football performance. Social agents changed their role in this category of influence at various developmental stages reflecting different performance levels. The changes in perceived social agent influence will now be discussed for each of the three developmental stages.

4.3.4.6.1.   Sampling Stage.

Each social agent provided practical support including lifestyle and transport support for players to be able participate in football. Social agents provided social support through emotional support and encouragement, helping players cope with new football experiences. Social agents provided effort support to players, encouraging them to maintain high workloads. Player 1 commented that without peers providing effort support he *"…probably wouldn't have gotten as far…"* as a player. Parents provided access to sport, paying for training and transport costs.

4.3.4.6.2. Specialising Stage.

Each social agent supported player performance by providing practical support to help with training and competition demands. Football academy participation required continued social support, especially when faced with challenging situations such as injury. Social agents provided access to sport, including parents who in some cases sacrificed their own ambitions and resources for players to join a football academy.

4.3.4.6.3. Investment Stage.

As players progressed to professional and semi-professional football, provision of support changed. Social agents continued to provide social support in assisting players to cope with this environment, as well as effort support to help them maintain high levels of performance. Coaches and parents provided access to sport, including access to sport science and other support services. Coaches provided support for performance during training and matches to help players cope with high-pressure performance situations. Parents continued to provide practical support to players despite them having professional contracts.

Table 7: Feedback & Evaluation Category for Each Social Agent Across Each Developmental Stage

Sampling	Specialising	Investment
Reflection	**Reflection**	**Reflection**
Performance Review (C, Pa)	Performance Review (C, Pa, Pe)	Performance Review (C, Pa, Pe)
Provided alternative perspectives (Pa)		Provided alternative perspectives (C)
Praise (Pe)	**Praise** (C)	**Praise** (C)
Forward Planning	**Forward Planning**	**Forward Planning**
Response to feedback (C, Pa)	Response to feedback (C, Pe)	Response to feedback (C, Pe)
	Highlighting long term objectives (C, Pa)	Highlighting long term objectives (Pa)

Key: C = Coaches; Pa = Parents; Pe = Peers

4.3.5. Feedback & Evaluation.

The final role that social agents played during development was in providing feedback and evaluation to athletes. Table 7 illustrates the higher order themes of motivationally-relevant feedback and evaluation behaviours for social agents across each developmental stage. These higher order themes will now be discussed in turn.

4.3.5.1. Reflection.

The reflection higher order theme relates to behaviours in which social agents assisted players in evaluating their experiences in sport and offering possible guidance as to how to view these experiences. For example, during the sampling stage Parent 1 highlighted that they would review performances with their son:

> *He used to always come off the park and could have had an outstanding game, but I would always look at the negatives of what he done…I always looked for the stuff he could work on, instead of just 'oh yeah, you are a star player'.*

Coaches played a similar role, providing positive and constructive feedback at this stage, with Player 2 stating that their coach was *"…always coming at it from a positive first, and then going 'right, we can improve on this'"*. This balanced approach to feedback continued into the specialising stage, with Parent 1 commenting about coaches that their son *"…seemed to listen to what they were saying and taking it on board…it was constructive criticism rather than negative"*. The investment stage saw this assistance in reflecting on performances and process continue to be important, with Player 1 describing that on the way home from matches his parents would *"…tell me, like, what I could have done better and what I need to improve on…so, kinda [giving] me constructive criticism and that"*. It would, however, appear at this stage that parents themselves realised that their expertise and knowledge of the sport was not as high as other social agents and therefore they might adapt the type of assistance they provide when reflecting on performances. For example, Parent 4 commented:

> *I tend to try and err on the fact that I don't try and go too much into the nitty gritty of the stuff, but if I think somebody has played well or, you know, scored a good goal then I will make a comment, but I wouldn't profess to sit down and talk football with [her son] 'cause I think he would just roll his eyes…I think he will speak to me about the game but not in the way that he would speak to, maybe, his teammates.*

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4.3.5.2. Praise.

Related to reflection on performances, social agents would also provide praise to athletes at all stages of development. Praise was simply general positive comments about performance that did not have specific feedback about technique or effort, and participants found these motivating. Player 2 highlighted the comradery and praise shared amongst his peers when in the sampling stage by describing that *"...everyone is mainly complementary when you are younger, everyone is sort of...wanting to give good, sort of, comments when you do something cool on the football...when you get those compliments it makes you feel good"*. During the specialising stage coaches became important in this manner, with Player 2 commenting that his coach was *"...searching for perfection, so it was quite...so you knew if you had done something well, and you knew that you had done something right, it made you sort of feel good..."*, highlighting the importance of gaining the coaches praise, including in the investment stage.

4.3.5.3. Forward Planning.

Whilst reflection and praise were positive and helpful, social agents used this information to assist players to look to the future. The higher order theme forward planning reflects behaviours in which social agents assisted players in taking feedback on board to improve performance and also reminding them of their long term goals. In discussing some feedback from coaches during the sampling stage, Parent 1 stated that his son *"…didnae accept it, he thought it was just a joke…it actually made him more determined"*, demonstrating the fact that feedback made the player focus hard on achieving his future goals. This was carried through to the specialising stage, where Parent 3 commented that he *"...just had to keep him focussed, you know, on the goal, which…probably seemed a long way away from him…it was just being a bit patient, waiting to develop"*. Player 1 reflected on being rejected during a trial for a football academy and being told he was not good enough by the coaches, but using this feedback to think *"'oh well, if I want to, like, play professionally I need to, kinda, get better!"*. During the investment stage, when players were receiving more focussed feedback and evaluation due to playing at a high level or professionally, social agents assisted players in responding to feedback by directly reflecting on where they want to be in terms of performance. For example, in response to some negative feedback, Player 3 commented that at this point *"...that is where my dad comes in, just like*

playing for my country and stuff like that, saying stuff like 'imagine this' or 'imagine that', doing that or 'just keep working and you will be there'...", demonstrating that social agents assisted in putting feedback into perspective.

4.3.5.4.   Feedback and Evaluation across Stages of Development.

Social agents facilitated support for development by implementing feedback and evaluation strategies during their development in relatively consistent ways. The changes in perceived social agent influence will now be discussed for each of the three developmental stages.

4.3.5.4.1.   Sampling Stage.

Coaches and parents helped players evaluate and learn from experiences through reflection. Coaches and peers provided praise, which made players feel good about themselves, although the pursuit of praise meant that *"...you will notice other players...getting more attention...so you may get jealous or annoyed"* (Player 2). Coaches and players assisted players' forward planning by helping them contextualise experiences about long-term goals.

4.3.5.4.2.   Specialising Stage.

Players were supported in their reflections by each social agent. Player 1, for example, reflected and improved his performance having received advice from a peer and *"...picked up what that boy had said to him and changed it slightly...it did improve his holding of the ball"* (Parent 1). Praise for performances came from coaches, though gaining this praise was a challenge as coaches were *"...searching for perfection...so you knew if you had done something well, and you knew that you had done something right, it made you sort of feel good..."* (Player 2). Each social agent continued to help athletes consider their learning within their long-term career ambitions, framing setbacks as opportunities to improve, and implementing feedback into their forward planning.

4.3.5.4.3.   Investment Stage.

Feedback and evaluation support from social agents continued into the specialising stage. Each social agent enhanced player reflection on performances, although parents recognised that their sport knowledge and ability had been surpassed by their son's. Praise of players' performance continued to be offered by coaches and became increasingly important as coaches selected teams and influenced player contracts. Each social agent supported players' forward planning about future ambitions. Social agents aided player reflection on challenges.

4.4. Discussion

This study aimed to identify the perceived motivationally-relevant influence that coaches, parents and peers had during investment-stage footballers' development in sport. Supporting and extending previous research, five categories of motivationally-relevant perceived social agent influence were identified across each developmental stage, although coach, parent and peer influence fluctuated between stages. Social agents played a role in each category of influence, yet their influence fluctuated through each stage of athlete development in complex and dynamic ways. The sampling stage was characterised by the dominant influence of coaches with most types of influence being shared by the coach and peer or coach and parent. The specialising stage saw the relationship quality with peers become more important and an increasing number of common influences amongst all three social agents. The investment stage resembled the sampling stage with coaches being involved in most influences and many influences being shared between two or three social agents. The following sections will discuss each category of perceived social agent influence in relation to existing literature.

4.4.1. Relationship Factors.

The quality of relationship between athlete and social agent was highlighted in the current study as being of motivational importance. Participants indicated that perceptions of the strength and value of the relationship with other social agents influenced their motivation. Friendships have been highlighted as a consistently motivating influence in the literature, particularly amongst peers who take on the role of teammate and friend. Positive peer relationships have been identified to be associated with intrinsic and adaptive forms of motivation, and protective against negative psychological outcomes such as stress (Gledhill et al., 2017; Smith et al., 2006).

The fact that participants rarely considered parents when discussing relationship factors is an unexpected finding compared to previous literature. This discrepancy may be explained by differing perceptions of a parent's role in sport. Perhaps the current players perceived their parents to have a more peripheral and facilitative role rather than a directive one (i.e., providing access to sport rather than being as directly involved as coaches and peers; Keegan et al., 2009, 2010a, 2014a). Similarly, the relationship between participants and parents may have facilitated positive relationships with peers (Carr, 2009) and coaches

(Jowett & Timson-Katchis, 2005). The present findings extend understanding of the relationship between athletes and parents as they suggest that athletes may not contextualise or define these relationships within sport as they do coaches and peers as they are more generalised across life domains.

The quality of relationships between peers may explain other findings within the study, such as the higher order theme group factors for which peers and coaches were important during all stages of development. Morgan, Fletcher and Sarkar (2013) identified that team resilience has multiple benefits for members including optimising individual and team resources to cope with stressors. Crucially, though, the development of team resilience relies on effective relationships amongst team members, which supports the current findings about the importance of being part of a team. The role of the coach in this higher order theme reflects their role in relation to athletes in leading teams and establishing relationships with individuals (Vella, Oades, & Crowe, 2010).

The findings of relationship factors broadly resonated with those of Keegan et al. (2014b) from their meta-synthesis of socio-motivational influences across athlete development. Keegan et al. proposed a relatedness climate which reflected factors relating to perceptions of affiliation and belongingness with social agents which are similar to the relationship factor category identified in this study. Furthermore, Keegan et al. identified that during athlete development coaches and peers became increasingly important within this climate, and parents less so, which corresponds with the findings of the present study. Overall, participants in the present study identified relationships with coaches and peers to be a consistently important motivational factor across each stage of athlete development.

4.4.2. Interpersonal Interactions.

Parents, peers and coaches have been consistently shown to influence and define the motivational climate experienced by athletes (e.g., Keegan et al., 2009, 2010a, 2014a), and the concept of motivational climate relates to more than one of the categories of perceived social agent influence identified in this study. Within the interpersonal interactions category, all three social agents were identified as promoting a sense of fun and enjoyment through various behaviours which are in line with a task motivational climate (Nicholls, 1984). This climate is similar to autonomy-supportive behaviours from social agents, which are proposed to provide positive outcomes such as intrinsic motivation and commitment to sport (Almagro,

Sáenz-López, Moreno-Murcia, & Spray, 2015; Cheon et al., 2015; Curran, Hill, Ntoumanis, Hall, & Jowett, 2016). It could therefore be proposed that the perceived social agent influences reflected by the higher order themes supportive behaviours and engendering positive feelings might have influenced the perception that social agents contributed to athletes being motivated to participate in the sport as illustrated by the higher order theme intrinsic motivation.

Whilst much of the results focussed on positive and facilitative interpersonal interactions between social agents and athletes, there were some of these which were perceived as having a negative influence. Much of this negative influence related to perceptions of pressure from social agents by players. Internal and external pressures have been identified as stressors for athletes (Gould et al., 1993; Sarkar & Fletcher, 2014), particularly self-presentational pressures such as feelings of not wanting to let down important others (James & Collins, 1997). The current study also supports the findings of Dugdale, Eklund and Gordon (2002) who found that international athletes perceived expected and unexpected stressors when competing, including dealing with perceived expectations of relevant others, along with negative reactions following performance errors. Athletes have been consistently shown to have appropriate coping mechanisms to deal with many stressors experienced during training and competition, perhaps demonstrating why they were still able to perform well and progress to become high-level performers despite this perceived negative influence (Dugdale et al., 2002; Sarkar & Fletcher, 2014). Wachsmuth, Jowett and Harwood (2017) reviewed the literature regarding conflict between athletes and coaches, identifying many intrapersonal, interpersonal and external factors which act as determinants of conflict, various strategies to manage conflict, and proposed intrapersonal, interpersonal and performance outcomes associated with conflict. Wachsmuth et al.'s definition of conflict reflects some of the negative elements of the interpersonal interactions identified in this study such as perceived pressure and stress from social agents. Overall, therefore, the findings of the present study reflect existing literature that has identified positive and negative behaviours and interactions between athletes and social agents.

4.4.3. Support for Development.

The support for development category of motivationally-relevant perceived social agent influence considers specific support and behaviours designed to develop the athletes' psychological and physical skills as players. This category is coach dominated, with coaches

involved in developing players at each stage. The predominant focus by social agents on supporting athletes in developing their technical skills has been identified by coaches as a significant part of their role in athlete development (Vella, Oades, & Crowe, 2011). This category of social agent support helps athletes meet their long-term objectives of becoming professional footballers. A recent systematic review of 43 articles relating to the psychosocial factors that influence the development of talent in football (Gledhill et al., 2017) identified 48 different social, psychological and behavioural factors during talent development which might differentiate between footballers who will and will not become successful. Coaches can therefore create challenging training situations for athletes that develop their resilience and ability to cope with challenges. Peers playing a role in athlete development has been suggested to be a result of them providing players with information and learning resources that they can use to develop their skills (Gledhill & Harwood, 2014; Gledhill et al., 2017). The findings of the present study, therefore, align with previous research that coaches dominate this type of support, but each social agent was perceived to have a motivationally-relevant influence in line with this category at different stages of development.

4.4.4. Support for Performance.

Parents and coaches dominated the motivationally relevant behaviours contained within the support for performance category, and the range of behaviours they are involved in are in line with previous literature (Keegan et al., 2009, 2010a, 2014a; Gledhill & Harwood, 2014). The finding that parents provide consistent practical support across all three stages of athlete development is in line with a study by Holt and Dunn (2004) in which they used a grounded theory approach to interpret the psychosocial competencies of 40 youth soccer players. In line with the current study, Holt and Dunn (2004) identified that parents provided players with support to attend training and competition logistically and financially.

Each social agent provided social support across each developmental stage. Social support has been found to buffer the stress associated with sporting injuries (Mitchell, Evans, Rees, & Hardy, 2014; Rees & Hardy, 2000; Rees, Mitchell, Evans, & Hardy, 2010) and can lead to improvements in performance (Moll, Rees, & Freeman, 2017). In line with the finding that coaches are involved in supporting performance, a recent systematic review into social support in youth sport (Sheridan et al., 2014) identified that coaches play the most significant role in providing this type of support. The review suggests that all social agents have a role in

ensuring that they provide social support, alongside practical and effort support, which will in turn lead to improvements in performance.

4.4.5. Feedback and Evaluation.

The finding that each social agent plays a role in supporting athletes in their feedback and evaluative behaviours resonates with existing evidence (e.g., Carpentier & Mageau, 2016). The quality rather than quantity of feedback received by athletes is proposed to be of more importance as this has been found to be a predictor of athlete performance and motivation (Carpentier & Mageau, 2013). Feedback from coaches might be linked to the quality of the coach athlete relationship when the feedback is autonomy supportive, in that it provides players with a choice of how to address their feedback (Carpentier & Mageau, 2013), and all three social agents have been found to be involved in this behaviour during the sampling (Keegan et al., 2009), specialising (Keegan et al., 2010a) and investment stages of athlete development (Keegan et al., 2014a).

4.4.6. Categories of Perceived Social Agent Influence.

The five-category structure of the proposed model (Figure 6) of perceived motivationally-relevant social agent influence in sport shares similarities with other attempts to map the influence that social agents have on athlete motivation, such as the heuristic model of motivational atmosphere suggested by Keegan et al. (2014b). For example, the relationship category in the current study aligns to the relatedness climate in the motivational atmosphere model. Each additional category in the current study maps to a similar category in the motivational atmosphere model (shown in brackets): interpersonal interactions (authority and emotional climates); support for development (training and learning climates); support for performance (competition climate); and feedback/evaluation (evaluation climate). Mapping the results of the current study across to Keegan et al.'s (2014b) model suggests that it may be possible to predict motivational, performance or other psychosocial outcomes based on knowing the respective perceived social agent influence, the stage of athlete development and their personal characteristics.
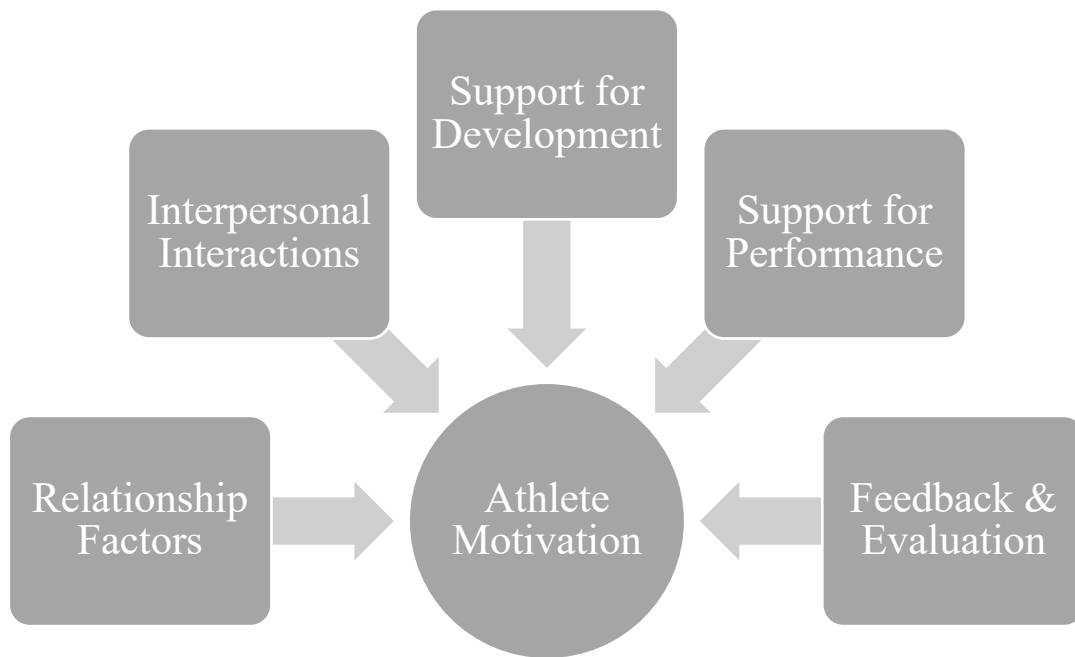
Figure 6: The Proposed Model of Perceived Motivationally-Relevant Social Agent Influence in Sport

What is unclear from the findings of the current study is whether social agents each have a unique influence on athlete motivation (i.e., an additive effect), or whether athletes require a specific amount of motivationally-relevant support for optimal performance and functioning that can be provided by any social agent. Future research should be undertaken to determine whether athletes have motivational needs that require distinct social agent influences or influences from any social agent. The categories of motivationally-relevant perceived social agent influence developed within this study, and grounded in participant experiences, resonate with existing motivational theories but go beyond these to suggest a more complex social context than the task- and ego-orientation dichotomy and relatedness elements from AGT (Nicholls, 1984) and SDT (Deci & Ryan, 1985) respectively.

4.4.7. Implications.

The findings of this study reinforce the complex nature of perceived motivationally-relevant social agent influence in sport. The categories of perceived motivationally-relevant social agent influence identified in this study may provide practitioners and coaches with a lens through which to better understand the motivational needs of athletes and the role that social agents may play in addressing these needs. Measures could be adapted or developed to determine athletes' perceptions of motivationally-relevant perceived social agent influence

and used to determine whether the categories of perceived social agent influence can predict motivation and other outcomes. The findings also demonstrate the range of social agent motivational roles in sport which extend beyond those considered by AGT and SDT.

4.4.8. Limitations and Strengths.

There are some limitations to the current study. First, participants represented experiences of male footballers, and evidence suggests there may be different perceptions of the importance of social agents in sport between male and female athletes (e.g., Martin, Ewing, & Gould, 2014). Second, the study only investigated one sport and one geographical area and results may therefore only relate to this unique cultural context. Third, the small population and sample size limited opportunity to reach saturation during data collection. Fourth, the questions asked in the interviews were informed by previous research into motivation (e.g., Keegan et al., 2009). Despite the researcher using reflexive discussions with supervisors and peers to ensure that questions to participants, as well as analysis and interpretation of data, were not informed by existing theories of motivation it is possible that the proposed model may have been implicitly informed by existing theories. Finally, information recall accuracy can reduce over time and the retrospective nature of this study might mean that the information provided by participants lacked accuracy, although the inclusion and triangulation of information via interviews with participant parents was designed to enhance accuracy of interpretation.

Despite the limitations mentioned above, a strength of the study was that it considered social agent influences across all three developmental stages in a retrospective manner. Furthermore, the focus on one sport and a small sample allowed an in-depth exploration of the socio-motivational context within the context of this sport. A detailed description of this context was provided, though, in order to enhance the transferability (Lincoln & Guba, 1985) and naturalistic generalisability (Stake, 1995) of findings. The next study will determine whether the findings from this sport are transferable to other sports.

4.5. Conclusions

The current study identified that the types of influence social agents have on football players' motivation is consistent across development in sport, but the specific roles of coaches, parents and peers play changed during each developmental stage. Although coaches and peers dominate motivationally-relevant support for athletes, social agents frequently provide similar and overlapping support. The rich description of the complex and dynamic social environment within football suggests a model of perceived social agent influence on athlete motivation, which might be able to predict motivational outcomes. Further research should determine whether social agents have distinct or combined influences on athlete motivation, or whether athletes require specific motivational support regardless of which social agent provides it. Longitudinal research could be used to determine whether the proposed categories of perceived social agent influence can predict athlete motivational outcomes.

The next chapter describes a study which will attempt to determine the structure of the proposed model of perceived social agent influence on athlete motivation outlined in this study.

Chapter Five - Study 2a

Refining the Structure of a Model of Perceived Motivationally-Relevant Social Agent Influence: A Confirmatory Factor Analysis

5. Study 2a – Refining the Structure of a Model of Perceived Motivationally-Relevant Social Agent Influence: A Confirmatory Factor Analysis

5.1. Introduction

The findings of Study 1 were used to develop a proposed model of perceived motivationally-relevant social agent influence during athlete development (Figure 6). This proposed model included five categories of perceived motivationally-relevant social agent influence that were consistent across athlete developmental stage: relationship factors, interpersonal interactions, support for development, support for performance, and feedback/evaluation. Each social agent was found to play a role in each category of motivationally-relevant influence at some point during athlete development, but the roles and types of influence fluctuated across each developmental stage. To allow further testing, refinement and application of the proposed model, the nature and structure of the model required confirmation. This chapter reports the findings of a study which aimed to determine and refine the structure of the proposed model of motivationally-relevant social agent influence. The next chapter then reports the findings of the second part of this study – Study 2b – which aimed to apply the refined proposed model to explore similarities and differences in perceived motivationally-relevant social agent influence between athletes at different stages of development. Study 2a and 2b are linked in that they use the same participant data to refine and then apply the proposed model of motivationally-relevant social agent influence.

5.1.1. Categories of Perceived Motivationally-Relevant Social Agent Influence.

The following section will summarise the extant literature regarding each of the five categories of perceived motivationally-relevant social agent influence. This discussion will set the context for the decisions made when conducting the confirmatory factor analysis including the structure of models to be compared.

5.1.1.1. *Relationship Factors.*

Positive relationships with social agents can lead to positive performance and wellbeing outcomes (Davis & Jowett, 2014). Study 1 identified that the quality of the relationship between athletes and social agents that were perceived to be motivationally-relevant. The motivationally-relevant relationship factors identified in Study 1 included

friendships with social agents, social agents acting as role models, belongingness to a team, closeness, similarity, choosing which social agents to form relationships with, and continuity of relationships.

5.1.1.2. *Interpersonal Interactions.*

The specific motivationally-relevant interpersonal interactions between social agents and athletes which were identified in Study 1 included supportive behaviours, behaviours which promoted positive athlete emotions, behaviours which support athlete intrinsic motivation, and behaviours perceived as being a negative influence. The interactions between participants in Study 1 and the relevant social agents were considered as being positive and negative. This dichotomy resonates with the findings of Weiss and Theeboom (1996) who identified conflict and conflict resolution as dimensions of peer friendships in sport, which were common across all social agents.

5.1.1.3. *Support for Development.*

Many social agent behaviours were identified in Study 1 which were perceived to be supportive of athlete development, including technical and psychological components as well as preparing athletes to contextualise their learning and prepare for competition. In line with previous research each social agent played a role in providing athletes with this type of support for their development as players, although coaches were the dominant social agent during each developmental stage in line with previous research (e.g., Keegan et al., 2014b).

5.1.1.4. *Support for Performance*.

Social agent behaviours, which were perceived to facilitate and support athlete performance in Study 1 participants, included practical support, social support, effort support and providing access to participation and competition opportunities. These types of support broadly align to models of social support offered by social agents in sport. For instance, Rees and Hardy (2000) identified four dimensions of social support amongst higher level performers: emotional, esteem, informational and tangible, which were further supported by Sheridan et al.'s (2014) systematic review of social support in youth sport.

5.1.1.5.   *Feedback and Evaluation.*

Study 1 identified many social agent behaviours which support athlete motivation by providing feedback and evaluative information. These behaviours included assisting athletes in reflection, providing praise for positive performances and helping athletes prepare for the future by placing experiences within long term development contexts. Quality of feedback from social agents has been suggested to predict athlete motivation, performance and enhance coach-athlete relationships when provided by the coach (Carpentier & Megeau, 2013). Feedback and evaluative information have also been proposed to be a dimension within models of athlete social support (Sheridan et al., 2014).

5.1.2. Understanding the True Nature of Motivationally-Relevant Perceived Social Agent Influence.

5.1.2.1.   *Unclear Model Structure.*

Study 1 demonstrated that at some point during athlete development, coaches, parents and peers all played a role in each category of motivational influence, yet their roles fluctuated between the stages of athlete development. Table 8 summarises the overall influence of each social agent and how these changed across developmental stages as identified in Study 1. Similar findings have been identified in previous literature (e.g., Keegan et al., 2009, 2010a, 2014a) although there is a lack of clear understanding of how the profile of perceived social agent influence might change during development. For instance, the findings from Study 1 were not clear as to whether coaches, parents and peers each have unique motivational influences as perceived by athletes, or whether athletes have motivational needs that can be fulfilled by any social agent. In order to better understand these changes in perceived social agent influence across time as well as differences in influence between stages of athlete development (i.e., the structure of the proposed model), the proposed model for perceived motivationally-relevant social agent influence needed to be tested and, if required, refined to better reflect the nature of perceived social agent influence on athlete motivation.

Table 8: Summary of Perceived Social Agent Influence Across Each Player Developmental Stage

Social Agent	Sampling Stage	Specialising Stage	Investment Stage
Coach	Dominant social agent within sport context, although has mainly similar influences as coaches and/or peers. Provides all aspects of motivational-influence, apart from providing access to sport. Perceived as only social agent supporting players' psychological development and engendering positive feelings.	Very important influence, mainly in combination with parents and peers. Quality of relationship with players less important. Supports players with praise.	Dominant perceived social agent influence as performance level increases. Quality of relationship important especially when there is continuity in this relationship. Perceived as sole provider of praise and many developmental influences.
Parent	Comparatively little perceived influence at this stage. Quality of relationship not perceived as being motivationally relevant within sport. Solely responsible for providing access to the sport.	No unique influence – each influence shared with coaches and peers. Closeness only relationship factor of influence. Main influences in development, performance and interpersonal interaction categories.	Sole provider of practical support. Players choosing which types of support to gain from parent. Few additional relationship factors perceived as influential. Most influences shared with coaches and peers.
Peer	Provides wide range of influence across each category. No influence for which they are solely responsible. Relationship factors important and shared with coach.	Dominant social agent of influence involved in almost every type apart from praise. Quality of relationship with player of particular sole importance at this stage.	Influential across many categories, but friendships with player only unique influence. Quality of relationship continues to be important, yet players choose which peers to influence their development.

5.1.2.2.   *Possible Model Structures.*

The changing nature of the profiles of perceived motivationally-relevant social agent influence make the proposed model of perceived motivationally-relevant social agent influence unclear between three possible options. Literature to date has identified individual social agent roles and roles that social agents share (e.g., Keegan et al., 2009, 2010a, 2014a, 2014b) and, therefore, multiple structures for the proposed model may exist. First, it may be possible that athletes require different types of support from each social agent at different developmental stages. This structure would be similar to findings by Vazou et al. (2006) who identified similar coach- and peer-created climates being important but no interaction between them. Second, athletes may require a specific type and amount of support at each developmental stage, but the support is not related to social agents and therefore coaches, parents and/or peers can provide the support needed to meet their motivational needs. This additive model of perceived social agent influence would resonate with findings from Ullrich-French and Smith (2006) who identified independent and additive parent and peer influences on athlete motivation. Third, a combination of these two approaches may exist whereby some roles or types of support are specific to particular social agents, whereas others can be fulfilled by more than one social agent. Testing different models of perceived motivationally-relevant social agent influence will allow for a greater understanding of which of these profiles best suits participant data and will then facilitate a greater understanding of whether social agents differ in the types and amount of influence they provide at each developmental stage.

5.1.2.3.   *Challenges in Research to Date.*

The extant literature relating to perceived motivationally-relevant social agent influences suggest that there is an overreliance on studying young athletes and team sports (e.g., Harwood et al., 2015) which has limited the generalisability of research findings to other population groups. Another factor that has limited the ability of researchers to date in exploring the separate and combined influence of parents, coaches and peers on athlete motivation during development is the use of different psychometric measures for each respective social agent (e.g., Atkins et al., 2014; Davies et al., 2014). For instance, some studies have measured coach and athlete motivational influences using different psychometric measures, making it challenging to compare the perceived influences of these respective social agents. Researchers have called for more appropriate approaches to exploring concurrent perceived social agent influence (e.g., measuring the same constructs

and ideally with the same measure for each social agent; Harwood et al., 2015). Some researchers have adapted psychometric tests and subscales that were designed for one social agent to then use to measure the construct with multiple social agents. For example, in a study exploring the independent and combined influence of peers and parents on athlete motivational outcomes, Ullrich-French and Smith (2006) used the peer-specific Sport Friendship Quality Scale (Weiss & Smith, 1999) to assess athlete-peer relationship quality, and an adapted version to assess athlete-parent relationship quality.

5.1.2.4.   *The Need for the Present Study*

In summary, Study 1 identified five categories of perceived motivationally-relevant social agent influence that were consistent across athlete developmental stages. Previous research has identified similar categories and dimensions of perceived motivationally-relevant social agent influence. Study 1 did not, however, identify the structure of the proposed model of motivationally-relevant perceived social agent influence. For example, it was not clear whether the perceived influence of social agents was independent or additive, or whether it was a combination of these two, and research to date has also not provided clarity regarding any theoretical structure. Part of the reason that previous research has been unable to determine this has been due to studies using different psychometric measures to explore the independent or combined motivational influence of social agents, making it challenging to accurately compare different theoretical models.

To better understand the complexities of perceived motivationally-relevant social agent influence, a study was required to determine the structure of the proposed model which allowed for direct comparison between each social agent. This comparison was achieved in the present study by adapting psychometric measures developed for one social agent to be used to measure the perceived influence of each of the three social agents. Furthermore, due to complex nature of the proposed model of perceived motivationally-relevant social agent influence a cross-sectional study was identified as the most appropriate approach prior to any future research testing and applying the model beyond this thesis. Despite the cross-sectional nature of the study limiting the opportunity to determine causality (e.g., the relationship between different levels of perceive social agent influence and athlete motivation and/or performance), it was deemed an appropriate starting point for model development and refinement.

5.2. Aims and Objectives

5.2.1. Aims.

In view of the findings of Study 1 and the limitations of the extant literature discussed, this study aimed to:

1. Determine the appropriateness of adapted psychometric measure subscales to measure perceived motivationally-relevant coach, parent and peer influence
2. Identify the structural nature of the proposed model of motivationally-relevant influence of coaches, parents and peers as identified in Study 1.

5.2.2. Objectives.

This study achieved its aims by:

1. To adapt valid and reliable adapted psychometric measures that concurrently measure the perceived motivationally-relevant influence of coaches, parents and peers
2. To determine the structure of the proposed model of perceived motivationally-relevant social agent influence using confirmatory factor analysis methods

5.3. Method

This section outlines the study design, participants, and data collection methods for both the present study and the study outlined in Chapter 6. Chapter 6 also includes information relating to the measurement of athlete motivation which addresses the aims and objectives of the subsequent study.

5.3.1. Study Design.

A cross-sectional design was adopted for this study where all participants completed questionnaires on one occasion. Confirmatory factor analyses (CFA) were used to test a) the psychometric properties of adapted psychometric subscales, and b) proposed models of perceived motivationally-relevant social agent influence. CFA has been proposed to be an appropriate method of model testing (Schumacker & Lomax, 2016) and have been used for similar purposes in previous research (e.g., Tamminen, Gaudreau, McEwen, & Crocker, 2016).

5.3.2. Participants.

To address the criticisms of previous research of sampling mainly from adolescent and student populations, as well as participants of team sports, the population for the current study was any sporting participant in the sampling, specialising or investment stage of development. Maximum range of athletes in terms of level of participation, age and type of sport was sought in order to develop as widely applicable a proposed model as possible. As different structural models were being tested, with the number of variables within each model unknown prior to CFAs being conducted, no sample size calculation was conducted prior to data collection. Instead, as large a sample size as possible, which included a range of sports and stages of development, was sought. The sample was recruited, therefore, from a wide range of ages, sports, clubs and participation levels. A purposive sampling approach was adopted whereby participants were recruited to participate in the study. The study was promoted using social media posts as well as by emails to local, regional and national sporting organisations and academic institutions.

The participants in this study ($n = 229$) were male ($n = 100$) and female ($n = 129$) athletes who participated in team ($n = 156$) and individual ($n = 73$) sports. Participants were

between 11 and 67 years of age and had a mean age of 23.09 years ($SD = 9.74$) with a mean of 10.05 years ($SD = 8.04$) experience of participating in their sport. Participants were involved in 40 different sports, with the most common being basketball (86 participants), football (22 participants), rugby (22 participants) and swimming (10 participants). Participants took part in their sport at different levels, including recreational ($n = 24$), local league ($n = 41$), regional league ($n = 49$), national league ($n = 80$), international ($n = 31$), and professional ($n = 4$) level of performance.

Based on level of participation, participants were classified into one of the three developmental stages outlined by trajectory 2 of the DMSP (Côté, 1999). Participants taking part in sport at recreational and local league level were classified as sampling stage athletes ($n = 65$), those taking part at regional level as specialising stage athletes ($n = 49$), and those at national, international and professional level as investment stage athletes ($n = 115$). The overall sample, therefore, for this study included athletes at all stages of development. The grouping of athletes by developmental stage was incorporated into the analysis in Study 2b (Chapter 6).

Table 9: Participant Group Information

Developmental Stage	N	Age		Gender		Sport Type		No. Years Participation		Level of Participation					
		M	*SD*	F	M	T	I	*M*	*SD*	1	2	3	4	5	6
Sampling	65	27.37	11.39	32	33	40	25	10.92	8.7	24	41	0	0	0	0
Specialising	49	22.47	8.6	20	29	39	10	10.06	7.8	0	0	49	0	0	0
Investment	115	22.25	8.72	48	67	77	38	9.55	7.97	0	0	0	80	31	4

Participation Level Key:
1 = Recreational; 2 = Local League; 3 = Regional League; 4 = National League; 5 = International; 6 = Professional

5.3.3. Measures.

As the proposed model in Study 1 was grounded in the data rather than being theoretically driven, no existing psychometric measure was available that measured each of the categories of perceived motivationally-relevant social agent influence. Validated and reliable subscales from different psychometric questionnaires were, therefore, selected for the current study where they were deemed to appropriately measure the categories of coach, parent and peer motivationally-relevant influences identified in Study 1. Researchers have suggested using the same psychometric questionnaires to measure the influence of multiple social agents (Harwood et al., 2015), and therefore items within each subscale were adapted

to measure the role of coaches, parents and peers for each category of influence in line with other studies (e.g., Carr & Weigand, 2001). Construct validity was determined for each subscale using confirmatory factor analysis. The convergent validity of adapted subscales was determined using average variance extracted (AVE), internal validity was measured using Cronbach Alpha (α). The measures used for this study are summarised in Table 10 below and in Appendix K.[1]

5.3.3.1.   *Relationship Quality & Interpersonal Interactions.*

To measure participants' perceptions of the quality of their relationships with social agents, and the interpersonal interactions with them, participants completed items from the Sport Friendship Quality Scale (SFQS; Weiss & Smith, 1999). Grounded in developmental models of peer relationships the measure was developed to be a sport-specific measure of peer friendship and was based on a multidimensional conceptualisation of sport friendships developed in a qualitative study by Weiss et al., (1996). This scale measures athletes' perceptions of the quality of relationship they have with their best friend on a team and consists of 22 items measuring six dimensions of friendship: self-esteem enhancement and supportiveness, loyalty and intimacy, things in common, companionship and pleasant play, conflict resolution, and conflict. Participants respond on a 5-point scale of how true each statement is ranging from 1 (*not at all true*) to 5 (*really true*).

The *loyalty and intimacy* (4 items) and *things in common* (4 items) subscales of the SFQS were used in combination to measure relationship quality between social agents and athletes. In their original conceptualisation of sport friendship, Weiss et al. (1996) identified that these dimensions of friendships in sport reflected a sense of commitment to one another, similarity of interests and values. This conceptualisation closely reflected the relationship quality dimension of the proposed model of perceived social agent influence developed in Study 1, in which the participants highlighted similar experiences and constructive relationships as being motivationally important. The *conflict* (3 items) and *conflict resolution* (3 items) subscales were used to measure athletes' interpersonal interactions with social agents as these were conceptualised by Weiss et al., (1996) as reflecting positive and negative

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[1] Data was collected regarding participant motivation using the Behavioural Regulation in Sport Questionnaire-8 (Lonsdale, Hodge, & Rose, 2008) but was not analysed in this study. The details of this measure will be provided in Chapter 6.

interpersonal behaviours within a friendship similar to those identified in Study 1 (e.g., enjoying one another's company, supporting one another, pressuring one another).

The SFQS has been demonstrated to have appropriate content, factorial and construct validity, good reliability (*loyalty & intimacy* subscale, R = 0.80; *conflict* subscale, R = 0.87; *conflict resolution* subscale, R = 0.88; Weiss & Smith, 1999). The SFQS has demonstrated good reliability scores when used with adolescents (Moran & Weiss, 2006) and adults (Dorsch et al., 2016), and when adapted for use with social agents other than peers (Dorsch et al., 2016; Ullrich-French & Smith, 2006). In the present study the SFQS questionnaire was adapted for use with coaches, parents and peers, and therefore questions were altered to reflect the social agents. For example, the item "My friend and I try to work things out when we disagree" was changed to three items: "My coach/parents/peers try to work things out when we disagree". The adapted SFQS subscales demonstrated appropriate validity and reliability. Each subscale demonstrated appropriate construct validity through appropriate CFA model fit, with AVE scores demonstrating appropriate convergent validity for the *loyalty & intimacy* subscale (coach AVE = 0.57; parent AVE = 0.55; peer AVE = 0.62), the *conflict* subscale (coach AVE = 0.56; parent AVE = 0.69; peer AVE = 0.70), and the *conflict resolution* subscale (coach AVE = 0.78; parent AVE = 0.74; peer AVE = 0.74). Good internal reliability was also demonstrated for the *loyalty & intimacy* subscale (coach α = 0.83; parent α = 0.81; peer α = 0.85), the *conflict* subscale (coach α = 0.80; parent α = 0.86; peer α = 0.87), and the *conflict resolution* subscale (coach α = 0.91; parent α = 0.89; peer α = 0.89). The measure was used in the present study with the permission of the original author.

5.3.3.2. *Support for Development.*

To investigate participants' perceived support for development from social agents, participants completed the Coaching Behaviour Scale for Sport (CBS-S; Côté, Yardley, Hay, Sedgwich, & Baker, 1999). Developed based on Côté et al.'s (1995) Coaching Model which proposed coaches as having mental models to facilitate effective coaching, the CBS-S is a 44-item scale examining seven coaching behaviours: physical training and planning, mental preparation, goal setting, competition strategies, technical skills, personal rapport, and negative personal rapport. The CBS-S has demonstrated adequate face validity, factor validity (all factor loadings > 0.64) and discriminant validity, as well as good internal

reliability (all α scores > 0.85) and adequate test-retest reliability (all r scores > 0.49; Côté et al., 1999). The CBS-S has been used with adolescent athletes (Baker, Côté, & Hawes, 2000), and athletes and coaches from a range of performance and experience levels have also identified the categories of coaching behaviours represented within the CBS-S as representative of their experiences in sport (Côté & Sedgwick, 2003; Gilbert & Trudel, 2000). The CBS-S has also been proposed as an effective procedure to evaluate coaching performance in sport (Mallett & Côté, 2006).

The 8 items from the CBS-S *technical skills* subscale (8 items) were adapted to reflect each social agent and used for this study to measure participants' perspective of social agent behaviours which support their technical development. For example, the item *"The coach(es) most responsible for my technical skills provides me with advice while I'm performing a skill"* was changed to reflect each social agent: *"My coach/parents/peers provides me with advice while I'm performing a skill"*. Participants were asked how frequently they experienced each behaviour during the previous week, rating from 1 (never) to 7 (always). In the present study the adapted CBS-S *technical skills* subscales relating to coaches, parents and peers demonstrated appropriate validity and reliability. Construct validity was demonstrated by appropriate model fit, and appropriate convergent validity (coach AVE = 0.67; parent AVE = 0.74; peer AVE = 0.72) and good internal reliability (coach α = 0.94; parent α = 0.96; peer α = 0.95) were also demonstrated for the subscale.

5.3.3.3. *Support for Performance and Feedback & Evaluation.*

Subscales from the Athletes' Received Support Questionnaire (ARSQ; Freeman, Coffee, Moll, Rees, & Sammy, 2014) were used to measure participants' perceptions of the support received from social agents for performance, and perceived feedback and evaluation support. Freeman et al. (2014) conceptualised social support in sport as having four dimensions each with their own outcomes. The ARSQ is a measure of received social support within a sporting context and comprises 22 questions measuring four dimensions of social support: emotional support, esteem support, informational support, and tangible support. Participants responded based on the perceived frequency of the type of support from social agents in the preceding week with the following scores: 1 (*not at all*), 2 (*once or twice*), 3 (*three of four times*), 4 (*five or six times*) and 5 (*seven or more times*). Items are preceded by the question *"In the last week, how often did someone…"*. Freeman and colleagues (2014) demonstrated that the ARSQ had appropriate construct validity, convergent validity and

nomological validity, although its use with populations other than young adults has been limited (Freeman et al., 2014; Moll, Rees & Freeman, 2017).

The *informational support* (6 items) and *tangible support* (6 items) subscales of the ARSQ were used for this study to measure perceived social agent support for performance and feedback & evaluation respectively. These subscales were chosen to measure these categories of social agent influence as the dimensions of social support they represent closely relate to those identified in the proposed model of social agent influence. The informational support dimension of social support as reflecting the guidance from others in sport contexts, similar to the assistance in reflecting and forward planning from social agents highlighted in the feedback & evaluation category in Study 1. Similarly, the tangible support dimension used to develop the subscale in the ARSQ relates to social support received which is practical in nature, similar to the logistical support identified in the support for performance category of social agent support in study 1.

For this study, the ARSQ anchor was changed for each of the social agents: *"In the last week, how often did your coach/parents/peers…"*. Each adapted subscale demonstrated appropriate construct validity demonstrated by appropriate model fit, with AVE scores demonstrating appropriate convergent validity for the *informational support* subscale (coach AVE = 0.47; parent AVE = 0.51; peer AVE = 0.55), and the *tangible support* subscale (coach AVE = 0.56; parent AVE = 0.64; peer AVE = 0.66). Good internal reliability was also demonstrated for the *informational support* subscale (coach α = 0.83; parent α = 0.84; peer α = 0.87), and the *tangible support* subscale (coach α = 0.88; parent α = 0.92; peer α = 0.92). The measure was used in the present study with the permission of the original author.

Table 10: Summary of Study 2a and 2b Questionnaire Subscales and Items

Category	Questionnaire	Subscales	Anchor	Items	Scoring
Feedback & Evaluation	Athletes' Receive Support Questionnaire (Freeman et al. 2014)	Information Support	In the last week, how often did your coach/parent/peers …	1. **Give you advice about performing in a competitive situation** 2. **Give you tactical advice** 3. **Offer you ideas and suggest actions** 4. **Help you put things in perspective** 5. **Help you decide what to do** 6. **Give you advice about what to do**	1 (not at all), 2 (once or twice), 3 (three or four times), 4 (five or six times), 5 (seven or more times)
Support for Performance	Athletes' Received Support Questionnaire (Freeman et al. 2014)	Tangible Support	In the last week, how often did your coach/parent/peers …	1. **Help plan your training** 2. **Help with transport to training and competition/matches** 3. **Do things for you at training and competition/matches** 4. **Help set sessions in training** 5. **Help you with tasks** 6. **Help manage your training session**	1 (not at all), 2 (once or twice), 3 (three or four times), 4 (five or six times), 5 (seven or more times)
Relationship	Sport Friendship Quality Questionnaire (Weiss & Smith, 1999)	Loyalty & Intimacy	N/A	1. **My coach/parent/peer and I can talk about anything** 2. **My coach/parent/peer and I stick up for each other in sports** 3. **My coach/parent/peer looks out for me** 4. **My coach/parent/peer and I tell each other secrets**	1 (not at all true) to 5 (really true)
		Things in Common		1. **My coach/parent/peer and I have common interests** 2. **My coach/parent/peer and I do similar things** 3. **My coach/parent/peer and I have similar values** 4. **My coach/parent/peer and I think the same way**	
Interpersonal Interactions	Sport Friendship Quality Questionnaire (Weiss & Smith, 1999)	Conflict	N/A	1. **My coach/parent/peer and I get mad at each other** 2. **My coach/parent/peer and I fight** 3. **My coach/parent/peer and I have arguments**	1 (not at all true) to 5 (really true)
		Conflict Resolution		1. **My coach/parent/peer and I make up easily when we have a fight** 2. **My coach/parent/peer and I try to work things out when we disagree** 3. **When we have an argument, my coach/parent/peer and I talk about how to reach a solution**	
Support for Development	Coaching Behaviour Scale for Sport (Côté et al., 1999)	Technical Skills	My coach/parent/peer …	1. **Provides me with advice when I'm performing a skill** 2. **Gives me specific feedback for correcting technical errors** 3. **Gives me reinforcement about correct technique** 4. **Provides me with feedback that helps me improve my technique** 5. **Provides visual examples to show how a skill should be done** 6. **Uses verbal examples that describe how a skill should be done** 7. **Makes sure I understand the techniques and strategies I am being taught** 8. **Provides me with immediate feedback**	1 (never) to 7 (always)

5.3.4. Data Collection.

Following institutional ethical approval (SRRG No. SHS1606), emails were sent to captains, presidents and management staff at various UK sport clubs and organisations who acted as gatekeepers to potential participants. A combination of convenience sampling and snowball sampling was adopted whereby information about the study (Appendix L) was shared via prospective emails and social media posts along with requests for details about the study to be further shared. Emails contained information about the study (Appendices M and N) and a link to allow online data collection. The study was also promoted via social media. Athletes interested in participating in the study were provided with detailed information via the web link and asked to provide online consent via an electronic signature. Where participants were aged under 16, parental and participant consent was required to take part in the study (Appendices O and P). For pragmatic reasons and to reach as many participants as possible, completion of measures took place online. Participants accessed and completed the measures for this study through the online survey tool REDCap, which was used due to it being the online survey tool provided by the researchers' institution. Participants provided demographic information including age, gender, sport, level of participation and number of years involved in their sport, before responding to items relating to perceived social agent influence and motivation. Data was downloaded from the REDCap programme in Excel format.

5.3.5. Data Analysis.

To address the aims and objectives of the study, a range of confirmatory factor analysis (CFA) was conducted on the data provided by participants. CFAs determine how well theorised models fit participant data, and therefore the general approach was a comparison of alternative models of perceived social agent influence.

The initial stage of the data analysis addressed the first aim of the study: to determine the appropriateness of the adapted psychometric measure subscale. A CFA was conducted on each of the proposed latent variables being measured by each adapted subscale, with the items for each subscale version (i.e., coach, parent and peer) loaded onto the proposed latent variable the subscale was theorised to measure. Where subscales loaded onto their theorised latent variable, correlations between theorised latent variables were conducted to determine convergent and divergent validity of the subscales.

The subsequent stage of the analyses addressed the second aim of the study: to identify the structural nature of the proposed model of motivationally-relevant influence of coaches, parents and peers as identified in Study1. Different model structures were tested for model fit in order to determine which best represented the structure of proposed model. Three fit measurements were used to determine the fit of the tested models: root-mean-squared error of approximation (RMSEA), comparative fit index (CFI) and standardised root mean square residual (SRMR). RSMEA values of less than 0.08, CFI values above 0.9, and SRMR values less than 0.08 are generally considered indicators of good model fit (Schumacker & Lomax, 2016; Hu & Bentler, 1995), and models were considered to have acceptable fit to the data when two of these fit measurements met these criteria. The series of CFAs were conducted using the Lavaan software package within the R software package (v.3.2.4). Once the relevant model was identified measurement invariance was determined and explored for each latent variable (Study 2b).

5.4. Results

5.4.1. Descriptive Statistics.

Table 11 provides the correlation matrix for each of the latent variables within the study. Correlations between 0 and 0.10 are proposed to indicate no association, those between 0.10 and 0.30 weak association, 0.30 and 0.50 moderate association, and correlations above 0.60 strong correlations (Bors, 2018). Results from the correlation matrix demonstrated various statistically significant moderate correlations were found which informed subsequent decisions regarding model testing and model fit. Most of the strongest correlations were between variables relating to the same social agent (e.g., coach feedback and coach support for performance, $r = 0.714$, $p < 0.01$). The only strong correlations between variables relating to different social agents were between coaches and peers and related to the same perceived type of support. In particular there was a significant moderate positive correlation between coach feedback and peer feedback ($r = 0.511$, $p < 0.01$), and between coach conflict and peer conflict ($r = 0.561$, $p < 0.01$). Positive correlations were found between all variables with the exception of the conflict variables which were either negatively or not significantly correlated with other variables. Data distributions for items were determined using tests for skewness and kurtosis. Recommendations suggest a skew index less than 3.0, and a kurtosis index of less than 8.0, when testing for multivariate normally within a CFA (Kline, 2005). All items met the skew threshold, and only six items exceeded that for kurtosis. A sensitivity analysis was completed where these items were removed from the final proposed model (outlined below), and the proposed model still demonstrated appropriate model fit.

Table 11: Social Agent Latent Variable Correlation Matrix

		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.
1.	**Coach Feedback**		0.527	0.354	0.091	0.307	0.65	0.206	0.261	0.225	0.078	0.161	0.206	0.331	0.193	0.091	0	0.092	0.309
2.	**Coach Support for Performance**	0.714**		0.396	0.098	0.387	0.601	0.249	0.306	0.229	0.084	0.199	0.287	0.33	0.338	0.14	-0.003	0.211	0.456
3.	**Coach Loyalty & Things in Common**	0.439**	0.414**		0.067	0.842	0.802	0.156	0.205	0.201	0.031	0.185	0.102	0.28	0.246	0.366	0.004	0.281	0.441
4.	**Coach Conflict**	0.14	0.127	0.08		-0.02	0.019	0.133	0.151	0.032	0.351	0.054	0.218	0.164	0.18	0.074	0.406	0.039	0.186
5.	**Coach Conflict Resolution**	0.348**	0.371**	0.739**	-0.022		0.81	0.184	0.176	0.182	-0.018	0.259	0.13	0.231	0.194	0.287	0.033	0.434	0.424
6.	**Coach Development**	0.606**	0.473**	0.578**	0.017	0.534**		0.227	0.295	0.324	0.169	0.263	0.259	0.278	0.165	0.41	-0.002	0.315	0.751
7.	**Parent Feedback**	0.36**	0.369**	0.21*	0.224*	0.228**	0.231**		0.386	0.3	0.047	0.233	0.65	0.149	0.154	0.092	0.052	0.114	0.14
8.	**Parent Support for Performance**	0.428**	0.424**	0.26*	0.239**	0.205*	0.281**	0.691**		0.268	0.037	0.194	0.679	0.216	0.236	0.186	0.023	0.173	0.264
9.	**Parent Loyalty & Things in Common**	0.314**	0.27**	0.217**	0.042	0.179*	0.263**	0.457**	0.383**		0.079	0.643	0.514	0.188	0.162	0.194	0.024	0.115	0.254
10.	**Parent Conflict**	0.093	0.085	0.028	0.404**	-0.015	0.118	0.062	0.045	0.083		-0.095	0.112	0.003	0.097	-0.018	0.314	-0.095	0.109
11.	**Parent Conflict Resolution**	0.22**	0.231**	0.196*	0.072	0.252**	0.21*	0.349**	0.273**	0.768**	-0.097		0.302	0.171	0.162	0.204	0.039	0.26	0.276
12.	**Parent Development**	0.19**	0.223**	0.072	0.193*	0.084	0.138*	0.651**	0.638**	0.41**	0.077	0.238**		0.194	0.21	0.111	0.022	0.133	0.328
13.	**Peer Feedback**	0.511**	0.43**	0.334**	0.243**	0.252**	0.25**	0.252**	0.342**	0.252**	0.003	0.225**	0.172*		0.469	0.316	0.098	0.23	0.659
14.	**Peer Support for Performance**	0.307**	0.455**	0.302**	0.276**	0.218*	0.152	0.267**	0.384**	0.224**	0.115	0.22**	0.191*	0.718**		0.287	0.099	0.268	0.619
15.	**Peer Loyalty & Things in Common**	0.142	0.184*	0.44**	0.11	0.315**	0.371**	0.157	0.296**	0.262**	-0.02	0.272**	0.099	0.473**	0.443**		0.09	0.505	0.495
16.	**Peer Conflict**	-0.001	-0.004	0.004	0.561**	0.033	-0.002	0.081	0.033	0.03	0.337**	0.048	0.018	0.136	0.141	0.125		0.033	0.189
17.	**Peer Conflict Resolution**	0.128	0.246**	0.301**	0.052	0.425**	0.253**	0.172*	0.246**	0.138	-0.099	0.308**	0.105	0.306**	0.367**	0.678**	0.041		0.439
18.	**Peer Development**	0.293**	0.364**	0.323**	0.169*	0.284**	0.413**	0.145	0.255**	0.209**	0.077	0.224**	0.178*	0.6**	0.581**	0.454**	0.16	0.358*	

Correlation scores below diagonal, Covariance scores above. **p<0.01. *p<0.05.

5.4.2. Testing Individual Factors.

As the measures of perceived motivationally-relevant social agent influence in this study had been adapted to explore the influence of all three social agents, CFA was used to explore how well items for each subscale loaded on to their theorised latent variable. Subscale convergent validity was determined by average variance extracted (AVE) calculated on individual factors (i.e., subscales). AVE of 0.5 or higher was considered to demonstrate convergent validity (Farell and Rudd, 2009). Internal reliability was measured using Cronbach Alpha (α). The fit of the models for each subscale was measured using chi-squared, SRMR, RMSEA and CFI statistics. Table 11 illustrates the correlations and covariances for all variables.

Tables 12, 13 and 14 summarise the validity, reliability and model fit statistics for the subscales related to the influence of coaches, parents and peers on athlete motivation. The results show that all subscales demonstrated appropriate convergent validity with the exception of coach support for performance, which was slightly below the 0.5 threshold for appropriate convergent validity. The model fit statistics for the coach support for performance subscale demonstrated that despite the lack of convergent validity for the items within this subscale participant data fit the model structure well. All Cronbach Alpha scores were above 0.8 and therefore demonstrated acceptable levels of reliability (Abell, Springer & Kamata, 2009). All model fit statistics met the criteria of at least two of the three fit statistics demonstrating appropriate fit thresholds, suggesting that the subscales adapted and used to measure perceived social agent influence on athlete motivation were valid, reliable and measured their predicted latent variables.

Table 12: Validity, Reliability, and Model Fit Statistics for Coach Factors

	Subscale	AVE	Cronbach α	Model Fit Statistics					
				df	χ^2	P<	SRMR	RMSEA	CFI
1.	Coach Feedback & Evaluation	0.56	0.88	9	65.263	0.000	0.061	0.165	0.893
2.	Coach Support for Performance	0.47	0.83	9	16.966	0.049	0.38	0.062	0.977
3.	Coach Loyalty	0.57	0.83	2	27.483	0.000	0.040	0.236	0.928
4.	Coach Things in Common	0.66	0.88	2	10.530	0.005	0.025	0.136	0.975
5.	Coach Development	0.67	0.94	20	47.997	0.000	0.032	0.078	0.971
6.	Coach Conflict	0.56	0.80	-	-	-	-	-	-
7.	Coach Conflict Resolution	0.78	0.91	-	-	-	-	-	-
8.	Combined Coach Loyalty & Things in Common	-	0.91	20	114.418	0.000	0.059	0.144	0.829
	Full Coach Model	-	-	506	896.780	0.000	0.055	0.052	0.931

Key: AVE = Average Variance Extracted; df = degrees of freedom; SRMR = Standardised Root Mean Square Statistic; RMSEA = Root-mean-squared error of approximation; CFI = confirmative fix index

Table 13: Validity, Reliability, and Model Fit Statistics for Parent Factors

	Subscale	AVE	Cronbach α	Model Fit Statistics					
				df	χ^2	P<	SRMR	RMSEA	CFI
1.	Parent Feedback & Evaluation	0.64	0.92	9	77.276	0.000	0.073	0.182	0.866
2.	Parent Support for Performance	0.51	0.84	9	75.707	0.000	0.083	0.180	0.800
3.	Parent Loyalty	0.55	0.81	2	9.336	0.009	0.029	0.127	0.975
4.	Parent Things in Common	0.68	0.89	2	5.869	0.053	0.020	0.092	0.989
5.	Parent Development	0.74	0.96	20	40.784	0.004	0.025	0.067	0.974
6.	Parent Conflict	0.69	0.86	-	-	-	-	-	-
7.	Parent Conflict Resolution	0.74	0.89	-	-	-	-	-	-
8.	Combined Parent Loyalty & Things in Common	-	0.90	20	154.333	0.000	0.058	0.171	0.854
	Full Parent Model	-	-	473	1255.47	0.000	0.075	0.074	0.880

Key: AVE = Average Variance Extracted; df = degrees of freedom; SRMR = Standardised Root Mean Square Statistic; RMSEA = Root-mean-squared error of approximation; CFI = confirmative fix index

Table 14: Validity, Reliability, and Model Fit Statistics for Peer Factors

	Subscale	AVE	Cronbach α	Model Fit Statistics					
				df	χ^2	P<	SRMR	RMSEA	CFI
1.	Peer Feedback & Evaluation	0.66	0.92	9	103.061	0.000	0.056	0.214	0.854
2.	Peer Support for Performance	0.55	0.87	9	26.483	0.002	0.039	0.092	0.957
3.	Peer Loyalty	0.62	0.85	2	55.818	0.000	0.060	0.342	0.872
4.	Peer Things in Common	0.68	0.90	2	51.515	0.000	0.068	0.329	0.880
5.	Peer Development	0.72	0.95	20	55.264	0.000	0.028	0.088	0.966
6.	Peer Conflict	0.70	0.87	-	-	-	-	-	-
7.	Peer Conflict Resolution	0.74	0.89	-	-	-	-	-	-
8.	Combined Peer Loyalty & Things in Common	-	0.92	20	207.190	0.000	0.059	0.202	0.829
	Full Peer Model	-	-	473	1074.52	0.000	0.051	0.067	0.903

Key: AVE = Average Variance Extracted; df = degrees of freedom; SRMR = Standardised Root Mean Square Statistic; RMSEA = Root-mean-squared error of approximation; CFI = confirmative fix index

5.4.3. Testing Social Agent Models.

With individual factors having demonstrated appropriate model fit, models were tested which grouped the factors by coach, parent and peer. Each social agent model was tested with all subscales as being independent of each other, with models with seven latent variables tested (i.e., information support, support for performance, loyalty, things in common, support for development, conflict, conflict resolution). Fit statistics are illustrated in tables 12 to 14 for each social agent, and demonstrated appropriate model fit with a seven-factor model (Coach Model: $\chi^2 = 896.78$, p < 0.000, SRMR = 0.055, RMSEA = 0.052, CFI = 0.931; Parent Model: $\chi^2 = 1255.47$, p <0.000, SRMR = 0.075, CFI = 0.88; Peer Model: $\chi^2 = 1074.52$, p < 0.000, SRMR = 0.051, RMSEA = 0.067, CFI = 0.903). Within each model the loyalty and things in common subscales were significantly correlated. Items for these subscales were fit to one latent variable (i.e., relationship) and demonstrated appropriate model fit for coach ($\chi^2 = 114.418$, p < 0.000, SRMR = 0.059, RMSEA = 0.144, CFI = 0.829), parent ($\chi^2 = 154.33$, p < 0.000, SRMR = 0.058, RMSEA = 0.171, CFI = 0.854) and peer ($\chi^2 = 207.19$, p < 0.000, SRMR = 0.059, RMSEA = 0.202, CFI = 0.829). These factors were therefore combined into one factor for the remainder of the analysis and model testing. The conflict and conflict resolution factors were predicted to combine into one latent factor based on the interpersonal interactions category of perceived social agent influence identified in Study 1. To explore whether these factors combined into one interpersonal interaction factor their items were combined and loaded onto one factor. This loading resulted in poor and inappropriate model fit statistics for each social agent, and therefore these factors were considered to be independent for the remainder of the analysis.

5.4.4. Full Model Specification & Testing.

In order to determine the structure of latent variables that best fit the participant data, nine configurations of latent variables were tested. Table 15 provides the fit statistics for each of the models tested.

Table 15: Summary of Fit Indices for Full Model Confirmatory Factor Analyses

Model	df	χ^2	P<	SRMR	RMSEA	CFI
A. Fully Independent Latent Variable Model (21 Latent Variables)	4638	7781.029	0.000	0.055	0.054	0.830
B. Modified Fully Independent Latent Variable Model (18 Latent Variables)	4695	8093.098	0.000	0.057	0.056	0.816
C. Combined Social Agent Latent Variables (7 Latent Variables)	4827	16422.046	0.000	0.144	0.102	0.367
D. Modified Combined Social Agent Latent Variables (5 Latent Variables)	4735	16149.498	0.000	0.145	0.103	0.368
E. Modified Combined Social Agent Latent Variables with Hierarchies (6 latent Variables)	4815	8853.784	0.000	0.100	0.061	0.779
F. Modified Combined Social Agent Latent Variables with Hierarchies (5 Latent Variables) (V4)	4823	10600.638	0.000	0.132	0.072	0.698
G. Social agent influence as hierarchy (3 Latent Variables)	4827	8711.428	0.000	0.083	0.061	0.788
H. Modified Social agent influence as hierarchy (3 Latent Variables, Interpersonal Interactions Removed)	3222	5768.001	0.000	0.079	0.061	0.820
I. Modified Social agent influence as hierarchy (3 Latent Variables, Relationship Factors and Interpersonal Interactions Removed)	1581	2847.230	0.000	0.073	0.063	0.862

df = degrees of freedom; SRMR = Standardised Root Mean Square Statistic; RMSEA = Root-mean-squared error of approximation; CFI = confirmative fix index

5.4.4.1. Independent Models.

The first model to be tested was Model A, the Fully Independent Latent Variable Model (Figure 7) which reflected independent latent variables for each social agent and each type of influence (i.e., 21 independent latent variables). This model demonstrated appropriate model fit (SRMR = 0.055, RMSEA = 0.054, CFI = 0.830), but significant and strong positive correlations between the loyalty and things in common subscales for coaches and parents.

Figure 7: Model A, Fully Independent Latent Variable Model (21 Latent Variables)
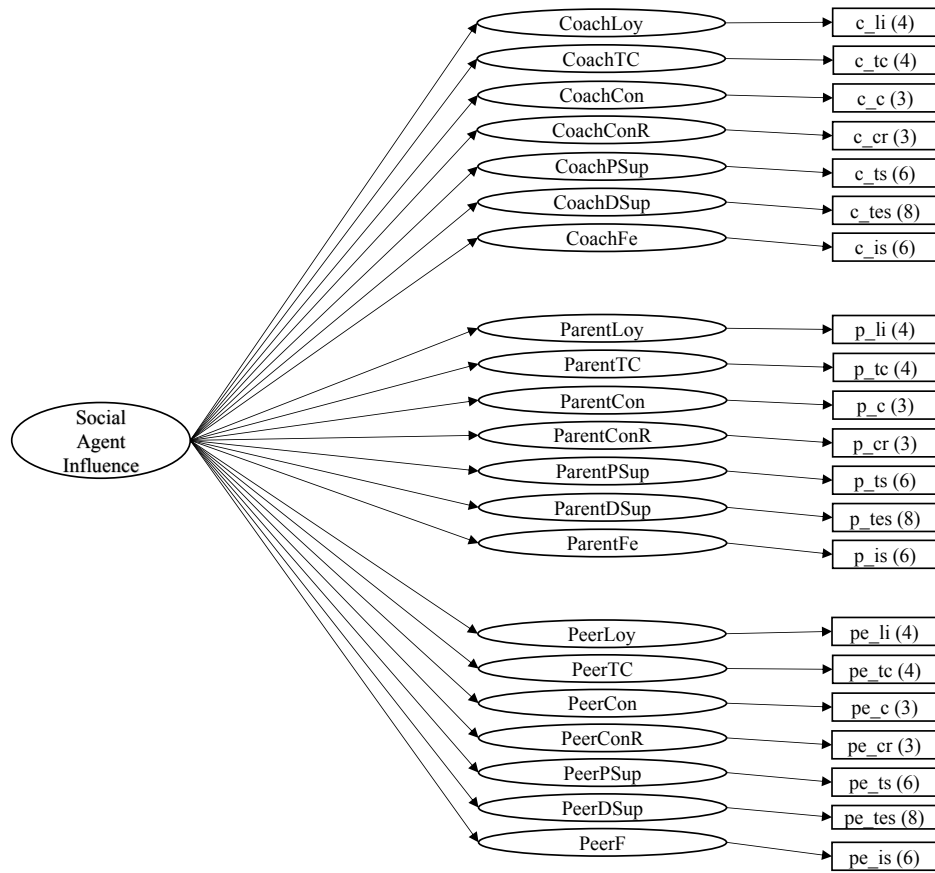
Key:
Latent Varibles: Loy = Loyalty & Intimacy; TC = Things in Common; Con = Conflict; ConR = Conflict Resolusion; PSup = Support for Performance; DSup = Support for Development; Fe = Feedback & Evaluation
Items: li = loyalty & intimacy; tc = things in common; c = conflict; cr = conflict resolution; ts = tangible support; tes = techical skills; is = informational support
Social Agent: c = coach; p = parent; pe = peer

Model A was modified to reflect the loyalty and things in common subscales being combined into a relationship factor to become Model B (Figure 8) which consisted of 18 latent variables. Model B demonstrated appropriate fit statistics (SRMR = 0.057, RMSEA = 0.056, CFI = 0.816) but, crucially, no correlations between latent variables above 0.8 suggesting distinct yet related latent variables. This model was also an improved model due to being more parsimonious than Model A (Schumacker & Lomax, 2016).

Figure 8: Model B, Modified Fully Independent Latent Variable Model (18 Latent Variables)

Key:
Latent Varibles: Rel = Relationship; Con = Conflict; ConR = Conflict Resolusion; PSup = Support for Performance; DSup = Support for Development; Fe = Feedback & Evaluation
Items: li = loyalty & intimacy; tc = things in common; c = conflict; cr = conflict resolution; ts = tangible support; tes = techical skills; is = informational support
Social Agent: c = coach; p = parent; pe = peer

5.4.4.2. *Combined Perceived Social Agent Influence Models.*

To explore whether social agents had a combined rather than distinct influence on athlete motivation, a series of models were tested on the participant data. Figure 9 illustrates Model C which tested 7 latent variables representing the seven theorised factors of perceived social agent influence: loyalty, things in common, conflict, conflict resolution, support for performance, support for development, feedback. Coach, parent and peer items for each category of influence were loaded on to their relevant factor. Model fit statistics were poor (SRMR = 0.144, RMSEA = 0.102, CFI = 0.367).

Figure 9: Model C, Combined Social Agent Latent Variables (7 Latent Variables)

Key:
Latent Varibles: Loy = Loyalty & Intimacy; TC = Things in Common; Con = Conflict; ConR = Conflict Resolusion; PSup = Support for Performance; DSup = Support for Development; Fe = Feedback & Evaluation
Items: li = loyalty & intimacy; tc = things in common; c = conflict; cr = conflict resolution; ts = tangible support; tes = techical skills; is = informational support
Social Agent: SA = social agent; c = coach; p = parent; pe = peer

As in previous testing, Model C was modified to combine the loyalty and things in common factors, as well as the conflict and conflict resolution factors, into two higher order factors relationship and interpersonal interactions respectively. Figure 10 illustrates this modification in Model D. Model D continued to demonstrate poor model fit (SRMR = 0.145, RMSEA = 0.103, CFI = 0.368) illustrating that creating hierarchies of relationship and interpersonal interaction factors did not result in an appropriate model fit.

Figure 10: Model D, Combined Social Agent Latent Variables (5 Latent Variables)
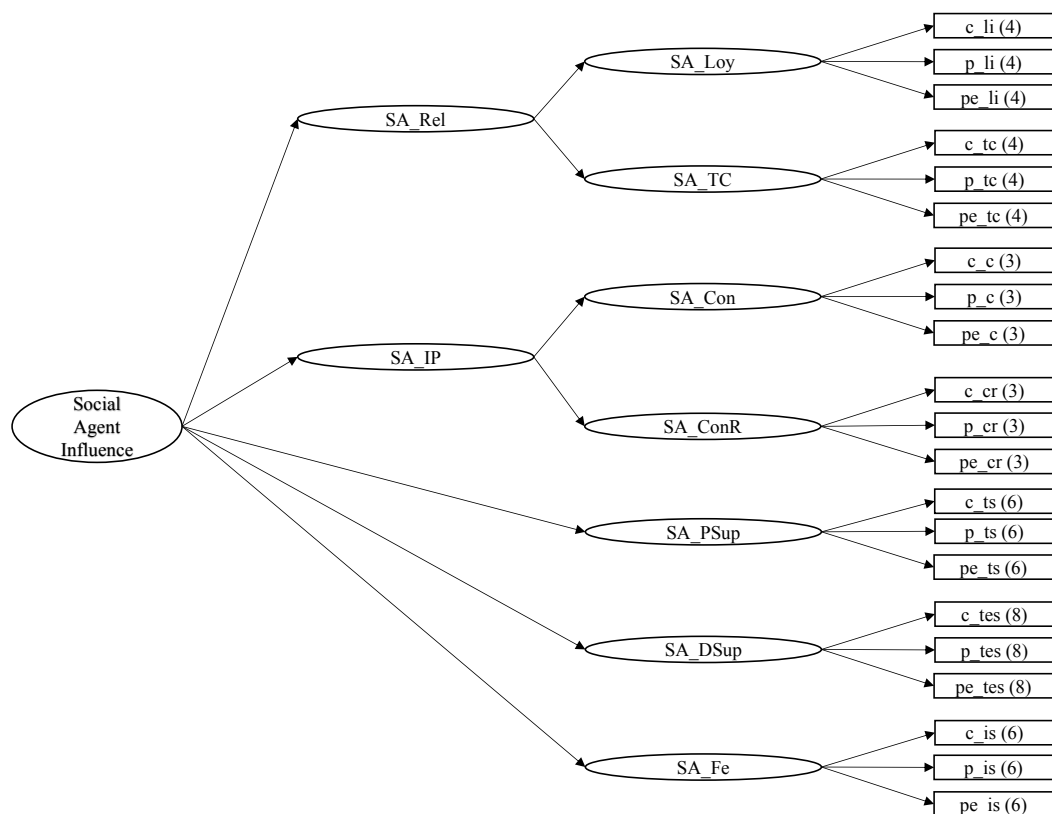
Key:
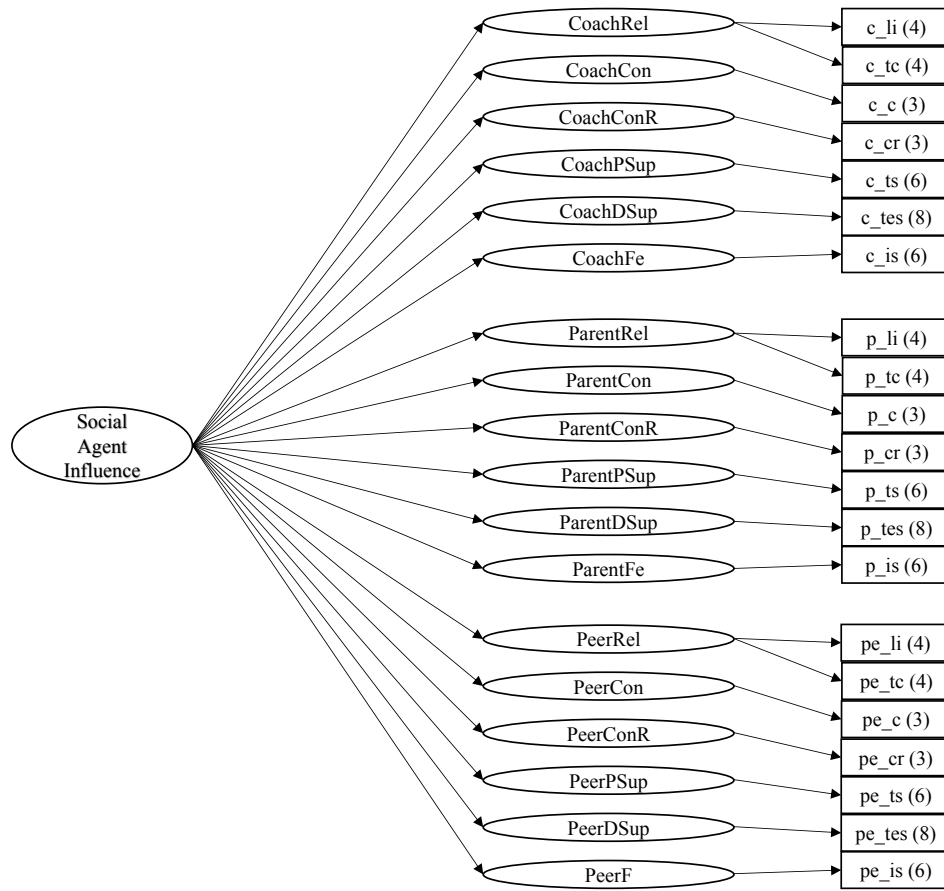**Latent Varibles:** Rel = Relationship; IP = Interpersonal Interactions; Loy = Loyalty & Intimacy; TC = Things in Common; Con = Conflict; ConR = Conflict Resolusion; PSup = Support for Performance; DSup = Support for Development; Fe = Feedback & Evaluation
Items: li = loyalty & intimacy; tc = things in common; c = conflict; cr = conflict resolution; ts = tangible support; tes = techical skills; is = informational support
Social Agent: c = coach; p = parent; pe = peer

The next step of the model testing was to determine whether a hierarchy existed in the categorisation of perceived social agent influence. Figure 11 illustrates Model E, which has six higher level latent factors which are not social agent specific (i.e., relationship, conflict, conflict resolution, support for performance, support for development, feedback). Coach, parent and peer factors for each category were loaded on to these higher order factors. Model E did not fit the data well (SRMR = 0.100, RMSEA = 0.061, CFI = 0.779) although the fit of the model did improve from Model C and Model D.

Figure 11: Model E – Modified Combined Social Agent Latent Variables with Hierarchies (6 Latent Variables
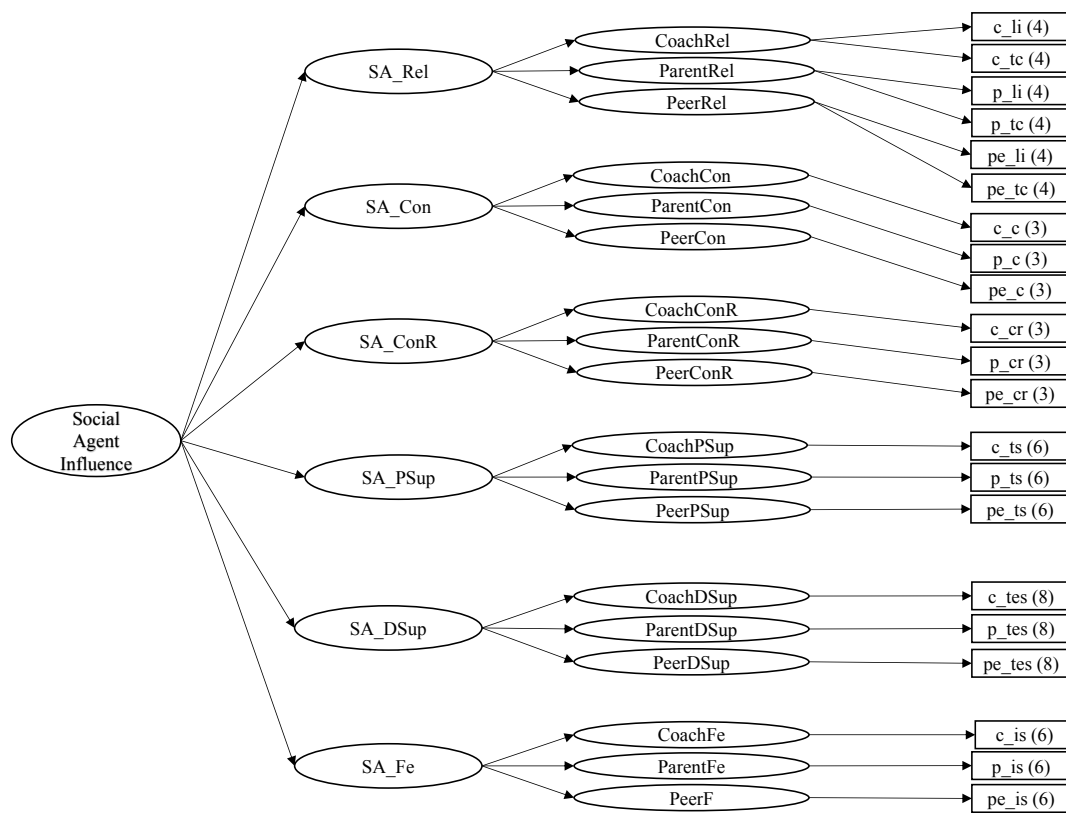
Key:
Latent Varibles: Rel = Relationship; Con = Conflict; ConR = Conflict Resolusion; PSup = Support for Performance; DSup = Support for Development; Fe = Feedback & Evaluation
Items: li = loyalty & intimacy; tc = things in common; c = conflict; cr = conflict resolution; ts = tangible support; tes = techical skills; is = informational support
Social Agent: c = coach; p = parent; pe = peer

Given the improved, although still inappropriate, fit for Model E, one final model was tested to determine whether the role of social agents on athlete motivation was a combined one rather than individual to each social agent. As illustrated in Figure 12, Model F tested whether a 5 factor higher order model (i.e., relationship, interpersonal interaction, support for performance, support for development and feedback) demonstrated appropriate model fit. This modification required the coach, parent and peer relationship factors be formed of the loyalty and things in common items, and the interpersonal interactions factors be formed of the conflict and conflict resolution items. Model F demonstrated inappropriate model fit (SRMR = 0.132, RMSEA = 0.072, CFI = 0.698).

Figure 12: Model F, Modified Combined Social Agent Latent Variables with Hierarchies (5 Latent Variables)
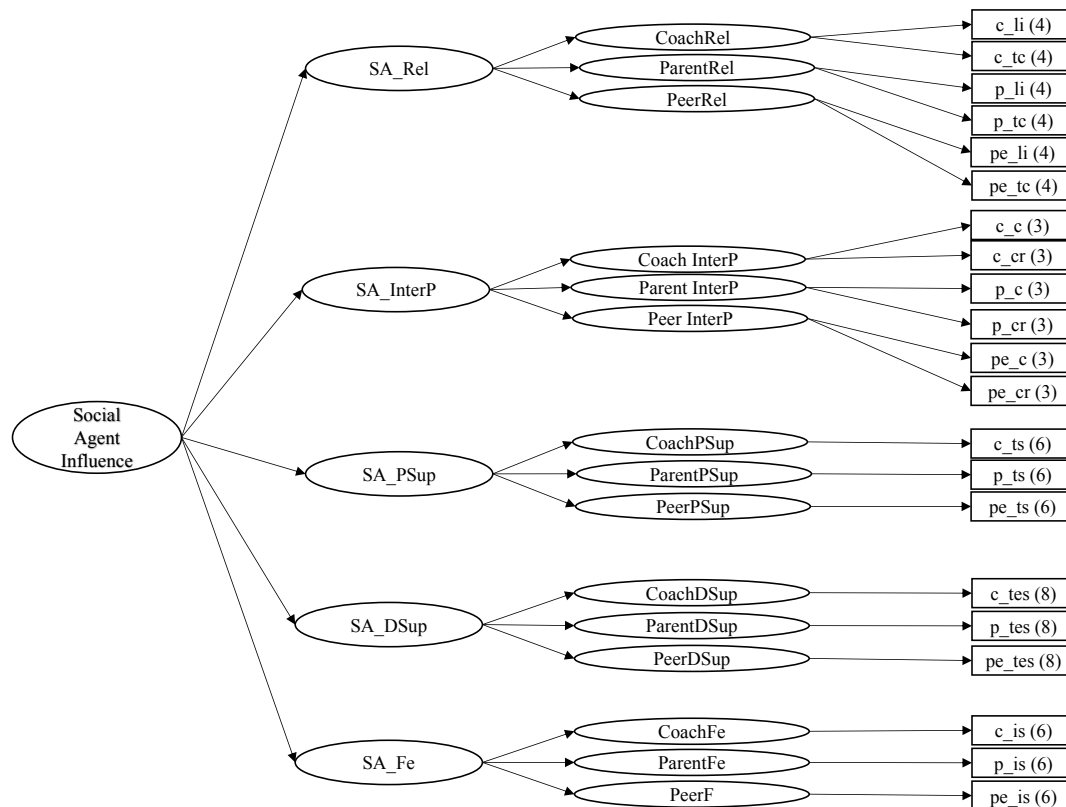
Key:
Latent Varibles: Rel = Relationship; InterP = Interpersonal Interactions; PSup = Support for Performance; DSup = Support for Development; Fe = Feedback & Evaluation
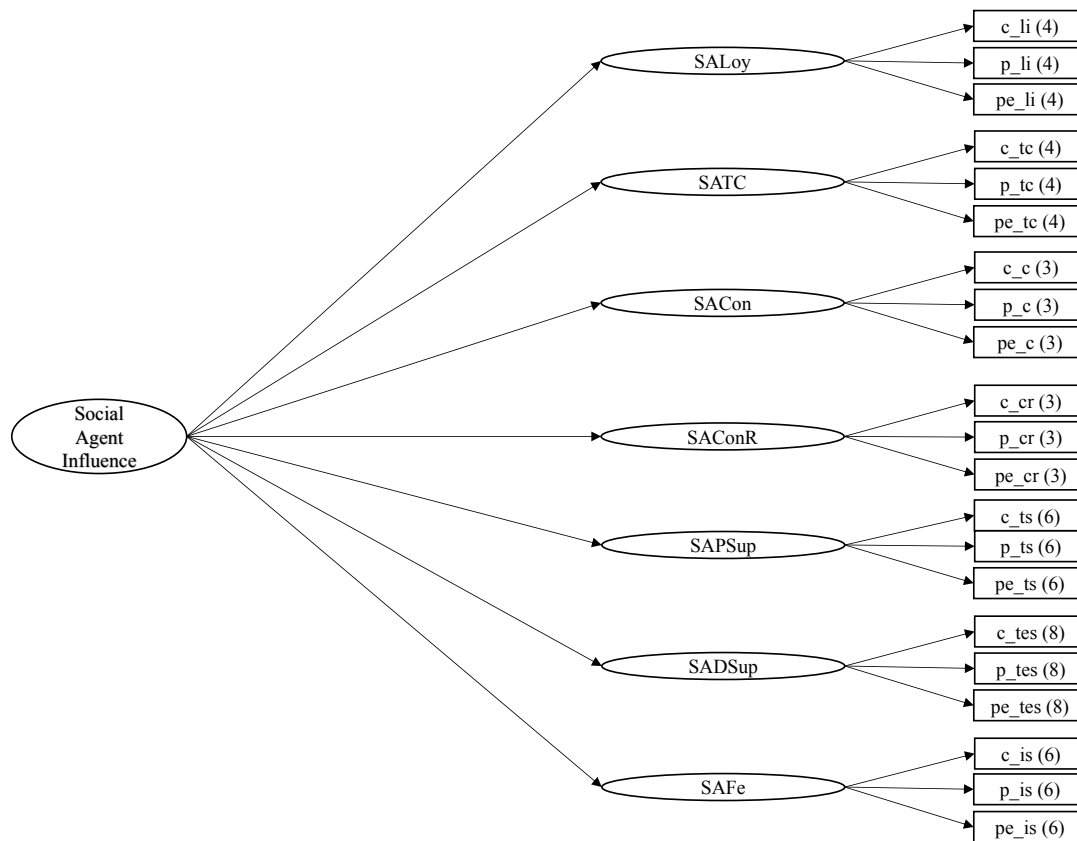**Items:** li = loyalty & intimacy; tc = things in common; c = conflict; cr = conflict resolution; ts = tangible support; tes = techical skills; is = informational support
Social Agent: c = coach; p = parent; pe = peer

The results of models C to F illustrated that the social agents did not have a combined or additive influence on athlete motivation and may suggested an individual influence. Additional theoretical model structures were, therefore, developed and tested to explore the nature of the relationship between perceived social agent influences on athlete motivation.

5.4.4.3.   Distinct Perceived Social Agent Influences.

In order to explore whether coaches, parents and peers had independent influences on athlete motivation, Model G tested whether a hierarchy of latent factors existed in which all coach, parent and peer latent factors were loaded on to their respective higher order social agent factor. Figure 13 illustrates this hierarchical model of perceived social agent influence, with six influence factors (i.e., relationship, conflict, conflict resolution, support for performance, support for development, feedback). Model G did not demonstrate appropriate fit statistics (SRMR = 0.083, RMSEA = 0.061, CFI = 0.788) although the data fit this model better than those models with combined perceived social agent influences (i.e., Models C to F). Within the hierarchical Model G the factor loadings for the coach, parent and peer conflict and conflict resolution factors were below the required threshold, and therefore these items were removed, and an updated hierarchical model developed for testing.

Model H reflected the same hierarchies as Model G but with the conflict and conflict resolution items removed from the analysis. Figure 14 illustrates this modified hierarchical model. Fit statistics improved for Model H (SRMR = 00.079, RMSEA = 0.061, CFI = 0.820) but the factor loadings for items relating to loyalty and things in common dropped below acceptable levels.

Figure 13: Model G, Social Agent as Hierarchy (3 Latent Variables)
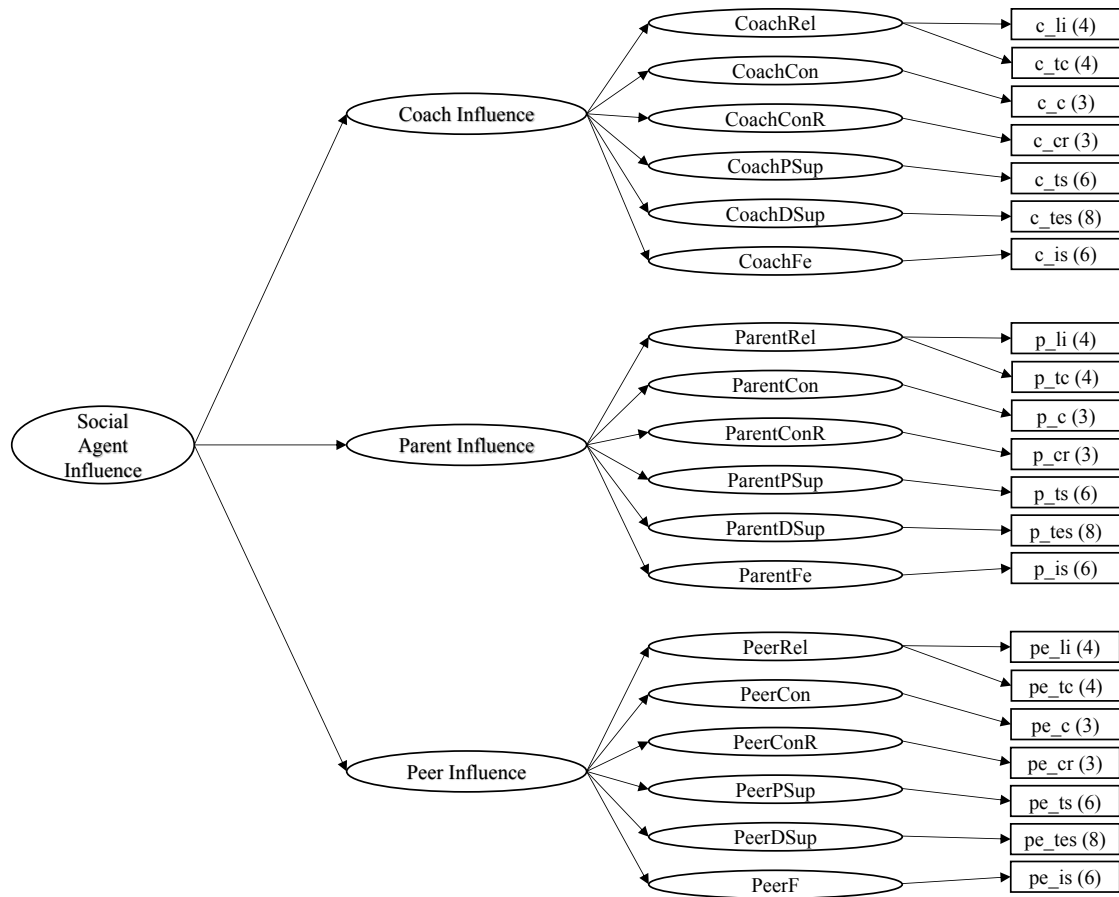
Key:
Latent Varibles: Rel = Relationship; Con = Conflict; ConR = Conflict Resolusion; PSup = Support for Performance; DSup = Support for Development; Fe = Feedback & Evaluation
Items: li = loyalty & intimacy; tc = things in common; c = conflict; cr = conflict resolution; ts = tangible support; tes = techical skills; is = informational support
Social Agent: c = coach; p = parent; pe = peer

Figure 14: Model H, Modified Social Agent as Hierarchy (3 Latent Variables, Interpersonal Interactions Removed)
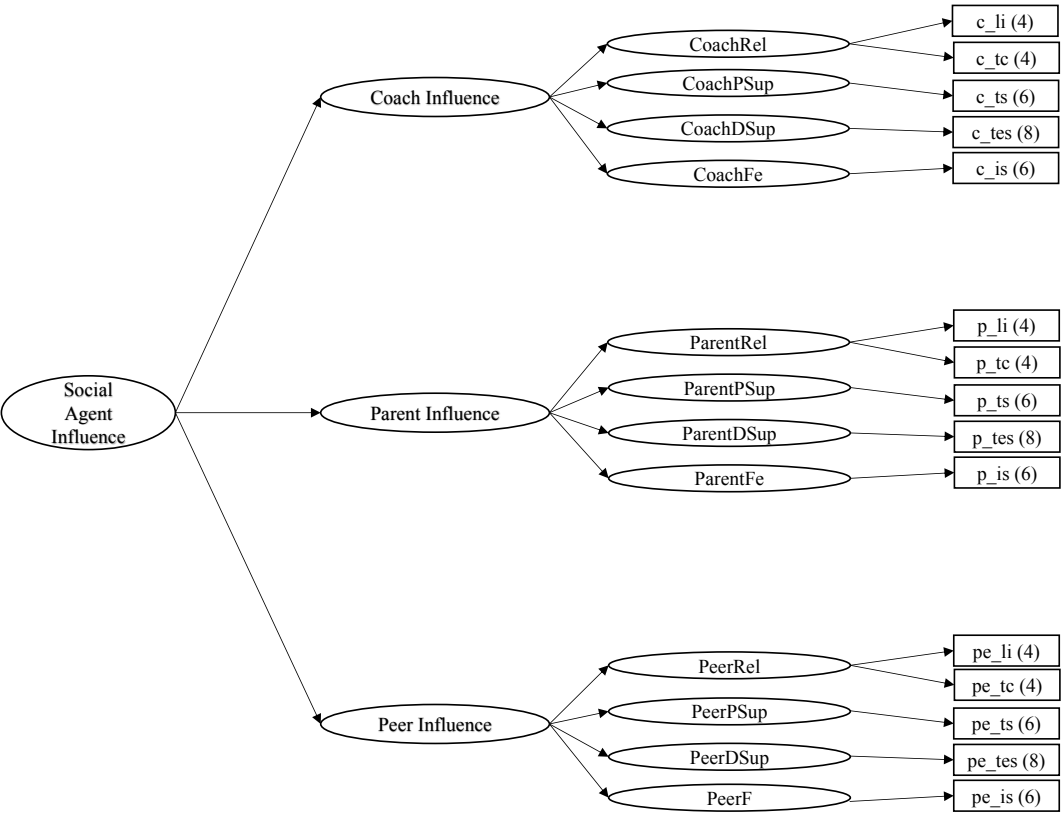
Key:
Latent Varibles: Rel = Relationship; PSup = Support for Performance; DSup = Support for Development; Fe = Feedback & Evaluation
Items: li = loyalty & intimacy; tc = things in common; ts = tangible support; tes = techical skills; is = informational support
Social Agent: c = coach; p = parent; pe = peer

One final model was tested and adapted from Model H. Model I was the same as Model H but with the removal of the relationship factor for each social agent reflecting the poor factor loadings identified in Model H. Figure 15 illustrates Model I. Fit statistics for Model I improved (SRMR = 0.073, RMSEA = 0.063, CFI = 0.862) but the removal of two of the six theoretical factors (i.e., relationship, interpersonal interaction) suggested that this model did not appropriately illustrate the mapping of items to latent variables.

Figure 15: Model I, Modified Social Agent as Hierarchy (3 Latent Variables, Relationship Factors and Interpersonal Interactions Removed)
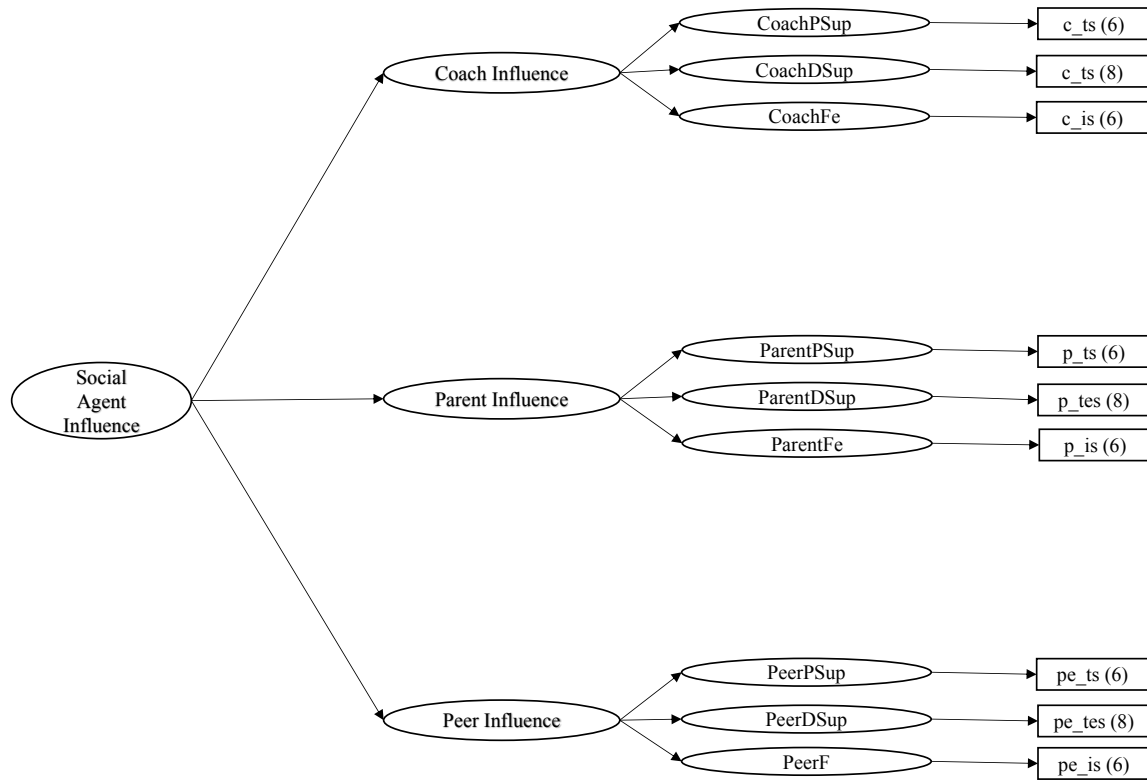
Key:
Latent Varibles: PSup = Support for Performance; DSup = Support for Development; Fe = Feedback & Evaluation
Items: ts = tangible support; tes = techical skills; is = informational support
Social Agent: c = coach; p = parent; pe = peer

5.5. Discussion

The aims of this study were twofold. First, to determine the appropriateness of adapted psychometric measure subscales to measure perceived coach, parent and peer influences on athlete motivation. Second, to identify the structural nature of the proposed model of perceived motivationally-relevant social agent influence of coaches, parents and peers as identified in Study 1. Confirmatory factor analysis was used to address both aims by determining the psychometric properties of the adapted measures used in this study, and by comparing the model fit of different theoretical models of perceived motivationally-relevant social agent influence. It is important to reiterate that the study did not test the relationship between specific social agent behaviours and athlete motivation. Rather, the study attempted to determine whether the structure of the proposed model of motivationally-relevant social agent influences as perceived by athletes.

5.5.1. Psychometric Properties of Subscales.

Relating to the first aim, the convergent validity, internal validity and fit statistics (i.e., SRMR, RMSEA, CFI) demonstrated that each subscale adapted and used in this study loaded on to their proposed latent variables and demonstrated good validity and reliability statistics. Good validity was identified for the subscales from the SFQS (Weiss & Smith, 1999), the CBS-S (Côté et al., 1999) and the ARSQ (Freeman et al., 2014) which were adapted from their original use to be used to measure all three social agents on the same subscale. In particular, the fit statistics for each of the subscales mean that it is possible to explore similarities and differences between the perceived influence of each social agent for each category of support as the subscales are able to adequately differentiate between the influences of each social agent. A criticism of previous research has been that studies have used different latent variables, measures or subscales for each social agent when exploring independent and concurrent influences (Keegan et al., 2014a). The appropriateness of the subscales used in the current study will provide a more nuanced understanding of the perceived motivational role of social agents during athlete development by allowing direct comparison between the types of support provided by coaches, parents and peers.

5.5.2. The Structure of a Model of Perceived Social Agent Influence on Athlete Motivation.

The finding that individual models for coach, parent and peer models (Tables 12 to 14) supported the findings of Study 1 that each social agent had similar perceived motivationally-relevant influences. The finding that for each social agent model the perceived conflict and conflict resolution subscales – chosen to reflect the interpersonal interactions category of perceived motivationally-relevant social agent influence identified in Study 1 - did not load effectively onto the one factor suggests that the positive and negative components of perceived interpersonal interactions have distinct motivational influences and are independent from one another. The finding that perceived conflict and conflict resolution between participants and social agents were independent variables from one another increases the sensitivity of the proposed model of perceived social agents motivationally-relevant influence and aligns to previous findings (e.g., Weiss & Theeboom, 1996). The independent nature of these subscales reflects the findings of the qualitative study of sport friendships by Weiss and Theeboom (1996), the results of which informed the development of the SFQS (Weiss et al., 1999) which proposed conflict and conflict resolution as independent, yet related, variables. Considering these two variables as independent suggests that they have a distinct influence on athlete motivation. Specifically, the amount of conflict being experienced between athletes and their social agents appears to be considered as independent from the behaviours social agents demonstrate to try to manage or resolve conflict. When considering the proposed framework of interpersonal conflict proposed by Wachsmuth et al. (2017), it is not surprising that these two variables are different from one another. For instance, Wachsmuth et al. define interpersonal conflict as *"a situation in which relationship partners perceive a disagreement about, for example, values, needs, opinions, or objectives that is manifested through negative cognitive, affective, and behavioural reactions"* (p. 88). Conflict can therefore be perceived as existing between an athlete and their social agent, but independently from this an athlete may also perceive efforts by the social agent to manage or resolve any conflict that is occurring. It is possible, therefore, that athletes may simultaneously provide high scores for conflict and conflict resolution at the same time.

In order to determine the structural nature of the proposed model of motivationally-relevant perceived social agent influence, various structural models were tested for model fit. These models tested different structures in which all variables were theorised to be independent from one another (i.e., Models A and B), where latent variables were combined

by proposed category of perceived social agent influence (e.g., coach, parent and peer perceived conflict items loading on to one variable; Models C to F), and where latent variables were combined by social agent (e.g., all parent variables loaded onto one parent variable; Models G to I). The failure of models C to I to gain appropriate levels of model fit without sacrificing a large part of the participant data suggests that of the nine models tested, Model B (Figure 8) was the most appropriate in terms of model fit and parsimony. Model B demonstrated the best model fit, whereby each social agent had the same 6 latent variables (i.e., relationship, conflict, conflict resolution, support for performance, support for development, feedback) which were not loaded in any form of hierarchy, resulting in 18 distinct latent variables. These results suggest that social agents have specific and distinct motivationally-relevant influences as perceived by athletes, and that each social agent plays a role in developing athlete motivation.

Previous research has provided equivocal findings regarding the combined or independent perceived motivationally-relevant influence of social agents. For instance, Keegan and colleagues (Keegan et al., 2009, 2010a, 2014a) identified categories of social agent influence that were common across coaches, parents and peers, but also some categories of influence that were common to only two social agents or were only related to one social agent. The qualitative nature of Keegan and colleagues' studies did not allow for insight into whether the support provide by coaches, parents and peers in their common categories was independent or additive (e.g., whether social support from coaches was the same as social support from parents and/or peers). The finding from the present study that the model which best fit the participant data was an independent rather than combined social agent influence supports previous literature demonstrating distinct social agent influences on athlete motivation (e.g., Davies et al., Riley & Smith, 2011). For instance, Vazou et al. (2006) identified that coaches and peers had distinct and independent influences on athlete motivational climate, and there was no interaction between these motivational influences. On the other hand, the independent nature of social agent influence contradicts some previous findings regarding the moderating role that social agents can have on the relationship between motivational processes and athlete outcomes (e.g.., Van Yperen, 1995). Furthermore, Ullrich-French and Smith (2006) identified an additive and combined influence of parents and peers for self-determination and enjoyment. As the present study did not measure motivation directly, however, it is not possible to tell whether combinations of different types of social agent influence result in different levels of motivation. The present study determined that the structure of perceived social agent influences is such that coaches,

parents and peers are perceived to be independent to one another, but the impact of interactions between different levels of influence cannot be determined.

The statistics illustrated in Table 11 demonstrate that there are significant correlations between most variables, especially amongst those variables which relate to the same social agent. The proposed model, therefore, demonstrates that social agents are perceived play distinct, yet related, motivational roles during athlete development. Each social agent is perceived to provide each type of influence, but what is not clear from this study is whether specific types of levels of perceived social agent influence are beneficial for outcomes such as motivation or performance. Parsimonious models whereby these 18 categories of influence load onto further variables in a hierarchical fashion (as tested by models 3-9) would have been intuitive as well as useful from a statistical perspective. Such models would have allowed for the use of structural equation modelling to determine the relationship between factors and other interesting variables (e.g., subjective motivation), but the best fitting model suggests a more complex process and does not allow for structural equation modelling in the present study.

Keegan et al. (2014b) conducted a meta-synthesis in which they proposed a model of motivational atmosphere to account for the social and environmental factors influencing athlete motivation. Their proposed model had seven distinct motivational 'climates' that each social agent might influence in different ways across each stage of athlete development. Their model was proposed to lead to 63 different areas of social agent influence (i.e., 7 categories across 3 developmental stages and for each social agent: 7 x 3 x 3). By the same token, the current model would suggest a possible 54 areas of interest (e.g., each category of influence across 3 developmental stages) that could be studied further.

Although the proposed model that best fit the data in the present study demonstrated 18 independent latent variables, there were some moderate correlations between variables that a) related to the same social agent, and b) related to the same category of social agent influence. These correlations suggest that whilst the proposed model fits independent variables, these variables are related in some way. As such, the results of the present study may resonate with the proposed structure of motivational climates within Keegan et al.'s (2014b) theorised model (Figure 6, chapter 4, p. 122). For instance, although the variables relating to the coach, parent and peer relationship factors may be independent from one another and not load on to a higher relationship factor variable, these latent variables may

illustrate a relationship motivational climate (or context) similar to the relatedness climate proposed by Keegan et al. (2014b). Determining whether this is the case is, however, out with the scope of the present study and thesis. With the individual subscales used in this study being identified as valid and reliable, and the best fitting model of social agent influence demonstrating independent motivationally-relevant influences by the coach, parent and peer, it would then be justified to use these measures to examine the differences in the amount of influence each social agent had and how this might have varied over time. Such a study might provide some initial insight into how the perceived motivationally-relevant influence of social agents may relate to additional outcomes such as subjective motivation.

5.6. Conclusion

The purpose of this study was to determine the psychometric properties of the adapted measures, and then determine the structure of the proposed model of perceived motivationally-relevant social agent influence developed in Study 1. Results demonstrated that the adapted measures and subscales demonstrated appropriate fit, validity and reliability statistics, which allowed the structural nature of the model to be tested by comparing model fit of a number of model structures using confirmatory factor analysis. The model which best fit the data consisted of 18 latent variables in total, six for each social agent. Each social agent had latent variables reflecting: a) relationship; b) negative interactions; c) positive interactions; d) support for performance; e) support for development; and f) feedback and evaluation. The poor model fit statistics for the CFAs for the hierarchical models (i.e., combined social agent influences, combine categories of influence) demonstrated that coaches, parents and peers were perceived to have independent motivationally-relevant influences on athlete motivation across each of the six types of influence.

The next chapter will use this proposed model to explore the similarities and differences of perceived motivationally-relevant social agent influence across developmental stages.

Chapter Six - Study 2b

An Investigation of the Perceived Role of Coaches, Parents and Peers on Athlete Motivation between Developmental Stages

6. Study 2b – An Investigation of the Perceived Role of Coaches, Parents and Peers on Athlete Motivation between Developmental Stages

The purpose of this chapter is to explore similarities and differences between athletes at the sampling, specialising and investment stages of athlete development relating to the perceived motivationally-relevant influence of coaches, parents and peers in line with the proposed model developed in Study 1 (Figure 6) and refined in Study 2a (Figure 8).

6.1. Introduction

Models of athlete development (e.g., Côté, 1999; Wylleman & Lavallee, 2004) have suggested that relationships with, and influences from, social agents change during athlete development. Keegan et al.'s (2014b) model of motivational atmosphere reflects a complex interaction of various social climates and conditions within which social agents are proposed to influence athlete motivation in various and dynamic ways. For example, parents have been found to move from providing technical support to more practical elements of support as an athlete develops, whereas peers increasingly offer social support during development (Keegan et al., 2014a). Keegan et al., (2014a) conducted their study qualitatively and compared their findings from investment stage athletes with those at the sampling (Keegan et al., 2009) and specialising (Keegan et al., 2010a) stages of development. Although the findings of this series of studies provided insight into the similar and different influences of social agents, they do not allow for a comparison about the relative amount of perceived influence each social agent had during each developmental stage and in relation to one another.

The results of Study 1 provided a proposed model of perceived social agent motivationally-relevant influence amongst participants who has progressed through the sampling, specialising and investment stages of development (Côté, 1999), and was grounded in the experience of football players and their parents. The resulting proposed model summarised the perceived social agent motivationally-relevant influences into five distinct categories: relationship, interpersonal interactions, support for development, support for performance, and feedback. Study 1 demonstrated that these categories of influence were consistent across developmental stages, yet the relative influence of each social agent during each stage was not clear. In addition, Study 1 did not determine whether social agents have distinct or combined influences on athlete motivation. Study 2a was designed to determine

how well the proposed model from Study 1 reflected the perceived motivationally-relevant social agent influences across developmental stages. The results from Study 2a supported the categories proposed in Study 1 with the exception of separating the interpersonal interactions category into two distinct categories of influence: positive and negative interactions. The structure of the proposed model tested in Study 2a also confirmed that coaches, parents and peers were perceived to have independent motivationally-relevant influences, although there were some strong correlations between different types of influence, particularly between variables relating to the same social agent.

Due to complexity of the proposed model of motivationally-relevant social agent influence developed and refined in Studies 1 and 2a respectively, the study size in Study 2a did not allow for structural equation modelling (SEM) between the proposed model and an outcome measure for motivation. Such an analysis may have provided insight into whether specific types of relative amounts of perceived motivationally-relevant social agent influence might have led to more positive forms of motivation (e.g., intrinsic motivation). Similarly, SEM may have allowed a comparison between the relative amounts of perceived motivationally-relevant social agent influence during each developmental stage, thereby providing insight into whether specific social agents provided more of less perceived influence at each development stage. The independent nature of perceived motivationally-relevant social agent influence within the proposed model does, however, allow for investigation into whether social agents provide different levels of support for each category individually, and whether the relative amounts of perceived motivationally-relevant social agent influence differ across each developmental stage. Such information may provide insight into whether future studies should consider SEM approaches to determining social agents' relative motivationally-relevant influence on athletes.

6.2. Aims and Objectives

6.2.1. Aim.

The current study aimed to extend and apply the findings of the preceding studies in this thesis by using the proposed model of perceived motivationally-relevant social agent influence to explore the similarities and differences between athletes at different developmental stages.

6.2.2. Objectives.

The specific objectives of the study, therefore, were to determine:

1. Whether the perceived motivationally-relevant influence of coaches, parents or peers differed from one another during athlete development
2. Whether perceived motivationally-relevant social agent influences changed as athletes progressed through developmental stages

6.3. Method[2]

6.3.1. Study Design.

A cross-sectional study design was adopted for this study where all participants completed questionnaires once. Dependent variables included six categories of perceived social agent motivationally-relevant influence (i.e., feedback & evaluation, support for performance, relationship quality, conflict, conflict resolution, and support for development) as well as categories of athlete motivation. Independent variables included gender, type of sport (e.g., individual and team), participant age and stage of athlete development (i.e., sampling, specialising and investment). Measurement invariance was tested within each latent variable of the social agent model and motivation data to determine whether participants in the sampling, specialising and investment stages of development scored differently on dependent variables.

6.3.2. Participants.

As Study 2a (Chapter 5).

6.3.3. Measures.

6.3.3.1. Relationship Quality, Conflict, Conflict Resolution, Support for Development, Support for Performance, Feedback and Evaluation.

The data analysed for this study was collected using the adapted subscales for these latent variables from Study 2a (see Chapter 5). Study 2a results demonstrated the reliability, validity and fit statistics for each subscale used, demonstrating that the subscales adapted for use in assessing the influence of coaches, parents and peers respectively were appropriate for use and comparison in this study.

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[2] The findings reported in this chapter refer to data collected as part of Study 2a (chapter 5), and therefore only additional information not reported in Study 2a has been included within this method section.

6.3.3.2. *Athlete Motivation.*

The Behavioural Regulation in Sport Questionnaire-8 (Lonsdale, Hodge, & Rose, 2008) measures athlete motivation as conceptualised by SDT (Deci & Ryan, 2000). The measure contains 32 items which assess amotivation, four forms of extrinsic motivation (i.e., integrated regulation, identified regulation, introjected regulation and external regulation), and three forms of intrinsic motivation (i.e., knowledge, experience stimulation, and accomplishment) as identified by Vallerand (1997). A general intrinsic motivation sub-scale was included which allowed for a 6-factor version of the questionnaire to be examined (i.e., BRSQ-6). The stem for questions was "I participate in my sport…" and participants respond on a Likert scale anchored at 1 (*not at all true*), 4 (*somewhat true*) and 7 (*very true*). Participants completed all 32 items of the measure (Appendix K). The BRSQ-8 and BRSQ-6 have demonstrated acceptable nomological validity, factor validity (demonstrated by model fit) and reliability (Cronbach alpha coefficients between above 0.78 for both versions) statistics for both elite and non-elite participants (Lonsdale et al., 2008) and have been used with a wide range of participants in previous studies (Fenton, Duda, & Barrett, 2016; Jowett et al., 2017).

6.3.4. Data Collection.

The data in this study was collected at the same time as the data in Study 2a. As in Study 2a, following institutional ethical approval (SRRG No. SHS1606), emails were sent to captains, presidents and management staff at various UK sport clubs and organisations who acted as gatekeepers to potential participants. Emails contained information about the study and a link to allow online data collection. The study was also promoted via social media. Athletes interested in participating in the study were provided detailed information via the web link and asked to provide online consent via an electronic signature. Where participants were aged under 16, parental consent was required in addition to participant consent to take part in the study and was also gained via an electronic signature. Participants accessed and completed the measures for this study through the online survey tool REDCap. Participants provided demographic information including age, gender, sport, level of participation and number of years involved in their sport, before responding to items relating to perceived social agent influence and motivation.

6.3.5. Data Analysis.

Key descriptive and inferential statistics for the study variables were explored. To address the primary research aim, measurement invariance was used to determine developmental stage differences for each social agent latent variable. MANOVAs were used to explore the data further and investigated whether there were any differences in scoring of perceived social agent influence and athlete motivation by type of sport (i.e., team vs. individual), gender, and self-reported participation level (Hollembeak & Amorose, 2005). A series of two-way ANOVAs were used to investigate whether there were significant differences in the amount of perceived influence social agents had for each category of perceived social agent influence. Descriptive and inferential analyses were conducted using the IBM Statistic Analysis in Social Science (SPSS) software (v.21).

6.4. Results

6.4.1. Descriptive Statistics.

The descriptive statistics for the full sample of participants (N = 229) are presented in Table 16 and 17. In an absolute sense (i.e., considering the mean scores for the entire sample) participants scored moderate to high for all social agent variables with the exception of conflict variables and parent support for performance. Generally speaking, participants scored high for autonomous forms of motivation (i.e., intrinsic motivation subscales, integrated regulation, identified regulation) and moderate-to-low for controlled (i.e., introjected regulation, external regulation and amotivation) forms of motivation.

Table 16: Means and Standard Deviations for Measure Subscales by Gender, Type of Sport and Stage of Development

Variable	All (N = 229)		Gender Female (N = 100)		Gender Male (N = 129)		Type of Sport Individual (N = 73)		Type of Sport Team (N = 156)		Stage of Development Sampling (N = 65)		Stage of Development Specialising (N = 49)		Stage of Development Investment (N = 115)	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Coach Feedback‡	2.54	0.91	2.59	0.91	2.49	0.91	2.44	0.97	2.58	0.88	2.34	0.92	2.43	0.76	2.69	0.94
Coach Support for Performance‡	2.40	0.88	2.41	0.83	2.39	0.92	2.30	0.95	2.44	0.85	2.22	0.84	2.45	0.78	2.48	0.94
Coach Loyalty*	2.94	0.98	3.06	1.00	2.84	0.95	3.04	1.09	2.89	0.92	2.65	1.03	2.89	0.97	3.12	0.91
Coach Things in Common*	2.91	0.98	3.11	0.96	2.76	0.98	3.09	1.15	2.83	0.89	2.66	1.02	2.82	0.99	3.10	0.93
Coach Conflict*	1.45	0.68	1.29	0.54	1.58	0.74	1.29	0.54	1.53	0.72	1.30	0.60	1.51	0.80	1.52	0.65
Coach Conflict Resolution*	3.31	1.20	3.51	1.20	3.16	1.19	3.43	1.33	3.26	1.14	3.05	1.25	3.11	1.31	3.54	1.09
Coach Development†	4.94	1.42	5.17	1.38	4.77	1.43	5.01	1.70	4.91	1.27	4.43	1.73	5.00	1.28	5.21	1.20
Parent Feedback‡	2.03	0.97	2.01	0.97	2.05	0.98	2.05	1.10	2.03	0.92	1.73	0.88	2.05	0.92	2.20	1.01
Parent Support for Performance‡	1.78	0.89	1.73	0.87	1.82	0.91	1.84	0.97	1.75	0.85	1.49	0.78	1.74	0.83	1.96	0.93
Parent Loyalty*	3.82	1.01	3.93	0.91	3.73	1.07	3.66	1.16	3.89	0.93	3.57	1.14	3.87	0.89	3.93	0.96
Parent Things in Common*	3.39	1.09	3.53	1.01	3.29	1.14	3.29	1.21	3.44	1.03	3.08	1.07	3.56	0.92	3.50	1.14
Parent Conflict*	2.36	1.00	2.30	0.96	2.40	1.04	2.21	1.03	2.43	0.99	2.28	1.07	2.46	1.06	2.36	0.94
Parent Conflict Resolution*	3.79	1.05	3.82	1.02	3.78	1.08	3.60	1.18	3.88	0.97	3.56	1.13	4.01	0.97	3.83	1.02
Parent Development†	2.24	1.44	2.16	1.35	2.30	1.51	2.21	1.49	2.25	1.43	1.95	1.24	2.24	1.43	2.40	1.53
Peer Feedback‡	2.49	0.92	2.50	0.92	2.48	0.93	2.45	1.03	2.50	0.87	2.51	0.91	2.61	0.86	2.42	0.95
Peer Support for Performance‡	2.03	0.84	2.06	0.87	2.01	0.82	2.00	0.90	2.05	0.82	1.92	0.84	2.31	0.81	1.98	0.84
Peer Loyalty*	3.71	0.89	3.83	0.90	3.62	0.88	3.84	0.89	3.65	0.89	3.50	1.02	3.85	0.83	3.77	0.82
Peer Things in Common*	3.67	0.88	3.73	0.86	3.62	0.90	3.79	0.80	3.61	0.91	3.45	0.97	3.74	0.82	3.75	0.84
Peer Conflict*	2.01	0.87	1.79	0.74	2.17	0.93	1.84	0.82	2.09	0.89	1.83	0.86	2.03	0.87	2.10	0.87
Peer Conflict Resolution*	3.60	0.99	3.65	0.99	3.55	0.99	3.63	0.92	3.58	1.02	3.51	1.09	3.74	0.97	3.58	0.94
Peer Development†	3.59	1.48	3.45	1.45	3.71	1.49	3.47	1.54	3.65	1.45	3.37	1.49	4.03	1.37	3.53	1.49
Intrinsic Motivation^	6.39	0.88	6.47	0.83	6.33	0.92	6.32	0.93	6.42	0.86	6.33	0.89	6.67	0.50	6.31	0.98
Intrinsic Motivation Knowledge^	6.10	0.91	6.21	0.91	6.01	0.91	6.08	0.99	6.11	0.88	5.91	1.10	6.23	0.66	6.15	0.88
Intrinsic Motivation Experience^	6.23	0.89	6.33	0.93	6.16	0.86	6.26	0.95	6.22	0.87	6.07	1.09	6.30	0.66	6.30	0.85
Intrinsic Motivation Accomplishment^	6.29	0.89	6.39	0.81	6.21	0.94	6.34	0.86	6.26	0.90	6.13	0.99	6.51	0.65	6.28	0.90
Integrated Regulation^	5.61	1.16	5.71	1.04	5.54	1.24	5.65	1.19	5.59	1.15	5.34	1.30	5.62	1.00	5.76	1.12
Identified Regulation^	5.75	0.99	5.86	0.94	5.66	1.02	5.79	0.95	5.73	1.01	5.68	1.06	5.82	0.85	5.75	1.01
Introjected Regulation^	2.60	1.52	2.50	1.47	2.68	1.56	2.72	1.50	2.54	1.53	2.49	1.24	2.21	1.51	2.83	1.63
External Regulation^	2.03	1.24	1.91	1.18	2.12	1.28	2.03	1.08	2.02	1.31	1.88	1.08	1.73	0.99	2.24	1.37
Amotivation^	1.88	1.24	1.77	1.13	1.98	1.32	1.95	1.17	1.86	1.28	1.95	1.26	1.52	1.05	2.00	1.29

Psychometric Measure Scales: * 1 = not at all true, 5 = really true; †1 = never, 7 = always; ‡1 = not at all, 2 = once or twice, 3 = three or four times, 4 = five or six times, 6 = 7 or more times; ^ 1 = not at all true, 4 = somewhat true, 7 = very true.

Table 17: Means and Standard Deviations for Measure Subscales by Age Group

Variable	All (N = 229)		10-17 Years (N = 70)		18-24 Years (N = 103)		25-34 Years (N = 32)		35-45 Years (N = 17)		46+ years (N = 7)	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Coach Feedback‡	2.54	0.91	2.86	0.95	2.56	0.78	2.05	0.82	2.15	1.08	2.14	0.86
Coach Support for Performance‡	2.40	0.88	2.57	0.93	2.46	0.80	2.13	0.84	1.98	1.00	1.98	0.96
Coach Loyalty*	2.94	0.98	2.90	0.98	3.07	0.90	2.88	1.14	2.50	0.87	2.64	1.38
Coach Things in Common*	2.91	0.98	2.71	0.93	3.12	0.93	2.81	1.11	2.69	0.87	2.86	1.50
Coach Conflict*	1.45	0.68	1.46	0.66	1.53	0.73	1.31	0.58	1.43	0.66	1.00	0.00
Coach Conflict Resolution*	3.31	1.20	3.28	1.32	3.50	1.06	3.22	1.25	2.71	1.10	2.76	1.63
Coach Development†	4.94	1.42	5.33	1.23	5.06	1.26	4.58	1.62	3.60	1.29	4.34	2.53
Parent Feedback‡	2.03	0.97	2.34	0.95	2.17	0.99	1.52	0.72	1.35	0.63	1.05	0.13
Parent Support for Performance‡	1.78	0.89	2.32	0.87	1.74	0.85	1.16	0.48	1.25	0.61	1.02	0.06
Parent Loyalty*	3.82	1.01	4.20	0.71	3.97	0.88	3.34	0.99	3.06	1.18	1.75	1.10
Parent Things in Common*	3.39	1.09	3.64	0.89	3.60	1.01	2.82	1.10	2.87	1.27	1.71	0.96
Parent Conflict*	2.36	1.00	2.38	0.91	2.52	1.05	2.13	0.93	2.24	1.02	1.10	0.25
Parent Conflict Resolution*	3.79	1.05	4.08	0.88	3.88	0.89	3.53	1.16	3.33	1.25	2.00	1.53
Parent Development†	2.24	1.44	2.65	1.54	2.35	1.49	1.53	0.98	1.60	0.88	1.29	0.49
Peer Feedback‡	2.49	0.92	2.45	0.99	2.64	0.92	2.23	0.83	2.43	0.78	1.86	0.46
Peer Support for Performance‡	2.03	0.84	1.88	0.79	2.24	0.92	1.96	0.67	1.88	0.68	1.26	0.42
Peer Loyalty*	3.71	0.89	3.69	0.95	3.95	0.85	3.48	0.81	3.07	0.59	3.07	0.61
Peer Things in Common*	3.67	0.88	3.74	0.96	3.82	0.81	3.41	0.87	3.00	0.64	3.46	0.82
Peer Conflict*	2.01	0.87	1.98	0.77	2.06	0.84	2.13	1.18	1.84	0.85	1.33	0.38
Peer Conflict Resolution*	3.60	0.99	3.57	1.08	3.74	0.91	3.39	1.07	3.18	0.91	3.62	0.49
Peer Development†	3.59	1.48	3.63	1.58	3.71	1.50	3.59	1.28	3.15	1.09	2.66	1.55
Intrinsic Motivation^	6.39	0.88	6.62	0.68	6.28	0.94	6.34	1.09	6.24	0.78	6.39	0.88
Intrinsic Motivation Knowledge^	6.10	0.91	6.20	0.89	6.15	0.90	5.96	1.02	5.63	0.91	6.11	0.78
Intrinsic Motivation Experience^	6.23	0.89	6.29	0.92	6.31	0.83	6.13	1.03	5.74	0.84	6.29	0.74
Intrinsic Motivation Accomplishment^	6.29	0.89	6.50	0.66	6.27	0.98	6.22	0.86	5.47	0.90	6.57	0.40
Integrated Regulation^	5.61	1.16	5.81	1.08	5.58	1.17	5.55	1.17	5.03	1.32	5.79	0.86
Identified Regulation^	5.75	0.99	5.75	1.02	5.80	1.00	5.83	0.98	5.28	0.81	5.71	0.98
Introjected Regulation^	2.60	1.52	2.43	1.58	2.80	1.56	2.61	1.41	2.26	1.07	2.14	1.61
External Regulation^	2.03	1.24	1.87	1.16	2.25	1.28	1.88	1.38	1.79	1.07	1.54	0.53
Amotivation^	1.88	1.24	1.57	1.05	2.04	1.28	1.99	1.41	2.06	1.43	1.79	0.82

Psychometric Measure Scales: * 1 = not at all true, 5 = really true; †1 = never, 7 = always; ‡1 = not at all, 2 = once or twice, 3 = three or four times, 4 = five or six times, 6 = 7 or more times; ^ 1 = not at all true, 4 = somewhat true, 7 = very true.

6.4.2. Exploring Group Differences.

A series of MANOVAs were conducted to further explore the data. Eight MANOVAs were undertaken to explore whether participants scored differently for perceived motivationally-relevant social agent influence and motivation between the types of sport (i.e., individual vs. team), gender, participation level (i.e., recreational, local league, regional league, national league, international and professional) and participant age (i.e., 10-17 years, 18-24 years, 25-35 years, 35-45 years, 45+ years). The dependent variables for these analyses were the categories of perceived motivationally-relevant social agent influence for each social agent (i.e., coach, parent and peer), and each group difference was explored through individual MANOVAs. The results of each of these MANOVAS will be discussed in turn.

6.4.2.1. Perceived Social Agent Motivationally-Relevant Influence - Team vs. Individual Sport.

The first MANOVA was a comparison between participants who took part in individual (n = 73) and team (n = 156) sports about the study variables. No significant sport type effect was found, F (20, 228) = 1.26, p = 0.211, Wilks λ = 0.892, partial η^2 = 0.11.

6.4.2.2. Perceived Social Agent Motivationally-Relevant Influence – Gender.

The second MANOVA compared female (n = 100) and male (n = 129) participant scores on study variables, and identified a significant gender effect, F (20, 228) = 1.79, p = 0.02, Wilks λ = 0.853, partial η^2 = 0.15. Between subject tests revealed a significant gender effect on scores for: things in common with their coach, F (1, 227) = 7.35, p = 0.007, partial η^2 = 0.31; coach conflict resolution, F (1, 227) = 4.90, p = 0.028, partial η^2 = 0.21; coach conflict, F (1, 227) = 11.40, p = 0.001, partial η^2 = 0.48; and coach support for development, F (1, 227) = 4.72 p = 0.031, partial η^2 = 0.02. As shown in Table 16, therefore, females scored significantly higher than males in: things in common with their coaches (M = 3.11, SD = 0.96) vs. M = 2.76, SD = 0.98); coach conflict resolution (M = 3.51, SD = 1.20 vs. M = 3.16, SD = 1.19); and coach support for development (M = 5.17, SD = 1.38 vs. M = 4.77, SD = 1.43). Males scored higher for conflict with their coaches than females (M = 1.58, SD = 0.74 vs. M = 1.29, SD = 0.54).

6.4.2.3. *Perceived Social Agent Motivationally-Relevant Influence - Level of Participation.*

The third MANOVA compared participant scores for perceived motivationally-relevant social agent influence based on whether they participated in sport at a recreational (n = 24), local league (n = 41), regional league (n = 49), national league (n = 80), international (n = 31), and professional (n = 4) level of performance. A significant participation level effect was identified F (105, 997) = 1.44, p = 0.004, Wilks λ = 0.502, partial η^2 = 0.13. Between subject tests revealed a significant participation level effect on: coach loyalty and intimacy, F (5, 223) = 4.04, p = 0.002, partial η^2 = 0.083; coach things in common, F (5, 223) = 2.78, p = 0.019, partial η^2 = 0.059; coach conflict resolution, F (5, 223) = 2.38, p = 0.040, partial η^2 = 0.051; and coach support for development, F (5, 223) = 2.81, p = 0.017, partial η^2 = 0.059. Means and Standard Deviations for all variables are demonstrated in Table 16. For coach loyalty and intimacy, participants at the recreational level of participation (M = 2.18, SD = 0.88) scored significantly lower than participants at the local (M = 2.93, SD = 1.03), regional (M = 2.89, SD =0.97), national (M = 3.11, SD =0.88) and international level (M = 3.17, SD =1.00). For coach things in common, recreational level participants (M = 2.37, SD =1.03) scored significantly lower than national level participants (M = 3.16, SD =0.92). For coach conflict resolution, recreational level participants (M = 2.76, SD=1.37) scored significantly lower than national level participants (M = 3.60, SD =1.01). For coach support for development, participants at local league level (M = 4.35, SD =1.56) scored significantly lower than national league level participants (M = 5.21, SD =1.17).

6.4.2.4. *Perceived Social Agent Motivationally-Relevant Influence – Age Group.*

The fourth MANOVA compared participant scores for perceived motivationally-relevant social agent influence based on whether they were aged 10-17 years (n = 70), 18-24 years (n = 103), 25-34 years (n = 32), 35-45 years (n = 17) and over 45 years (n = 7). A significant age effect was identified, F (84, 808) = 2.70, p = 0.000, Wilks λ = 0.353, partial η^2 = 0.23. Between subject tests revealed a significant age effect on: coach feedback, F (4, 224) = 6.26, p = 0.000, partial η^2 = 0.101; coach support for performance, F (4, 224) = 3.04, p = 0.018, partial η^2 = 0.051; coach technical development, F (4, 224) = 6.75, p = 0.000, partial η^2 = 0.108; parent feedback, F (4, 224) = 9.55, p = 0.000, partial η^2 = 0.146; parent

support for performance, $F(4, 224) = 16.60$, $p = 0.000$, partial $\eta^2 = 0.229$; parent loyalty and intimacy, $F(4, 224) = 19.21$, $p = 0.000$, partial $\eta^2 = 0.255$; parent things in common, $F(4, 224) = 10.80$, $p = 0.000$, partial $\eta^2 = 0.162$; parent conflict resolution, $F(4, 224) = 9.01$, $p = 0.000$, partial $\eta^2 = 0.139$; parent conflict, $F(4, 224) = 4.20$, $p = 0.003$, partial $\eta^2 = 0.070$; parent support for development, $F(4, 224) = 5.48$, $p = 0.000$, partial $\eta^2 = 0.089$; peer support for performance, $F(4, 224) = 3.97$, $p = 0.004$, partial $\eta^2 = 0.066$; peer loyalty and intimacy, $F(4, 224) = 5.87$, $p = 0.000$, partial $\eta^2 = 0.095$; and peer things in common, $F(4, 224) = 4.39$, $p = 0.002$, partial $\eta^2 = 0.073$.

For coach feedback, 10-17 year olds ($M = 2.86$, $SD = 0.95$) scored higher than participants aged 25-34 years ($M = 2.05$, $SD = 0.82$) and 35-45 years old ($M = 2.15$, $SD = 1.08$), and 18-24 year olds ($M = 2.56$, $SD = 0.78$) scored significantly higher than 25-34 year olds ($M = 2.05$, $SD = 0.82$). For coach support for performance, post-hoc comparisons with the Tukey's HSD adjustment did not identify any significant differences between age groups. For coach support for development, 10-17 year olds ($M = 5.33$, $SD = 1.23$) and 18-24 year olds ($M = 5.06$, $SD = 1.26$) both scored significantly higher than 35-45 year olds ($M = 3.60$, $SD = 1.29$), but were not significantly different from one another.

For parent feedback, participants aged 10-17 years old ($M = 2.34$, $SD = 0.95$) and 18-24 years old ($M = 2.17$, $SD = 0.99$) scored significantly higher than those aged 25-34 years old ($M = 1.52$, $SD = 0.72$), 35-45 years old ($M = 1.35$, $SD = 0.63$), and those over 46 ($M = 1.05$, $SD = 0.13$) but did not score differently from one another. For parent support for performance, participants in the 10-17 year age group ($M = 2.32$, $SD = 0.87$) scored significantly higher those in the 18-24 year age group ($M = 1.74$, $SD = 0.85$), the 25-34 years age group ($M = 1.16$, $SD = 0.48$), the 35-45 years age group ($M = 1.25$, $SD = 0.06$) and the 46 years and over age group ($M = 1.02$, $SD = 0.06$). In addition, participants in the 18-24 years age group ($M = 1.74$, $SD = 0.85$) scored significantly higher than participants in the 25-34 years age group ($M = 1.16$, $SD = 0.48$) for parent support for performance. For parent loyalty and intimacy, participants in the 10-17 years group ($M = 4.20$, $SD = 0.71$) and 18-24 years group ($M = 3.97$, $SD = 0.88$) scored significantly higher than participants in the 25-34 years group ($M = 3.34$, $SD = 0.99$), 35-45 years group ($M = 3.06$, $SD = 1.18$) and over 46 years group ($M = 1.75$, $SD = 1.10$). In addition, participants in the 25-34 years group ($M = 3.34$, $SD = 0.99$) and 35-45 years group ($M = 3.06$, $SD = 1.18$) scored significantly higher than those in the 46 years and over age group ($M = 1.75$, $SD = 1.10$) in parent loyalty and intimacy. For the

parent things in common variable, participants in the 10-17 years group ($M = 3.64$, $SD = 0.89$) and 18-24 years group ($M = 3.60$, $SD = 1.01$) scored significantly higher than those in the 25-34 years group ($M = 2.82$, $SD = 1.10$), the 35-45 years group ($M = 1.27$, $SD = 1.71$), and the 46 years and over group ($M = 1.71$, $SD = 0.96$). For the parent conflict resolution variable, participants in the 10-17 years group ($M = 4.08$, $SD = 0.88$) scored significantly higher than those in the 35-45 years group ($M = 3.33$, $SD = 1.25$), whereas participants in the 46 years and over group ($M = 2.00$, $SD = 1.53$) scored significantly lower than those in all other groups. For parent conflict, participants in the 10-17 years group ($M = 2.38$, $SD = 0.91$) and the 18-24 years group ($M = 2.52$, $SD = 1.05$) scored significantly higher than those in the 46 years and over group ($M = 1.10$, $SD = .025$). For the parent support for development variable, participants in the 10-17 years group ($M = 2.65$, $SD = 1.54$) scored significantly higher than those in the 25-34 years group ($M = 1.53$, $SD = 0.98$) and the 35-45 years group ($M = 1.60$, $SD = 0.88$), and participants in the 18-24 years group ($M = 2.35$ $SD = 1.49$) scored significantly higher than those in the in the 25-34 years group ($M = 1.53$, $SD = 0.98$).

In relation to peer variables, participants in the 10-17 years group ($M = 1.88$, $SD = 0.79$) scores significantly lower than those in the 18-24 years group ($M = 2.24$, $SD = 0.92$), and those in the 18-24 years group scored significantly higher than those in the 46 years and over group ($M = 1.26$, $SD = 0.42$) in relation to peer support for performance. In relation to peer loyalty and intimacy, participants in the 18-24 years category ($M = 3.95$, $SD = 0.85$) scored significantly higher than those in the 35-45 years category ($M = 3.07$, $SD = 0.59$). For the peer things in common variable, participants in the 10-17 years group ($M = 3.74$, $SD = 0.96$) and the 18-24 years group ($M = 3.82$, $SD = 0.81$) scored significantly higher than those in the 35-45 years category ($M = 1.84$, $SD = 0.85$).

6.4.2.5. Motivation – Type of Sport.

The fifth MANOVA was a comparison between participants who participated in individual ($n = 73$) and team ($n = 156$) sports about the motivation variables. No significant sport type effect was found, $F(9, 219) = 0.66$, $p = 0.745$, Wilks $\lambda = 0.974$, partial $\eta^2 = 0.03$.

6.4.2.6.   Motivation – Gender.

The sixth MANOVA compared female ($n = 100$) and male ($n = 129$) participant scores on motivation variables and similarly found no significant gender effect, $F (9, 219) = 0.49$, $p = 0.88$, Wilks $\lambda = 0.98$, partial $\eta^2 = 0.02$.

6.4.2.7.   Motivation – Level of Participation.

The seventh MANOVA compared participant scores for motivation based on whether they participated in sport at a recreational ($n = 24$), local league ($n = 41$), regional league ($n = 49$), national league ($n = 80$), international ($n = 31$), and professional ($n = 4$) level of performance. A significant participation level effect was identified, $F (45, 964) = 1.39$, $p = 0.049$, Wilks $\lambda = 0.756$, partial $\eta^2 = 0.054$. Between-subjects tests revealed that participants scored differently for integrated regulation depending on their participation level, $F (5, 223) = 2.33$, $p = 0.043$, partial $\eta^2 = 0.050$. Specifically, participants at local level ($M = 5.27$; $SD = 1.29$) scored significantly lower for integrated regulation than participants at international level ($M = 6.11$; $SD = 0.64$).

6.4.2.8.   Motivation – Age.

The eight MANOVA compared participant scores for motivation based on whether they were aged 10-17 years ($n = 70$), 18-24 years ($n = 103$), 25-34 years ($n = 32$), 35-45 years ($n = 17$) and over 45 years ($n = 7$). A significant age group effect was identified $F (36, 811) = 1.47$, $p = 0.036$, Wilks $\lambda = 0.788$, partial $\eta^2 = 0.058$. Between-subjects tests revealed that participants scored different for intrinsic motivation accomplishment depending on their age group, $F (4, 224) = 5.21$, $p = 0.000$, partial $\eta^2 = 0.085$. Specifically, participants aged 10-17 years old ($M = 6.50$, $SD = 0.66$), 18-24 years old ($M = 6.27$, $SD = 0.98$), 25-34 years old ($M = 6.22$, $SD = 0.86$) and over 46 years old ($M = 6.57$, $SD = 0.40$) scored significantly higher than those aged 35-45 years old ($M = 5.47$, $SD = 0.90$) for intrinsic motivation accomplishment.

6.4.3. Comparing Perceived Social Agent Influence Similarities and Differences.

To determine whether participants scored parents, coaches and peers differently for each category of perceived social agent influence, and whether scoring was influenced by participant developmental stage, a series of two-way mixed ANOVAs were conducted. The independent variable for these analyses was participant developmental stage (i.e., sampling, specialising and investment), and the dependent variable was the scores for each category of perceived social agent influence (i.e., scores for coaches, parents and peers). Each of these ANOVAS will be discussed in turn.

6.4.3.1. Feedback.

A repeated measures ANOVA was conducted to identify any differences in participant scores for coach, parent and peer feedback, and whether differences were related to participant developmental stage. Mauchly's test for sphericity was significant ($\chi^2 = 15.64$, $p < 0.001$) and therefore the Greenhouse-Geiser corrected degrees of freedom was used to determine within-subject significance. Tests of within-subject effects identified a significant difference between participant scores for coach, parent and peer feedback, $F_{(2, 424)} = 30.68$, $p < 0.001$, partial $\eta^2 = 0.120$. Bonferonni corrected pairwise comparisons identified that overall coach feedback scores ($M = 2.49$) and peer feedback scores ($M = 2.51$) were significantly higher than parent feedback scores ($M = 1.99$) but did not significantly differ from one another. There was no significant between group effect found for developmental stage, $F_{(2, 226)} = 2.60$, $p = 0.076$, partial $\eta^2 = 0.023$. A significant interaction effect was also identified between feedback scores and developmental stage, $F_{(4, 424)} = 3.74$, $p = 0.006$, partial $\eta^2 = 0.120$. Inspection of the profile plot (Figure 16) highlights that the difference between parent and peer scores for feedback during the investment stage was not as large as it was during the sampling and specialising stages.

Figure 16: Plot of Social Agent Feedback Scores by Developmental Stage
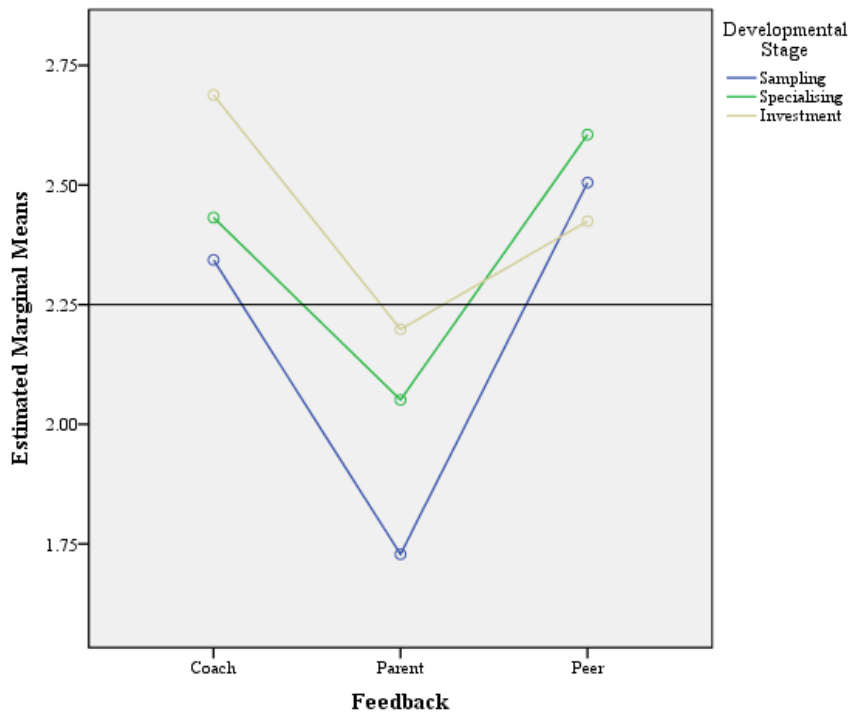
6.4.3.2.   *Support for Performance.*

A repeated measures ANOVA was conducted to identify any differences in participant scores for coach, parent and peer support for performance, and whether differences were related to participant developmental stage. Mauchly's test for sphericity was non-significant ($\chi^2 = 1.384$, $p > 0.05$) and therefore sphericity was assumed when reviewing within-subject significance. Tests of within-subject effects identified a significant difference between participant scores for coach, parent and peer support for performance, $F (2, 452) = 47.00$, $p < 0.001$, partial $\eta^2 = 0.172$. Bonferonni corrected pairwise comparisons identified that coach ($M = 2.38$) and peer ($M = 2.07$) support for performance were significantly higher than parent support for performance ($M = 1.23$), and that perceived coach support for performance was higher than that of peers. A significant between group effect was found for developmental stage, $F (2, 226) = 3.89$, $p = 0.022$, partial $\eta^2 = 0.033$. Pairwise comparisons identified that sampling stage scores for social agent support for performance ($M = 1.88$) were significantly lower than scores at the investment stage ($M = 2.14$), but no other significant differences were identified. A significant interaction effect was also identified between support for development scores and developmental stage, $F (4, 452) = 1.64$, $p =$

0.007, partial $\eta^2 = 0.030$. Inspection of the profile plot (Figure 17) highlights that the difference between parent and peer scores for support for performance during the investment stage was not as large as it was during the sampling and specialising stages.

Figure 17: Plot of Social Agent Support for Performance Scores by Developmental Stage

6.4.3.3. Loyalty and Intimacy

A repeated measures ANOVA was conducted to identify any differences in participant scores for coach, parent and peer loyalty and intimacy, and whether differences were related to participant developmental stage. Mauchly's test for sphericity was significant ($\chi^2 = 7.54$, $p = 0.023$) and therefore the Greenhouse-Geiser corrected degrees of freedom was used to determine within-subject significance. Tests of within-subject effects identified a significant difference between participant scores for coach, parent and peer loyalty and intimacy, $F (2, 452) = 76.36$, $p < 0.001$, partial $\eta^2 = 0.253$. Bonferonni corrected pairwise comparisons identified that scores for parent ($M = 3.79$) and peer ($M = 3.71$) loyalty and intimacy were significantly higher than that of coaches ($M = 2.89$), but did not differ significantly from one another. A significant between group effect was found for

developmental stage, $F_{(2, 226)} = 6.31$, $p = 0.002$, partial $\eta^2 = 0.053$. Pairwise comparisons identified that sampling stage scores for social agent loyalty and intimacy ($M = 3.24$) were significantly lower than scores at the investment stage ($M = 3.61$), but no other significant differences were identified. No significant interaction effect was identified between loyalty and intimacy scores and developmental stage, $F_{(4, 452)} = 0.724$, $p = 0.576$, partial $\eta^2 = 0.006$.

6.4.3.4.   *Things in Common.*

A repeated measures ANOVA was conducted to identify any differences in participant scores for coach, parent and peer things in common, and whether differences were related to participant developmental stage. Mauchly's test for sphericity was significant ($\chi^2 = 14.81$, $p = 0.001$) and therefore the Greenhouse-Geiser corrected degrees of freedom was used to determine within-subject significance. Tests of within-subject effects identified a significant difference between participant scores for coach, parent and peer things in common, $F_{(2, 452)} = 43.32$, $p < 0.001$, partial $\eta^2 = 0.161$. Bonferonni corrected pairwise comparisons identified that things in common scores for peers ($M = 3.65$) were significantly higher than those for coaches ($M = 2.86$) and parents ($M = 3.38$). Parent scores for things in common were also significantly higher than those of coaches. A significant between group effect was found for developmental stage, $F_{(2, 226)} = 6.92$, $p = 0.001$, partial $\eta^2 = 0.058$. Pairwise comparisons identified that sampling stage scores for social agent things in common ($M = 3.07$) were significantly lower than scores at the investment stage ($M = 3.45$), but no other significant differences were identified. No significant interaction effect was also identified between things in common scores and developmental stage, $F_{(4, 452)} = 0.86$, $p = 0.486$, partial $\eta^2 = 0.008$.
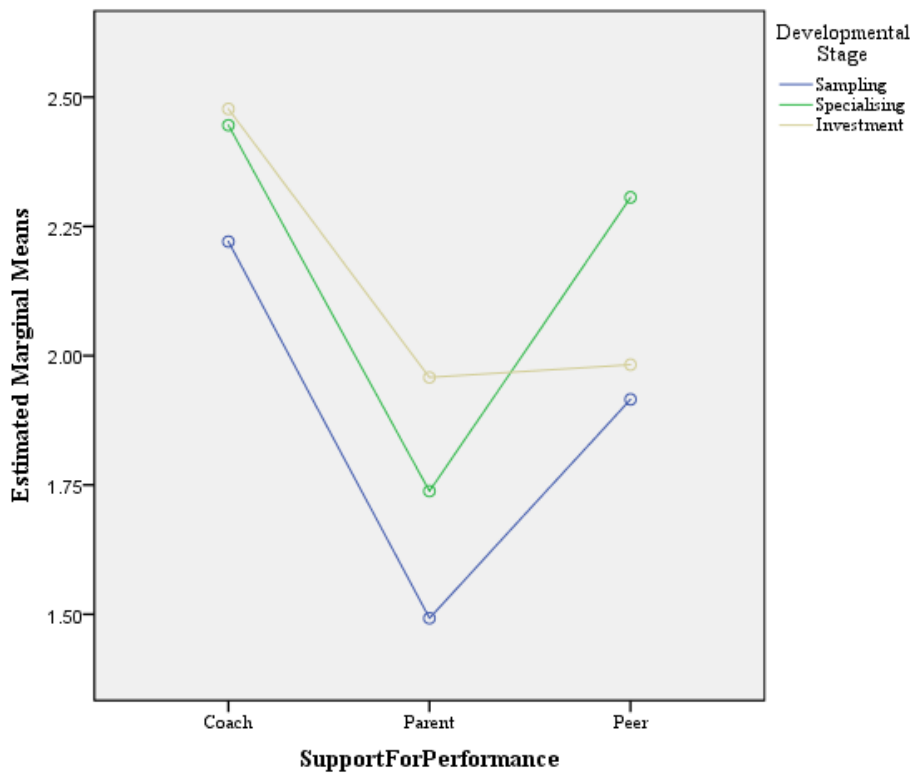
6.4.3.5.   *Conflict.*

A repeated measures ANOVA was conducted to identify any differences in participant scores for coach, parent and peer conflict, and whether differences were related to participant developmental stage. Mauchly's test for sphericity was significant ($\chi^2 = 30.59$, $p = 0.001$) and therefore the Greenhouse-Geiser corrected degrees of freedom was used to determine within-subject significance. Tests of within-subject effects identified a significant difference between participant scores for coach, parent and peer conflict, $F_{(1.78, 452)} =$

91.41, $p < 0.001$, partial $\eta^2 = 0.288$. Bonferonni corrected pairwise comparisons identified that conflict scores for parents ($M = 2.37$) were significantly higher than those for coaches ($M = 1.44$) and peers ($M = 1.99$). Peer scores for conflict were also significantly higher than those of coaches. No significant between group effect was identified, $F_{(2, 226)} = 2.01$, $p = 0.136$, partial $\eta^2 = 0.017$. No significant interaction effect was identified between conflict scores and developmental stage, $F_{(4, 452)} = 0.58$, $p = 0.657$, partial $\eta^2 = 0.005$.

6.4.3.6.   *Conflict Resolution.*

A repeated measures ANOVA was conducted to identify any differences in participant scores for coach, parent and peer conflict resolution, and whether differences were related to participant developmental stage. Mauchly's test for sphericity was significant ($\chi^2 = 8.89$, $p = 0.012$) and therefore the Greenhouse-Geiser corrected degrees of freedom was used to determine within-subject significance. Tests of within-subject effects identified a significant difference between participant scores for coach, parent and peer conflict resolution, $F_{(1.93, 452)} = 20.81$, $p < 0.001$, partial $\eta^2 = 0.084$. Bonferonni corrected pairwise comparisons identified that conflict resolution scores for coaches ($M = 3.24$) were significantly lower than those for parents ($M = 3.80$) and peers ($M = 3.61$), but there was no significant difference between the conflict resolution scores for parents and peers. No significant between group effect was identified, $F_{(2, 226)} = 2.79$, $p = 0.136$, partial $\eta^2 = 0.024$. A significant interaction effect was identified between conflict resolution scores and developmental stage, $F_{(3.86, 452)} = 3.10$, $p = 0.016$, partial $\eta^2 = 0.027$. Inspection of the profile plot (Figure 18) highlights that the difference between coach and parent scores for conflict resolution as not as large during the investment stage as it was between the specialising stage.

Figure 18: Plot of Social Agent Conflict Resolution by Developmental Stage
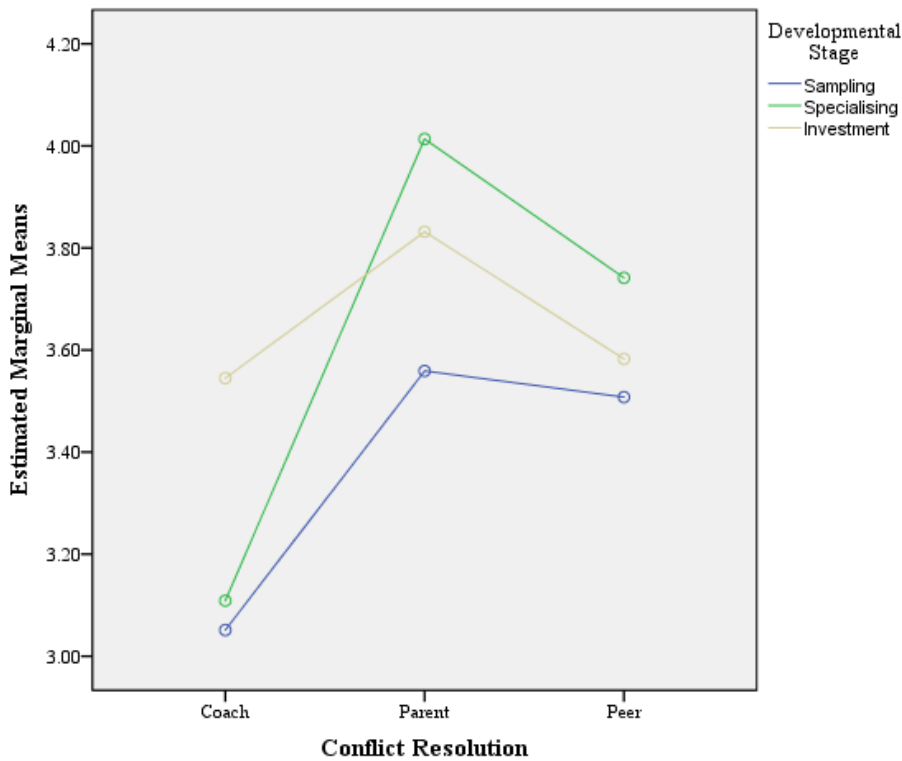
6.4.3.7. *Support for Development.*

A repeated measures ANOVA was conducted to identify any differences in participant scores for coach, parent and peer support for development, and whether differences were related to participant developmental stage. Mauchly's test for sphericity was significant ($\chi^2 = 10.17$, $p = 0.006$) and therefore the Greenhouse-Geiser corrected degrees of freedom was used to determine within-subject significance. Tests of within-subject effects identified a significant difference between participant scores for coach, parent and peer support for development, $F (1.92, 452) = 233.08$, $p < 0.001$, partial $\eta^2 = 0.508$. Pairwise comparisons identified that coach support for performance ($M = 4.88$) were significantly higher than parent scores ($M = 2.20$) and peer scores ($M = 3.64$), and that peer scores were significantly higher than those of parents. A significant between group effect was identified, $F (2, 226) = 5.42$, $p = 0.005$, partial $\eta^2 = 0.046$. Pairwise comparisons identified that social agent scores for support for performance at the specialising ($M = 3.76$) and investment stage ($M = 3.72$) were significantly higher than those at the sampling stage ($M = 3.25$), but did not significantly differ from one another. No significant interaction effect was identified between

support for development scores and developmental stage, $F(3.83, 452) = 2.37$, $p = 0.054$, partial $\eta^2 = 0.021$.

6.4.4. Measurement Invariance.

The preceding discussion explored differences in scoring perceived social agent influence and motivational data between type of sport, gender, participation level and social agent (i.e., coach, parent and peer). The following section will explore whether participants scored any of the variables differently due to their developmental stage within the proposed model of special agent influence. This exploration will be completed using measurement invariance statistics.

To determine whether individuals in the sampling, specialising and investment developmental stages a) measured each construct in the same ways, and if so then b) scored each construct differently, the variables within the proposed model developed in Study 2a (Chapter 5) were tested for measurement invariance. Measurement invariance could not be determined for the full model of perceived social agent influence due to the small sample sizes within each developmental stage group which did not allow for a model fit of the overall model for each group. Measurement invariance and developmental stage differences were, therefore, explored for each latent variable individually.

Tests were carried out to determine fit loadings, fit intercepts and fit means, with results illustrated in Table 18. Non-significant results for fit loadings and fit intercepts demonstrated the same measurement model across groups. The only latent variables that did not demonstrate measurement invariance were coach feedback, parent support for performance, parent things in common & loyalty (combined), coach conflict, and parent development, suggesting that the underlying model for these subscales/constructs may have been different between the groups.

Where variables were found to have measurement invariance, a significant finding for fit means demonstrated a significant difference between how participants scored on that variable depending on their group. In this case, differences in score within the proposed model were tested between participants in the sampling, specialising and investment stage of athlete development. The following section will discuss the measurement results for each type of social agent support and motivation, and illustrate which variables demonstrated

measurement invariance and the corresponding differences between participants in each developmental stage.

Table 18: Measurement Invariance of Latent Variables

Latent Variable	Fit Loadings	Fit Intercepts	Fit Means	Investment-Sampling			Investment-Specialising			Sampling-Specialising		
				Estimate	P-Value	Std.All	Estimate	P-Value	Std.All	Estimate	P-Value	Std.All
Coach Feedback	0.03241	0.39838	0.042									
Parent Feedback[1,2]	0.681168	0.967142	0.007146	-0.334	0.002*	-0.533	-0.103	0.371	-0.162	0.231	0.068	0.361
Peer Feedback[1]	0.3511	0.7845	0.4405									
Coach Support for Performance[1]	0.4054	0.2593	0.1428									
Parent Support for Performance	0.012071	0.008385	0.010157									
Peer Support for Performance[1,2]	0.77222	0.26105	0.02156	-0.032	0.807*	-0.039	0.347	0.013*	0.477	0.379	0.013*	0.521
Coach Loyalty[1,2]	0.573919	0.262506	0.004459	-0.544	0.001*	-0.524	-0.263	0.14	-0.267	0.281	0.173	0.285
Parent Loyalty	0.309111	0.006307	0.202576									
Peer Loyalty[1,2]	0.92665	0.429	0.04218	-0.266	0.064	-0.285	0.147	0.272	0.197	0.413	0.012*	0.555
Coach Things in Common[1,2]	0.13098	0.96508	0.01645	-0.485	0.006*	-0.434	-0.315	0.103	-0.286	0.17	0.443	0.154
Parent Things in Common[1,2]	0.30243	0.73022	0.02559	-0.478	0.013*	-0.416	0.028	0.886	0.028	0.506	0.019*	0.503
Peer Things in Common[1]	0.83406	0.34417	0.09896									
Coach Things in Common-Loyalty Combined[1,2]	0.612527	0.716102	0.005927	-0.521	0.003*	-0.477	-0.294	0.097	-0.29	0.227	0.276	0.224
Parent Things in Common-Loyalty Combined	0.004394	0.144501	0.024705									
Peer Things in Common-Loyalty Combined[1]	0.9928	0.5268	0.067									
Coach Conflict	0.0001717	0.8399348	0.0713493									
Parent Conflict[1]	0.3229	0.2265	0.7459									
Peer Conflict[1]	0.47347	0.50051	0.08342									
Coach Conflict Resolution[1,2]	0.98769	0.29535	0.01545	-0.467	0.008*	-0.407	-0.35	0.082	-0.287	0.117	0.606	0.096
Parent Conflict Resolution[1]	0.93642	0.77384	0.07825									
Peer Conflict Resolution[1]	0.9207	0.4279	0.4795									
Coach Support for Development[1,2]	0.282311	0.576234	0.005449	-0.772	0.001*	-0.474	-0.202	0.35	-0.164	0.57	0.038*	0.462
Parent Support for Development	0.00648	0.41853	0.09696									
Peer Support for Development[1,2]	0.99869	0.11494	0.02101	-0.177	0.407	-0.133	0.495	0.025*	0.407	0.672	0.007*	0.552
Intrinsic Motivation[1,2]	0.0686542	0.3566315	0.0002623	0.028	0.8	0.044	0.31	0*	1.014	0.283	0.003*	0.924
Intrinsic Motivation Knowledge[1,2]	0.324505	0.839606	0.007777	-0.161	0.326	-0.157	0.35	0.02*	0.499	0.511	0.003*	0.728
Intrinsic Motivation Experience[1]	0.6135	0.1433	0.2022									
Intrinsic Motivation Accomplishment	0.04247	0.49963	0.07533									
Integrated Regulation[1]	0.9031	0.8343	0.1012									
Identified Regulation[1]	0.08588	0.81058	0.56615									
Introjected Regulation[1]	0.28494	0.72733	0.06899									
External Regulation	0.00015	0.0293	0.03128									
Amotivation[1,2]	0.25555	0.24304	0.04467	0.001	0.993	0.002	-0.368	0.019*	-0.439	-0.369	0.036*	-0.44

[1] = Same Measurement Model; [2] = Measurement Invariance; * = significant p-value

6.4.4.1. Feedback and Evaluation.

6.4.4.1.1. Coach Feedback.

The fit loadings for coach feedback were significant, suggesting that it was possible that the measurement model for this latent variable was different depending on developmental stage (e.g., the loadings of items may be different dependent on participants developmental stage).

6.4.4.1.2. Parent Feedback.

Measurement invariance was identified for parent feedback, but not for coach or peer feedback. This finding suggested that athletes scored the feedback they received from their parents differently depending on their developmental stage. Specifically, sampling stage athletes perceived parents as providing significantly higher amounts of feedback than athletes in the investment stage of development.

6.4.4.1.3. Peer Feedback.

The peer feedback fit loadings, fit intercept and fit mean statistics were non-significant, suggesting that despite the measurement model being consistent across developmental stages there were no significant differences in how participants scored the feedback they received from their peers.

6.4.4.2. Support for Performance.

6.4.4.2.1. Coach Support for Performance.

The coach support for performance fit loadings, fit intercept and fit mean statistics were non-significant, suggesting that despite the measurement model being consistent across developmental stages there were no significant differences in how participants scored this category of support provided by coaches.

6.4.4.2.2. *Parent Support for Performance.*

The fit loadings for parent support for performance were significant, suggesting the measurement model for this latent variable may have been different depending on developmental stage (e.g., the loadings of items may be different dependent on participants developmental stage).

6.4.4.2.3. *Peer Support for Performance.*

Measurement invariance was identified for peer support for performance, suggesting that there were differences in the amount of this type of support participants received depending on their stage of development. In particular, specialising stage athletes felt that they received significantly less support for performance from their peers than did athletes in the sampling and investment stages of development. No difference was identified between the sampling and investment stages.

6.4.4.3. **Loyalty.**

6.4.4.3.1. *Coach Loyalty.*

The coach loyalty latent variable demonstrated measurement invariance, suggesting that participants scored these latent variables differently depending on developmental stage. Participants in the sampling stage scored coach loyalty as being significantly higher than those participants in the investment developmental stage.

6.4.4.3.2. *Parent Loyalty.*

The fit intercepts for parent loyalty were significant, suggesting the measurement model for this latent variable may have been different depending on developmental stage (e.g., the loadings of items may be different dependent on participants developmental stage).

6.4.4.3.3. *Peer Loyalty.*

The peer loyalty latent variable demonstrated measurement invariance, suggesting that participants scored these latent variables differently depending on developmental stage.

Sampling stage athletes scored peer loyalty significantly higher than those participants in the specialising stage.

6.4.4.4. Things in Common.

6.4.4.4.1. Coach and Parent Things in Common.

The coach things in common latent variable demonstrated measurement invariance, suggesting differences in how participants scored these categories of perceived social agent influence depending on developmental stage. Participants in the sampling stage scored things in common with their coach significantly higher than those in the investment stage of development.

6.4.4.4.2. Parent Things in Common.

The parent things in common latent variable demonstrated measurement invariance, suggesting differences in how participants scored these categories of perceived social agent influence depending on developmental stage. Participants in the sampling stage scored this category of influence significantly higher than those in the specialising and investment stages of development.

6.4.4.4.3. Peer Things in Common.

The peer things in common latent variable fit loadings, fit intercept and fit mean statistics were all non-significant, suggesting that despite the measurement model being consistent across developmental stages there were no significant differences in how participants scored the things they had in common with their peers.

6.4.4.5. Combined Things in Common and Loyalty (i.e., Relationship Quality).

6.4.4.5.1. Coach Combined Things in Common and Loyalty.

Participants' perceived relationship quality with coaches demonstrated measurement invariance, suggesting that participants scored this latent variable differently depending on

developmental stage. Sampling-stage participants scored this latent variable significantly higher than investment stage athletes, although there were no further differences between developmental stages.

6.4.4.5.2. *Parent Combined Things in Common and Loyalty.*

The fit intercepts for the parent relationship quality latent variable were significant, suggesting the measurement model for this variable may have been different depending on developmental stage (e.g., the loadings of items may be different dependent on participants developmental stage).

6.4.4.5.3. *Peer Combined Things in Common and Loyalty.*

The peer relationship quality latent variable fit loadings, fit intercept and fit mean statistics were non-significant, suggesting that despite the measurement model being consistent across developmental stages there were no significant differences in how participants scored their relationship with their peers across the three developmental stages.

6.4.4.6. Conflict

6.4.4.6.1. *Coach Conflict.*

The fit intercepts for the coach conflict variable were significant, suggesting the measurement model for this variable may have been different depending on developmental stage (e.g., the loadings of items may be different dependent on participants developmental stage).

6.4.4.6.2. *Parent Conflict.*

The parent conflict variable fit loadings, fit intercept and fit mean statistics were non-significant, suggesting that despite the measurement model being consistent across developmental stages there were no significant differences in how participants scored conflict with their parents across the three developmental stages.

6.4.4.6.3.   Peer Conflict.

The peer conflict variable fit loadings, fit intercept and fit mean statistics were non-significant, suggesting that despite the measurement model being consistent across developmental stages there were no significant differences in how participants scored conflict with their peers across the three developmental stages.

6.4.4.7.   Conflict Resolution.

6.4.4.7.1.   Coach Conflict Resolution.

The coach conflict resolution variable met the criteria for measurement invariance, suggesting that participants scored this latent variable differently depending on developmental stage. Sampling-stage participants scored this latent variable significantly higher than investment stage athletes, although there were no further differences between developmental stages.

6.4.4.7.2.   Parent Conflict Resolution.

The parent conflict resolution variables fit loadings, fit intercept and fit mean statistics were non-significant, suggesting that despite the measurement model being consistent across developmental stages there were no significant differences in how participants scored conflict with their parents across the three developmental stages.

6.4.4.7.3.   Peer Conflict Resolution.

The peer conflict resolution variables fit loadings, fit intercept and fit mean statistics were non-significant, suggesting that despite the measurement model being consistent across developmental stages there were no significant differences in how participants scored conflict with their peers across the three developmental stages.

6.4.4.8. Support for Development.

6.4.4.8.1. Coach Support for Development.

The coach support for development variable demonstrated measurement invariance, suggesting differences in how participants scored these categories of perceived social agent influence depending on developmental stage. Participants in the sampling stage scored this type of support from their coach significantly higher than did the participants in the specialising and investment stages of development.

6.4.4.8.2. Parent Support for Development.

The fit intercepts for the parent support for development variable were significant, suggesting the measurement model for this variable may have been different depending on developmental stage (e.g., the loadings of items may be different dependent on participants developmental stage).

6.4.4.8.3. Peer Support for Development.

The peer support for development variable demonstrated measurement invariance, suggesting differences in how participants scored these categories of perceived social agent influence depending on developmental stage. Participants in the sampling and investment stages of development scored peer support for development as being significantly higher than did participants in the specialising stage of development, although there was no significant difference between scores for sampling and investment stage athletes

6.4.4.9. Motivation.

Measurement invariance was also explored for motivation constructs as measured by the BRSQ-8. Two motivational constructs – intrinsic motivation-accomplishment and external regulation – did not meet the criteria for measurement invariance, suggesting that the models underlying these constructs may differ depending on developmental stage. Of the remaining constructs, significant differences were found for many motivation variables.

6.4.4.9.1.   Global Intrinsic Motivation.

A significant difference in scores was found between groups on global intrinsic motivation, with specialising stage participants scoring intrinsic motivation significantly lower than those participants in the sampling and investment stages of development.

6.4.4.9.2.   Intrinsic Motivation-Knowledge.

A significant difference was found for intrinsic motivation-knowledge, with athletes in the specialising stage scoring this item significantly lower than sampling and investment stage athletes.

6.4.4.9.3.   Amotivation.

A significant difference was found for the amotivation construct, with specialising athletes scoring significantly higher than sampling and investment stage athletes for this type of motivation.

6.4.4.9.4.   Additional Motivation Variables.

All other motivational variables – intrinsic motivation experience, integrated regulation, and introjected regulation – demonstrated non-significant fit loadings, intercepts and means, suggesting that despite each variable having the same measurement model across all three developmental stages no significant differences existed between how participants in each of these developmental stages rated these types of motivation.

6.4.5. Summary of Findings.

Tables 19 and 20 summarise the key findings for the study. This section will briefly summarise the main findings by the perceived social agent influence and motivation variables.

Table 19: Summary of Differences in Scores by Gender, Type of Sport, Participation Level & Developmental Stage (Combined Social Agents)

Variable	Differences by Group or Stage

Relationship	• **Coach Things in Common:**
	  ○ **Females scored significantly higher than males**
	  ○ **Recreational scored significantly lower local, regional, national & international**
	• **Parent Things in Common:**
	  ○ **10-17 and 18-24 year olds score significantly higher than 25-34, 35-45 and 46+ year olds**
	
	• **Peer Things in Common:**
	  ○ **10-17 and 18-24 year olds score significantly higher than 35-45 year olds**
	• **Parent Loyalty & Intimacy:**
	  ○ **10-17 and 18-24 year olds score significantly higher than 25-34, 35-45 and 46+ year olds**
	  ○ **25-34 and 35-45 year olds score significantly higher than 46+ year old group**
	• **Peer Loyalty & Intimacy:**
	  ○ **18-24 year olds score significantly higher than 35-45 year olds**
	• **Loyalty & intimacy:**
	  ○ **Parent & peer scores significantly higher than those of coach**
	• **Sampling Stage scored significantly combined perceived social agent influence lower than investment stage**
	• **Things in Common:**
	  ○ **Parents Things in Common scores significantly higher than coach scores**
	  ○ **Sampling stage scored significantly lower than investment stage**

Conflict	• **Coach Conflict: Males scored significantly higher than females** • **Parent Conflict: 10-17 and 18-24 year olds scored significantly higher than those in the 46+ age group** • **Coach conflict was scored significantly higher than peer conflict, which in turn was significantly higher than parent conflict**

Conflict Resolution	• **Coach conflict resolution:**
	  ○ **Females scored significantly higher than males**
	  ○ **Recreational level athletes scored significantly lower than national level athletes**
	• **Parent Conflict Resolution:**
	  ○ **10-17 year olds scored significantly higher than 35-45 year olds**
	  ○ **46+ group scored significantly lower than all other groups**
	• **Scores for conflict resolution with coaches significantly lower than scores for conflict with parents and peers**

Support for Development	• **Coach:** ○ **Females scored significantly higher than males** ○ **Local league scored significantly lower than national league athlete** ○ **10-17 year olds and 18-24 year olds scored significantly higher than 35-45 year olds** • **Parent:** ○ **10-17 year olds scored significantly higher than 25-34 and 35-45 year olds** ○ **18-14 year olds scored significantly higher than 25-34 year olds** • **Scores for coach significantly higher than scores for peers, which in turn were significantly higher than parents** • **Specialising and investment stage participants scored significantly higher than sampling stage participants**
Support for Performance	• **Parent:** ○ **10-17 year olds scored significantly higher than all other age groups** ○ **18-24 year olds scored significantly higher than 25-34 year olds** • **Peers:** ○ **18-24 year olds scored significantly higher than 10-17 year olds and those 46 years and over participants** • **Scores for coaches and peers significantly higher than parents** • **Sampling stage participants scored significantly lower than investment stage participants**
Feedback & Evaluation	• **Coach:** ○ **10-17 year olds scored significantly higher than 25-34 and 35-45 year olds** ○ **18-24 year olds scores significantly higher than 25-34 year olds** • **Parent:** ○ **10-17 year olds and 18-24 year olds scored significantly higher than 25-34, 35-45 and over 46 year olds** • **Scores for coaches and peers significantly higher than scores for parents**
Motivation	• **International level participants scored integrated regulation significantly higher than local level participants** • **35-45 year olds scored significantly lower for intrinsic motivation accomplishment than all other groups**

Table 20: Measurement Invariance Results for Perceived Social Agent Influence and Motivation Variables

Dependent Variable	Social Agent		
	Coach	Parent	Peer
Relationship	Sampling stage score significantly higher than investment stage	No significant difference, but possibly different measurement model	No significant difference between stages
Conflict	No significant difference, but possibly different measurement model	No significant difference between stages	No significant difference between stages
Conflict Resolution	Sampling stage score higher than investment stage	No significant difference between stages	No significant difference between stages
Support for Development	Sampling stage scored higher than specialising and investment stage	No significant difference, but possibly different measurement model	Sampling and investment stage scored significantly higher than specialising stage
Support for Performance	No significant difference between stages	No significant difference, but possibly different measurement model	Investment stage scored significantly higher than specialising stage
Feedback & Evaluation	No significant difference, but possibly different measurement model	Sampling stage scored significantly higher than investment stage	No significant difference between stages
Motivation	**General intrinsic motivation:** specialising stage scored significantly less than sampling & investment stages **Intrinsic motivation-knowledge:** specialising stage scored significantly lower than sampling & investment stages **Amotivation:** specialising stage scored significantly higher than sampling and investment stage - All other types of motivation demonstrated no significant differences between stages		

6.4.5.1.   Relationship Factors.

Results from the MANOVAs and ANOVAs comparing gender, level of participation, type of sport and age group demonstrated some statistically significant differences. Many of these differences related to perceptions of the relationship with the coach. Specifically, females perceived themselves as having more things in common than males, although on average all participants perceived themselves as having more in common with their parents than their coaches and having more loyalty and intimacy with parents and peers than coaches. The quality of relationship with coaches was perceived to be lower amongst regional level participants than those playing at a higher level, and the perception of the combined relationship with coaches, parents and peers was lower for participants at the sampling stage than the investment stage. Age group differences were found for some relationship variables. For instance, 10-17 and 18-24 year old athletes reported higher scores for perceived things in common, as well as loyalty and intimacy, with parents and peers than other age group. The measurement invariance results indicated that the only significant difference was for the quality of relationship with coaches, with sampling stage participants scoring this significantly higher than those in the investment stage. That being said, the measurement model for parent relationship data may be different between the developmental stages.

6.4.5.2.   Conflict.

Perceived conflict with coaches was higher amongst males than females, and participants on average scored coach conflict significantly higher than that of peer and parent conflict, with peer conflict also being significantly higher than parent conflict. Participants in the 10-17 and 18-24 years old age groups identified reported significantly higher conflict with parents than those aged 46 year and over. Measurement invariance results indicated that there was no significant different for coach, parent and peer conflict between the participants at the sampling, specialising and investment stages of development, although the measurement model for the coach conflict latent variable may be different depending on developmental stage.

6.4.5.3. Conflict Resolution.

There were various significant results relating to the perception of coach conflict resolution. Females scored this type of behaviour as higher than males, and recreational level athletes scored this significantly lower than national level athletes. Participants in the 46 years old and over group reported significantly lower levels of parent conflict resolution than all other age groups. Scores of conflict resolution with coaches were also significantly lower than the scores for parents and peers. Measurement invariance results indicated that for coach conflict, sampling stage athletes score conflict resolution higher than investment stage athletes, but no other significant different was found for coach, parent and peer conflict resolution between participants at different developmental stages.

6.4.5.4. Support for Development.

Many of the significant differences identified for this type of social agent support related to coaches. Female participants scored this type of support significantly higher than male participants, and local league athletes scored this type of support significantly lower than national league athletes. 10-17 year olds and 18-24 year olds scored this type of support significantly higher than those aged 35-45 years. These two younger age groups also scored significantly lower than most other groups for parent support for development. Combined average scores for coach support for development were significantly higher than scores for peers and parents, with peer scores also being significantly higher than parent scores. Participants at the specialising and investment stages of development scored the combined social agent support for development significantly higher than those at the sampling stage of development. Measurement invariance demonstrated that for coach support for development, sampling stage athletes scored this factor significantly higher than investment stage athletes. For peer support for development, sampling and investment stage athletes scored this factor significantly higher than specialising stage athletes.

6.4.5.5. Support for Performance.

There were significant age differences for scores for parent and peer support for performance. Specifically, 10-17 year olds were scored higher than all other age groups in parent support for performance, and 18-24 year olds scored significantly higher than

participants aged 25-34. For peer support for performance, participants aged 18-24 scored significantly higher than those aged 10-17 years or over 46 years. Scores for perceived support for performance were significantly higher for coaches and peers than parents, and sampling stage participants rated the combined support from social agents to be significantly lower than those participants at the investment stage of development. Measurement invariance results indicated that investment stage athletes scored this factor higher than athletes at the specialising stage of development. No other significant differences were identified, although there may have been a different measurement model depending on developmental stage for parent support for performance.

6.4.5.6.   *Feedback and Evaluation.*

There were significant age differences in scores for perceived feedback and evaluation support from coaches and parents. Specifically, participants aged 10-17 years and 18024 years scored coach feedback and evaluation as significantly higher than 25-34 year olds, and 10-17 year old also score significantly higher than participants aged 35-45 years old. For parent feedback and evaluation support, participants in the 10-17 and 18-24 years old groups scored significantly higher than all other groups. Results for the feedback and evaluation factor demonstrated than on average participants scored this type of support significantly higher for coaches and peers than parents. Furthermore, measurement invariance results indicated that perceived feedback and evaluation support from parents was significantly higher amongst participants at the sampling stage than the investment stage. No other significant differences were identified, although the measurement model may have differed depending on developmental stage for coach feedback and evaluation support.

6.4.5.7.   *Motivation.*

Analysis of motivation data suggested that there were differences in types of motivation between stages and level of participation. International level athletes were found to score integrated regulation significantly higher than local level athletes. Many of the significant differences in motivation data, however, focussed on specialising stage athletes. For instance, sampling and investment stage athletes scored significantly higher for general intrinsic motivation and intrinsic motivation-knowledge than specialising stage athletes. Specialising stage athletes, on the other hand, scored significantly higher

on amotivation than sampling and investment stage athletes. In relation to age, the only difference between participants was that those aged 35-45 years old scored intrinsic motivation accomplishment significantly lower than all other groups.

6.5. Discussion

The aim of this study was to explore the similarities and differences in coach, parent and peer influence on athlete motivation across the sampling, specialising and investment stages of development. Specifically, this study aimed to explore whether coaches, parents and peers were perceived to have similar or different amounts of influence about the categories confirmed in Study 2a. In addition, the study aimed to explore if and how perceived social agent influence changed across athlete developmental stages. The key findings of the study are discussed below.

6.5.1. Relationship Factors.

The finding that the perceived quality of relationships with parents and peers was significantly higher than those with coaches when all stages were considered in combination resonates to some extent with previous literature. Ullrich-French & Smith (2006) identified that positive relationships with parents and peers, and the interaction of these relationships, led to various positive motivational outcomes. In addition, parents and peers are likely to be the social agents that athletes interact with most across all life domains and, therefore, there is likely more time spent in establishing these relationships. A direct comparison between the current study findings and those of Ullrich-French & Smith is challenging, though, because the nature of the proposed model of perceived motivationally-relevant social agent influence considers parent and peer influences in this category as being independent of one another rather than interactive, and the current study did not consider interactions between the independent social agent influences.

The finding that athletes in the investment stage were found to have higher levels of relationship quality with their collective social agents than did those in the sampling stage would also seem intuitive when considering the fact that these athletes will have spent more time forming and developing these relationships due to their longer engagement with social agents. That being said, though, for many of the relationship variables participants in the younger age groups (i.e., 10-17 and 18-24 years old) scored perceived relationship quality between them and parents and peers as being higher than older athletes. These contrary findings, therefore, may suggest that the higher scores for investment-stage athletes in terms of relationship factors may not be solely related to the

number of years of involvement in the sport during, but also the stage of development the athlete is in.

The findings that sampling stage participants perceived the quality of relationship with their coaches as being higher than those in the investment stage, and there being no significant difference between stages for peer relationship factors, conflict with some findings from previous studies. In their meta-synthesis of the social motivational influences across stages of athlete development, Keegan et al. (2014b) proposed a relatedness climate that reflected friendship and affiliation in sport, and peer relationship quality was consistent across each developmental stage. Peers and coaches were found to increase in importance within this climate, which was not found in the current study. This finding could be explained by changes in coaching personnel as athletes progress through developmental stages. Changes in coaches may lead to less time for relationships to develop which may explain lower levels of perceived coach relationship quality during the investment stage. The perceived relationship between athletes and their coaches and their peers may not have been found to be higher in the groups of athletes at later stages of development and age, but this may not mean that athletes do not perceive the role of these social agents to increase in importance in other areas more directly and explicitly related to performance in sport.

6.5.2. Feedback and Evaluation.

The findings that perceived parental feedback and evaluation influence was lower than that of perceived coach and peer influence across each developmental stage, and is lower at the investment stage of development than the sampling stage, are not unexpected. Studies have demonstrated that whilst all three social agents provide this type of support during development (Keegan et al., 2009, 2010a, 2014a; Sheridan et al., 2014), coaches and peers are in a position to provide more of this support due to their technical knowledge of the sport being higher than parents. Keegan et al. (2014b) also identified that parental feedback and information support reduced across developmental stage as was suggested by the findings in the current study. The findings that younger players (i.e., aged 10-17, and 18-24 years) perceived coaches and parents as having more feedback and evaluation influence would suggest that these social agents are less likely to be as involved in the appraisal of performances, perhaps due to athletes being more independent in providing themselves which such support.

6.5.3. Support for Performance.

The finding that coaches provided significantly more support for performance than did parents and peers resonates with previous findings in literature. For example, Sheridan et al. (2014) identified that coaches, parents and peers provided similar categories of support, such as social support and practical support, but coaches had the most significant role. Furthermore, some of the categories of support for performance relate to the authority climate proposed by Keegan et al., (2014b), which was a coach-dominated climate within their study. Participants in younger age groups were identified as scoring perceived parental influence higher than participants in older age groups, perhaps indicating that parents become less involved in the types of performance-supportive behaviours as athletes become independent adults. The finding that peer support for performance was significantly higher during the investment than the specialising stage resonates with findings from previous literature that this type of support becomes increasingly important as athletes enter more professional and intense levels of performance and is related with various positive outcomes (Keegan et al., 2014b).

6.5.4. Conflict.

Perceived conflict between athletes and social agents was reported in previous studies (Vazou et al., 2005; Wachsmuth et al., 2017; Weiss et al., 1996), yet the results for the current study only partially support previous findings. Perceived parental conflict endures in sport settings (Knight & Holt, 2014; Wachsmuth et al., 2017), however the finding that athletes' perception of this type of conflict was significantly higher than that of the other two social agents was surprising as conflict with peers and coaches is also common in sport (Wachsmuth et al., 2017). Conflict with peers was found to be present across each developmental stage of Keegan et al.'s (2014b) social support climate within their meta-synthesis of qualitative studies investigating socio-motivational influences across athlete development, but not for coaches and parents. Parents being the large source of conflict could be explained by them being the social agent that participants spend most time with, therefore allowing more opportunity for conflict. The lack of extant literature concurrently comparing the perceived conflict between athletes and social agents makes the relative conflict levels between athletes and their coaches, parents and peers challenging to compare and contrast.

6.5.5. Conflict Resolution.

The finding that coaches were perceived to have provided significantly less conflict resolution behaviours than did parents and peers reflects not only previous research but also reflects other findings in this study. For instance, coaches were the social agent found to have the lowest levels of perceived conflict with athletes in this study, and therefore may not have had to engage in as many positive behaviours perceived by athletes as solving any conflict issues. Furthermore, findings suggest that when athletes perceive conflict with their coaches they tend to try to solve it themselves or seek support from others (i.e., they do not seek conflict resolution support from their coaches; Mellallieu et al., 2013). The finding that coach conflict resolution is significantly higher during the sampling than investment stage of development may also reflect athletes seeking external support for conflict with coaches as other social agents (e.g., parents) provide more emotional support during latter developmental stages (Adams, Coffee, & Lavallee, 2015).

6.5.6. Support for Development.

Various findings relating to social agent support for development correspond with previous studies. The ordering of perceived social agent influence in this category of influence (i.e., coaches higher than peers and parents, peers higher than parents) resonates with previous findings which demonstrated that whilst all three social agents are perceived to influence athletes in this manner, coaches are the dominant perceived influence (Keegan et al., 2009, 2010a, 2014a). The finding that perceived coach support for development was higher for athletes at the sampling stage versus the investment stages, and that it was rated as higher by younger participants (i.e., 10-24 year olds) than those in older age groups, conflicts with findings that this type of support remains consistent across developmental stage (Keegan et al., 2014a). The findings, though, may reflect greater dependence on coaches providing technical development due to the lower ability level of athletes during this stage. The lower level of peer support for development during the specialising stage than the sampling and investment stage may reflect competition for resources amongst athletes during this stage (Keegan et al., 2014a) whereby peers are reluctant to support one another whilst competing for places in squads, academies and at competition.

6.5.7. Motivation.

The general findings that specialising stage athletes demonstrated lower levels of some indicators of intrinsic motivation, and higher levels of extrinsic forms of motivation, than athletes during the sampling and investment stage of development was an unexpected finding. This finding may broadly reflect athlete experiences during this developmental stage. Specialising athletes are proposed to begin to take their sport more seriously and increase the amount of effort and time invested in developing their skills (Côté, 1999; Wylleman & Lavallee, 2003). Whilst fun and enjoyment are still important at this stage, technical and tactical development is a factor, as is competitive sport, perhaps explaining a shift towards more extrinsic reasons for sport participation during this stage. These findings may suggest that greater support is provided to athletes during the specialising stage to maintain their intrinsic motivations for participation in sport.

6.6. Conclusions

The present study applied the proposed model of perceived motivationally-relevant social agent influence developed in Studies 1 and 2a to explore the influence of coaches, parents and peers on key elements of athlete motivation between different developmental stages. The results indicate the complexity of perceived social agent motivationally-relevant influence when considering participant developmental stage. Despite this, the ability to consider the perceived influence of individual social agents within the context of the proposed model allows for comparison between developmental stages, which is a strength to the study.

On the other hand, the sample size does not allow the differences between perceptions of athletes in the sampling, specialising and investment stages to be as accurately compared as the structural model cannot accommodate small sample sizes when being tested. As such, considering the individual variables in isolation from one another, rather than using the entire model, may reduce the sensitivity in exploring differences between developmental stage. The correlations between the proposed latent variables of perceived motivationally-relevant social agent influence identified in Study 2a mean that the relationship between variables might be important, and future studies applying the model should seek larger sample sizes in order to fully understand how

perceived motivationally-relevant social agent influences might change depending on athlete developmental stage. The sample size also limits the ability to explore the relationship between the proposed model of perceive social agent motivationally-relevant influence and athlete motivation, which may have provided insight into whether specific types or levels of perceived influence related positively or negatively to the different categories of social agent influence.

Chapter Seven - Main Discussion

7. Main Discussion

7.1. Overview of Thesis and Summary of Main Findings

The primary aim of this thesis was to develop a proposed model of perceived motivationally-relevant social agent influence which reflected the role of coaches, parents and peers across all stages of athlete development. This aim was achieved by Study 1 (Chapter 4) and Study 2a (Chapter 5). Study 1 qualitatively investigated the perceptions of investment-stage male football players and their parents on the perceived motivationally-relevant influence of coaches, parents and peers during the players' progression through trajectory 2 of Côté's (1999) DMSP, namely the sampling, specialising and investment stages of athlete development. Five categories of motivationally-relevant social agent influence emerged from the data: (a) relationship factors; (b) interpersonal interactions; (c) support for development; (d) support for performance; and (e) feedback/evaluation.

The structure of the proposed model of perceived motivationally-relevant social agent influence was then determined and refined in Study 2a. Using confirmatory factor analysis, different structures of the proposed variables of perceived motivationally-relevant social agent influence were tested to determine which best fit the data. The best fitting model identified six categories of perceived motivationally-relevant social agent influence: (a) relationship factors; (b) conflict; (c) conflict resolution; (d) support for development; (e) support for performance and (f) feedback/evaluation. Study 2a also identified that each social agent had an independent, although related, perceived influence on each of the six categories of motivationally-relevant categories, producing the final proposed model comprising 18 latent variables. Within the thesis, conflict and conflict resolution were initially theorised to be part of the interpersonal interaction latent variable, but due to the findings of Study 2a these have been renamed as positive interactions and negative interactions.

Figure 19 illustrates a visualisation of the categories of perceived motivationally-relevant social agent influence within the final proposed model. Each box represents an independent latent variable (i.e., there are no hierarchies). Vertical boxes represent latent variables that form the same category of perceived social agent influence. Horizontal boxes group behaviours based on the social agent of influence.

Relationship Factors	Negative Interactions	Positive Interactions	Support for Development	Support for Performance	Feedback & Evaluation
Coach Relationship	Negative Interactions with Coach	Positive Interactions with Coach	Coach Support for Development	Coach Support for Performance	Coach Feedback & Evaluation
Parent Relationship	Negative Interactions with Parent	Positive Interactions with Parent	Parent Support for Development	Parent Support for Performance	Parent Feedback & Evaluation
Peer Relationship	Negative Interactions with Peer	Positive Interactions with Peer	Peer Support for Development	Peer Support for Performance	Peer Feedback & Evaluation

Figure 19: Illustration of the Categories of Perceived Social Agent Influence on Athlete Motivation.

(Each box represents latent variable. Vertical grouping represents category of perceived social agent influence. Horizontal grouping represents variables relating to the same social agent.)

The secondary aim of the thesis was to determine whether the perceived motivationally-relevant influence of coaches, parents and peers differed from one another and between developmental stages, which was achieved by Study 2b (Chapter 6). Study 2b explored similarities and differences between a) the perceived motivationally-relevant influence of coaches, parents and peers across all categories of the proposed model, and b) the perceived motivationally-relevant influence of coaches, parents and peers during each stage of athlete development. Results of Study 2b supported previous research that indicated the dynamic nature of perceived social agent influence between developmental stages (i.e., Keegan et al., 2009, 2010a, 2014a), and relative differences in perceived influence between coaches, parents and peers.

The purpose of this chapter is to discuss the original contribution of this thesis to the research about social agent motivational influences in sport. This contribution will be contextualised by discussing the general strengths and limitations of this body of research. Applied implications will then be presented, followed by suggestions for future research. Importantly, the findings of Studies 1, 2a and 2b are considered in combination with one another in line with the mixed methods methodological position of this thesis. Specifically, results are considered in terms of developing a proposed model in Study 1 and then refining and applying this model in Studies 2a and 2b.

7.2. Primary Aim

The primary aim of this thesis was to develop a proposed model of perceived motivationally-relevant social agent influence within sport across all stages of athlete development. Adopting a mixed-methods research methodology, this aim was achieved through the following objectives:

1. To explore the perceptions of investment stage athletes and their parents regarding the perceived motivationally-relevant influence of parents, coaches and peers during athletes' development in sport
2. To develop a proposed model of perceived motivationally-relevant influence social agent influence across athlete development
3. To adapt valid and reliable adapted psychometric measures that concurrently measure the perceived motivationally-relevant influence of coaches, parents and peers
4. To determine the structure of the proposed model of perceived motivationally-relevant social agent influence using confirmatory factor analysis methods

By achieving these research objectives, this thesis makes an original contribution to knowledge about the perceived motivationally-relevant influence of coaches, parents and peers within sport. The final proposed model generated and refined following Study 1 (Chapter 4) and Study 2a (Chapter 5) incorporated six categories of perceived social agent influence on athlete motivation that contextualise a multifaceted and dynamic social environment that surrounds athletes during their participation in sport. Coaches, parents and peers are each considered to have an individual influence within each of these categories such that the overall proposed model contains 18 types of motivational influence. The six categories of motivationally-relevant social agent influence (illustrated in Figure 19) within the proposed model extend existing knowledge of the role of coaches, parents and peers by considering each of the social agents concurrently.

7.2.1. Categories of Perceived Social Agent Influence on Athlete Motivation.

The six categories of perceived motivationally-relevant social agent influence represented by the final proposed model in this body of research suggest a broader socio-motivational context than much of the previous literature has considered. As discussed in

Chapters 2 and 3, many previous studies have investigated individual or multiple perceived social agent influences in line with existing paradigms in motivation research such as SDT and AGT. The findings of the present thesis extend knowledge regarding the role of social agents beyond existing research into dichotomous motivational climates (Nicholls, 1984) and climates which support basic psychological need satisfaction (Deci & Ryan, 2000) to consider a broader range of motivationally-relevant behaviours and dimensions. Each of the six categories of perceived motivationally-relevant social agent influence were consistent across all three social agents and each developmental stage. This finding contributes to existing knowledge of the motivational context in sport by demonstrating that research into the individual social agent roles may limit understanding of the broader motivational context experienced by athletes, and that consideration of multiple sources of perceived motivationally-relevant influence may be needed in order to fully describe, understand and influence motivational contexts in sport.

7.2.1.1.   Relationships.

The relationship category of perceived motivationally-relevant social agent influence was conceptualised in Study 1 as reflecting the indicators of the quality of the relationship between social agents and athletes. Study 2a findings confirmed the structure of this variable in which perceived quality of relationships were conceptualised as being distinct but similar between social agents, reflects much of the previous research within sport (e.g., Jowett, 2007; Sheridan et al., 2014; Weiss et al., 1996). The relationship category reflects elements of existing theories and models of social agent influence in sport, especially the closeness dimension of Jowett's (2007) coach-athlete relationship model and the peer friendships proposed by Weiss et al. (1996) but these conceptualisations do not completely explain the construct identified in the present thesis. Nor do the findings map completely to concepts such as relatedness (Deci & Ryan, 2000) as the independent influence of each social agent suggests distinct motivational roles for coaches, parents and peers rather than general relationships to fulfil the basic psychological need for relatedness. Many of these theories of motivation, and of relationships between social agents and athletes, have considered a range of positive outcomes include performance, emotion and motivation, but few have been exclusively conceptualised in relation to the perceived motivational relevance of this influence within the social context in sport (Lyle, 2007; Vella et al., 2012).

The measurement invariance analysis used in Study 2b then identified that the perceived motivationally-relevant relationship between coaches and athletes was stronger in the sampling stage than the investment stage, and consistent between all three developmental stages for parents and peers. The findings in relation to coaches and peers are consistent with previous research (Keegan et al., 2009, 2010a, 2014a) and conceptualisations of coach athlete relationship (Jowett, 2007) and peer friendships (Weiss et al., 1996), with the former perhaps reflecting the fact that coaches at higher levels of performance are more transient and, therefore, are less likely to be as consistent a present in athletes' sporting lives. The finding that the perceived quality of relationship with parents was consistent is perhaps not surprising given their consistent presence in the lives of athletes, but the results of Study 2b indicated that the model being measured for parents may not quite fit the data. This finding may be due to the fact that the SFQS (Weiss & Smith, 1999) used to measure this category of perceived motivationally-relevant social agent influence in Studies 2a and 2b was based on Weiss et al.'s (1996) conceptualisation of sport friendships. It may be possible that the perceived relationship with coaches and peers are confined to the sporting context, and thereby appropriately measured by the SFQS which is sport-specific, but the perceived relationship quality with parents may go beyond the sporting context and be quite different to the nature of perceived relationships with parents, explaining why the measurement model used in Study 2b may not have been accurate.

7.2.1.2.   *Positive and Negative Interactions.*

The interpersonal interactions category identified in Study 1 was conceptualised to reflect the specific behaviours demonstrated by social agents during their interactions with athletes. This category did not fit the proposed model structure identified in Study 2a and was therefore adjusted to become perceived positive and negative dimensions of interactions between athletes and social agents. These two categories broadly reflect research into the interpersonal interactions between social agents and athletes within literature. For instance, Dorsch et al. (2016) identified that athletes perceive parents as providing pressure in sport, and the behaviour dimension of Jowett's (2007) conceptualisation of the coach-athlete relationship (i.e., complementarity) considers the reciprocity of coach and athlete behaviours in the sporting context. Many conceptualisations of the behavioural dimension of the relationship between social agents and athletes in sport do not have distinction between positive and negative interactions in

the manner of the current findings. The separation of these two dimensions most closely reflects the (absence of) conflict and conflict resolution dimensions of Weiss et al.'s (1996) conceptualisation of sport friendships. This finding may be due to the fact that the SFQS (Weiss & Smith, 1999) used to measure the interpersonal interactions category of perceived motivationally-relevant social agent influence in Study 2a was based on Weiss et al.'s (1996) conceptualisation of sport friendships. These categories, therefore, may have always been destined to conceptually different variables despite the fact that the SFQS has been adapted for use in measuring the quality of relationship between athletes and social agents other than peers (e.g., Ullrich-French & Smith, 2006; Dorsch et al., 2016). Whilst the accuracy of the categorisation of variables may benefit from further exploration, the finding does suggest that behaviours within the interactions between social agents and athletes may be perceived to be motivationally-relevant by athletes.

The results of the measurement invariance analysis in Study 2b identified that athlete perceptions of motivationally-relevant parent and peer positive and negative interactions (i.e., conflict and conflict resolution) did not differ between developmental stages. Coaches on the other hand were perceived to demonstrate more positive interactions in the sampling stage than both the specialising and investment stages, reflecting the qualitative findings of Study 1. Athletes did not report any difference in perceived conflict with their coach between developmental stages, but the results also did not find support for the measurement model suggesting that perceived motivationally-relevant conflict with coaches is different in nature to that of parents and peers. This difference in measurement model may reflect a difference in the relationship between coaches and athletes, whereby their relationship is much more focussed on performance than those of parents and peers with athletes (e.g., Jowett, 2007).

7.2.1.3.   *Support for Development.*

The support for development category of social agent influence reflects motivationally-relevant social agent behaviours which were perceived by athletes to contribute to their sport-specific development. The conceptualisation of this category of social agent reflects previous research which has identified that coaches, parents and peers all contribute to the development of skills and competencies in sport (e.g. Keegan et al., 2009, 2010a, 2014a). The findings from the measurement invariance analysis in Study 2b that coaches were perceived to have a greater influence during the sampling stage of

athlete development compared to the specialising and investments stages, and that peers are perceived to have a greater influence during the sampling and investment stages than the specialising stages, broadly represents previous findings (Keegan et al., 2009, 2010a, 2014a) and supports the distinction between the roles of coaches, parents and peers. The fact that there was no significant difference in perceived parent influence between developmental stages contradicts previous findings (Keegan et al., 2014a) which suggested that parental influence in this type of sport-specific developmental support reduced as athletes progressed through developmental stages. This unexpected finding may be explained by two factors. First, the measurement invariance suggested that the model for perceived parent support for development may have been different for the one used to compare between developmental stages. This different model may be explained by the second explanatory factor: the CBS-S (Côté et al., 1999) was developed to consider the sporting context, which is where coaches and peers may provide much of their support for development behaviours. From the results of Study 1, participants conceptualised parental support for development behaviours as taking place away from the sporting context, thereby meaning that the CBS-S measure may not be measuring the specific type of perceived support for development provided by parents.

7.2.1.4. *Support for Performance.*

The support for performance category of perceived motivationally-relevant social agent influence reflected behaviours which facilitated and supported athlete performance in sport. In Study 1 this category of perceived motivationally-relevant social agent influence was considered to reflect concepts such as practical support to get to training, social support, providing opportunities for participation and supporting opportunities for performances (e.g., in matches). This category broadly reflected previous literature conceptualising elements of social agent interactions with athletes (e.g., Keegan et al., 2009, 2010a, 2014a; Rees & Hardy, 2000; Sheridan et al., 2014). Study 2a confirmed the distinct coach, parent and peers variables of perceived support for performance. Study 2b identified that coaches were perceived to consistently provide this type of support across all three developmental stages, whereas peer support for performance was perceived as higher during the investment stage than the specialising stage, which supports previous literature (Keegan et al., 2009, 2010a, 2014a). Once again, perceived support for performance from parents did not differ between developmental stages, perhaps reflecting the suggestion that parents adapt their involvement in their children's sport depending on

their stage of development (Harwood & Knight, 2015). The analysis of measurement invariance suggested that the underlying model of parent support for performance may not have been accurate. The tangible support subscale of the ARSQ (Freeman et al., 2014) was adapted and used for all three social agents, but the original measure considered support as a combined construct rather than specific to individual social agents. As with the support for development category, the measure was sport-specific and in relation to the sporting context, and the different potential measurement model for parent support for performance may reflect the fact that athletes perceive parents to provide similar – but distinct – support for performance out with the sporting context, and coaches and athletes within the sporting context.

7.2.1.5. *Feedback and Evaluation.*

Feedback and evaluation categories were conceptualised in Study 1 as reflecting motivationally-relevant behaviours from social agents which assist players in evaluating their competencies. In Study 2a the results confirmed the structural nature of this variable suggesting that coaches, parents and peers were perceived to provide distinct but related motivationally-relevant support for feedback and evaluation. The measurement invariance tests identified that perceptions of peer support for feedback and evaluation did not differ between developmental stages, but parents were perceived to provide more support amongst participants in the sampling stage compared to the investment stage. These findings broadly reflect previous literature (Keegan et al., 2009, 2010a, 2014a) and may reflect parents becoming less able to provide informative feedback and evaluation as players progress to higher levels of task complexity in their sport. The measurement invariance findings for perceived motivationally-relevant coach feedback and evaluation identified that the coach measurement model may have been different to the one used in the analysis. This finding may reflect the type of feedback and evaluation from coaches as being more in-depth, technical and specific to ways in which athletes could improve their performance compared to the feedback and evaluation received from parents and peers.

7.2.1.6. *Motivation.*

As explained in Study 2a and 2b, the complexity of the structural model which best fit the data did not allow for analysis of the relationship between the proposed model of perceived motivationally-relevant social agent influence and subject athlete

motivation. The results of the measurement invariance analysis of subjective motivation ratings in Study 2b identified that specialising stage athletes scored significantly lower than sampling and investment stage athletes in the general intrinsic motivation, intrinsic motivation-knowledge variables, and significantly higher in the amotivation variable. Without being able to explore the relationship between the proposed model and athlete subject motivation, these findings generally do not provide much insight into how perceived social agent motivationally-relevant influence might impact on subjective motivation. Future studies with larger sample sizes may be able to determine whether the differences in subject motivation identified in the current study are in any way related to perceived motivationally-relevant social agent influence through structural equation modelling methods.

7.2.2.   The Structure of the Proposed Model.

As discussed in the literature review (Chapter 2), existing literature has yet to clarify the combined and interactive influence of coaches, parents and peers on athlete motivation. There is evidence that some types of support are common across some or all of these (and other) social agents (e.g., Keegan et al., 2009, 2010a, 2014a). The findings of the present thesis suggest that coaches, parents and peers each have a distinct and independent influence on each of the six categories of perceived motivationally-relevant social agent influence at each developmental stage. Furthermore, each category of perceived motivationally-relevant social agent influence applies across developmental stages, although during some developmental stages some social agents may have more or less of an influence than either of the other social agents and/or about other developmental stages. These findings contradict some previous research which has identified additive and interactive motivational perceived social agent influences (e.g., Riley & Smith, 2011; Sheridan et al., 2014; Van Yperen, 1995; Vazou et al., 2006) as the findings clearly delineate the contribution made by coaches, parents and peers as perceived by athletes.

The categories of perceived motivationally-relevant social agent influence, and the independent nature of each social agents influence within each of these categories, have some similarity to the proposed model of motivational atmosphere proposed by Keegan et al. (2014b). In particular, four of the proposed six categories of perceived motivationally-relevant social agent influence in the current study (i.e., support for

performance, support for development, feedback & evaluation, relatedness climate) resemble some of Keegan et al.'s proposed motivational climate (i.e., competition climate, training and learning climate, evaluation climate, relatedness climate). Extending previous findings, the categories identified in the present thesis were found to be consistent across all stages of development and involve all three social agents. In line with the motivational atmosphere model proposed by Keegan et al. (2014b), the findings of the present thesis identified that coaches, parents and peers perceived motivationally-relevant influences were distinct and did not have an additive effect, but the correlations between variables within the same category (e.g., parent support for performance, peer support for performance and coach support for performance) may suggest that there are social-motivational contexts within which each social agent has a distinct role to play.

Despite the structure of the proposed model of perceived motivationally-relevant social agent influence appearing to have 18 distinct latent variables, the measurement invariance analysis conducted in Study 2b identified that some of the measurement models specific to some of these latent variables may not be accurate when comparing between developmental stages. Specifically, variables proposed to represent perceived parent relationship, coach conflict, parent support for development, parent support for performance, and coach feedback and evaluation did not fully demonstrate their proposed measurement model. These results suggest that the overall structure of the proposed model of perceived motivationally-relevant social agent influence requires further testing and refinement, ideally with larger sample sizes across all developmental stage groups.

7.3. Secondary Aim

The secondary aim of this thesis was to determine whether the perceived motivationally-relevant influence of coaches, parents and peers differed from one another and between developmental stages. This aim was achieved through the following objectives:

1. To explore the similarities and differences between the perceived motivationally-relevant influence of coaches, parents and peers during athlete development
2. To examine changes in perceived motivationally-relevant social agent influence between athlete developmental stages

Due to the scarcity of research into the concurrent perceived motivationally-relevant influence of coaches, parents and peers, as well as few studies that considered how these influences might change during development, the findings of the present study contribute new knowledge to the understanding of the dynamic perceived motivationally-relevant influences of social agents. Keegan et al.'s (2009, 2010a, 2014a) series of studies did compare and contrast the relative roles of social agents at each stage of development and across all three stages and identified that parents became less instrumental and more supportive as athletes progressed to the investment stage of development, and peers became increasingly important in all aspects of motivational influence. In contrast to previous findings, the results of Study 2a suggested that despite some differences in some categories between social agents and between developmental stages, social agents were broadly consistent in the amount of influence they had during athlete development across all categories of perceived motivationally-relevant influence. This finding demonstrates that coaches, parents and peers are perceived as stable sources of motivationally-relevant influence across a number of motivational dimensions. Coaches demonstrated the most changes in influence between stages, being perceived to be less influential in terms of relationship factors, conflict resolution and support for development in the investment stage than the sampling stage. The only difference in the perceived influence of parents was regarding feedback and evaluation where they provided less of this support in the investment stage than the sampling stage. The only difference in peer motivational influence between developmental stages was for support for performance, with investment stage athletes perceiving this type of support higher.

7.3.1.1.   *Relating Findings to AGT and SDT.*

Despite the purpose of this thesis to develop and test a new proposed model of perceived social agent influence on athlete motivation, it would be remiss to not consider areas of overlap with AGT and SDT as the dominant theories in literature relating to motivation in sport.

A proponent of AGT might argue that the categories of perceived social agent influence proposed in the current thesis broadly reflect the basic tenets of AGT, including elements that focus on task/mastery content (e.g., support for development, feedback & evaluation categories) and some which focus on ego/competitive goals (e.g., support for

performance, conflict). Furthermore, predictions about the nature and structure of the overall proposed model might suggest that those elements of the model relating to task- and ego-influences might themselves be moderated by the interpersonal categories (e.g., conflict resolution, relationship factors), or, indeed, these interpersonal categories might be considered to be outcomes of the task- and ego-related categories. To illustrate, according to this interpretation an athlete might perceive a mastery-climate due to perceptions that coaches, parents and peers provided them with support for development as well as feedback about their performance. This type of support was more salient due to the positive nature of the relationship the athlete had with their social agents. Not only were motivation and performance positively influenced but also there were less instances of conflict and more instances of behaviours designed to avoid or resolve conflict between the athlete and their social agents (Harwood et al., 2015).

Alternatively, considering the proposed model from an SDT perspective, elements of the model reflect some of the tenets of this theory. Categories of perceived social agent influence proposed in the current study reflect elements of basic need satisfaction. For instance, relationship factors and interpersonal interactions may align to the need for relatedness, providing support for development and performance may correspond with the need for competence, and the feedback and evaluation category may correspond with autonomy (in the shape of autonomy-support). Therefore, participants achieving each of these categories of perceived social agent influence may be more likely to be intrinsically motivated. Vallerand's (2007) HMIEM may also map to the proposed model because some of the categories of perceived social agent influence may be considered at a global (e.g., quality of relationships with parents), contextual (e.g., conflict with coach) and situational (e.g., feedback and evaluation) level.

The challenge with applying existing theories and models is that the nature and structure of these models influence the testing of hypotheses or approaches to answering the research question. AGT and SDT only reflect some of the elements of motivationally-relevant perceived social agent influence proposed within the current study, but had a theoretically-driven approach been adopted then only variables proposed by each of these theories would have been investigated and identified. The grounded nature of the proposed model, therefore, broadens the understanding of the motivational context of athletes beyond that proposed by AGT and SDT by simultaneously considering the perceived influence of all three social agents across a range of motivationally-relevant

dimensions. Considering these three social agents at the same time allows for a broader and deeper understanding of the socio-motivational picture.

7.4. Contribution of Thesis to Knowledge

The findings of this thesis contribute to the knowledge of the social-motivational context within which athletes participate, develop and perform in sport. Specifically, the proposed model of perceived motivationally-relevant social agent influence in sport identified six categories of perceived influence and 18 independent social agent variables. Despite some differences in perceived social-agent motivationally-relevant influence in some categories between developmental stages, each social agent was found to be perceived as having a motivationally-relevant influence in each category across each developmental stage. The findings of the study also demonstrate the need for future research and applied practice to consider the whole social context when exploring perceived social agents' roles in athlete motivation as considering coaches, parents and/or peers in isolation only provides part of a complex social-motivational picture.

7.5. Strengths

One of the major strengths of this thesis is the approach adopted to generate, refine and apply a novel proposed model of perceived motivationally-relevant social agent influence during athlete development in sport. The thesis addressed some criticisms from the literature regarding the nature of perceived social agent influence on athlete motivation across different developmental stages. The thesis aimed to address this gap by firstly retrospectively investigating the perceived motivationally-relevant role of social agents, determining the structural nature of the proposed model using confirmatory factor analysis methods, and then applying the proposed model to investigate changes in perceived motivationally-relevant social agent influence as athletes develop.

Previous literature has been criticised for the dominant and dogmatic application of AGT and SDT in considering motivation in sport broadly, and the role of social agents specifically. A further strength of the study was the generation of a proposed model of perceived social agent influence which was grounded in the experiences of investment-stage athletes. In addition, the application of a mixed methods approach provided a balance between exploring participant experiences (qualitative) and then conducting

confirmatory activities (quantitative) to determine the validity and applicability of the proposed model. For Study 2a and Study 2b the participants were drawn from diverse populations, thereby providing the current thesis a further strength by looking beyond participants who have dominated previous literature (i.e., young athletes) and recruiting a wide range of participants that represented all three developmental stages of athlete development.

A further strength of the thesis is the testing of the properties of psychometric measures which have been adapted to measure all three social agents on the same theorised latent variable. This approach addressed criticisms of previous literature (e.g., Harwood et al., 2015) that different subscales and tools measure different social agents within sporting contexts, making comparisons between the relative influence of social agents challenging. Future research will be able to use these adapted measures to investigate and explore concurrent perceived social agent influences on athlete motivation and to test the model proposed in the present thesis.

Furthermore, the mixed methods approach adopted in this thesis ensured that the proposed model of perceived motivationally-relevant social agent influence was grounded in the experiences of athlete. Aligning methods to the ontological, epistemological and methodological position of the research allows other researchers to better understand and contextualise the research process which has led to the conclusions in the present study, as well as better allow other researchers to critique the work within this thesis.

7.6. Limitations

Despite the strengths of this thesis there are limitations. First, the homogenous nature of the participants in Study 1 may limit the transferability of the findings from the qualitative study employed. Despite this, the proposed model developed was then demonstrated to fit the data from in Study 2a which had a sample representative of a breadth of participant sports and demographics. This model fit suggests that the homogenous nature of the sample in Study 1 may not have limited transferability of findings. Furthermore, the small sample size of participants in Study 1 allowed an in-depth exploration of the experiences of one group within a specific sport, which generated greater understanding of the influence of social agents within this specific context (Gledhill et al., 2016). In addition, the retrospective nature of Study 1 may have

limited recall, particularly when participants were asked to consider the time at which they commenced the sport which was at least 12 years prior to the interviews being conducted. The involvement of parents within the study, however, was designed to provide triangulation when exploring the roles of coaches, parents and peers during all stages of athlete development. Consideration of the perspectives of coaches and peers in future studies would provide a triangulated perspective of the developmental experiences in sport.

A further limitation of the thesis is the sample size employed in Study 2a. Despite demonstrating adequate fit statistics, the complexity of the final proposed model structure for perceived motivationally-relevant social agent influence, in combination with the sample size, meant that it was not possible to use structural equation modelling to explore the relationship between proposed model variables and subjective motivation as had originally been intended. This relatively small sample size meant that whilst it was possible to determine the types of influence social agents have on athlete motivation during development, it was not possible to determine if and how these categories of influence related to motivation as an outcome.

A further limitation was the use of a combination of purposive and convenience sampling the studies within this thesis, which may mean that the sample in each study was not as representative of their respective populations. Despite this limitation, the large range of sports and levels of experience allowed for the proposed model to have some applicability to sport in general, thereby increasing its relevance in practice. The cross-sectional nature of Study 2a and 2b meant that that it was not possible to consider how perceived social agent influence might a) relate directly to motivation as an outcome variable, and b) determine the direction of causation between variables identified as being related. Further research will be required to determine the nature and direction of any relationships between variables identified within the present study, and their theorised influence on motivation and performance.

Whilst the adaptation of psychometric measures to test coaches, parents and peers one the same subscales, thereby allowing for direct comparison between perceptions of the influence of these social agents, met calls from motivation researchers (e.g., Harwood et al., 2015), it is possible that the subscales used in Studies 2a and 2b did not accurately measure the variables identified in the proposed model in Study 1. The fact measurement

invariance analysis identified potentially different measurement models for some of the perceived motivationally-relevant social agent categories may suggest that either a) it was not appropriate to adapt some of the subscales for different social agents, and/or b) that the type of perceived support from some social agents in certain categories is not the same between coaches, parents and peers as the proposed model suggests. Whilst some of the subscales had been adapted for other social agents than they were originally designed, they have not been as extensively validated for use with social agents other than those they were designed for. Furthermore, the ARSQ (Freemen et al., 2016) was designed to measure holistic support from social agents rather than support specific to one social agent, and adjusting it may have contradicted the conceptualisation of social support the measure was developed for. Future research will be needed to further test and refine the proposed model, the adapted subscales, and even alternative measures to accurately identify

Despite these limitations, the use of a three-staged approach to model development, model refinement and model testing using mixed-methods demonstrated a novel approach to model generation and will allow for new hypotheses to be explored which can test this new proposed model and may lead to the development of a novel theory (Popper, 1967).

7.7. Practical Implications

By understanding how social agents were perceived by athletes to influence their motivation, we can provide better advice to social agents and athletes in sport regarding the roles and behaviours that can promote motivation amongst athletes as they develop.

The results in this thesis highlighted various ways in which coaches, parents and peers can influence athlete motivation during their development. First, practitioners in sport (e.g., coaches, volunteers, parents, sport scientists) could consider the categories of perceived social agent influence and whether social agents could ensure that athletes gain the support from all social agents for each of the categories, with the exception of negative interactions which should be minimised. This suggestion is made with caution, however, as the current thesis was only able to determine the structural nature of the proposed model but not the direction of causation between any of the variables.

The findings of this thesis have the potential to enhance coach education in sport by providing insight into the distinct roles that social agents have in promoting and maintaining athlete motivation. Categorisation of roles will also allow coaches, parents and peers to better understand how they can support athletes during their development, but also allow athletes to seek the support they need from the right social agents. A better understanding of the role of social agents in these categories may also allow stakeholders to reduce athlete anxiety, stress and dropout from sport, by being more aware of the motivational mechanisms that might lead to these maladaptive behaviours and outcomes.

7.8. Future Research

The purpose of this thesis was to develop a proposed model of perceived motivationally-relevant social agent influence during development. In line with a critical rationalist epistemological perspective (Popper, 1967), a proposed model has been developed which should subsequently be tested further, refined and compared to other existing models and theories to determine which contain the most truth content. Despite the model being developed, refined and applied to a diverse sample within the thesis, further studies will assist in determining the appropriateness of the proposed model as well as its applicability to sport participants across each developmental stage. The following recommendations for future research can be considered.

7.8.1. Refining the Proposed Model.

Further exploration of the structure of the proposed model would be advantageous, especially to better understand the relative influence of each social agent. The correlations between variables within the findings from Study 2a (chapter 5) demonstrated that despite the theorised hierarchical models (i.e., combining perceived social agent influence, or combining the categories of influence) not fitting the data, there appears to be an underlying relationship between the key variables. The positive correlation between these variables may well indicate distinct motivational atmospheres similar to those proposed by Keegan et al. (2014), and further research should explore these correlations to determine whether this is the case.

The finding that some of the measurement models for certain social agent variables suggests that the proposed model may not be as accurate as it could be, and

therefore future research should explore the appropriateness of each of the proposed variables within the model. To assist in doing so, the psychometric properties of the adapted psychometric measure subscales should continue to be tested in order to determine their appropriateness for measuring the social agent variables within the proposed model. Future studies may wish to consider developing a bespoke psychometric measure based on the conceptualisation of perceived motivationally-relevant social agent influence within the current proposed model. The proposed model also did not consider the perceived motivationally-relevant influence of social agents beyond coaches, parents and peers, despite there being evidence of other social agents playing an important motivational role (e.g., relatives other than parents, teachers, friends from out with the sporting context, professional athletes, etc.; Garcia Bengoechea & Strean, 2007). Future research may, therefore, look to consider the broader social context within which athletes participate in sport, perhaps mapping out the social context of participation using personal social network methods.

Important to each of these suggested steps for future research is the use of larger sample sizes when considering the structural nature of the proposed model through structural equation modelling methods. Studies with large sample sizes which provide a more equal representation of each developmental stage would allow for these relationships between variables to be better explored and the structure of the proposed model more accurately determined. For instance, it may be that some of the variables within the proposed model act as moderators and mediators of the (hypothetical) relationship between categories of perceived social agent influence and athlete motivation.

7.8.2. Examining Outcomes Associated with the Proposed Model.

One line of additional research that might be of relevance is to explore the relationship between the respective perceived motivationally-relevant influence of coaches, parents and peers and related outcomes such as psychological wellbeing, motivation and performance. For instance, it would be helpful to determine whether there is an optimal profile of perceived social agent motivational influence. For example, such research may examine whether there are specific levels of perceived motivationally-relevant social agent influence more or less likely to lead to adaptive or maladaptive outcomes. One way to address this line of research might be to use latent profile analysis

methods to determine whether participants can be grouped by underlying factors such as the relative amount of perceived motivationally-relevant influence each social agent is providing (e.g., 'optimal perceived social agent influence' reflecting high levels of support from all three social agents; or 'limited perceived social agent influence' reflecting a lack of support from social agents). Differences in motivation levels between these groups could then be explored for outcomes such as motivation as well as enjoyment, performance, adherence, and so on.

In line with Popperian concepts of falsification, future experimental studies should be designed to falsify rather than support the proposed model in order to make it more likely to reflect truth. Longitudinal studies would not only address the criticisms of the extant literature's reliance on cross-sectional studies, but also the limitations of the present thesis. Longitudinal, mixed-methods studies which explored and measured the simultaneous influence of coaches, parents, peers – and other relevant social agents – on athlete motivation throughout each developmental stage in line with the categories of perceived social agent influence proposed in the present study would enhance knowledge and understanding (Moran et al., 2011). Employing mixed methods approaches to such future studies would also allow for any proposed model to be more refined and sensitive so as to contextualise the social-motivational context that athletes experience. For instance, some significant differences for the relative perceived influence of coaches, parents and peers in some of the categories of perceived social agent influence were found between male and female participants, and between different competition levels. As such collecting more information about an athletes' sporting context (e.g., coach characteristics) might add further clarity to the mechanisms underpinning social agents' motivational influence. Furthermore, experimental studies in which the relative influences of coaches, parents and peers are manipulated and changes in appropriate outcomes (e.g.., motivation) determined would further enhance understanding of the influence of social agents on specific outcomes, although this type of experimental manipulation may be challenging in practice. Case studies with non-traditional sport settings (e.g., extreme sports, diversionary sport programmes) and athletes with alternative social agents as their primary support in sport (e.g., grandparents, adoptive parents) may also assist in the refining of the proposed model.

7.9. Conclusions

In conclusion, this thesis considered the perceived motivationally-relevant influence of coaches, parents and peers during athletic development. First, using qualitative methods a proposed model of perceived motivationally-relevant social agent influence was developed which consisted of six categories of influence within which each social agent had a distinct influence. Second, the proposed model was tested using confirmatory factor analysis and found to be applicable across all three developmental stages in sport, and each social agent was found to play a role during each developmental stage. Third, the proposed model was applied to explore the similarities and differences in perceived motivationally-relevant influence between coaches, parents and peers and between stages of athlete development. Results indicated that each social agent played a role in each developmental category at each stage.

Using a novel mixed-methods approach, the thesis presents an original contribution to research on motivation in sport. The thesis addresses methodological and philosophical limitations of existing research into the motivational role of social agents in sport. The findings of the present thesis extend knowledge of the role of coaches, parents and peers on athlete motivation. Specifically, the thesis demonstrates that these social agents play a consistent and independent role from one another during all three developmental stages.

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Appendices

Appendix A: Study 1 Ethics Approval

Robert Gordon University, Aberdeen
School of Health Sciences

School Research Review Group (SRRG)

Project reviewed: SHS 14 21
Project Investigators: Bryan McCann
Project Title: Exploring the role of social agents in the development of athlete motivation: a retrospective study

Review Group: Lyndsay Alexander (convenor)
Date of Review: 25th September 2014
Review number: AM01

Documentation presented:
Amendment form

Review
Thank you for providing the information to support this amendment.

Outcome:
Approved

Conclusions:
Recruitment and data collection may now. Please inform SRRG of any further amendments to this study prior to implementation.

Dr Lyndsay Alexander
Convenor
SHS SRRG

Appendix B: Study 1 Participant Email

Dear (SFA Performance School Graduate – name to be inserted),

My name is Bryan McCann, and I am a lecturer in sport and exercise science at Robert Gordon University in Aberdeen. I have been given your email address by Neil Mackintosh from the SFA Performance Department. I am approaching you as you are a graduate from the SFA Performance School pilot programme. As part of my doctoral studies I am undertaking a study investigating the development of motivation within the SFA Performance School, and I am hoping to interview graduates from the programme as well as their coach, parents and peers to better understand this development.

In brief, participation in this study would involve an interview with me in person or on the phone. Interviews would last approximately one hour, and I would ask a number of questions related to motivation during your participation in the performance school. I will also be interviewing your coach and other players who were also part of the performance school. I would also like to interview your parent/guardian to gain their insight into your motivation.

The information I gather during this study will hopefully provide insight into how motivation develops during participation in the SFA Performance School, and the role that other people (i.e., coaches, parents/guardians, peers) have in developing a player's motivation. The results may help the SFA improve the performance school programme and improve the quality of experience amongst current and future players.

I hope you might be interested in participating in this study. If so, I have attached a more detailed information sheet which will provide all the required details. If you are interested in participating, please get in touch with me by email (b.mccann@rgu.ac.uk) or by phone (01224 262978).

Thank you for taking the time to read this email.

I look forward to hearing from you.

Bryan McCann BSc (Hons), MSc, CPsychol

Lecturer in Sport and Exercise Science

Appendix C: Study 1 Player Information Sheet

SRRG reference number: SHS 14 21

Study Title: Social agent influence on athlete motivation

Introduction.

My name is Bryan McCann and I am a Lecturer in Sport and Exercise Science at Robert Gordon University. I am writing this letter to invite you to participate in a research project called 'Social agent influence on athlete motivation'.

I am contacting you as you have been identified as a graduate from the SFA Performance School programme. Neil Mackintosh, the SFA Head of Youth Development, has provided approval for this study to take place, and he is happy for you to participate should you wish to. The aim of the study is to better understand the development of motivation during your career as a footballer, and the role that social agents (e.g., parents, peers and coaches) have had on this motivation.

Your participation in the study will involve taking part in an interview in which you will be asked to think back through your playing career to date and consider how your motivation developed, and perhaps changed, at various points in time. You will be asked questions about the roles that other people may have taken in terms of your motivation. Your interview will be recorded for use in the research.

Should you be interested in participating in the study, you will be asked to identify a parent/guardian who may also be willing to participate, and provide them with the relevant information sheet which the researcher will give you. Your parent/guardian will also be asked whether they wish to participate, and if so then both interviews can go ahead. Your parent, along with your coach and a fellow player from the SFA Performance School, will be asked questions about their perspectives on the development of your motivation during your career, as well as the role they felt they played. The information they provide will allow for a fuller understanding of how your motivation developed during your playing career.

As part of the study you will also be asked whether you are willing to be interviewed as a peer for one of the other SFA Performance School graduates who as agreed to take part in the study. This will involve you being asked a number of questions relating to the development of your peers motivation during the time you were together in the SFA Performance School, and the role that you feel you and other social agents took in the development of this motivation. This additional interview would take place after the interview regarding your own motivation. This is an optional component, and you can choose not to act as a peer for another participant but still provide information as a participant yourself.

Your participation in this research project is completely voluntary, and should you choose to participate you are free to withdraw at any time and with no need to provide an explanation.

This research project has been reviewed and approved by the Robert Gordon University School of Health Sciences Research Review Group reference number SHS 14 21.

Taking part in the study

If you agree to take part in this study, you will be asked to take part in a one-on-one interview with the researcher. This will take approximately one hour, and will be at a time and location that suits you, or over the phone if that is most suitable. All of the information you provide during the interview will be kept confidential. Your name will not be used in any report or publication related to the research.

Before taking part in the study, the researcher will repeat the information in this sheet and answer any questions you might have. The researcher will also remind you of the potential lack of anonymity associated with participation in the study (see below). If you are then willing to participate in the study you will then be asked to complete a consent form to demonstrate this. You will also be asked to provide consent regarding your willingness to participate as a peer for another graduate who is participating in the research, though this is optional. You may withdraw from the study at any time without needing to provide a reason.

Either immediately after or at a time soon after you have been asked questions about your own motivation, you will be asked to undertake an interview as a peer for one of the other graduates from the SFA Performance School.

Advantages to participating

There are no direct advantages to you participating in this research. The information we gather from the study will help us understand the development of motivation during footballer playing careers, and will provide information about the ways in which important others influence this motivation. This may also provide useful information for the SFA Performance School, ideally allowing the programme to provide the best possible developmental environment for players.

Disadvantages to participating

There are no anticipated disadvantages to you participating in this study.

Confidentiality and anonymity

All of the information provided during your interview, including your name and any other details personal to you, will not be shared with anyone. Any information that may identify you will be removed from the interview transcripts. Some quotes from your interviews may be used in a report or publication of the results of the study, and given the case study nature of the project it is possible that other participants may be able to identify you from these quotes. Information you provide will be analysed and discussed in relation to the information your social agents provide, and therefore your anonymity cannot be guaranteed as other participants may be able to identify sources of information. You will be reminded of this at the start of the interview, and will be able to indicate during or at the end of the interview whether there is any information you provide that you do not wish to be published in any reporting of results (e.g., it is sensitive or could be considered offensive by another participant). This information may still be used for analysis purposes however, but would then not be included as a quote in any reports. You will also be sent a transcript of your interview to check for accuracy, during which time you can again indicate any content that you wish to be removed from any publication of results.

Any questions?

If you have any questions about this research please contact the researcher, Bryan McCann, using the contact information below.

What happens if there is a problem?

Please discuss any problems with us. Our contact details are given at the bottom of this letter. If you have a complaint please send details of this to the Lyndsay Alexander, Convenor Research Review Group, School of Health Sciences, Robert Gordon University, Garthdee Road, Aberdeen AB10 7QG l.a.alexander@rgu.ac.uk, or Mrs Elizabeth Hancock, Head of School of Health Sciences, Robert Gordon University, Garthdee Road, Aberdeen AB10 7QG l.hancock@rgu.ac.uk

What will happen to my research data?

All recordings will be stored on a password-protected computer until it is no longer needed following the completion of the research project. A research report and article will be written using the information gathered during the study, and may be more widely disseminated in reports, academic and professional journals and conferences.

What happens now?

Please feel free to discuss this letter with your family and friends.

Thank you for taking the time to read this letter.

Researcher:

Bryan McCann
Lecturer in Sport and Exercise Science
School of Health Sciences
Robert Gordon University
Garthdee Road
Aberdeen AB10 7QG

email: b.mccann@rgu.ac.uk
Tel: 01224 262978

SRRG reference number: SHS 14 21

Study Title: Social agent influence on athlete motivation

Introduction.

My name is Bryan McCann and I am a Lecturer in Sport and Exercise Science at Robert Gordon University. I am writing this letter to invite you to participate in a research project called 'Social agent influence on athlete motivation'.

I am contacting you as your son has been identified as a graduate from the SFA Performance School programme and has indicated a willingness to participate in the study. Neil Mackintosh, the SFA Head of Youth Development, has provided approval for this study to take place, and he is happy for your son and you to participate should you wish to. The aim of the study is to better understand the development of motivation during your son's career as a footballer, and the role that social agents (e.g., parents, peers and coaches) have had on this motivation.

Your participation in the study will involve taking part in an interview in which you will be asked to think back through your son's playing career to date and consider how their motivation developed, and perhaps changed, at various points in time. You will be asked questions about the roles that you may have taken in terms of your son's playing and motivation. Your interview will be recorded for use in the research.

During the interviews you will also be asked to identify the role that you and other social agents played a role in your son's development as a player. Other individuals identified by your son (e.g., fellow players and their coach) will be approached and asked to participate in an interview, and will also be asked questions about their perspectives on the development of your son's motivation during your career, as well as the role they felt they played. The information they and you provide will allow for a fuller understanding of how your motivation developed during your playing career.

Your participation in this research project is completely voluntary, and should you choose to participate you are free to withdraw at any time and with no need to provide an explanation.

This research project has been reviewed and approved by the Robert Gordon University School of Health Sciences Research Review Group reference number SHS 1421.

Taking part in the study

If you agree to take part in this study, you will be asked to take part in a one-on-one interview with the researcher. This will take approximately one hour, and will be at a time and location that suits you, or over the phone if that is most suitable. All of the information you provide during the interview will be kept confidential. Your name will not be used in any report or publication related to the research.
Before taking part in the study, the researcher will repeat the information in this sheet and answer any questions you might have. The researcher will also remind you of the potential lack of anonymity related to the study (see below). If you are then willing to participate in the study you will then be asked to complete a consent form demonstrating

you are willing to participate in the study. You may withdraw from the study at any time without needing to provide a reason.

Advantages to participating

There are no direct advantages to you participating in this research. The information we gather from the study will help us understand the development of motivation during footballer careers, and will provide information about the ways in which important others influence this motivation. This may also provide useful information for the SFA Performance School, ideally allowing the programme to provide the best possible developmental environment for players.

Disadvantages to participating

There are no anticipated disadvantages to you participating in this study.

Confidentiality and anonymity

All of the information provided during your interview, including your name and any other details personal to you, will not be shared with anyone. Any information that may identify you will be removed from the interview transcripts. Some quotes from your interviews may be used in a report or publication of the results of the study, and given the case study nature of the project it is possible that other participants may be able to identify you from these quotes. Information you provide will be analysed and discussed in relation to the information from other participants in relation to each player, and therefore your anonymity cannot be guaranteed as other participants may be able to identify your information in relation to their interview content. You will be reminded of this at the start of the interview, and will be able to indicate during or at the end of the interview whether there is any information you provide that you do not wish to be published in any reporting of results (e.g., it is sensitive or could be considered offensive by another participant). This information may still be used for analysis purposes however, but would then not be included as a quote in any reports. You will also be sent a transcript of your interview to check for accuracy, during which time you can again indicate any content that you wish to be removed from any publication of results.

Any questions?

If you have any questions about this research please contact the researcher, Bryan McCann, using the contact information below.

What happens if there is a problem?

Please discuss any problems with us. Our contact details are given at the bottom of this letter. If you have a complaint please send details of this to the Lyndsay Alexander, Convenor Research Review Group, School of Health Sciences, Robert Gordon University, Garthdee Road, Aberdeen AB10 7QG l.a.alexander@rgu.ac.uk, or Mrs Elizabeth Hancock, Head of School of Health Sciences, Robert Gordon University, Garthdee Road, Aberdeen AB10 7QG l.hancock@rgu.ac.uk

What will happen to my research data?

All recordings will be stored on a password-protected computer until it is no longer needed following the completion of the research project. A research report and article will be written using the information gathered during the study, and may be more widely disseminated in reports, academic and professional journals and conferences.

What happens now?

Please feel free to discuss this letter with your family and friends.

Thank you for taking the time to read this letter.

Researcher:

Bryan McCann
Lecturer in Sport and Exercise Science
School of Health Sciences
Robert Gordon University
Garthdee Road
Aberdeen AB10 7QG

email: b.mccann@rgu.ac.uk
Tel: 01224 262978

Appendix E: Study 1 Player Consent Form

ROBERT GORDON UNIVERSITY ABERDEEN

PARTICIPANT CONSENT FORM

Study reference: SHS 1421
Title of project: Social agent influence on athlete motivation
Name of Researcher: Bryan McCann

Please initial box

1. I confirm that I have read and understand the information sheet for the above study. I have had the chance to consider the information, ask questions and get answers to these questions.

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.

3. I agree to my interview being audio recorded for research purposes.

4. I understand that data collected during the study will be looked at by individuals from The Robert Gordon University where it is relevant to my taking part in this research. I give permission for these individuals to have access to the data.

5. I understand that quotes from my interview may appear in published reports of the study. I also understand that, though these will be anonymous it may still be possible for other participants to identify me from quotes due to the nature of the study. I understand that I will be given a chance to indicate (during the interview and on inspection of interview transcripts) whether there is content from my interview I do not wish to be included in any published reports.

6. I agree to take part in the above study.

7. I also agree to participate in an additional interview as the peer of another participant, in which I will be asked questions relating to that peer. In doing so I agree that all of the above points also relate to my participation in that additional interview.

**ROBERT GORDON
UNIVERSITY ABERDEEN**
PARTICIPANT CONSENT FORM

Study reference: SHS 1421
Title of project: Social agent influence on athlete motivation
Name of Researcher: Bryan McCann

Please initial box

1. I confirm that I have read and understand the information sheet for the above study. I have had the chance to consider the information, ask questions and get answers to these questions.

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.

3. I agree to my interview being audio recorded for research purposes.

4. I understand that data collected during the study will be looked at by individuals from The Robert Gordon University where it is relevant to my taking part in this research. I give permission for these individuals to have access to the data.

5. I understand that quotes from my interview may appear in published reports of the study. I also understand that, though these will be anonymous it may still be possible for other participants to identify me from quotes due to the nature of the study. I understand that I will be given a chance to indicate (during the interview and on inspection of interview transcripts) whether there is content from my interview I do not wish to be included in any published reports.

6. I agree to take part in the above study.

Name of participant   Date   Signature

Name of person taking consent   Date   Signature

Preface: Explain purpose of study and go through informed consent procedure. Explain confidentiality. As for permission for audio recording of interview, and inform that notes will be taken throughout.

Explain that questions will relate to their development within football. Explain the three stages of development and ask the players to consider these and determine whether they can identify these stages for their own development:

- *Sampling years* – characterised by enjoyment, trying out different sports

- *Specialising years* – characterised by the athlete focussing on one or two sports. Focus changes from playing to more deliberate practice and learning of skills, tactics and rules.

- *Investment years* – commitment to only one sport. High frequency and high intensity training. High level of competition.

Introductory Questions
- Age
- Years playing football
- Other sports currently/previously involved in
- Current occupation
- Current participation in football
- Summary of performance school participation

Sampling Years

Coach Influence:

1. How important do you feel your coach was during this stage of your development?
   a. Why? Any examples?

2. During this stage, how would your coach try to motivate you in your sport? E.g., to try harder or learn new skills?
   a. Any examples?

3. During this stage, what kind of things did your coach do/say to make you want to try your hardest? (Approach motivation)
   a. Any specific examples?

4. During this stage, what kind of things did your coach do/say that may have made you feel worried about making mistakes? (Avoidance motivation)
   a. Any specific examples?

5. During this stage, what kind of things did your coach do/say to make you compare yourself against other players and focus on being better than others? (Performance focus)
   a. Any specific examples?

6. During this stage, what kind of things did your coach do/say to make you focus on your own performance and not compare yourself to others? (Mastery focus)
   a. Any specific examples?

7. During this stage, what kind of things did your coach do/say to make you continue to put in effort even when you felt tired or lacked motivation?
   a. Any specific examples?

Parent Influence:

8. How important do you feel your parent/parents (significant others?) were during this stage of your development?
   a. Why?
   b. Any examples?

9. During this stage, how would your parent/parents (significant others?) try to motivate you in your sport? E.g., to try harder or learn new skills?
   a. Any examples?

10. During this stage, what kind of things did your parent/parents (significant others?) do/say to make you want to try your hardest? (Approach motivation)
    a. Any specific examples?

11. During this stage, what kind of things did your parent/parents (significant others?) do/say that may have made you feel worried about making mistakes? (Avoidance motivation)
    a. Any specific examples?

12. During this stage, what kind of things did your parent/parents (significant others?) do/say to make you compare yourself against other players and focus on being better than others? (Performance focus)
    a. Any specific examples?

13. During this stage, what kind of things did your parent/parents (significant others?) do/say to make you focus on your own performance and not compare yourself to others? (Mastery focus)
    a. Any specific examples?

14. During this stage, what kind of things did your parent/parents (significant others?) do/say to make you continue to put in effort even when you felt tired or lacked motivation?
    a. Any specific examples?

Peer Influence:

15. How important do you feel other players were during this stage of your development?
    a. Why?
    b. Any examples?

16. During this stage, how would your other players try to motivate you in your sport? E.g., to try harder or learn new skills?
    a. Any examples?

17. During this stage, what kind of things did other players do/say to make you want to try your hardest? (Approach motivation)
    b. Any specific examples?

18. During this stage, what kind of things did other players do/say that may have made you feel worried about making mistakes? (Avoidance motivation)
    c. Any specific examples?

19. During this stage, what kind of things did other players do/say to make you compare yourself against other players and focus on being better than others? (Performance focus)
    d. Any specific examples?

20. During this stage, what kind of things did your other players do/say to make you focus on your own performance and not compare yourself to others? (Mastery focus)
    e. Any specific examples?

21. During this stage, what kind of things did other players do/say to make you continue to put in effort even when you felt tired or lacked motivation?
    f. Any specific examples?

Specialising Years

Coach Influence:

22. How important do you feel your coach was during this stage of your development?
    a. Why? Any examples?

23. During this stage, how would your coach try to motivate you in your sport? E.g., to try harder or learn new skills?
    a. Any examples?

24. During this stage, what kind of things did your coach do/say to make you want to try your hardest? (Approach motivation)
    a. Any specific examples?

25. During this stage, what kind of things did your coach do/say that may have made you feel worried about making mistakes? (Avoidance motivation)
    a. Any specific examples?

26. During this stage, what kind of things did your coach do/say to make you compare yourself against other players and focus on being better than others? (Performance focus)
    a. Any specific examples?

27. During this stage, what kind of things did your coach do/say to make you focus on your own performance and not compare yourself to others? (Mastery focus)
    a. Any specific examples?

28. During this stage, what kind of things did your coach do/say to make you continue to put in effort even when you felt tired or lacked motivation?
    a. Any specific examples?

Parent Influence:

29. How important do you feel your parent/parents (significant others?) were during this stage of your development?
    a. Why?
    b. Any examples?

30. During this stage, how would your parent/parents (significant others?) try to motivate you in your sport? E.g., to try harder or learn new skills?
    a. Any examples?

31. During this stage, what kind of things did your parent/parents (significant others?) do/say to make you want to try your hardest? (Approach motivation)
    a. Any specific examples?

32. During this stage, what kind of things did your parent/parents (significant others?) do/say that may have made you feel worried about making mistakes? (Avoidance motivation)
    a. Any specific examples?

33. During this stage, what kind of things did your parent/parents (significant others?) do/say to make you compare yourself against other players and focus on being better than others? (Performance focus)
    a. Any specific examples?

34. During this stage, what kind of things did your parent/parents (significant others?) do/say to make you focus on your own performance and not compare yourself to others? (Mastery focus)
    a. Any specific examples?

35. During this stage, what kind of things did your parent/parents (significant others?) do/say to make you continue to put in effort even when you felt tired or lacked motivation?
    a. Any specific examples?

Peer Influence:

36. How important do you feel other players were during this stage of your development?
    a. Why?
    b. Any examples?

37. During this stage, how would your other players try to motivate you in your sport? E.g., to try harder or learn new skills?

      c.   Any examples?

38. During this stage, what kind of things did other players do/say to make you want to try your hardest? (Approach motivation)
      d.   Any specific examples?

39. During this stage, what kind of things did other players do/say that may have made you feel worried about making mistakes? (Avoidance motivation)
      e.   Any specific examples?

40. During this stage, what kind of things did other players do/say to make you compare yourself against other players and focus on being better than others? (Performance focus)
      f.   Any specific examples?

41. During this stage, what kind of things did your other players do/say to make you focus on your own performance and not compare yourself to others? (Mastery focus)
      g.   Any specific examples?

42. During this stage, what kind of things did other players do/say to make you continue to put in effort even when you felt tired or lacked motivation?
      h.   Any specific examples?

Investment/Mastery Years

Coach Influence:

43. How important do you feel your coach was during this stage of your development?
      a.   Why? Any examples?

44. During this stage, how would your coach try to motivate you in your sport? E.g., to try harder or learn new skills?
      a.   Any examples?

45. During this stage, what kind of things did your coach do/say to make you want to try your hardest? (Approach motivation)
      a.   Any specific examples?

46. During this stage, what kind of things did your coach do/say that may have made you feel worried about making mistakes? (Avoidance motivation)
      a.   Any specific examples?

47. During this stage, what kind of things did your coach do/say to make you compare yourself against other players and focus on being better than others? (Performance focus)
      a.   Any specific examples?

48. During this stage, what kind of things did your coach do/say to make you focus on your own performance and not compare yourself to others? (Mastery focus)
      a.   Any specific examples?

49. During this stage, what kind of things did your coach do/say to make you continue to put in effort even when you felt tired or lacked motivation?
   a. Any specific examples?

Parent Influence:

50. How important do you feel your parent/parents (significant others?) were during this stage of your development?
   a. Why?
   b. Any examples?

51. During this stage, how would your parent/parents (significant others?) try to motivate you in your sport? E.g., to try harder or learn new skills?
   a. Any examples?

52. During this stage, what kind of things did your parent/parents (significant others?) do/say to make you want to try your hardest? (Approach motivation)
   a. Any specific examples?

53. During this stage, what kind of things did your parent/parents (significant others?) do/say that may have made you feel worried about making mistakes? (Avoidance motivation)
   a. Any specific examples?

54. During this stage, what kind of things did your parent/parents (significant others?) do/say to make you compare yourself against other players and focus on being better than others? (Performance focus)
   a. Any specific examples?

55. During this stage, what kind of things did your parent/parents (significant others?) do/say to make you focus on your own performance and not compare yourself to others? (Mastery focus)
   a. Any specific examples?

56. During this stage, what kind of things did your parent/parents (significant others?) do/say to make you continue to put in effort even when you felt tired or lacked motivation?
   a. Any specific examples?

Peer Influence:

57. How important do you feel other players were during this stage of your development?
   c. Why?
   d. Any examples?

58. During this stage, how would your other players try to motivate you in your sport? E.g., to try harder or learn new skills?
   e. Any examples?

59. During this stage, what kind of things did other players do/say to make you want to try your hardest? (Approach motivation)
    f. Any specific examples?

60. During this stage, what kind of things did other players do/say that may have made you feel worried about making mistakes? (Avoidance motivation)
    g. Any specific examples?

61. During this stage, what kind of things did other players do/say to make you compare yourself against other players and focus on being better than others? (Performance focus)
    h. Any specific examples?

62. During this stage, what kind of things did your other players do/say to make you focus on your own performance and not compare yourself to others? (Mastery focus)
    i. Any specific examples?

63. During this stage, what kind of things did other players do/say to make you continue to put in effort even when you felt tired or lacked motivation?
    j. Any specific examples?

General Questions

64. Do you feel that the role of your coach/parent/peers (ask all) has changed during your development as a player?
    a. If so, in which ways? Any examples?
    b. Why do you think these changes have occurred?
    c. How do you feel these changes have affected you as a player?

65. Apart from coaches, parents and peers, are there any other people or things that you feel influenced your development, and motivation, as a player?

66. Looking back over your development as a player, is there anything that you would want others to do differently?
    a. Any specific examples?

Appendix H: Study 1 Parent Interview Guide

Preface: Explain purpose of study and go through informed consent procedure. Explain confidentiality. As for permission for audio recording of interview, and inform that notes will be taken throughout.

Explain that questions will relate to their son's development and motivation within football. Explain the three stages of development and ask the parent to consider these and determine whether they can identify these stages for their son's development (put ages next to them):

- *Sampling years* – characterised by enjoyment, trying out different sports

- *Specialising years* – characterised by the athlete focussing on one or two sports. Focus changes from playing to more deliberate practice and learning of skills, tactics and rules.

- *Investment years* – commitment to only one sport. High frequency and high intensity training. High level of competition.

Introductory Questions
- How long has their son being playing football?
- Do they feel football is an important part of their son's life, and why?
- What current level would they identify their son as being in terms of playing football?
- Was/is their son involved in other sports during their development?
- How would they describe their son generally and within football?

Sampling Years

Parent:

67. How important do you feel you were during this stage of your son's development?
    a. Why? Any examples?

68. In relation to your son's motivation, can you tell me about your role during this stage of their development?
    b. Probe for content related to effort, persistence, approach motivation, avoidance motivation, etc.
    c. Seek examples to illustrate and clarify

Coach:

69. How important do you feel your son's coach was during this stage of their development?
    a. Why? Any examples?

70. In relation to your son's motivation, can you tell me about the role of their coach during this stage of their development?
    a. Probe for content related to effort, persistence, approach motivation, avoidance motivation, etc.

     b. Seek examples to illustrate and clarify

Peers:

71. How important do you feel your son's peers were during this stage of their development?
        d. Why? Any examples?

72. In relation to your son's motivation, can you tell me about the role of their peers during this stage of their development?
        e. Probe for content related to effort, persistence, approach motivation, avoidance motivation, etc
        f. Seek examples to illustrate and clarify

Specialising Years

Parent:

73. How important do you feel you were during this stage of your son's development?
        g. Why? Any examples?

74. In relation to your son's motivation, can you tell me about your role during this stage of their development?
        h. Probe for content related to effort, persistence, approach motivation, avoidance motivation, etc
        i. Seek examples to illustrate and clarify

Coach:

75. How important do you feel your son's coach was during this stage of their development?
        a. Why? Any examples?

76. In relation to your son's motivation, can you tell me about the role of their coach during this stage of their development?
        a. Probe for content related to effort, persistence, approach motivation, avoidance motivation, etc
        b. Seek examples to illustrate and clarify

Peers:

77. How important do you feel your son's peers were during this stage of their development?
        j. Why? Any examples?

78. In relation to your son's motivation, can you tell me about the role of their peers during this stage of their development?
        k. Probe for content related to effort, persistence, approach motivation, avoidance motivation, etc
        l. Seek examples to illustrate and clarify

Investment/Mastery Years

Parent:

79. How important do you feel you were during this stage of your son's development?
    m. Why? Any examples?

80. In relation to your son's motivation, can you tell me about your role during this stage of their development?
    n. Probe for content related to effort, persistence, approach motivation, avoidance motivation, etc
    o. Seek examples to illustrate and clarify

Coach:

81. How important do you feel your son's coach was during this stage of their development?
    a. Why? Any examples?

82. In relation to your son's motivation, can you tell me about the role of their coach during this stage of their development?
    a. Probe for content related to effort, persistence, approach motivation, avoidance motivation, etc
    b. Seek examples to illustrate and clarify

Peers:

83. How important do you feel your son's peers were during this stage of their development?
    p. Why? Any examples?

84. In relation to your son's motivation, can you tell me about the role of their peers during this stage of their development?
    q. Probe for content related to effort, persistence, approach motivation, avoidance motivation, etc
    r. Seek examples to illustrate and clarify

General Questions

85. Do you feel that the role of your son's coach/peers or your role changed during their development as a player?
    a. If so, in which ways? Any examples?
    b. At what point did these changes occur?
    c. Why do you think these changes have occurred?
    d. How do you feel these changes have affected your son as a player?

86. Apart from you, their coaches and their peers, are there any other people or things that you feel influenced your son's development, and motivation, as a player?
    a. Why do you think they were an important influence?

b. In what way did they influence your son's motivation?

87. Looking back over your son's development as a player, is there anything that you would want yourself or others to do differently?
     e. Why is this the case?
     f. Any specific examples?

Appendix I: Study 1 – Example Player Interview Transcript (Player 1)

INTERVIEWER: Have you got any questions about the study?

P1: Nah, no really…

INTERVIEWER: Your quite happy?

P1: Aye.

INTERVIEWER: Ok. Alright. So essentially the purpose of the study is for me to find out a little more about your development, specifically associated with your participation in the performance school. Emm…But also, looking around motivation as well and the role of your parents, your coach, and also other players, in this. Em…So, in terms of what we are doing in the study and talking about, I'm going to…everything we say will be kept confidential except what I just said there about the anonymity of any of your quotes. Em…and, I will be taking notes as we go along so I might follow up on a couple of things you say.

P1: No bother.

INTERVIEWER: Sorry…Ok, so basically what…the interview is going to be split down into four parts. The first part I am going to be looking at what is called the sampling years…em…and then I will be looking at the specialising years and the investment years. So I will explain what those are. The sampling years is basically when you were playing football and the main purpose of you playing was really just for fun and enjoyment, and you were maybe trying out lots of different sports as well. So it was probably when you were a bit younger and you were trying a lot of different sports. Can you… can you think back to a time when that was probably the case?

P1: Eh…kinda, but I've always kinda just played fitba, ae. There's no really been any other sport I really liked.

INTERVIEWER: OK, but when you started off playing football, would you say it was more for fun that anything else?

P1: Aye. Aye.

INTERVIEWER: Yeah, so it was probably quite a while ago but we will start looking…we will talk about some of those bits. Em…in your specialising years this is where you tend to focus on your sport a little bit more, and its… the focus changes from you just playing for fun to more deliberate practice and learning of skills, tactics and rules. So you might get more…playing more games, going to training where it was more to do with drills and things like that. Would you identify with that?

P1: Aye.

INTERVIEWER: Ok, and then I suppose the final stage is the investment years. That's where you are committed to that one sport and you've got a high frequency of training, and it is quite high intensity training, and you are also competing at a high level. Now I reckon when you were in the performance school you were at that particular stage.

P1: Aye, aye.

INTERVIEWER: Would you say so, yeah? Ok, so what we are going to do is just break each of those down and talk about the role of your parents, your coach and your peers at each of those stages, and then at the end there will just be a couple of sort of general questions as well. Ok?

P1: Yip.

INTERVIEWER: Alright, so, just to get us started of, what age are you Harley?

P1: Eh, I'm eighteen.

INTERVIEWER: Eighteen. And how long have you been playing football for?

P1: Eh…probably…I don't know…for about twelve years or something like that.

INTERVIEWER: So twelve years, ok, so you started when you are about in P1 or something, yeah?

P1: Aye, about then, yeah.

INTERVIEWER: Alright, and did you ever take part in any other sports, other than PE?

P1: Eh, nah, no really. Just fitba.

INTERVIEWER: Ok, so its always been football. Ok, so what are you currently doing? Have you got a job at the moment? Are you studying?

P1: Eh, I work in McDonalds the now. (laughs)

INTERVIEWER: Ok, and in terms of your football participation are you still playing, or…?

P1: Yeah, I just play with a boys club now.

INTERVIEWER: Ok. And, in terms of your time at the performance school, were you there for the whole four years of the programme?

P1: Yeah, I was, aye. I was oot injured, though, for about…about a year and wee bit I think. Or just under a year. I canne mind. (Laughs)

INTERVIEWER: Ok, that's fine. And how would you sort of…overall, how would you say your enjoyed or didn't enjoy the performance school?

P1: I loved it like. Like, it was easier getting up to go to school and that. It was just…it was amazing like.

INTERVIEWER: Ok, and do you think the performance school helped you in any way?

P1: Aye, eh…it total developed me, and the technical side and that.

INTERVIEWER: Ok, and any other…do you think it maybe helped you out with school as well?

P1: Em…aye, a wee bit. It kinda made a wee bit more sociable I would have said, like no as shy and that.

INTERVIEWER: Ok, great. Ok, so as I mentioned the interview is sort of split into different parts. So the first part is about the sampling years. This is when, I mentioned, you are playing more for enjoyment. So if you can think back to when that was the case, em…that you were more playing…for the purposes of enjoyment, not necessarily playing in too many matches or going to a lot of sessions where you were doing lots of training of drills and things like that. Emm…so, we will start off with your coach at that time, or you might have had different coaches at the time. How important do you feel that your coach was during that particular stage?

P1: Eh, I would probably say one of the most important, eh…kind of influences, cause like obviously they've got to teach you how to dae the coreect technique, like no hit it with the top of yer taes and that. Eh…its kind of always…ah dinnae ken. Aye, probably have got a big influence and stuff.

 INTERVIEWER: Ok. Any particular examples that you can remember of your coach being, you know, particularly important at that stage?

P1: Emm…well my dad was basically the coach, so. Eh…there always, just kinda…always tried to get me to do the right technique. Like, always tried to help me get the right running technique and all that stuff, if that makes any sense? If that's the question?

INTERVIEWER: Yeah, yeah.

P1: I don't know if I have answered it properly?

INTERVIEWER: No, that's fine, so…I should of said this before but there is no right or wrong answer in this. I am just interested in your view on things…

P1: Alright.

 INTERVIEWER: So don't stress too much about that, but if you are able to give me as much detail as you can then…then we will probably get through things pretty quickly, so. Em, ok, so in terms of your coach at that stage, do you think in terms of your motivation that they were…or, what was their role in terms of motivating you do you think?

P1: Em…well, I don't know. He was always like…if I asked him to take me to the park and that he would always be like 'aye'. Like, thingy, I get that is not really the same as like the coach. I don't know – he was always there to help and stuff. Like if I…if there was anything I was struggling on and that, like my weaker foot and stuff. Just always there to…not make me feel bad or that, if I couldn't dae it he would just keep encouraging me.

INTERVIEWER: Ok, so what kind of things did they say or do to try and keep encouraging you?

P1: Eh…I cannae really mind to be honest, but I can just mind him always, like, no putting you down and that. But, I cannae mind, sorry.

INTERVIEWER: No, no, it's fine. It was obviously quite a while ago, and that's fine. I would struggle to remember back to that age as well. Emm…ok, so…sorry I am just turning over some paper here…do you think at that stage your coach did anything to, to sort of…did they say or do anything to compare you against other players or were you quite focussed on yourself?

P1: Emm…I was just focussed on myself really. Eh, obviously like professionals and that I would focus on, but, don't know. Sorry…

INTERVIEWER: No, no, like I said it is absolutely fine. It's difficult to remember that back. Can you think of anything in terms of they might have done to try and help you put in effort and things like that… or, especially when you were feeling tired or lacking motivation, did your coach do anything to try and enthuse you?

P1: Emm…I can mind that he always did but I honestly couldnae mind how they done it.

INTERVIEWER: That's fine, ok.

P1: Sorry…

INTERVIEWER: No, you're fine. You said obviously that your coach was important at that time but your coach was also your father, is that right?

P1: Eh, aye, well…at one point when I started, like, kinda playing football, like, for a team it was more like that.

INTERVIEWER: Ok, so when you started playing for a team, then…did you say, sorry, that it wasn't your father coaching you at that time?

P1: Naw, it was him and ma…pal's dad tae.

INTERVIEWER: Ok, so the two of them were taking it. Ok. Alright, well we will move on a little bit to your parents more generally, or I suppose other social, sort of, em…like grandparents and things like that. How important do you think that those people are at that stage of your development?

P1: Eh, probably the maest important, because obviously you've no' got any, like, money to get you to the places you need to train or that. They've got to help, like, obviously, to, like, kinda get you there and stuff.

INTERVIEWER: So in terms of things that they might have done at that stage, other than obviously your dad doing a bit of your coaching, did any of your other…well, did your parents do anything else to sort of help you with your development?

P1: Eh, well, like ma da' would always like take me to the park and that and help me with ma weaker foot, and like, ma technique and stuff like that. Just, kinda like, going over the stuff we did in training kind of thing.

INTERVIEWER: So, in the role of being your parent they were also giving you some advice in terms of technique and things, is that right?

P1: Aye.

INTERVIEWER: Ok, so at that stage it was also…it was kind of two roles they were doing.

P1: Aye.

INTERVIEWER: Ok, em… do you think they had any other roles at that stage as well, apart from giving you a little bit of technique and trying to, you know, take you to training and things like that? Maybe to do with effort and things like that?

P1: Em…aye, well, I'd probably say, like…like if my da', say, couldn't make it and that well obviously felt like I had to impress him, if you ken what I mean?

INTERVIEWER: Ok, yeah. So why do you think you felt like you had to impress him?

P1: Dinnae ken. Like, even if I played bad he wouldn't go mental or that, but I just always wanted to impress him because he is always, like, put in the time and effort and that, and I didn't want to disappoint him if you ken what I mean?

INTERVIEWER: Yeah, so its kind of like you wanted to make sure that you…you rewarded almost that effort and things that he had put back?

P1: Aye. Aye.

INTERVIEWER: Ok. Alright, and I suppose then we will move on to other players at that stage. So, we've talked about coaches and things, and also your parents, but how important do you think that other players were during that stage of your development?

P1: Em…Aye, obviously they were quite important tae, 'cause if it wisnae for them I probably wouldn't have gotten as far as I was. Obviously, like, it's no just one player in a team, so like they've…obviously, like, aww kinda motivate yourselves and that tae, to kinda, do the best you could.

INTERVIEWER: Ok, so even at that young age you were…you were sort of motivating each other to do well?

P1: Aye.

INTERVIEWER: And what kind of ways…can you think back to what you might try and do to motivate each other?

P1: Eh, just like…I don't know, like…if we wernae daen that well, just like "C'mon, head up!" and that, just usual stuff kind of thing.

INTERVIEWER: Ok, and do you think you were…you know, you were maybe going to…or you were going to put in more effort maybe because you had other players around you?

P1: Aye.

INTERVIEWER: Ok, and do you think you were…would you say you were pushing each other to develop better, or do you think you were more focussed on your own performance?

P1: Emm…I don't know, probably say I was more focussed on my ain, ah?

 INTERVIEWER: Ok, yeah…

P1: But at the same time, also trying to kinda encourage other folk.

INTERVIEWER: Ok, so you were looking after yourself and trying to develop yourself, but you were also trying to help other people out?

P1: Aye.

INTERVIEWER: Ok, great. So in terms of that stage, you know that samp0ling stage where you are playing for fun more than anything else, what…if you were to put a rough age range on that, what would you say it was?

P1: Em…probably since P1 to probably about Primary 6.

INTERVIEWER: Ok, so P1 to P6. Alright, so then moving on to the next stage then, which is the specialising stage, which is where you start, you know, to focus a lot more, and you are not so much playing for fun but maybe trying to develop your skills, your tactics, the rules and things like that. So, its slightly more deliberate.

P1: Aye.

 INTERVIEWER: I imagine, that means, that you think would start from P7?

P1: Aye.

INTERVIEWER: Em…ok, and how long do you think that went on for, before you started going on to the point where you were almost, like, training like a professional?

P1: Emm…probably until about…like, first year kinda. Wisnae really long! (Laughs)

INTERVIEWER: So, basically, from P7…no, for the whole of P7 you started getting into it a bit more?

P1: Aye.

 INTERVIEWER: And then, that would lead into the performance school, wouldn't it, in terms of…right, you've decided in P7 that you want to focus and develop yourself, and then when you go into first year that's when you start the performance school and you really focus? Would that be right?

P1: Aye.

INTERVIEWER: Ok, well thinking about that, at P7 stage then, we will go through all those different social agents and see, you know, what the influence was at that point. So, at P7, you're at the specialising stage, you're starting to want to develop your skills, the rules, the tactics. You're not playing…you know, you probably still enjoy it but that's not the main reason you're playing anymore.

P1: Aye.

INTERVIEWER: We'll start of then, again, with your coach. So who was your coach at that time?

P1: Emm…I cannae…I couldn't tell you…

INTERVIEWER: Ok, but it wasn't your day anymore?

P1: I think he was still helping oot, but he couldn't make it a lot because he was obviously at work an' that.

INTERVIEWER: So you maybe had different coaches?

P1: Aye.

INTERVIEWER: Ok, so bearing in mind that stage, and the focus of that is to develop your skills and things, how important do you think your coach was at that stage in your development?

P1: Well, I would say, well I kinda got a trial wae Falkirk, and the coaches there said basically that I wasn't good enough and that, so like after that is when I started, kind of like 'oh well, if I want to, like, kind play professionally I need to kinda get better. So that's when I kinda just started…like any time I had spare time just went oot with the ba' and that and practiced my skills, and like all of my spare time, like watch videos and go on YouTube and stuff.

INTERVIEWER: Ok, so did you say you had a trial with Falkirk, and they told you that you weren't good enough?

P1: Aye.

INTERVIEWER: And it sounds like you are saying that motivated you, then, to you know then put in more effort, more training and more practice?

P1: Aye.

INTERVIEWER: Ok, so what was it about that knock-back from Falkirk that made you want to do that?

P1: Eh, I don't know. I was…back then I was quite confident. Well, a wee bit cocky I would have said, so, I kind of thought, well 'naebody can kind of tell me that'. So then I just kinda thought 'you'll just need to try harder then'.

INTERVIEWER: Ok. Did you agree with them at the time?

P1: Emm…partly. Like, I would have said that some of my skills could have been better and that, and techniques and shit like that, but, eh, obviously… I didn't think I was quick enough, I didn't think I was mentally ready either. Kind of like, 'cause they would be training a lot mare than the boys club, and the training's mare intense and that, so, a dinnae think I would have been ready for that.

INTERVIEWER: Ok, so I suppose you would have gone for a trial with them, and this is the feedback they gave you?

P1: Aye

INTERVIEWER: Ok, and you were looking to get on to their boys club programme or join their academy squad, is that right?

P1: Aye.

INTERVIEWER: Ok, alright so was it the coaches at Falkirk that gave you that feedback?

P1: Eh, no, it was just what I kind of felt personally. Their kind of feedback was just that I wisnae, wisnae ready yet.

INTERVIEWER: Ok, so you took…you took their feedback which was that you weren't quite ready yet, and you identified where you needed to develop?

P1: Aye

INTERVIEWER: Ok, alright. So, I suppose during that stage then, when you…when you had taken that feedback on from them and you were trying to develop, what do you think…or how important was your coach in helping you develop that at that point?

P1: Emm…I don't know, because I felt, like, the training that was, like, obviously it was good but it was kind of mainly a laugh and a joke at that time because it was still folk wanting to have fun still, but I kind wanted it a bit more serious, and kind of, progress more if you ken what I mean?

INTERVIEWER: Ok, so do you think that your coaches did or didn't help you in terms of you trying to achieve your goals at that stage?

P1: I think they still helped me, but I just wanted…I dinnae ken…a bit mare, if you ken what I mean?

INTERVIEWER: Uh-huh. So what squad were you playing with at that time? Was it still the boys club, or was it…

P1: It was the Falkirk community team.

INTERVIEWER: Right, ok. So…em, ok. So in terms of, then, at that stage how they helped you…well, I suppose in relation to your motivation, can you tell me about the role of your coaches during that stage? So obviously you were motivated to develop your skills and develop what you, you know…your playing, and that sort of stuff. Em…how did they help you in terms of your motivation for that?

P1: Em…I cannae really mind. Obviously they tried to motivate everybody but I think I was just…I was already motivated to try and, like, kinda be the best kind of thing.

INTERVIEWER: Ok, so you had that motivation anyway and didn't really necessarily…it wasn't your coaches that gave you that?

P1: Aye.

INTERVIEWER: Ok. Alright, so then I suppose we will move on to your parents at that stage then. So obviously you've gone to the point where you want to develop your skills quite a bit. How important were your parents at that stage of your development?

P1: Eh…probably say really important again. Obviously, when I've went up for the trial and that in Falkirk, like, they've, like, had to take me up to Stirling and that. And then, obviously, I was a wee bit upset and that when they said I wisnae good enough, and they had to keep me cheered up and stuff.

INTERVIEWER: Ok, so what sort of things did they do to cheer you up?

P1: Em…just said 'dinnae worry about it, its like…what's meant to be 's meant to be". I told my dad kinda like I needed tae…I kinda needed tae, like, kind progress mare as a fitba player. My da would take me up tae the park even mare and try and help me improve, eh…ma fitba side kind of thing.

INTERVIEWER: Ok, so your dad was still helping you with the sort of technical side of things?

P1: Aye

INTERVIEWER: To help you achieve your goals and things, yeah?

P1: And then, like obviously, with dinner and that they'd make it mare healthy and that, so I would, like, kinda get mare benefit and that when I'm playing, if that makes sense?

INTERVIEWER: Yeah, so they were trying to, you know, help you eat more healthily and things like that?

P1: Aye, aye.

INTERVIEWER: And did they also eat more healthily?

P1: Aye.

INTERVIEWER: Everyone was forced to eat nice meals.

P1: Aye, pretty much.

INTERVIEWER: Ok, in terms of, you know…did they say or do anything to make you want try your hardest for instance?

P1: No really. They have always said "go oot and enjoy yourself", eh.

INTERVIEWER: Ok, so its always been about you enjoying yourself, and they're going to support you to do that?

P1: Aye.

INTERVIEWER: Ok. Em…did you ever feel worried about making mistakes or anything, in terms of…from your parents' perspective?

P1: Em… no really. Like, I always think they would be disappointed and that, do personally I felt like disappointed in myself, no…kinda…I dinnae ken.

INTERVIEWER: Ok, so do you feel that you thought at that time that you might disappoint them? Is that what you are saying?

P1: Aye, but like they've never really, like, put that pressure on me if that makes sense.

INTERVIEWER: Yeah, so they've never given you that impression that they would be disappointed.

P1: Aye.

INTERVIEWER: But you have always felt like you would disappoint them?

P1: Aye, I've always felt like I would have, if that makes sense.

INTERVIEWER: Yeah, no that makes perfect sense. Alright then, I suppose we will move on to your peers at that stage, the other players at that stage. How important were they at that stage of development?

P1: Emm…no really. I dinnae think they were that important. Obviously they were still kinda playing for fun, but obviously they still had a wee bit of importance because they...(sniffs) sorry, I've got a wee bit of a cold the now.

INTERVIEWER: No, that's ok.

P1: Emm…what do you call it…They were still playing mare kind of for fun, and just kinda having a carry on at training, but obviously they still made it to training and that and so it still kinda improved me.

INTERVIEWER: Ok, so them just being there helped you out?

P1: Aye.

INTERVIEWER: Ok, but in terms of them still thinking or still wanting to play for fun, rather than be, maybe, as serious as you were, how do you think that affected you?

P1: Em…kinda frightened me a wee bit. 'Cause, like, there were a couple of ma pals who played in the team tae, and they wanted to obviously get better, so they moved to a different team and that, and they said that they liked it better, but I just stayed at the same team.

INTERVIEWER: Ok, and you think you made the right decision staying with the same team?

P1: Aye, because not long after I was picked up by Falkirk and signed for them.

INTERVIEWER: Ok, so…so Falkirk came back in for you after all this?

P1: Aye.

INTERVIEWER: Eh, ok. So how long was it between you having the trial for them and them picking you for their squad?

P1: I cannae mind if it was two year or a year, but it wisnae that long I dinnae think.

INTERVIEWER: Ok. So in terms of that stage, still sort of thinking about your peers, what kind of things did they say or do that make you focus on yourself and develop your own skills and things like that?

P1: Em…don't know. I have always been just kind of self-motivated, eh.

INTERVIEWER: Ok, and was there ever a sort of feeling that people were trying to get you to compare yourself against other people or was it just about yourself?

P1: Eh…I don't know. I dinnae ken really. They always used to, say, look at the professionals and say 'could you do that' and stuff like that. Just like normal chit chat kind of thing.

INTERVIEWER: Ok, so rather than comparing yourself against each other its more just about what you can do in comparison to professionals and things?

P1: Aye, pretty much.

INTERVIEWER: Ok. Alright, is there anything else you want to add about that particular stage in terms of what was a big, sort of, motivator for you during sort of P7 going into S1?

P1: Eh…nah, no really. Just kinda, probably say my mum and dad basically, they were the big motivators for me.

INTERVIEWER: And your experience with Falkirk probably motivated you, it sounds like?

P1: Aye.

INTERVIEWER: Ok. Alright then, this might be the sort of easiest period to, sort of, talk about, because it was when you were at the performance school. And you were there for four years, is that right?

P1: Aye.

INTERVIEWER: Em, so…em…that wasn't as long ago, so we are getting a bit more recent and hopefully you've got a bit more that you can think about in terms of that. So, during the performance school I think you had two coaches, is that right?

P1: Eh, I think so, aye.

INTERVIEWER: Ok, and so during the performance school – and bearing in mind that this stage, this is what is known as the investment or the mastery stage, where you're solely focussed on one sport, you are training a lot, you are competing a lot, and you are competing at a high level as well, which is what the performance school was all about – em…how important do you feel that your coach was during this stage?

P1: Eh…really important. Like, basically all the…the wee bits of your game, like you didn't even know or think about and all that, like they would start introducing that too you. Like just wee small things that could help you get, like, an extra yard on your opponent and stuff. Like, wee simple things but you had just never thought about it before, kind of thing.

INTERVIEWER: Ok. So any other examples of how important your coach was at that stage?

P1: Eh, probably also to motivate you. 'cause, like…obviously, like especially when you cannae…like, first thing in the morning and your quite tired and that still. Like, he'd be like "come one, let's get going' and that, like, just motivate you to just wake up and start playing. And after that you'd be fine and total buzzing.

INTERVIEWER: Ok, so…you've mentioned there that you would be 'totally buzzing'. What kinds of things would they maybe say or do to try and get you to maybe be that motivated?

P1: Just kinda like the usual thing a coach would say, like "Come on, like you're just mucking about here boys. Right, I expect a higher standard than that." And obviously you dinnae…you obviously want to do the best you can dae, so would you go "right, let's do this". And obviously everybody else would, like…you focus and that and you start moaning at each other when your not performing at a high standard, so…

INTERVIEWER: So, it sounds like your coach…he really set the standard for you?

P1: Aye.

INTERVIEWER: Ok, and what kind of…I mean, can you remember any sort of standards that they maybe set for you during the time there, that you would've been expected to achieve?

P1: Emm…sorry, I cannae mind.

INTERVIEWER: Ok, well I mean…well, I suppose was it standards for things like effort, or was it…

P1: oh right. Aye, effort – we were always made to try our hardest and that. Eh…just if, like, you didnae…like, obviously if you gave it your all and that he wouldnae really moan at you, but if you just gied like…fucking about and that then he would be getting annoyed

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at you and that, and just, like, say "that's it, just sit at the side for a bit" and let you start to calm down a bit and start focussing.

INTERVIEWER: Ok, so he'd want you to have 100% effort but then if you weren't putting it in, or you were mucking about, you would maybe…he'd maybe then sit you to one side and get you to try and focus on what you were doing?

P1: Aye.

INTERVIEWER: Ok, and in terms of, em…you know, things like maybe making mistakes and stuff like that, did your coach say or do anything to make you think about that or make you worried about making mistakes?

P1: Eh, nah, no really. He's always, kind of said "everybody makes mistakes" and if you watch a game, like, everybody will make a mistake and it's the way you respond to it…that makes you the player that you are and that, so…

INTERVIEWER: And what kind of thing…what kind of response was he looking for?

P1: Kinda like…say you were in the middle of the park and you lost the ball, instead of thinking "aww, come on" like total feeling sorry for yourself he'd want you to get up and sprint back and get the ball back. And stuff like that.

INTERVIEWER: Alright, em…you've mentioned already that you had quite a focus on yourself, and your own performance as you went along. Did that continue when you were in the performance school?

P1: Eh…I kind looked up to Sibbs when I was there.

INTERVIEWER: And who was that?

P1: [says name]

INTERVIEWER: Ok, so you were kind of comparing yourself against someone else, is that right?

P1: Aye.

INTERVIEWER: And what kind of…how did that motivate you do you think?

P1: Well, when I went to Falkirk like he was kind of the main guy there. So, obviously he was like the main guy there and then we went to the fitba academy he was the main guy there tae. So, I thought personally it was a good person to look up to 'cause he was the best everywhere I was so if I could even play a wee bit like him then maybe I would get mare kinda recognition and that, and game time and stuff.

INTERVIEWER: In terms of your coach trying to help you with that, did they encourage you to look up to this person as well?

P1: Eh…no really, I just kinda kept it to myself that I looked up to them.

INTERVIEWER: Ok, and what kind of things…was your coach encouraging you to compare yourself to each other.

P1: No, I don't think so. I think it was just something that I done. Because the first night I went to, like, Falkirk, and I was just running about and basically getting no touches of the ball and everybody was just passing it around me. And it went to him, he stopped the ball, sat doon on the ball as if like 'I've got the ball now, this is easy'. And then he got up and nutmegged me and I was like "I want to be like him!".

INTERVIEWER: Ok, alright. Ok, so in terms of…you've already mentioned that your coach had high standards of you in terms of putting in effort and things like that. Did they say anything or do anything to, you know, motivate you when you felt tired or lacked motivation in particular? If you were struggling, say?

P1: Aye, that was the kind of sport science side of it, eh, if we were struggling and that.

INTERVIEWER: So, can you maybe tell me a little more about that?

P1: Eh, like…I think it was…well, I think the first year or two it was only once a week, but eh...what do you call it…we would go down to the swimming pool and that on the Monday and like, do hydrotherapy, if that's what its called, and stuff like that. But we only did that in the first year, it was a wee bit disappointing though.

INTERVIEWER: Right. Ok, so was that to help you if you were feeling tired and stuff?

P1: Aye, it was to help…like, obviously we would have had a game at the weekend and that. Just to gradually get into it and kinda loosen off the muscles so they would be better for the morra. So you could train better then.

INTERVIEWER: Ok, so they gave you some, like, extra training and things to do to try and help that then?

P1: Aye, and they told us, like, all the stretches we should do after football, and that crap, so…

INTERVIEWER: Ok. Ok, well I mean I suppose over the course of the four years, then, do you think that the role of your coach changed in terms of how important they were for your development and your motivation?

P1: Em…a wee bit. Because, eh…what do you call it?...Like I got a spine infection, I think it was in the 3rd year kind of thing, and they were kinda motivating me tae, like, what do you call it…to come back and play fitba. And I was kinda mare like, wanting to focus on my fitness and my…building up my strength again. So, like, I kinda…it wasn't that I kinda, like, no enjoyed it as much I just kinda…I dinnae ken…I just kinda wanted to focus on other things.

INTERVIEWER: Ok, so how important was your coach at that point to help you focus back on the football?

P1: Eh, on the fitba side he was alright, but for like, my progress and that it wisnae really the best.

INTERVIEWER: Ok, and why wasn't it the best do you think?

P1: Eh, 'cause I think he was wanting me to obviously…like, when I came back I think it was only like a couple of months left, obviously there would be nae point in them focussing on my fitness 'cause, if I was oot for that long he's no really gonna affect, like, anything really. So I think he was just wanting me to come back and enjoy myself for what was left.

INTERVIEWER: Ok. So, when you came back from your injury his focus was more on you enjoying yourself because…?

P1: Aye, I think he tried to bring me back, kind of gradually if you know what I mean?

INTERVIEWER: Yeah, yeah…

P1: You know, enjoy it at the same time. But I was mare kinda wanting to kind of go all out. No hurt myself, but go all out on my fitness and try to get back to the same fitness as what I wis.

INTERVIEWER: Ok, alright. Ok, so then…is there anything else in terms of your coach that you'd want to add about…about your time at the performance school and how important they were?

P1: Eh…nah, no really.

INTERVIEWER: Do you think we have covered everything on the coach front?

P1: Aye, I would say we huv…aye.

INTERVIEWER: Ok, I suppose, then, looking at your parents in terms of their importance during your time at the performance school. How important do you think they were?

P1: Eh, again probably the most important. Obviously, eh, I was playing at Falkirk, so they'd have to take me up to Stirling Uni all the time, and when I got released from there I went to Stennie, and then…what do you call it…they would take me to Stennie and come back and that. And I if was playing up in Aberdeen they would take me all the way up to Aberdeen and stuff like that, so probably the most important folk again.

INTERVIEWER: Ok, so they were really important in terms of getting you from different places, and to training and things like that?

P1: Aye.

INTERVIEWER: Were they important in any other way?

P1: Eh…like my food and that, obviously. My diet.

INTERVIEWER: Ok, so they are still helping you with your diet and things?

P1: Aye. And, eh, if I was playing on that day, obviously because it was more serious and that, like, on the way hame they would tell me, like, what I could have done better and what I need to improve on, and that. So, kinda gein me constructive criticism and that.

INTERVIEWER: Ok, so they were giving you feedback, basically, on your performance?

P1: Aye.

INTERVIEWER: How…how did you use this feedback? Did you find it useful?

P1: Eh, aye. Aye, probably.

INTERVIEWER: And was this both giving you this feedback, or was it just your dad?

P1: Both of them.

INTERVIEWER: Both of them. So, what kind of…what kind of feedback were they giving you on your performance? Was it, you know, your technique, or attitude?

P1: Just kind of all round, eh, like just say i was like if I was on the ball and just being too greedy they would be ike 'you were too greedy'. But, eh, like say I wisnae tracking back fast enough they would be like 'you effort or your attitude wisnae good enough', and like stuff like that, eh.

INTERVIEWER: Ok, and how was that feedback different to say the feedback that your coach might have given you?

P1: Eh, the majority of the time it was exactly the same.

INTERVIEWER: Ok, so they were giving you pretty much the same feedback?

P1: Aye, pretty much.

INTERVIEWER: Ok. And then I suppose in terms of similar things to do with your coach, do you think your parents were important in terms of you putting in effort in things during your time at the performance school?

P1: Emm…aye. Especially like after my injury, like. I could have, well…personally I could have done more. I ken I could have. But like I say when I was out for a jog, like every, twice a week or something like that, they were the ones that kind of got me to go out when I am just sitting about feeling sorry for myself.

INTERVIEWER: Ok, so how did they manage to motivate you to go out?

P1: Eh, well my da would just keep saying to me 'you have to go out for a job if you want to get back to the standards that you were'. My maw would just dae what most women dae and just moan!

INTERVIEWER: She'd moan, did you say?

P1: Aye.

INTERVIEWER: Ok. To get off the couch and stop being a lazy bugger?

P1: Aye. Pretty much.

INTERVIEWER: Cool, ok. And I suppose as well, at this point were you…did they say or do anything to make you worried about making mistakes or anything like that?

P1: Nah, they were always 'just enjoy yourself'.

INTERVIEWER: Ok, so that was still the case at that stage, that they were looking for you to enjoy yourself?

P1: Aye.

INTERVIEWER: Ok. In terms of, you know, focussing on yourself or other people, did your parents give you any…was there any influence from them about, you know, focussing on your own performance or the performance of other people?

P1: Nah, they've always tried to get me just to focus on my ain performance and that.

INTERVIEWER: And that was the same during the performance school?

P1: Aye. Always kind of been like that.

INTERVIEWER: Ok. Alright, and during the performance school, was your goal to try and get a professional contract?

P1: Aye.

INTERVIEWER: And did you…how did you get on with that?

P1: No really well…

INTERVIEWER: Ok, was that to do with your injury?

P1: Well, I didnae like using it as an excuse, but aye I would probably say it was. But at the same time when I came back I could have done a lot more. But it was quite sare still even when it was better, so. Like, I still get bother with my back the day.

INTERVIEWER: Ok, so what…when during the four years at the school, when was it that you got injured again?

P1: I think it was third year, but I couldnae tell you. I cannae really mind, sorry.

INTERVIEWER: That's alright. So you were out for, you know, say it was third year and you were out for, I think you said the best part of a year?

P1: Aye.

INTERVIEWER: So, that's quite a big chunk. That's a quarter of the whole performance school. In terms of…you know, you didn't manage to get a professional contract. How important were your, em…were your parents at that point?

P1: Eh…they were…I don't know. Like, there was a lot of pain and that, because I had an infection in my spine. So, like, I couldnae even walk some days and obviously the last thing on my mind was kind of football. So, I don't know, its quite hard to judge.

INTERVIEWER: I suppose…well, I don't know…how did you feel when you didn't get your professional contract at the end of the performance school?

P1: Eh, disappointed.

INTERVIEWER: Yeah. And, how… obviously you told me that you are still playing football now. Em…you know, so how important were your parents in helping you, you know, deal with the fact that you didn't get that professional contract do you think?

P1: Em…aye, they were supportive. Just, like, there's nothing they could dae, but they just tried to support me. Just kind of said there were other things tae dae instead of fitba. Obviously if you still want to dae it you can stick in and dae the best that you can dae. But, I think they are just more happy that I can still play fitba even if it isnae the highest level, because obviously my back was that bad.

INTERVIEWER: It sounds like you have done well to even get back to playing football after such an injury.

P1: Aye.

INTERVIEWER: Ok, em…anything else you want to add about your parents at that stage?

P1: Nah, no really.

INTERVIEWER: Ok. We will move onto your peers. We are nearly at the end of the interview, so we've not got too much longer to go. So obviously during the performance school you were in the performance school with, what was it, 10 other players?

P1: Eh, I think so, aye.

INTERVIEWER: So, and you were with them for all four years of the programme, so you probably got to know them very well. How important were they at the performance school?

P1: They were important obviously. We all motivated each other and that, like, if a couple of people were like 'I cannae be bother the day' we were like 'come on, like, dinnae like, just go outside an muck about and that', like stuff like that. Dinnae ken how to explain it, we just obviously had to keep everyone motivated.

INTERVIEWER: Why was that important, that you kept everyone motivated?

P1: Eh, don't know. Just everybody…obviously everybody… obviously everybody wanted to do the best they could dae, and obviously it was gonna benefit us in the future. So, what was the point of mucking about when we could, like, gain something from it. A lot of folk thought like that.

INTERVIEWER: Ok, but, I mean, why did you think it was important to motivate each other rather than just worry about yourself?

P1: 'Cause, we obviously like we all cared for each other and had a little bit of a wee bond and that on the go. Cause we just respect each other. So we all kind of cared and wanted the best for each other.

INTERVIEWER: Yip.

P1: Eh, aye. That's about it. One second… (blows nose)

INTERVIEWER: Don't worry. I am glad we are talking over the phone and you are not going to give me that cold of yours. Ok, so going back to the other players then. Specifically around your own motivation, you've said that obviously you motivated each other to try and, you know, put in effort and try hard, and things like that. Emm…how important were the other players for your motivation? Was there anything that they said or did in particular to help you out?

P1: Emm…well, I'd probably say, like, especially, like, when I was injured and that. They were all, totally, like, I dinnae ken…just being supportive and that, and just making sure I was alright. They'd say, like, 'we cannae wait until you are back' and stuff like that. Just kinda normal stuff that folk would say to each other if you know what I mean, in situations like that.

INTERVIEWER: Ok. How do you think that helped you?

P1: It just kind of let me get back playing.

INTERVIEWER: Ok, you felt that they were wanting you to come back, and that was going to motivate to do it?

P1: Aye.

INTERVIEWER: Ok, and I suppose when you were, like, just throughout the performance school, did your fellow players do or say anything that might make you feel worried about mistakes? Did you play many matches as a team, or…

P1: Em…nah, no really. We all kinda just encouraged each other. We never really…there wisnae really, being negative with each other and that. If that's what the question was?

INTERVIEWER: Yeah, yeah. It was just about, you know, whether you were worried about mistakes, whether your team mates made you feel worried about your mistakes. But you said that there wasn't that much negativity, so…

P1: Nah. It was mare like, kinda, like…like obviously if you, like, were being 'ba greedy and that they would be like 'come on man, stop being greedy' and that. But, like, well personally I didn't take it as offence or worry about it as I just thought they were telling me what I needed to improve on. I have always looked at it that way, eh. But I think a lot of other folk might maybe think differently.

INTERVIEWER: Ok, so do you think there was an environment at the performance school that helped with that, so that you weren't taking things like that negatively – you were taking it positively and constructively?

P1: Eh, I don't know. I have never really been one that's kinda taken stuff, like, to heart that way. I don't know, I couldnae really tell you, sorry.

INTERVIEWER: No, that's ok. Do you think that is a personal thing or just the way the performance school was set up as well?

P1: Emm..maybe a bit of both. Like, I ken personally I have, but I know one person did… well, maybe he was little more sensitive than the rest of us.

INTERVIEWER: Ok. Alright, and what sort of things did…or did your fellow players do or say anything to make you compare yourself against other players and focus on being better than anyone else?

P1: I cannae think…Em…sometimes you would talk about who was the best and that, and then obviously you always wanted to be the best. So, if, eh…your name wasn't in the top three I was more determined to kind of do better and that.

INTERVIEWER: Uh-huh. Ok, so there was a bit of…maybe a bit of competition between you all to try and be in the top in terms of…top three in terms of skills and stuff, or…?

P1: Just the way we were, like…like the best player kind of thing.

INTERVIEWER: Ok, alright. Is that something you would talk about with the other players?

P1: Aye, just like a normal chit chat, like when we were waiting to, like…when we were all getting ready and that and we went out. Stuff like that

INTERVIEWER: Alright, ok.

P1: So, aye, just did it!

INTERVIEWER: Ok. Emm…so that's us finished about looking at all those sections. There's just a couple of, sort of, general questions just to finish off with.

P1: Nae bother.

INTERVIEWER: So, do you feel that the role of, em, say your coach has changed during your development as a player? So thinking back across all those stages, do you think the role of your coach has changed?

P1: Em…

INTERVIEWER: This is just coaches in general. Obviously you didn't have the same coach for the whole time. Generally the role of the coach: is it the same or different?

P1: Probably the same. You always look up to them and kinda try and get advice from them to try and how to improve your game. Always…don't know, just always looked up

to them. Like, obviously my dad's no, like, as qualified as the ones at the…what do you call it…like the SFA's ones, but he could always gie me, like, different advice on how I could improve my game. So, I've always looked at it that way, kind of thing.

INTERVIEWER: Ok, so they've always kind of been someone that you look up to and aspire to learn from, basically?

P1: Aye, aye.

INTERVIEWER: Ok, but in terms of how important they are…you know, so we talked about how important different people are at different stages. Do you think their importance has changed at all?

P1: Emm…probably, say…aye, sorry actually I never answer that question there. I would probably say that the higher you get up, like the older you get, sorry…the coach's importance gets greater.

INTERVIEWER: Why do you think that?

P1: Eh…cause obviously when you are wee and that its just for fun. So, like, they're all like…they dae obviously have tae teach you but they dinnae really need tae if you know what I mean, because your only there tae have a good time. But if you want to make it professional then your gonna have tae make sure your, like, ready for it and the best you can be. They're the ones going to get the best oot ye.

 INTERVIEWER: And I suppose the same question looking at your parents. Do you feel that the role of your parents has…has changed at all during your development as a player?

P1: Em…aye, I'd probably say that the higher up again the mare important they were. Eh, just the same again. Obviously, like, em just helping me out…like, mare by taking me tae places. Obviously, like you are no just playing in Falkirk, but Aberdeen, Inverness, stuff like that. So obviously they've go tae take out a lot of time out of their hands tae, like, help me improve.

INTERVIEWER: Ok, so…so they've done a lot of, em…they've committed a lot of time and driven you to a lot of places, and that's been quite consistent?

P1: Aye.

INTERVIEWER: Ok. And what about your other players. Has that changed at all over the course of your development, thinking back through all those stages and about how important they are for your development?

P1: Probably no really, until I got tae, kinda the later stage. 'cause I just thought of them as team mates, and never really looked up to them until I went to Falkirk. And then I would probably say I had a role model kind of thing then.

 INTERVIEWER: Ok, so they were previously just team mates and people you were playing alongside, but then actually as you get older your maybe start learning from them a bit more?

P1: Aye.

INTERVIEWER: Are there any examples that you can give me there of that sort of change?

P1: Em…no really, sorry.

INTERVIEWER: No, that's fine. Don't worry. Ok, em…apart from your coaches, parents and other players, are there any…is there anything else, or anyone else, that you think, em…towards your development or motivation as a player?

P1: Probably, like, my pals. Eh, they've always kinda, I don't know, like just 'cause we were younger and that they were kind of jealous and stuff, like they'd always kind of put you doon. They've always…always kind of wanted to make it and turn around and be like 'fuck you'.

INTERVIEWER: Ok, so you think they've been jealous, did you say?

P1: Well, I don't know, 'cause it never really started until I went to the football academy but I would probably say aye.

INTERVIEWER: And…and I think you said you wanted to, sort of, show them basically?

P1: Aye?

INTERVIEWER: You said 'F you'?

P1: Aye.

INTERVIEWER: Ok, so how do you think that motivated you?

P1: Eh, probably quite a lot. Probably say I was getting mare tired and that, when I was training myself, I was kind of like 'naw, if you want to make it this is the time you need to stick in'.

INTERVIEWER: Ok, and you think it was thinking about your friends that helped you do that?

P1: Aye.

INTERVIEWER: Ok. Was there any other way that they influenced your development, your friends?

P1: Eh, obviously there were times when they came out with me when I was like 'aww, I'm going to the park to kick the 'ba aboot'. They'd all come over and gie you a hand and that.

INTERVIEWER: OK.

P1: Like going in goals when I'm taking shots and stuff like that. Just, normal things.

INTERVIEWER: Right, so they kind of motivated you because they made fun of you a little bit or gave you a hard time, but at the same time they also would sometimes come and help you in terms of developing your skills and things?

P1: Aye.

INTERVIEWER: Ok. Alright, apart from, then, your friends is there anyone else, or was there anything else, that you think influenced your development?

P1: Nah, no really.

INTERVIEWER: Ok. And then, last question. Looking back over your development as a player, is there anything that you would want others – you know, your coaches, your parents, your peers – anything that you would want them to do differently?

P1: Emm…no really. I would probably say that they all gave me the best they could do.

INTERVIEWER: Ok. So you wouldn't want them to change the support or anything that they gave you?

P1: Nah.

INTERVIEWER: Ok. Alright. Is there anything you want to add at all? Anything that you thought I might ask but I haven't?

P1: Eh, I thought, maybe, you would have asked something like, eh…I don't know. I cannae mind what I was going to say there!

INTERVIEWER: Ok. So there was nothing else that you were expecting me to talk about?

P1: Nah, no really. Nah.

INTERVIEWER: Ok, well I suppose one question. I just saw a note that I gave myself earlier on. So you said that you were still playing with a boys…is it a boys club you are playing with just now?

P1: Eh, yes.

INTERVIEWER: And how important do you think any of these social agents are for you now. So your parents, your peers, your coaches? Is it different from when you were at the performance school or is it still the same?

P1: Aye a lot different, well its just mare a carry on. Folk are smoking and that after the game and stuff. Its just kinda back, like, doing it for fun.

INTERVIEWER: Ok, so would you say that you are currently playing for fun rather than for competition or anything like that?

P1: Eh…a wee bit. Like, there's obviously a wee bit of a competitive side still tae me, but, like, I still need tae dae mare tae get ma fitness up to even think about maybe getting back to playing competitively.

INTERVIEWER: Right. So it sounds like what you were saying there was that you;ve maybe…your playing a bit more for fun now, going back to that specialising stage where you are training and things but maybe not at that elite level, and maybe then because you are back at that stage the influence of different people are probably the same as they were at that previous stage as well?

P1: Aye.

INTERVIEWER: Alright. Ok, that's really interesting. Ok, thanks for that. Eh…for giving me the time there, I know it's taken up a fair chunk of your evening. Which of your parents is it I am speaking to on Wednesday?

P1: Its my dad I think.

INTERVIEWER: Its your dad. Ok.

Appendix J: Study 1 – Example Parent Transcript (Parent 1)

Interviewer: The first section is going to focus on what's called the sampling years, and this is where young people…em…are trying out lots of different sports, and the main reason they are trying them out is for fun and enjoyment. Em…is that…can you remember a time when that was the case for Harley?

Participant: Eh…nope, it was only football.

Interviewer: It was always football?

Participant: It was always football.

Interviewer: Was there a time when he was playing football that the focus, really, was just on playing for fun? He might have been playing competitive games, but like I say it was more just as a fun sort of thing for him?

Participant: What we just told him was just go out and enjoy himself, regardless of whether he was going for a trial, going for a big game or a final or anything. We just told him to 'go and enjoy yersel' – have fun'.

Interviewer: Alright, ok. So the following stage, then, is known as the specialising years. So this is where the athlete tends to focus on one or two sports, but obviously in Harley's case it was just football, em…and the focus changes more from…from just playing for fun to being more deliberate, and its about more deliberate learning of skills, tactics and rules. Is that…is there a shift…can you recognise a shift where it maybe went to that more focussed learning?

Participant: Yes.

Interviewer: Yeah, and when would that shift maybe have happened would you say?

Participant: After the first time that he went up to the… Falkirk Academy.

Interviewer: Ok.

Participant: Eh…he wasn't accepted the first time, and he was in awe at the… the skills that some of the players had up there, and…came home and started practicing what they were doing.

Interviewer: Ok, yip. That certainly reflects on what Harley said as well. He felt that that was the point where he then stopped playing for fun and started playing a bit more seriously and practicing a bit more seriously. Ok, and then the final, sort of…stage is known as the investment or mastery stage, and this is really where its…again you are really committed to one sport but there's really high frequency and high intensity training, and a high level of competition. And what I would think, maybe, is that the performance school was where Harley might have been at that stage?

Participant: Yeah that, or eh…when he was signed to the academy team.

Interviewer: And was that…when he was signed to the academy, was that roughly around the same time as?

Participant: It was all roughly the same time.

Interviewer: Ok, great. So that's the three time periods that we are going to sort of focus on. So prior to him…that time he was knocked back by the academy, em…and then the immediate aftermath of him being knocked back and then him joining the performance school and joining the academy, are the three times that we are going to sort of look at. So, em…in terms of the questions, they are quite open ended, and as much detail as you can give would be ideal, and would probably get us through things a little quicker as well.

Participant: Okeydoke.

Interviewer: Em…if at any point your not sure about any of the questions just let me know. I hope the phone line is ok and you can hear me throughout, but like I say just give me a shout if you can't. Emm…so just a few introductory questions to get us started off with. How long has Harley been playing football?

Participant: Eh…since about three or four.

Interviewer: Since the age of three or four. Ok, and how important do you feel football is a part of Harley's life?

Participant: Eh…he lived, breathed football. Live and breathed and sleeped football.

Interviewer: Is that still the case, or is that past tense?

Participant: Eh…its dwindling. Its dwindling.

Interviewer: Why do you think it was so important to him in the past?

Participant: I think he just enjoyed it.

Interviewer: Ok, and is there any particular reason that you think it might be dwindling a little bit?

Participant: Eh…he had the infection in his spine, and he stopped playing at the academy level, and, eh…even boys club level, if he is going out for even half an hour, forty minutes, when he comes back, gets off the bench or gets out the car he's virtually doubled over, until he can stretch his back off again.

Interviewer: So, his injury…well injury/infection in his spine has really caused him to lose that importance, maybe? Ok, and you'd said that he wasn't really involved in any other sport – its always football that he has done – apart from obviously PE and things like that?

Participant: Yeah.

Interviewer: Ok. Ok, so we will just get started, then, in terms of the different stages. So we are going to start off with the sampling years, and I know this might be a while to think back to. I know I would even struggle to think that long back, but if you can imagine Harley prior to that em…time that he got knocked back from Falkirk, and I am

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specifically going to start off by focussing on your role at that stage. I mean, how important do you feel that you were at that stage of Harley's development?

Participant: Eh…well, we never put any pressure on Harley at all for anything with his football. All we did was encourage him. 'Well, if they've told you your no good enough, then go and practice what you've to practice. If your needing a hand gie me a shout, I'll come down and practice wae yi'. Eh, he had a problem wie his running, they said he had a problem with his running technique, I got in touch with a sprint coach and got him down for a couple of sessions with him. They also worked with him on his fitness as well to get him up to peak fitness.

Interviewer: Ok, and would you say you, you played any specific roles during that stage?

Participant: Eh…I don't know. We were there for him all the time. If he needed runs…most nights he came out with us when we were out with the dog, or across the park, across the park with us for a couple of hours when we were kicking the ba' about, wie the dug chasing him and him taking the ba' aff the dug and the dug chasing him.

Interviewer: Ok, so you kind of…you had a kick around with him most nights and things like that?

Participant: Yeah.

Interviewer: And you had quite a supportive role, would that be right?

Participant: Yeah, aye you could say.

Interviewer: Ok, and is there anything…can you think of any examples where you…I think you mentioned that…you know, if he had been knocked back or anything like that, that you would try and encourage him. Was there anything in particular you would say to him to try and encourage him? To keep going, or to put in effort and things like that?

Participant: Eh…just to keep practicing. 'What was it that let you down? Did they tell what let you down? Right, that's what you need to focus on.' His left foot was very weak, we did one afternoon with him and at one point he was in tears. Eh…he wasn't allowed to use his right foot – he was only allowed to use his left foot.

Interviewer: I can imagine that being quite difficult, so. Ok, em…and how important do you think your role was at that stage? Say, in comparison to his coaches or other players?

Participant: Eh…I don't…I've no actually thought aboot it. Eh…we were just always there for him. If he needed anything or wanted anything, or advice or…

Interviewer: Do you feel…do you feel he benefited from having you there to support him?

Participant: Yes.

Interviewer: Ok, and any particular way that you can think back and think about a particular way that he might have benefitted from having that support?

Participant: Eh…he always got a fresh perspective on how he played, eh…he used to always come off the park and could have had an outstanding game, but I would always look at the negatives were that he done. 'Yeah, you had a fantastic game, you set up that and done the next thing, and your first touch was perfect, but eh…your work off the ball was very poor. You could have tracked back more, you could have done this.' Things like that. I always looked for stuff he could work on, instead of just 'oh yeah, you are a star player – you're this, that and the next thing.' Instead, always trying to keep him grounded, to show him that although he was good he could always be better.

Interviewer: Ok. Ok, so it was almost kind of a motivating role?

Participant: Yeah.

Interviewer: Ok, great. Well I suppose almost in the same year, at the same sort of stage of his development, how important do you think the coach…his coach was? Or he might have had multiple coaches at that stage?

Participant: Eh, aye I would say his coaches had a big impact, especially at Falkirk. One of them liked him, one of them didn't.

Interviewer: Ok, and how did that then influence his development would you say?

Participant: Eh…he was happy as long as the other coach wasn't taking the training sessions. One of the…the head coach that they had, he got on really well with him, and he really liked him. The assistant, I don't know what it was, it was just a clash of personalities or…other coaches see things in different people. And, eh…he seemed to get picked on more at training, or I thought anyway.

Interviewer: And how did that affect Harley?

Participant: His head used to go down at times.

Interviewer: Ok.

Participant: Eh, there was one occasion…they went down to Newcastle, played Newcastle on the Sunday afternoon, went doon on the Saturday. We travelled down on the Saturday morning with another couple of parents to watch them. And, eh…he didn't start - he came on five or ten minutes into the second half. They were getting beat 7-0 – totally changed the game, and set up a beautiful goal. When he came back up the road off the team bus, we were standing waiting for them, and the eh…we seen the head coach going up to him and speaking to him, and you could see his wee face lighting up, a big smile on his face. He came across and I said 'what's he said?'. He said 'oh, he said I played absolutely fantastic. The Newcastle coaches were even talking about me, and I'll make the starting line up for Celtic next week'.

Interviewer: Ok.

Participant: The following Sunday, the game started, he's on the side lines, and he got five minutes at the end of the game.

Interviewer: And how did that affect him do you think?

Participant: It totally devastated him. He was absolutely gutted that day.

Interviewer: And did they give him any explanation as to why he had gone from getting such high praise to then being left on the bench again?

Participant: They forgot about him.

Interviewer: They forgot? Ok.

Participant: Which is kinda poor.

Interviewer: Yeah. And how…I mean, specifically that bit of information, how do you think he handled that?

Participant: He didnae accept it, he thought it was just…a joke.

Interviewer: Do you think it affected his motivation or anything?

Participant: No, it actually made him more determined.

Interviewer: Ok, and how did that then…how did he then behave? Did that make him train harder, or…

Participant: Em…he was rather erratic on the park for that five minutes, and at training he was pushing himself more.

Interviewer: Ok. Ok, great. Would you say there was anything else in terms of the role of the coach at that particular stage that you would like to add, or…

Participant: No.

Interviewer: Ok, that's fine. Em…and then, I suppose, still sticking with that early stage of his development, how important do you think his peers or other players were during that stage?

Participant: Very important. All his friends had…well no, not all his friends…there are two or three of his friends that he's kept since he played in a community team when he was five year old, and they have all progressed through different teams, and some of them to academy level and some of them to boys clubs. But they have all kept in touch, and met up now and again for five-a-sides, and things like that. And then there were his other pals that he was at school wie…they've reached the stage that they were starting to drink, smoke, so on the odd occasion that he did go out to a party or out at some event or wie his pals, they were all 'come one, have a drink, have a fag, it'll nae hurt you' and all this, and he always declined. Until recently [laughs].

Interviewer: Ok, so in terms of that influence then, so he had that group of friends that he had stayed in touch with since playing with the community team…how do you think that influenced him, or having that group of friends influenced him, in terms of his development over a number of years?

Participant: I think it was quite good for him, because they were quite competitive. If one of them was, like having been signed to an academy team, his friend was trying to get

into an academy team and going through different trials, his father would phone me for advice, and then they would meet up and Harley would go through his training sessions and extra bits and pieces wie him, to try and get his friend up to the same sort of standard.

Interviewer: So they sort of motivated each other and pushed each other on, would you say?

Participant: Yes.

Interviewer: And then I suppose, looking at the other group of friends and their influence, how do you think the group of friends that you were saying were smoking and things like that, how do you think they influenced him?

Participant: Em…they didn't have any influence on him at all. He just thought it was a time and space at times with them.

Interviewer: Ok. Do you think he then…made that conscious decision, and put his efforts into his training and things?

Participant: Yes.

Interviewer: Because perhaps he saw what the other option was, the other opportunities, and thought 'actually, its about football'?

Participant: He had a…I think he had a goal that he wanted to go professional, that that was a career. And he knew that if he started drinking and started smoking that, eh…his chances would be greatly reduced.

Interviewer: OK. Ok, great. I suppose then, moving on to sort of the next stage, some of what we just talked about there might crossover into this stage and we might have talked about it already, but moving on to the stage from when he was initially rejected by Falkirk. And you mentioned that he then was really determined and put in a lot more effort and things like that, and was really focussed. If you were to think about that stage in particular, how would…you know, what would you say your role was at that stage?

Participant: Eh…taxi driver, dietician, eh…water boy! Things like that. And, eh…just keeping his confidence up and keeping him going.

Interviewer: Ok, so quite a lot of roles there. You mentioned keeping his confidence up and keeping him going – what kind of things would you do to try and help him achieve that?

Participant: Eh…going back to what I said before. If he had a good game, complimenting him on, on his ball control or complementing him on something else, but giving him a wee reality check. 'Well, you done really well here, there, and here, but your game did lack there, there and there.' So, just to try and keep things kind of balanced. But as well, reward him for when he did do good.

Interviewer: Ok, yip, so quite a variety of different things there. Em…how important do you think that those roles were for him at that stage of his development?

Participant: Eh…well, he seemed to listen to me. [Laughs]. A lot of his friends, and speaking to other parents and that, they would be coming along, dropping their kid off at training, and just disappear. And then come back. And on a Sunday they wouldn't watch them playing on a Sunday either, so I think we were there - we were supporting him. If we were there watching his training, if he was making an arse of himself at training, he would get it in the car going home. If he done well at training he would get praised for it. Eh…that's about it I think.

Interviewer: Ok, so you've mentioned quite a few things there. How do you think that, then…that level of support again that you had for him, how do you think he benefited from that?

Participant: Well, he didnae have to…have to worry about anything. Eh…a lot of them had issues getting backward and forward from training, going to the games, he never had to worry about that. He was always…he came in…it was like military precision! He came in from school, his dinner would be lying on the table the minute he walked in the door. He got all that done, did his homework – we gave him a hand with his homework if needed. Then bundled into the car, up to Stirling Uni for 7 o'clock, and then for the first couple of weeks he'd actually… he was that knackered he would fall asleep on the way hame.

Interviewer: Ok, great. Ok, and I suppose then, at that stage of his development how important do you rate his coaches for his development and motivation, and things?

Participant: They definitely brought him…made him a lot sharper…eh…with his skills. I was coaching him at boys club level, with the community team, and I was ready to sit my level four before he got signed to the academy. But with him at academy level I couldnae afford to go and start doing academy football as well as I would miss…I felt I was missing out on him at the weekend and also logistically if he was playing up in Aberdeen there was no way he was getting to Aberdeen without me driving him.

Interviewer: Ok, I suppose then going back to his coaches, you mentioned that they made him a lot sharper in terms of his technique and things. Is there anything in terms of his motivation or his confidence, or anything, that you think they had a role in at that stage?

Participant: I…I think they would have. Eh…just going by the comments he would make at times, 'ah so and so, such a coach said this', 'I have to try this', 'he doesn't think that's right', 'I got a bollocking tonight', 'what for?', 'ah, it was my fault, it was on Sunday and instead of coming out earlier on and challenging I stood back and the guy got in a better position, and if I had chucked in earlier they wouldnae have got the goal'. And he seemed to listen to what they were saying and take it on board. It wasn't as if he was saying 'ah he is just getting on at me, just getting on at me', it was constructive criticism rather than negative, so I would say that they had a major input.

Interviewer: Ok, and are you able to identify any particular reason why he took their comments as constructive criticism rather than, you know, thinking he was getting…getting hounded or getting, given, told off all the time?

Participant: The…the coaches, eh…he looked at the coaches as kind of mentors, that they knew what they were talking about and for him to proceed on he was better to listen to them as they knew what they were talking about.

Interviewer: Ok, so he respected them then?

Participant: Yes.

Interviewer: Ok, and then at that same stage then, in terms of the other players and peers, and potentially some of the same sort of peers you already mentioned…at that stage how important were his fellow players and peers?

Participant: Eh…as I say he eats sleeps…ate, slept and breathed football all the time, and he was solely focussed on what he wanted, which was to make a career of it. So I think he actually…he actually started dropping, or not so much dropping…he wasn't keeping in touch as much with the other friends who were smoking and drinking, and were more, like…they were going out to a party on a Friday night and he would be playing five-a-sides, and would come back in and have an early night.

Interviewer: Ok, so would you…it sounds like he was then making a conscious decision to, em…which friends he would socialise with?

Participant: Yes.

Interviewer: And they were the ones that would help him achieve his goal?

Participant: Yes, definitely.

Interviewer: Ok, and in terms of obviously when he moved up to the academy level he would maybe have a different level of players around him. Would that have had an influence on him do you think?

Participant: Definitely. Eh…the first night that he went to the training at the academy, coming back down in the car all he kept going on about…they were doing a game of possession in the warm up, and you have probably heard of him – Craig Sibbald? – the ball got crossed to Sibs, he sat on the ball, when Harley…by the time Harley got to him he was back up and passed the ball across, and Harley thought that…ken, someone who could take control of the ball, get down and back up, and then play the ball before he could get to him, he was amazed at that. And other techniques and other skills, eh…all the other boys was watching him, and he actually approached him when he was shielding the ball, and he gave him – Harley – some pointers, and Harley picked what the boy had said to him and changed it slightly, but it did improve his holding of the ball as well.

Interviewer: Ok, so his peers and the other players and things were giving him…

Participant: Valuable advice.

Interviewer: …advice, yeah?

Participant: Yeah.

Interviewer: Ok, great. Ok, just moving on to the final section. Sorry, I know I am taking up some of your time in the evening. Em…looking at the stage where it's known as the investment or mastery stage, which is where, you know, there is a really high level of intensity of training, high level of competition, and I think we had spoken about the fact

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that that was probably at the point when he joined the academy and the performance school…

Participant: Yip.

Interviewer: Em…considering your own role again at that stage, do you…how would you sort of categorise or illustrate your own role at that stage?

Participant: It's never really changed. All the time from when he was playing community level up to academy level, our attitudes always been 'it's fun, go oot and enjoy yourself'. When he went for the trials for the SFA at Graeme High, him and one of his friends…they were playing together since they were five years old in the community team. And, eh…I was going to say his name, but I mind it is getting recorded so I cannae…

Interviewer: That's fine. I mean, I certainly wouldn't…don't worry too much about that, I wouldn't publish his name or anything. Right, on you go.

Participant: Both of them were standing together and talking. We were standing together with his father, and eh, the names got shouted out for the first drill they were going into. And, eh, Harley walked past and I went "away you go son, away and enjoy yourself." And, eh, the other parent leaned across and spoke and the other boy went away off and his…his face was all…you could see he was worried. And when he came back out the first thing he done was just burst into tears. His father had put that much pressure on him that it was just relief when he came of the park, and he just burst into tears. And ran away.

Interviewer: Ok. And how would you say that Harley reacted to your advice at that point? So, you'd given him advice to enjoy himself and do well, in comparison to the other parent who had maybe given some more pressure…

Participant: Harley appreciated the fact that everything was…we didn't put any pressure on him succeed. If he wanted to succeed it was his decision, it was up to him. If he wanted to be better on his left foot he had to practice on his left foot. Eh, and…we weren't making the decisions for him, it was up to him. If he wanted it he had to work for it, he had to realise he had to do it. But we would encourage him, give him pointers in the right direction. If he takes them , fine. If he doesn't, fine as well.

Interviewer: Ok, and I suppose during his time at the performance school, you know…its quite an intense programme, and especially when he would have been at the academy at the same time. Was there any…have you got any examples of times when you had to, you know, maybe help him persist or put in more motivation, or anything like that?

Participant: Naw…naw, he always has been…managed to focus himself, and wanted tae…he wanted to…that was his dream, he wanted to be a professional football player. And, the way everything was going everything was falling in place for him. He was in this SFA programme which was unique, eh, at the time. He was signed to the class at the time when he was in one of the best academies in Britain for his age group, that Falkirk football club thought was the crop of the crop of the academy, the best team that they ever had, was that year. And, we thought, and I guess Harley must have thought as well, that that was him on track.

Interviewer: And so I suppose from what Harley said, that was the point that he had his injury? Or his infection in his spine?

Participant: Yeah.

Interviewer: How did that affect him at that stage?

Participant: Em…well, the physio at Falkirk said it was muscle or ligament damage in his lower back. And then it was his hamstrings – they said 'he's got inflamed hamstrings'. So, he'd come home from training and we would get him lying on the thingmy, we would get out the cream and rub it on, cold comp, ice packs and everything on, heat packs on. The night before he went down to Newcastle with Falkirk I spent the whole evening, from about 4 or 5 o'clock at night, spoke to the physio and they sold us this gel stuff, and we sat and rubbed it in every 20 minutes / half and hour, and then put ice on it, heat it all back up, put the cream back in. So that his hamstrings were going to be fit for him and no flare up when he was away. When…when he was released we went to Stenhousemuir. The first night at training at Stenhousemuir he trained for about 10 minutes, and pulled up with his hamstring again, and the coach came across and I thought 'well, that's it, he's going tae get telt to come back when he is fit.' But he said 'I really liked what I seen, but I want the physio to have a look at him first.' So the physio had a…had him back on the Wednesday night and the physio checked him over and said he had anti…anti-lever pelvis. It was basically because he was growing so fast that his thigh bones were shooting up was tilting his pelvis forward and putting a strain on his hamstrings. They manipulated his pelvis and there was this awful crunching sound, and, eh, he wasn't allowed to train that night. Back in to see the physio the following day and, em…he was fit to play and train again. But then it was getting more regular, it was coming out and then the back pains and other pains were getting stronger and more serious. Eh…again, the physio said it was ligament damage, muscle…he was to keep working on it. It was his pelvis as well, one thing led to another thing. And eventually it got to the stage where every waking moment of the day he was just walking about in total agony.

Interviewer: Right.

Participant: And then, we came back and took him to the doctors. The doctors gave him valium and said it was muscle damage all across the lower back, eh…so he was getting pumped full of valium and other nice tablets. He was walking around like a space cadet most of the time.

Interviewer: Yeah, I can imagine.

Participant: Eh…we got the all clear. Well, we kinda…we spoke to a sports therapist, got a second opinion off of him, and then took him to another physio and he gave us the same. We took him to casualty and they told us the same. So we automatically assume that if all these medical professionals and other professionals, physios etc. would all know what they are talking about. Eh, we went across to Canada to see my wife's uncle, and we were sitting down at one of the lakes one day, and he'd taken his top off to go into the pull and they noticed that his spine had curved at the top. So, the minute we came back, straight to the doctor and we got a referral quick, seen a specialist, and he referred him to Stirling. They started out tests and they thought there was an infection. They said they couldn't find any infection, and, eh, it was possibly cancer and they were going to get him transferred to Yorkhill and get him operated on the following week. The following week came and went and we never heard anything. So on the Thursday morning I got a hold of

the consultants name and I phoned his secretary every half hour, and I got 'aww, he's doing his wards'. 'Get him to phone me back please.' Half an hour later call again – 'Ah, he's in surgery'. 'I asked you to ask him to phone'. Eventually at 2 o'clock – I just pulled into the drive of the house, and the wife was cleaning the wheely bin, and em I got this phone call. So I answered the phone, and it comes through the car thing. I shouted the wife across so she could hear. 'This is doctor so and so from yorkhill hospital. I would like to know why you have been pestering and thingmying my secretary all day.' I said 'well do you want to tell me why my son's no been in and been operated on? I was told by the doctor in Stirling that you'd have him in on Wednesday and operated by Thursday, and you'd get to know what the cause of this was and whether it was cancer or not.' 'Pardon?'. So I went through it all again. 'Who told you your son had cancer?'. I went 'the consultant at Striling'. 'He had no right to tell you that, he had no right to tell you my care plan. I am 99% sure that your son has an infection in his spine, and he has got an appointment for next Tuesday to see me.' So I went through and apologised – 'Look, I'm really sorry' – and he said 'no, its ok, you should never have been told that'. Within a couple of hours of being in Yorkhill they diagnosed him with an infection, he wasn't going to have to go in for an operation as they could treat it with tablets over 3-6 months, and eh…that was him on his way back. But unfortunately due to the length of time it took them to diagnose it the…several disks at the bottom of his back had started dissolving and had started to fuse together.

Interviewer: Right.

Participant: And we were told by the consultant there at Yorkhill that its very rare for somebody at his age to pick up that. Its an unknown entity to them. As for his football, go out and try and see what he can do. But there was nae guarantee, nae promises, just do what you can do.

Interviewer: Ok, so how do you think it affected his football then?

Participant: Eh…he's never got back to the same level as, or the same skill level, as he was before. His compet…he's lost all his competitiveness.

Interviewer: Do you think that the lack of…or not getting back to the skill level, do you think that is because of the time that he missed, or do you think that is because the nature of the injury he has got with his spine?

Participant: The actual capability of what he can do. He hass limited movement, around about his lower back and waist.

Interviewer: And how has that affected him? How has he reacted to that?

Participant: He's come off…off after a game, and eh…you can see he's upset. 'What's wrong with you?'. 'Oh, I tried tae dae that'. 'Aye, you looked like a donkey!' 'Halfway around, my back – I could feel my back going and everything'. Or he'd go tae jump up to the ball to head it and he would…his back would go…two seconds…He'd be half way up in jumping for a ball and be grimacing a bit. Or he would spin and end up pulling up. 'What happened there then?' 'Oh, my back, my back.' And I say, nine times out of ten when he does come off he is stooping over slightly. By the time he comes out of the car and he is actually doubled over sometimes. And straight in and into a hot bath, and eh…try and get him freed up again.

Interviewer: Ok, so I mean I suppose during that difficult period, then, how important do you think his coaches were in helping him with getting him through these sort of difficulties he was having?

Participant: Eh…they didn't help at all. The head coach at Stenhousmuir was very good, and they brought two new coaches in – I think it was when he was at the under 15s and under 17s. He went back half way through the 15s, and, eh, it was two new coaches that he had. During that time he never missed…I think he missed one game, even though he was still thingmy they still insisted to him, and the head coach had always said to him he wanted him to still feel part of the team, and to come along to training if he wanted. Come along to the training, and he was more than welcome to come for the home games or away games, travel with the squad, so he's kept involved and disnae get left oot. But when he did go back, the other coaches…they didnae even bother asking why he hadnie been there, why he hadnie playing. It was just assumed that he was being lazy, 'your just back and you're no trying'. And, eh, eventually one of them was quite shocked when I went over and spoke to him. And, eh, I said 'Harley isnae like…it's no Harley being lazy. He has been out for nearly a year and a half, two years now. He's had an infection in his spine, I said. He went from a solid eleven, twelve stone of muscle down to five and a half, six stone.' 'Oh, we didnae know that, we didnae know that.' So they didnae even…they came out and just assumed. And instead of building him up by playing him maybe five, ten minutes before a game and then the following week, if he is coping alright with that, building him up to twenty, and get him back in, they just kept it to five minutes at the end of each game, five minutes to the end of each game. So, he was going out training three times a week. He was going travelling up to Aberdeen. Just to get five minutes at the end of a game. And he got told, 'sorry, we will get you on longer next time, and…or we will start you next weekend and you play the first half and see, because the tempo is a little different'. And none of it ever materialised, and they just stick him on at the last five minutes and he will be happy with that. And he kept repeatedly going to see them, to see his coach, and he kept getting the same thing. 'Aye, its alright, its in hand, we are going to get this sorted'. And then one of the games, the coach didnae turn up – I think he was away doing his level 4 or something, and the head coach, the head of youth development for the whole team, put Harley on for the whole game, and he played absolutely as well as he could. I wouldn't say outstanding, but for not seeing him play for three years it was great to see some of his old tricks and turns and flicks, and it was all coming back to him. And then the following week he got five minutes again.

Interviewer: Ok, and how do you think that affected him and his motivation?

Participant: It totally killed him. It got to the stage where he was like 'what's the point of going to training, what's the point of doing this? What's the point of going on Sunday if I am only going to get 5 minutes in the game?' When we actually approached the club and asked for his, eh…his papers back, they said 'we are going to loan him out to a…'. Because, of the…there is seven teams, and possibly, well, its was more of the right team and you were going into the reserves. They wanted to keep the squad solid for the second half of the season, and they were going to loan him out to another junior team or another club. And, I went and asked them about another one and they could take him but he cannot play as is signed to Stenhousmuir and if they get caught they get fined by the SFA. So I went back to the club and said 'So you aren't going to…are you going to get him a club so he can play?'. 'Yeah, we are working on it'. 'Well I have been round club x, x and x, and they say they will take him and let him play, but its going to be submitted to the SFA.' And, eh…'sorry, sorry, we will get it sorted'. And it got to the stage where we

were like 'give us his papers back, he wants to go and play football and no sit on the bench and maybe play five minutes if he is lucky'.

Interviewer: Ok, and how about his performance school coach? How was he during this period?

Participant: During the…well, that was…it was…he was going…instead of going when he had the infection, instead of going and actually sitting when they were doing anything he was put into the library or to sit in the corner and read. So they kept him involved as much as they could, but eh…that sort of encouragement, I don't think they just kinda 'son, just dinnae turn up, it will be alright', or, 'are you sure you cannae dae this, aye its no as bad as you are actually making out'. But the school actually refused to take him back at one point. They found out what kind of medication he was on and what type of medication he was on, and he was assessed and made sure he was capable of walking up and down the stairs. We had to take him down to the school and walk around the full school with him, the head mistress and this other teacher, just to make sure that because he was missing so much…well it was fourth year and actually he was due to sit exams and was missing out on that as well.

Interviewer: Uh-huh. Ok. And then, sorry, just finally on that stage. We have mentioned his peers – his friends and fellow players and things. How important were they at this stage would you say?

Participant: Eh…some of his teammates were very supportive for him. Eh…the first night, eh, at training they all made a big fuss of him and were all round about him, and the first time that, eh, he came back on and actually played for Stenhousemuir a lot of his teammates applauded him as he came on, which we thought was really nice of them.

Interviewer: How did he react to that?

Participant: He was embarrassed.

Interviewer: Ok. Ok, I suppose that is us finished the main part of it. Just a couple more questions to finish off if that is ok with you. We have discussed your role, the coaches role and the role of his friends, players, peers and stuff. Looking at your role over the entirety of his development, do you think your role has changed at all?

Participant: Hmm…well, I am still coaching him. Well, I still coach him from the sidelines, shouting abuse at him. No, eh…I would still say that it is still the same. Eh…still don't put any pressure on him. If he wants…we are at the stage now where if he wants to go to training then I will take him to training, if he doesn't want to go he disnae go. Its up to him and that's always been the way it has been. He had a decision at one point to go to a boys club, eh…he signed with Falkirk and Girbuck was wanting him, and another couple of teams were wanting him as well. And we put all that on the table for him – 'that's your options, what do you want to dae? Well, I am no deciding because then you could turn around in years to come and say 'nuh'. The decision has got to be yours – we will help you and bounce ideas off you, and we give you feedback, but at the end of the day its your decision.' And we just let him…no put any pressure on him at all, let him do his own kind of thing.

Interviewer: Ok, and what about his coaches, do you think that has changed over the course of his development, the coaches role?

Participant: Eh, he has no got as much time, or thingmy, for coaches anymore.

Interviewer: Ok, and is that in reaction to the way, or, the way things happened…

Participant: I think its due to being harmed. And the first coach when he came out of the academy and went to the boys club, the coach used to come to him and ask him for tactics, and use to run ideas past him and ask him for ideas for training. He kinda felt then that he was missing out as he was there to gain more experience, get match fit, get game fit, and hopefully get back into academy level, and this wisnae gonna happen if the coach was coming to him and asking him what he should be doing.

Interviewer: Ok, and in terms of his peers and other players, do you think their role has changed over the course of his development?

Participant: No, the ones that are still keen and dedicated – Sibbs and other yins – he still keeps in touch with them, and…so I would still say…the ones he has started socialising with – the drinkers and the smokers, tae he's no playing at the same level, no playing like he used to. I think he has resigned himself that the best he is going to get it maybe Sunday, or maybe an amateur.

Interviewer: Ok, apart from yourself, and coaches, and his peers, do you think there is any other people or anything that has played a role in motivating Harley as a footballer?

Participant: Watching professionals playing. He used to be fascinated with Ronaldo's feet! And, eh, flicks and tricks that Messi would do, and others…other big players. And he would sit and watch it over and over and over again and then go out and practice. And practice and practice so he could actually do it.

Interviewer: Ok, and then I suppose final question. Looking back over Harley's development can you think of anything that you would want yourself or anyone to do anything differently?

Participant: Yip, if the doctors had only picked it up that he had an infection when it first happened, he would have went from maybe having two years of totally agony and outcome. It might no have changed anything and he might be at the same level as he is right now, but it might have changed and he might have got what he wanted, which was to be a professional footballer.

Interviewer: Ok, great. Well that's all the questions. Is there anything that you would like to add, that you were expecting to be asked or anything?

Participant: No, no.

Appendix K: Study 2a and 2b Measures

The following questions are about different social influences on your motivation and performance as an athlete. In particular the questions will ask you about your coach, your parents and your peers, and the questionnaires will be put into a section for each of them.

- When answering questions relating to your coach, please answer in relation to the coach you consider as the coach you work with most regularly

- When answering questions relating to your parents, please answer in relation to the parent you feel is most involved in your sport

- When answering questions relating to your peers, please answer in relation to your team and club mates in general, rather than an individual peer/friend

Please try and answer the questions as best and honestly as you can. Please try to answer all questions.

First Name	
Surname	
Date of Birth	
Gender (tick one)	• Female • Male
Email Address	
Number of Years Playing Sport	
Name of Sport Team/Club	
Level of Participation (tick one)	• Recreational (i.e., playing for fun) • Local league • Regional league • National league • International (i.e., playing for national squad) • Professional

Coach Questions

The following questions relate to your coach. Please answer all questions and be as honest as you can be.

For each question below, please select how often your coach did these things.
In the last week, how often did your coach…

1. …give you advice about performing in a competitive situation?				
Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

2. …give you tactical advice?				
Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

3. …offer you ideas and suggest actions?				
Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

4. …help you put things in perspective?				
Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

5. …help you decide what to do?				
Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

6. …give you advice about what to do?				
Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

7. …help plan your training?				
Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

8. …help with transport to training and competition/matches?				
Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

9. …do things for you at training and competition/matches?				
Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

10. …help set sessions in training?				
Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

11. …help you with tasks?				
Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

12. …help manage your training sessions?				
Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

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Circle the answer below each statement that best indicates how you feel.				
13. My coach and I can talk about anything				
Not at all true	A little true	Somewhat true	Pretty true	Really true
14. My coach and I stick up for each other in sports				
Not at all true	A little true	Somewhat true	Pretty true	Really true
15. My coach looks out for me				
Not at all true	A little true	Somewhat true	Pretty true	Really true
16. My coach and I tell each other secrets				
Not at all true	A little true	Somewhat true	Pretty true	Really true
17. My coach and I have similar interests				
Not at all true	A little true	Somewhat true	Pretty true	Really true
18. My coach and I do similar things				
Not at all true	A little true	Somewhat true	Pretty true	Really true
19. My coach and I have similar values				
Not at all true	A little true	Somewhat true	Pretty true	Really true
20. My coach and I think the same way				
Not at all true	A little true	Somewhat true	Pretty true	Really true
21. My coach and I make up easily when we have a fight				
Not at all true	A little true	Somewhat true	Pretty true	Really true
22. My coach and I try to work things out when we disagree				
Not at all true	A little true	Somewhat true	Pretty true	Really true
23. When we have an argument, my coach and I talk about how to reach a solution				
Not at all true	A little true	Somewhat true	Pretty true	Really true
24. My coach and I get mad at each other				
Not at all true	A little true	Somewhat true	Pretty true	Really true
25. My coach and I fight				
Not at all true	A little true	Somewhat true	Pretty true	Really true
26. My coach and I have arguments				
Not at all true	A little true	Somewhat true	Pretty true	Really true

Please select the most accurate answer.

27. My coach provides me with advice while I'm performing a skill

1 Never	2	3	4 Fairly Often	5	6	7 - Always

28. My coach gives me specific feedback for correcting technical skills

1 Never	2	3	4 Fairly Often	5	6	7 - Always

29. My coach gives me reinforcement about correct technique

1 Never	2	3	4 Fairly Often	5	6	7 - Always

30. My coach provides me with feedback that helps me improve my technique

1 Never	2	3	4 Fairly Often	5	6	7 - Always

31. My coach provides visual examples that describe how a skills should be done

1 Never	2	3	4 Fairly Often	5	6	7 - Always

32. My coach uses verbal examples that describe how a skill should be done

1 Never	2	3	4 Fairly Often	5	6	7 - Always

33. My coach makes sure that I understand the techniques and strategies I'm being taught

1 Never	2	3	4 Fairly Often	5	6	7 - Always

34. My coach provides me with immediate feedback

1 Never	2	3	4 Fairly Often	5	6	7 - Always

Parent/Guardian Questions

The following questions relate to your parents or guardians. Please answer all questions and be as honest as you can be.

For each question below, please select how often your parent/guardian did these things.
In the last week, how often did your parent/guardian…

35. …give you advice about performing in a competitive situation?				
Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

36. …give you tactical advice?				
Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

37. …offer you ideas and suggest actions?				
Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

38. …help you put things in perspective?				
Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

39. …help you decide what to do?				
Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

40. …give you advice about what to do?				
Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

41. …help plan your training?				
Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

42. …help with transport to training and competition/matches?				
Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

43. …do things for you at training and competition/matches?				
Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

44. …help set sessions in training?				
Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

45. …help you with tasks?				
Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

46. …help manage your training sessions?				
Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

Circle the answer below each statement that best indicates how you feel in relation to your parent/guardian.				
47. My parent/guardian and I can talk about anything				
Not at all true	A little true	Somewhat true	Pretty true	Really true
48. My parent/guardian and I stick up for each other in sports				
Not at all true	A little true	Somewhat true	Pretty true	Really true
49. My parent/guardian looks out for me				
Not at all true	A little true	Somewhat true	Pretty true	Really true
50. My parent/guardian and I tell each other secrets				
Not at all true	A little true	Somewhat true	Pretty true	Really true
51. My parent/guardian and I have similar interests				
Not at all true	A little true	Somewhat true	Pretty true	Really true
52. My parent/guardian and I do similar things				
Not at all true	A little true	Somewhat true	Pretty true	Really true
53. My parent/guardian and I have similar values				
Not at all true	A little true	Somewhat true	Pretty true	Really true
54. My parent/guardian and I think the same way				
Not at all true	A little true	Somewhat true	Pretty true	Really true
55. My parent/guardian and I make up easily when we have a fight				
Not at all true	A little true	Somewhat true	Pretty true	Really true
56. My parent/guardian and I try to work things out when we disagree				
Not at all true	A little true	Somewhat true	Pretty true	Really true
57. When we have an argument, my parent/guardian and I talk about how to reach a solution				
Not at all true	A little true	Somewhat true	Pretty true	Really true
58. My parent/guardian and I get mad at each other				
Not at all true	A little true	Somewhat true	Pretty true	Really true
59. My parent/guardian and I fight				
Not at all true	A little true	Somewhat true	Pretty true	Really true
60. My parent/guardian and I have arguments				
Not at all true	A little true	Somewhat true	Pretty true	Really true

Please select the most accurate answer.

61. My parent/guardian provides me with advice while I'm performing a skill

1 Never	2	3	4 Fairly Often	5	6	7 - Always

62. My parent/guardian gives me specific feedback for correcting technical skills

1 Never	2	3	4 Fairly Often	5	6	7 - Always

63. My parent/guardian gives me reinforcement about correct technique

1 Never	2	3	4 Fairly Often	5	6	7 - Always

64. My parent/guardian provides me with feedback that helps me improve my technique

1 Never	2	3	4 Fairly Often	5	6	7 - Always

65. My parent/guardian provides visual examples that describe how a skills should be done

1 Never	2	3	4 Fairly Often	5	6	7 - Always

66. My parent/guardian uses verbal examples that describe how a skill should be done

1 Never	2	3	4 Fairly Often	5	6	7 - Always

67. My parent/guardian makes sure that I understand the techniques and strategies I'm being taught

1 Never	2	3	4 Fairly Often	5	6	7 - Always

68. My parent/guardian provides me with immediate feedback

1 Never	2	3	4 Fairly Often	5	6	7 - Always

Peer Questions

The following questions relate to your peer. Please answer all questions and be as honest as you can be.

For each question below, please select how often your peer did these things.
In the last week, how often did your peers…

69. …give you advice about performing in a competitive situation?

Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

70. …give you tactical advice?

Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

71. …offer you ideas and suggest actions?

Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

72. …help you put things in perspective?

Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

73. …help you decide what to do?

Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

74. …give you advice about what to do?

Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

75. …help plan your training?

Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

76. …help with transport to training and competition/matches?

Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

77. …do things for you at training and competition/matches?

Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

78. …help set sessions in training?

Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

79. …help you with tasks?

Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

80. …help manage your training sessions?

Not at all	Once or Twice	Three or Four Times	Five of Six Times	Seven or More Times

Circle the answer below each statement that best indicates how you feel in relation to your peers.				
81. My peers and I can talk about anything				
Not at all true	A little true	Somewhat true	Pretty true	Really true
82. My peers and I stick up for each other in sports				
Not at all true	A little true	Somewhat true	Pretty true	Really true
83. My peers look out for me				
Not at all true	A little true	Somewhat true	Pretty true	Really true
84. My peers and I tell each other secrets				
Not at all true	A little true	Somewhat true	Pretty true	Really true
85. My peers and I have similar interests				
Not at all true	A little true	Somewhat true	Pretty true	Really true
86. My peers and I do similar things				
Not at all true	A little true	Somewhat true	Pretty true	Really true
87. My peers and I have similar values				
Not at all true	A little true	Somewhat true	Pretty true	Really true
88. My peers and I think the same way				
Not at all true	A little true	Somewhat true	Pretty true	Really true
89. My peers and I make up easily when we have a fight				
Not at all true	A little true	Somewhat true	Pretty true	Really true
90. My peers and I try to work things out when we disagree				
Not at all true	A little true	Somewhat true	Pretty true	Really true
91. When we have an argument, my peers and I talk about how to reach a solution				
Not at all true	A little true	Somewhat true	Pretty true	Really true
92. My peers and I get mad at each other				
Not at all true	A little true	Somewhat true	Pretty true	Really true
93. My peers and I fight				
Not at all true	A little true	Somewhat true	Pretty true	Really true
94. My peers and I have arguments				
Not at all true	A little true	Somewhat true	Pretty true	Really true

Please select the most accurate answer.

95. My peers provide me with advice while I'm performing a skill

1 Never	2	3	4 Fairly Often	5	6	7 - Always

96. My peers give me specific feedback for correcting technical skills

1 Never	2	3	4 Fairly Often	5	6	7 - Always

97. My peers give me reinforcement about correct technique

1 Never	2	3	4 Fairly Often	5	6	7 - Always

98. My peers provide me with feedback that helps me improve my technique

1 Never	2	3	4 Fairly Often	5	6	7 - Always

99. My peers provide visual examples that describe how a skills should be done

1 Never	2	3	4 Fairly Often	5	6	7 - Always

100. My peers use verbal examples that describe how a skill should be done

1 Never	2	3	4 Fairly Often	5	6	7 - Always

101. My peers make sure that I understand the techniques and strategies I'm being taught

1 Never	2	3	4 Fairly Often	5	6	7 - Always

102. My peers provide me with immediate feedback

1 Never	2	3	4 Fairly Often	5	6	7 - Always

Motivation Questionnaire

Below are some of the reasons why people participate in sport. Using the scale provided, please indicate how true each of the following statements are for you. When deciding if this is one of the reasons why you participate, please think about the reasons why you participate.

There are no right or wrong answers, so do no spend too much time on any one question and please answer all as honestly as you can. Some items may appear similar but please respond to all the statements by circling the appropriate answer.

I participate in my sport…						
103. …because I enjoy it						
1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true
104. …because of the pleasure I experience when I feel completely absorbed by in my sport						
1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true
105. …because it's a part of who I am						
1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true
106. ...because it's an opportunity to just be who I am						
1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true
107. …because I would feel ashamed if I quit						
1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true
108. …but the reasons why are not clear to me anymore						
1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true
109. …because I would feel like a failure if I quit						
1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true
110. …but I wonder what's the point						
1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true
111. …because what I do in the sport is an expression of who I am						
1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true
112. …because the benefits of sport are important to me						
1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true
113. …because I enjoy the feeling of achievement when trying to reach long-term goals						
1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true
114. …because I enjoy the feeling of success when I am working towards achieving something important						
1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true
115. …because if I don't other people will not be please with me						
1	2	3	4	5	6	7

Not at all true			Somewhat true			Very true

116. …because I like it

1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true

117. …because I enjoy learning something new about my sport

1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true

118. …because I feel obligated to continue

1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true

119. …but I question why I continue

1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true

120. …because I feel pressure from other people to play

1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true

121. …because of the excitement I feel when I am really involved in the activity

1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true

122. …because people push me to play

1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true

123. …because it's fun

1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true

124. …because it teaches me self-discipline

1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true

125. …because I enjoy doing something to the best of my ability

1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true

126. …because I would feel guilty if I quit

1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true

127. …because I find it pleasurable

1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true

128. …because I like learning how to apply new techniques

1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true

129. …because I value the benefits of my sport

1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true

130. …because I enjoy learning new techniques

1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true

131. …because I love the extreme highs I feel during sport

1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true

132. …but I question why I am putting myself through this

1	2	3	4	5	6	7

Not at all true			Somewhat true			Very true

133. …because it is a good way to learn things which could be useful to me in my life

1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true

134. …because of the positive feelings that I experience while playing sport

1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true

135. …in order to satisfy people who want me to play

1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true

136. …because I get a sense of accomplishment when I strive to achieve my goals

1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true

137. …because it allows me to live in a way that is true to my values

1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true

138. …for the pleasure it gives me to know more about my sport

1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true

Appendix L: Study 2a and 2b Participant Emails

Dear …,

My name is Bryan McCann, and I am a Lecturer in Sport and Exercise Science at Robert Gordon University in Aberdeen. I am undertaking a research project investigating the development of motivation amongst athletes. I am emailing you because you currently playing for a local, regional or national basketball team and have been identified as a possible participant by Basketball Scotland.

This project has been approved by Basketball Scotland, and you will be receiving this email from your coach or a Basketball Scotland official. I have attached a detailed information sheet for you to consider which outlines the project. In summary, however, participation in the study would involve you completing a series of questionnaires relating to the role of social agents (i.e., parents, peers, coaches) on the development of your motivation in sport. Questionnaires will be completed online using the link below, and you will be asked to complete these four times between August 2016 and June 2017.

Once you have considered the attached information sheet, and should you be willing to take part in this study, you can click on the web link below. This will take you to the online questionnaire, where you will be asked to provide consent and complete the questionnaire. You will then be sent emails in the future requesting you complete the questionnaires again at certain times of the season.

Should you have any questions about this study please feel free to contact me.

Kind regards,

Bryan McCann
Lecturer in Sport and Exercise Science

School of Health Sciences
Robert Gordon University
Garthdee Road
Aberdeen
AB10 7QG

Email: b.mccann@rgu.ac.uk
Phone: 01224 262978

Appendix M: Study 2a and 2b Participant Information Sheet (Under 16 and Over 16)

Participant Information Sheet (under 16)

Study Title: Modelling Social Agent Influence on Athlete Motivation

SRRG reference number: SHS 1606

Introduction.

My name is Bryan McCann and I am a Lecturer in Sport and Exercise Science at Robert Gordon University. I am undertaking a research project called 'Modelling Social Agent Influence on Athlete Motivation'.

The aim of the study is to better understand the role of your friends and teammates (peers), parents and coaches on your motivation over a period of time. This information may allow researchers and coaches to identify the best types of support parents, peers and coaches can provide for motivation, and the best times to provide it.

Your participation in this research project is completely voluntary, and should you choose to participate you are free to withdraw at any time and with no need to provide an explanation. This research project has been reviewed and approved by the Robert Gordon University School of Health Sciences Research Review Group reference number SHS 1606.

Taking part in the study

If you agree to take part in this study you will be asked to complete a questionnaire online just once. The questionnaire includes questions which ask about the influence of your parents, peers and coaches on your motivation, as well as some personal information such as your age, number of years playing sport, and current club.

Completing the questionnaire should take around 30 minutes.

All of the information you provide during the research project will be kept confidential. Your name will not be used in any report or publication related to the research. You may withdraw from the study at any time without needing to provide a reason.

Your parents are also being provided an information sheet. If they are willing for you to participate in this study they will be asked to provide consent by completing a consent form. You will then be asked to provide consent in the same way, before you then complete the questionnaire.

Advantages to participating

There are no direct advantages to your child for participating in this research. The information we gather from the study will help us understand the development of motivation within sport, and will provide information about the ways in which important others influence this motivation. This may provide useful information for the sport organisations, ideally allowing clubs to provide the best possible developmental environment for players.

Disadvantages to participating

There are no anticipated disadvantages to you participating in this study.

Confidentiality and anonymity

All of the information provided during your participation in this study, including your name and any other details personal to you, will not be shared with anyone. Any information that may identify you will not be included in any publication of the results of the study.

Any questions?

If you have any questions about this research please contact the researcher, Bryan McCann, using the contact information below.

What happens if there is a problem?

Please discuss any problems with us. Our contact details are given at the bottom of this letter. If you have a complaint please send details of this to Dr Kay Cooper, Convenor Research Review Group, School of Health Sciences, Robert Gordon University, Garthdee Road, Aberdeen AB10 7QG k.cooper@rgu.ac.uk, or Mrs Elizabeth Hancock, Head of School of Health Sciences, Robert Gordon University, Garthdee Road, Aberdeen AB10 7QG l.hancock@rgu.ac.uk

What will happen to my research data?

All questionnaire information will be stored on a password-protected computer. Once the data has been analysed for the study the information that can identify you (e.g., your name) will be deleted. The remaining data will not be deleted. A research report and article will be written using the information gathered during the study, and may be more widely disseminated in reports, academic and professional journals and conferences.

What happens now?

Please feel free to discuss this letter with your family and friends. Thank you for taking the time to read this letter.

Researcher:	Study Coordinator/Supervisor:
Bryan McCann Lecturer in Sport and Exercise Science School of Health Sciences Robert Gordon University Garthdee Road, Aberdeen, AB10 7QG Email: b.mccann@rgu.ac.uk Tel: 01224 262978	**Dr Kay Cooper** Senior Lecturer School of Health Sciences Robert Gordon University Garthdee Road, Aberdeen, AB10 7QG Email: k.cooper@rgu.ac.uk Tel: 01224 262677

Participant Information Sheet (over 16)

Study Title: Modelling Social Agent Influence on Athlete Motivation

SRRG reference number: SHS 1606

Introduction.

My name is Bryan McCann and I am a Lecturer in Sport and Exercise Science at Robert Gordon University. I am inviting you to participate in a research project called 'Modelling Social Agent Influence on Athlete Motivation'.

The aim of the study is to better understand the role of your peers, parents and coaches on your motivation over a period of time. This information may allow researchers and coaches to identify the best types of support parents, peers and coaches can provide for motivation, and the best times to provide it.

Your participation in this research project is completely voluntary, and should you choose to participate you are free to withdraw at any time and with no need to provide an explanation. This research project has been reviewed and approved by the Robert Gordon University School of Health Sciences Research Review Group reference number SHS 1606.

Taking part in the study

If you agree to take part in this study you will be asked to complete a questionnaire online just once. The questionnaire includes questions which ask about the influence of your parents, peers and coaches on your motivation, as well as some personal information such as your age, number of years playing sport, and current club.

Completing the questionnaires should take around 30 minutes.

All of the information you provide during the research project will be kept confidential. Your name will not be used in any report or publication related to the research. You may withdraw from the study at any time without needing to provide a reason.

Advantages to participating

There are no direct advantages to your child for participating in this research. The information we gather from the study will help us understand the development of motivation within sport, and will provide information about the ways in which important others influence this motivation. This may provide useful information for the sport organisations, ideally allowing clubs to provide the best possible developmental environment for players.

Disadvantages to participating

There are no anticipated disadvantages to you participating in this study.

Confidentiality and anonymity

All of the information provided during your participation in this study, including your name and any other details personal to you, will not be shared with anyone. Any information that may identify you will not be included in any publication of the results of the study.

If you have any questions about this research please contact the researcher, Bryan McCann, using the contact information below.

What happens if there is a problem?

Please discuss any problems with us. Our contact details are given at the bottom of this letter. If you have a complaint please send details of this to Dr Kay Cooper, Convenor Research Review Group, School of Health Sciences, Robert Gordon University, Garthdee Road, Aberdeen AB10 7QG k.cooper@rgu.ac.uk, or Mrs Elizabeth Hancock, Head of School of Health Sciences, Robert Gordon University, Garthdee Road, Aberdeen AB10 7QG l.hancock@rgu.ac.uk
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What will happen to my research data?

All questionnaire information will be stored on a password-protected computer. Once the data has been analysed for the study the information that can identify you (e.g., your name) will be deleted. The remaining data will not be deleted. A research report and article will be written using the information gathered during the study, and may be more widely disseminated in reports, academic and professional journals and conferences.

What happens now?

Please feel free to discuss this letter with your family and friends. Thank you for taking the time to read this letter.

Researcher:	Study Coordinator/Supervisor:
Bryan McCann Lecturer in Sport and Exercise Science School of Health Sciences Robert Gordon University Garthdee Road, Aberdeen, AB10 7QG Email: b.mccann@rgu.ac.uk Tel: 01224 262978	**Dr Kay Cooper** Senior Lecturer School of Health Sciences Robert Gordon University Garthdee Road, Aberdeen, AB10 7QG Email: k.cooper@rgu.ac.uk Tel: 01224 262677

Appendix N: Study 2a and 2b Parent Information Sheet

Parent Information Sheet

Study Title: Modelling Social Agent Influence on Athlete Motivation

SRRG reference number: SHS 1606

Introduction.

My name is Bryan McCann and I am a Lecturer in Sport and Exercise Science at Robert Gordon University. I am inviting your child to participate in a research project called 'Modelling Social Agent Influence on Athlete Motivation'.

The aim of the study is to better understand the role of peers, parents and coaches on athlete motivation over a period of time. This information may allow researchers and coaches to identify the optimal types of social agent support and the key times to provide it during athlete development.

Your child's participation in this research project is completely voluntary, and should they choose to participate they are free to withdraw at any time and with no need to provide an explanation. This research project has been reviewed and approved by the Robert Gordon University School of Health Sciences Research Review Group reference number SHS 1606.

Taking part in the study

If your child and yourself agree for them to take part in this study your child will be asked to complete a questionnaire just once. The questionnaire includes questions which ask participants about the influence of their parents, peers and coaches on their motivation, as well as some personal information such as their age, number of years playing sport, and current club.

Completing the questionnaire should take around 30 minutes.

All of the information your child provides during the research project will be kept confidential. Their name will not be used in any report or publication related to the research. They may withdraw from the study at any time without needing to provide a reason.

If you are willing for your child to take part in this study you will be asked to provide informed consent. After this, your child will have the opportunity to provide their informed consent in the same way before they then complete the questionnaire.

Advantages to participating

There are no direct advantages to your child for participating in this research. The information we gather from the study will help us understand the development of motivation within sport, and will provide information about the ways in which important others influence this motivation. This may provide useful information for the sport

organisations, ideally allowing clubs to provide the best possible developmental environment for players.

Disadvantages to participating

There are no anticipated disadvantages to your child participating in this study.

Confidentiality and anonymity

All of the information provided during your child's participation in this study, including their name and any other details personal to them, will not be shared with anyone. Any information that may identify your child will not be included in any publication of the results of the study.

Any questions?

If you have any questions about this research please contact the researcher, Bryan McCann, using the contact information below.

What happens if there is a problem?

Please discuss any problems with us. Our contact details are given at the bottom of this letter. If you have a complaint please send details of this to the Dr Kay Cooper, Convenor Research Review Group, School of Health Sciences, Robert Gordon University, Garthdee Road, Aberdeen AB10 7QG k.cooper@rgu.ac.uk, or Mrs Elizabeth Hancock, Head of School of Health Sciences, Robert Gordon University, Garthdee Road, Aberdeen AB10 7QG l.hancock@rgu.ac.uk

What will happen to my research data?

All questionnaire information will be stored on a password-protected computer. Once the data has been analysed for the study the identifiable information (e.g., name) will be deleted, though remaining data will be retained. A research report and article will be written using information gathered during the study, and may be more widely disseminated in reports, academic and professional journals and conferences.

What happens now?

Please feel free to discuss this letter with your family and friends. Thank you for taking the time to read this information.

Researcher:	Study Coordinator/Supervisor:
Bryan McCann Lecturer in Sport and Exercise Science School of Health Sciences Robert Gordon University Garthdee Road, Aberdeen, AB10 7QG Email: b.mccann@rgu.ac.uk Tel: 01224 262978	**Dr Kay Cooper** Senior Lecturer School of Health Sciences Robert Gordon University Garthdee Road, Aberdeen, AB10 7QG Email: k.cooper@rgu.ac.uk Tel: 01224 262677

ROBERT GORDON
UNIVERSITY ABERDEEN   **PARTICIPANT CONSENT FORM**

Study reference: SHS 1606
Title of project: Modelling Social Agent Influence on Athlete Motivation
Name of Researcher: Bryan McCann

Please initial box

1. I confirm that I have read and understand the information sheet for the above study. I have had the chance to consider the information, ask questions and get answers to these questions.

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.

3. I agree to my questionnaire data being collected for research purposes.

4. I understand that data collected during the study will be looked at by individuals from The Robert Gordon University where it is relevant to my taking part in this research. I give permission for these individuals to have access to the data.

6. I agree to take part in the above study.

Name of participant   Date   Signature

Name of person taking consent   Date   Signature

ROBERT GORDON
RGU UNIVERSITY ABERDEEN

PARENT CONSENT FORM

Study reference: SHS 1606
Title of project: Modelling Social Agent Influence on Athlete Motivation
Name of Researcher: Bryan McCann

Please initial box

1. I confirm that I have read and understand the information sheet for the above study. I have had the chance to consider the information, ask questions and get answers to these questions.

2. I understand that my child's participation is voluntary and that they are free to withdraw at any time without giving any reason.

3. I agree to my child's questionnaire data being collected for research purposes.

4. I understand that data collected during the study will be looked at by individuals from The Robert Gordon University where it is relevant to my child taking part in this research. I give permission for these individuals to have access to the data.

6. I agree to take part in the above study.

| Name of Parent | Date | Signature |

| Name of person taking consent | Date | Signature |