ROLE STRAIN IN TALENT DEVELOPMENT: A PSYCHO-SOCIAL PERSPECTIVE ON THE DUAL CAREERS OF JUNIOR ELITE ATHLETES

by

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ABSTRACT

This thesis developed and validated the Role Strain Questionnaire for Junior Athletes (RSQ-JA), an instrument designed to measure the role strain junior elite athletes experience in their multiple life domains (e.g., school, sport, family and friendships). Results supported a 22-item five factor structure for the RSQ-JA. These factors reflected five components of role strain, namely; (i) overload in school, (ii) overload in sport and between roles, (iii) conflict, (iv) underload, and (v) ambiguity. The RSQ-JA therefore provides the first valid measure to assess the role strain associated with the dual careers of junior elite athletes.

The RSQ-JA was then used in to examine the effect of role strain on the life satisfaction and stress levels of junior athletes. Results suggested that experiences of the 'underload' and 'overload in sport and between roles' contributed most to the negative relationship between role strain and life satisfaction. These findings indicate that a challenging environment contributes to the life satisfaction of junior elite athletes; however a too challenging environment decreases their life satisfaction.

Furthermore, non-productive coping strategies mediated the relationship between role strain and life satisfaction, and role strain and stress. Specifically, the use of non-productive coping strategies decreased life satisfaction and increased stress in junior elite Australian Rules Football players. Additionally, the use of productive coping strategies had a direct, positive effect on their life satisfaction (but not on stress). These findings indicate that junior elite athletes could benefit from interventions aimed at optimizing their use of productive coping strategies.

In conclusion, the collective findings of this thesis contribute to the growing body of literature concerned with the dual careers of junior athletes. From a practical sense, the RSQ-JA provides a tool for sporting organizations and schools to examine the types of role strain that their athletes experience in their dual careers.

SAMENVATTING

In deze thesis werd de Role Strain Vragenlijst voor Topsporttalenten (RSQ-JA) ontwikkeld en gevalideerd om de verschillende soorten role strain (spanningen in en tussen de rollen; school, sport, familie en vriendschappen) die topsporttalenten ervaren te meten. De bevindingen ondersteunden de factoriele structuur van de 22 item versie van de RSQ-JA met vijf factoren. Deze vijf factoren zijn: (i) overload in school, (ii) overload in sport en tussen rollen, (iii) conflict, (iv) onderload, en (v) ambiguïteit. De RSQ-JA is het eerste gevalideerde instrument dat gebruikt kan worden om de role strain te meten die topsporttalenten in hun duale carrières ervaren.

Vervolgens werd de RSQ-JA gebruikt om de associatie tussen role strain en de levenstevredenheid van topsporttalenten te onderzoeken. De negatieve relatie tussen role strain en levenstevredenheid komt vooral voort uit ervaringen van onderload en overload in sport en tussen rollen. In de praktijk betekent dit dat een uitdagende leefomgeving in positieve zin bijdraagt aande levenstevredenheid van topsporttalenten. Te hoge uitdagingen zullen de levenstevredenheid echter verminderen.

Verder toonde dit onderzoek aan dat het gebruik van niet-productieve coping strategieën een mediërend effect heeft op de relaties tussen role strain en levenstevredenheid dan wel stress. Daarnaast had het gebruik van productieve coping strategieën een direct, positief effect op de levenstevredenheid van de talenten (maar niet op stress). Deze bevindingen tonen aan dat topsporttalenten baat kunnen hebben bij interventies gericht op het gebruik van geschikte coping strategieën.

De resultaten van deze thesis dragen bij de kennis over de gevolgen van duale carrières van topsporttalenten. Daarnaast biedt de RSQ-JA sportorganisaties en scholen de mogelijkheid om de typen role strain te meten die door topsporttalenten ervaren worden.

DOCTOR OF PHILOSOPHY DECLARATION

I, Florentina, Engelina, Corrita, Aimée van Rens, declare that the PhD thesis entitled ‘Role strain in talent development: a psycho-social perspective on the dual careers of junior elite athletes’ is no more than 100,000 words in length including quotes and exclusive of tables, figures, appendices, bibliography, references, and footnotes. This thesis contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my own work.

Signature:  Date: 11/04/2016

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LIST OF PUBLICATIONS AND PRESENTATIONS

Sections of this thesis have been published and/or presented at relevant scientific conferences.

Publications from this thesis

Chapter 4

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Chapter 5 and 6

Van Rens, F.E.C.A., Borkoles, E., Farrow, & Polman, R.C.J. (under review). The Effect of Role Strain and Coping on the Life Satisfaction of Junior Elite Athletes in Dual Careers. *Psychology of Sport and Exercise*.

Other publications during my PhD

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Scientific conference presentations

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Reports to professional organisations

Van Rens, F., Farrow, D., Borkoles, E., & Polman, R. (2014). *Role strain in the dual careers of Australian junior elite athletes: feedback for the AIS and AFL*. Melbourne: Victoria University/ISEAL.

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Van Rens, F., Borkoles, E., Farrow, D., & Polman, R. (2013). *Balancing football, school and other activities: Feedback for players 2013.* Melbourne: Victoria University/ISEAL.

Van Rens, F., Borkoles, E., Farrow, D., & Polman, R. (2013). *Exploring role strain in talented adolescent athletes: Summary for participating organisations.* Melbourne: Victoria University/ISEAL.

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CHAPTER 1

INTRODUCTION

An increasing amount of countries invest large amounts of money to compete against other nations in the global sporting arms race (De Bosscher, De Knop, Van Bottenburg, & Shiblis, 2006). In 2013 to 2014, the Australian Sports Commission spent over 85 million Australian Dollars to support high performance in sports (Australian Sports Commission, 2014). Talent development and talent identification is believed to be one of nine factors that influence the sporting success of a nation (De Bosscher et al., 2006). Systematic talent development in sport is therefore commonplace and big business.

Over the past decades, there has been a shift of focus on the development of elite athletes. Originally, sport specific development such as skill levels and physical capacities at a young age was deemed key in the successful development of junior athletes (Debois, Ledon, & Wylleman, 2014). More recently, a holistic perspective that considers athletic, psychological, psychosocial and academic development of the athlete, has received increased support (e.g., Debois et al., 2014; Wylleman & Lavallee, 2004). This holistic approach exposed a constant tension in the dual careers (e.g., school and sport) of junior elite athletes, and caused concerns as to how these dual careers affect the overall development of the adolescent (Miller & Kerr, 2002). Brettschneider (1999, p.122) colourfully described the tension in the dual careers of junior elite athletes as an 'existential stress-test.'

An extensive list of stressors has been associated with the dual careers of junior elite athletes (Miller and Kerr, 2002; Christensen & Sorensen, 2009; Godbert, 2012). This list contains:

a) difficulties with time management (little time to study because of training hours)

b) time pressure (meeting deadlines for homework and assignments)

c) the impact of sporting events and training on schoolwork and homework

d) extended absences from school to attend overseas events

e) restricted subject choice due to conflicts between assessments and sporting competitions

f) mental stress due to expectations imposed by self and others

g) sport related injuries, lack of recognition of sporting commitments

h) dealing with disappointment and failure

i) fatigue due to daily routines of early morning, afternoon or evening practices.

Although the above-mentioned research has contributed to a better understanding of the challenges junior elite athletes face in their dual careers, it remains unclear how these challenges affect their psycho-social and academic development. In addition, it is unknown how junior elite athletes try to manage the challenges they face, or how these challenges relate to junior athletes' levels of stress and life satisfaction. I aim to investigate this issue by using 'role strain' as a theoretical framework to contextualize the challenges these athletes face.

The concept of role strain refers to the difficulties a person experiences when trying to meet role demands (Goode, 1960). Role strain is a widely used theoretical framework in educational and organizational psychology and encapsulates four components; (a) overload, (b) underload, (c) conflict and (d) ambiguity (Fenzel, 1989a; Holt, 1982). Broadly speaking, the overload component of role strain refers to a situation in which role demands exceed personal resources (Fenzel, 1989a; Hecht, 2001). Underload refers to a perceived underutilization of the role fulfillers resources (Holt, 1982). The conflict component of role strain refers to a situation in which role demands conflict with the wishes of the person that fulfils the role (Fenzel, 1989a; Hecht, 2001). The ambiguity component of role strain refers to an experienced lack of clarity about one's responsibilities in a role (Holt, 1982; Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964). A more detailed description of role strain and its four components is provided in Chapter 2.

Experiences of role strain in adolescent students have previously been associated with poorer school performance, lower global self-worth, lower self-esteem and lower perceived competence of secondary school students (Fenzel 1989a, 1989b, 2000; De Bruyn, 2005). In these studies, role strain was measured by the Early Adolescent Role Strain Inventory (Fenzel, 1989a), and the transition to middle school was of particular interest within Fenzel's studies (1989a, 1989b, 2000).

Role strain has yet to be used to investigate the dual careers of adolescents. However, role strain has been used to examine the dual careers of adults (Nordenmark; 2004; Pitney, Stuart, & Parker, 2008). This research has mainly focused on working parents who attempt to balance their jobs with raising children (i.e., Holt, 1982; Nordenmark; 2004; Park & Liao, 2000). These studies support the applicability of the role strain framework for those who are fulfilling dual careers. Results suggest that housewives experienced less role strain and were physically healthier compared to working mothers (Holt, 1982; Park & Liao, 2000), indicating that balancing multiple roles can take a toll on the person who is juggling these multiple roles. Further, the results of these studies indicated that an increase in work and family demands was associated with an increased likelihood of fatigue occurring and in a desire to reduce work commitments (Nordenmark, 2004).

This thesis investigates role strain experienced in the multiple life domains of junior elite athletes through a series of five experimental studies. These five experimental studies are distributed over three chapters. The three experimental chapters are designed to be submitted for publication in peer reviewed journals. As such, some repetition will occur between the general introduction (Chapter 2) and the introduction sections of the three experimental studies, as well as the general discussion (Chapter 7) and the discussion sections of the three experimental studies.

Chapter 2 discusses the literature relevant to this thesis. The ‘nature versus nurture’ debate, various models of talent development, research on the dual careers of talented athletes, introducing two strain theories; General Strain Theory (Agnew, 1992) and the role strain framework (Fenzel, 1989a), the relevance of coping skills for the development of adolescent athletes and the importance of life satisfaction are considered. Chapter 2 finishes with a statement on the purpose of this thesis.

Chapter 3 discusses the selection of the instruments that have been used to measure role strain, coping skills, life satisfaction, stress, and school performance in the junior elite athletes.

Chapter 4 presents a series of three related studies, which were conducted with the aim to develop a measure that assesses role strain experienced in the multiple life domains of junior elite athletes. Study 1 investigates whether the role strain framework is suitable to measure the difficulties junior elite athletes experience when trying to meet their role demands. Twenty semi-structured interviews with junior elite athletes were conducted and the data gathered from these interviews was used to create an item pool for the development of the Role Strain Questionnaire for Junior Athletes (RSQ-JA).

Study 2 of Chapter 4 built on the key findings gathered in study 1, by using the interview data to create a questionnaire designed to measure the components of role strain in the multiple life domains of junior elite athletes. A 65 item pool was created and Exploratory Factor Analysis was conducted after presenting these items to 296 adolescent athletes who attended secondary school at the time of measurement. A five factor, 25 item, questionnaire was extracted from this analysis and showed promising psychometric properties.

In study 3 of Chapter 4, the factorial structure of the questionnaire was further investigated using Confirmatory Factor Analyses on a sample of 124 talented Australian

Rules Football players (see Chapter 4). The RSQ-JA was confirmed as a five factor 22 item questionnaire and showed good model fit and acceptable composite reliability.

Chapter 5 presents the fourth study of this thesis, which investigated the relationship between the five subscales of the RSQ-JA and the life satisfaction of 112 junior elite Australian Rules Football players. Results indicated that a challenging environment contributes to the life satisfaction of junior elite Australian Rules Football players, however a too challenging environment decreases their life satisfaction.

Chapter 6 presents the fifth and final study of this thesis, which concerns the mediating effect of coping strategies on the relationship between role strain and life satisfaction, and role strain and stress. The results of this study indicated that the use of non-productive coping strategies mediated the relationship between role strain and life satisfaction, as well as role strain and stress. Furthermore, productive coping strategies had a direct, positive effect on the life satisfaction of the junior elite Australian Rules Football players.

Chapter 7 presents an overall discussion of the thesis. This section discusses key findings, theoretical considerations, practical implications, limitations, recommendations for future research and presents some final thoughts.

Definition of key terms

Some key terms used in the current investigation are defined below.

Role strain is defined as ‘the felt difficulty in fulfilling role obligations. Role relations are seen as a sequence of role bargains, and as a continuing process of selection among alternative role behaviours, in which each individual seeks to reduce his role strain.’

(Goode, 1960, p. 483). Role strain consists of four components, ambiguity, conflict, overload, and underload (Fenzel, 1989a; Holt, 1982)

Ambiguity is described as a lack of understanding or clarity about one's responsibilities in one or multiple roles (Fenzel, 1989a; Holt, 1982; Kahn et al., 1964). Four sources of ambiguity were identified by Beauchamp et al. (2002): (a) lack of knowledge about the scope of one's responsibilities, (b) lack of information on the expected methods/ behaviours that should be utilized to fulfil the role, (c) lack of knowledge on how one's performance is evaluated, and (d) lack of information on the consequences of not fulfilling the role in accordance to the expectations.

Conflict is defined as a "discrepancy between expected behaviours or performance associated with a particular role and the individual's own interpretation of what constitutes acceptable behaviour or performance. Conflict also results from conflicting expectations of different role senders" (Fenzel, 1989a, p. 20). Alternatively, Hecht (2001) defined conflict as a stressor that "occurs when demands associated with one role, interfere directly with one's ability to satisfy demands of another role" (p. 112). The definition of conflict will be further investigated in Chapter 4.

Overload is defined by Fenzel (1989a) as "perceiving that the demands of the role exceed personal resources*"* (p. 20). Moreover, Hecht (2001) investigated overload associated with the fulfilment of dual careers (working parents) and observed that overload occurred "when an individual has too many role demands given the time to satisfy them" (p.112). There are two main differences between these definitions of overload. In this thesis Fenzel's and Hecht's definitions of overload were combined, and overload is described as a situation in which role demands exceed personal resources.

Underload refers to a perceived underutilization of one's resources (Holt, 1982). It reflects a perceived imbalance between personal capabilities and a lack of challenge posed by the environment.

Dual careers refer to the simultaneous fulfilment of multiple life roles. The dual careers of junior elite athletes in this thesis consist of sport and secondary school education (e.g., Debois et al., 2014).

Elite, or talent 'refers to performance which is distinctly above average in one or more fields of human performance' (Gagné, 1985, p. 108). In this thesis, sport is the field of human performance of interest. Throughout the thesis, the term 'elite' will be used to indicate athletes who perform distinctly above average in their respective age groups. In this thesis, junior elite athletes were identified by their respective sporting organisations and competed at state, national or international level in their respective sports.

Junior is the term used to describe the adolescent participants in this thesis who manage both demands from school and their developing sporting career. In developmental psychology, children between 11 and 19 years of age are classified as adolescent (Barret, 1996). Adolescence can be divided into three phases; (a) early adolescence (11 to 13 years of age), mid adolescence (14 to 16 years of age), and late adolescence (17 to 19 years of age; Barret, 1996).

Coping is defined as the 'constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person' (Lazarus & Folkman, 1984, p. 141). In this thesis, Frydenberg's line of research will be followed (e.g., Frydenberg & Lewis, 2002, 2009a), as her work has mainly focussed on adolescent Australians (which is similar to the sample used in this thesis). Frydenberg's work categorizes coping strategies in productive (problem-solving) coping

styles, and non-productive (passive – avoidant) coping strategies. Additionally, Frydenberg uses the term ‘other coping strategies’ for coping strategies such as using spirit and humour.

Life satisfaction is conceptualized as an ‘overall cognitive evaluation of the condition of one’s life’ (Saha, Huebner, Suldo, &Valois, 2010, p. 150). Life satisfaction is the longer lasting component of subjective well-being. Affect, the other component of subjective well-being is somewhat more ephemeral (Diener, 1984).

CHAPTER 2

REVIEW OF LITERATURE

A wealth of research has investigated the development of talent in sport. In the first section of this chapter, the so-called ‘nature versus nurture’ debate will be briefly discussed, as it has influenced core assumptions of talent development models. The second section of this chapter will detail various models of talent development. The third section will present research on the dual careers of talented athletes. In the fourth section, two strain theories will be introduced; General Strain Theory and role strain. In the fifth section of this chapter, the relevance of coping skills for the development of adolescent athletes will be introduced, as well as the importance of life satisfaction. In the final section of this chapter a statement on the purpose of this research is presented.

Athletes are (not) born to succeed: the nature versus nurture debate

There is no question that young people differ from each other in terms of their achievements, and the apparent ease in which they accomplish them. The reason why these differences exist has sparked the long standing ‘nature-nurture debate’, which concerns the extent to which either genetics (nature) or the environment and experience (nurture) predict human achievement (Galton, 1883; Davids & Baker, 2007).

Those who support the ‘nature’ approach of the achievement of excellence believe that the likelihood of becoming exceptionally competent depends on inborn attributes, often labelled as ‘gifts’. In sport science, the belief that one is ‘born to succeed’ has driven research on talent development. It has contributed to efforts to search for single genes that might identify potential elite athletes and has inspired the core assumption of many talent development models in sport: that gifted children can be detected at a young age (Eynon et al., 2013; Singer & Janelle, 1999).

An important consequence of this assumption in early talent identification is that young people who are not identified as 'gifted' are likely to miss out on the help and encouragement (nurture) needed to achieve exceptional performance levels (Brophy & Good, 1973). As such, early talent identification systems can serve as a self-fulfilling prophecy in which only those who are identified as 'gifted' receive the extra nurturing needed to develop into a professional athlete, and are thus more likely to succeed compared to their peers who were not labelled as 'gifted' and did not receive this extra support (Howe, Davidson, & Sloboda, 1998).

In Australia, athletes identified as 'gifted' by the Australian Institute of Sport have access to nurturing facilities such as: clinical services (including physicians, physiotherapists, massage therapists, sport psychologists, and strength and conditioning coaches), sport scientists (nutritionists, movement scientists, and physiologists), and athlete education (Australian Institute of Sport, 2015). Athletes who are not identified as 'gifted' do not have access to these facilities. One would expect that having access to these forms of support increases athlete's opportunities to perform at the best of their abilities.

Furthermore, the assumption that talent can be detected at a young age has been associated with the relative age effect. The relative age effect refers to the consequences of being born shortly after the cut-off date of an age group (Musch & Grondin, 2001; Wattie, Cobley, & Baker, 2008). Those who are relatively older are argued to have a competitive advantage over their younger peers because of their more advanced (physical) maturation, and are more likely to be identified as 'gifted'. Musch and Grondin's review study (2001) on the consequences of the relative age effect in a range of different sports has indicated that in almost every sport where there is a large participation base, relatively older athletes are more likely to succeed. This means that some children, who might have great potential to become professional athletes, are overlooked because they were born in the 'wrong' time of the year.

As a result, they do not receive access to the nurturing facilities as described previously, and their chances of making it to an elite level in their sport decrease. As such, the nature approach that is present in the early talent identification of athletes has some important limitations.

Rather than positioning this thesis within the constraints of the distinct 'nature-nurture' categories, the view in which exceptional sport performance is said to be the result of interactions between genetic and environmental factors is supported in this thesis (Davids & Baker, 2007). As such, early talent identification is accepted (albeit with caution), while the benefits of providing nurturing support are also recognized. This nurturing support can be provided by the junior athletes' school (Radtke & Coalter, 2007), sporting organization (Pink et al., 2014), and by junior athlete's parents (Bloom, 1985; Côté, 1999). However, this thesis will focus on the interplay between demands from junior elite athletes' dual careers and their personal characteristics. Specifically, the role strain these athletes experience as a result of the multiple roles they fulfil will be investigated, as well as the psychological skills they use to manage their multiple life domains (e.g., school, sport, family, and friendships). As such, the information derived from this thesis can be used by sporting organizations and schools to create an environment for the developing junior elite athletes in which they can flourish.

Adolescents are not miniature adults

During adolescence brain maturation is still ongoing (Paus, 2005). As such it is important to realize that 'the young athlete is not a miniature adult' (Gould, 1982. p.12), and that research findings based on a sample of adult athletes do not automatically transfer to adolescent age groups. Rather, adolescents should be seen as individuals in a stressful period

of development during which many physical, social, emotional and cognitive transformations take place (Compas, 2009; Skinner & Zimmer-Gembeck, 2009).

Adolescence is divided into three stages: early adolescence (ages 11-13), mid adolescence (14-16), and late adolescence (17-19; Barrett, 1996). The main focus of this thesis are athletes in the mid and late adolescence stage, although some early adolescents also participated in this project.

The Lifespan Model (Wylleman & Lavallee, 2004; Wylleman & Reints, 2010) was the first model to draw connections between the athlete's age and their developmental stage on an athletic, psychological, psychosocial level and academic/vocational level. This model described four stages of athletic development. The first 'initiation' stage describes the moment in which prospective junior elite athletes first practice their sport, which usually occurs around the age of six or seven. A children grow to the 'development stage' when they are around thirteen or fourteen years of age. During this stage junior athletes are being recognized as 'talented' and levels of training and competitions intensify. This thesis will mainly focus on the final years of this development stage, just before the athlete makes the transition to the mastery stage (18 to 19 years of age) which is followed by the final, discontinuation, stage (dependent on the type of sport at approximately thirty years of age; North & Lavallee, 2004).

In the Lifespan Model the 'development phase' – the phase relevant to this thesis - is connected to adolescence (psychological domain), when peers, parents and coaches are the athlete's greatest influences on a psycho-social level, and when the junior athlete attends secondary school (academic domain). The support junior athletes receive from their school (Radtke & Coalter, 2007) sporting organization (Pink et al., 2014), and parents (Bloom, 1985; Côté, 1999) is therefore deemed crucial in their development. Yet, the interplay between demands from junior elite athletes' dual careers and their personal characteristics is the focus

of this thesis. Following the purpose of this thesis, the lifespan model thus indicates that stressors junior elite athletes may experience are likely to be related to the school, sport, family and friendship life domains.

One cognitive transformation adolescents go through that is highly relevant to this thesis is the development and use of the various coping resources available to them (Compas, 2009). As adolescents mature they develop a greater variety of cognitive coping strategies, which help them overcome stressful situations (Spirito, Stark, & Williams, 1988). However, the amount of coping strategies adolescents use decrease with age, indicating that they become more and more experienced in knowing which coping strategies work in stressful situations (Spirito et al., 1988). Section 6 of this chapter will elaborate on the development of the coping repertoire of adolescents.

In general, sport participation of adolescents is associated with many positive effects on their lives. For instance, sport participation is associated with fewer mental health problems, less general health problems, less eating and dietary problems and higher emotional wellbeing of adolescents (Steiner, McQuivey, Pavelski, Pitts, & Kreamer, 2000; Stephoe & Butler, 1996; Eime, Young, Harvey, Charity, & Payne, 2013). Although the relationship between sports participation and school performance remains a topic of debate, research seems to indicate that increased physical activity is associated with higher school grades (Trudeau & Shephard, 2008; Singh, Uijtdewilligen, Twisk, van Mechelen, & Chinapaw, 2012; Ardoy et al., 2014). However, the demands of participation in recreational physical activity are substantially different to sports participation at an elite level. Junior elite athletes spend more time practicing their skills (Baker, Côté, & Abernethy, 2003) compared to recreational level athletes. Additionally, junior elite athletes devote more time to participating in specific activities that are deemed relevant to developing other essential skills needed for expert performance in sport, such as video training, competition and one on one

coach instructions (Baker et al., 2003). Further, junior elite athletes are required to deal with disappointments such as failure and sport related injuries, and they have to manage the mental stress associated with sport performance expectations, which are both self-imposed as well as originating from parents and coaches (Godbert, 2012). To date, limited research has investigated the effect of participation in elite sports on the psychological, cognitive and academic development of adolescents.

Adolescence is also a crucial time in a person's life for identity development (McLean, Breen, & Fournier, 2010). As a result of the sporting commitments of junior elite athletes, their identities might become strongly based on their sport (Coakley, 1993; Mitchell et al., 2014). When a strong commitment to the athletic identity occurs, athletes might not engage in exploration of other possible self-identities, this process is called identity foreclosure (Petitpas, 1978). Athletes who develop these strong sport based identities are less likely to plan post-athletic career opportunities prior to the retirement of sport (Gordon, 1995). As such, talented athletes with a strong athletic identity are expected to feel less inclined to focus on secondary and further education. Additionally, these athletes are expected to experience more distress when retiring from their sport compared to athletes who did explore multiple self-identities (Crook & Robertson, 1991). Furthermore, the delayed onset of puberty associated with participation in high level sports such as gymnastics (e.g., Georgopoulos et al., 1999) has been speculated to delay the psychological development of junior elite athletes (Wylleman & Lavallee, 2004). Taken together, these findings suggest that adolescent elite athletes could suffer from negative psychological consequences as a result of their participation in high level sports.

Models for talent development and identification

Several theorists have tried to describe the developmental phases leading to expert (sport) performance. A popular stance is that talented athletes will have to invest 10,000 hours into task-specific 'deliberate practice' to achieve an elite level of expertise (Ericsson, Krampe, & Tesch-Römer, 1993). Although this theory rightly emphasizes that deliberate practice is essential to become an elite athlete, it oversimplifies the role deliberate practice plays in the route towards becoming elite. Research has shown that about a quarter of the Australian senior national athletes reached elite status within four years of practicing their sport. Prior to this many were competing in other sports (Oldenziel, Gagné, & Gulbin, 2004). For example, Michelle Steele was able to achieve elite status in the women's skeleton and participate at the 2006 Winter Olympic Games. Steele finished 13th with just 14 months of deliberate practice. Prior to this she had never practiced skeleton in her life, but she did compete at a state level at surf life-saving and gymnastics (Bullock et al., 2009). Although a criticism to this kind of research is that it might tell us more about the poor standards in the female skeleton sport, it does illustrate that the rule of 10,000 hours of deliberate practice is too much of a generalization to be applicable to all sports and athletes (e.g., Hambrick et al., 2014).

Work by Baker, Côté, and Abernethy (2003) further criticizes the claim that early specialization is the only way to develop expertise. Their work with athletes in field hockey, netball, and basketball suggest a functional role for deliberate play on the development of expert decision-making. Deliberate play refers to physical activities that are designed to maximize enjoyment, it typically involves intrinsic motivation and immediate gratification (Berry, Abernethy, & Côté, 2008). Baker et al. (2003) found that athletes who participated in more activities other than specific practice needed less hours of sport-specific training to develop expert decision-making skills.

The creation of the Developmental Model of Sport Participation (DMSP) (Côté, Baker, & Abernethy, 2007) positions 'deliberate play' as equally important as 'deliberate practice' in the development of talent. The DMSP considers three possible outcomes of sport participation: elite participation, recreational participation and dropout. Côté et al. (2003) argue that deliberate play is essential in order to develop fundamental movement skills (such as running, throwing and jumping) in an enjoyable environment. Wall and Côté (2007) furthermore showed that early diversification of practice is preferable to early specialization, as chances of dropout in sport are higher amongst those that specialized early compared to those who specialized later-on in their sport career.

Balyi and Hamilton (2004) further explored the growth and development timeframes athletes go through in their model for Long Term Athlete Development (LTAD). In this model Balyi and Hamilton argue that sports can be categorized in those that require early specialization (individual sports such as gymnastics) and those that do not (most team sports). According to the LTAD,elite athletes in early specialization sports transition trough four stages: (a) the training to train stage, (b) the training to compete stage, (c) the training to win stage and (d) the retirement stage. In sports that do not require early specialization, six stages of specialization are mentioned: (a) the FUNdamental stage, (b) the learning to train stage, (c) the training to train stage, (d) the training to compete stage, (e) training to win stage and (f) retirement. Balyi and Hamilton (2004) argue that enjoyment of the sport is critical in reaching an elite level in a late specialization sport because it prevents dropout and injuries. Furthermore, the LTAD accounts for the possibility that athletes who do not belong to the best players in their age group at an early age can still transfer to an elite level in their sport. A limitation of the LTAD is that it does not consider how the environment and psychological or physiological changes can influence talent development.

In 2004, two talent development models were developed which addressed the psychological and physiological aspects that might affect talent development. Abbott and Collins (2004) introduced a Multidimensional and Dynamic Talent Identification Model aimed to increase the success of talent identification programs. Abbott and Collins (2004) argued that, in the early stages of an athlete's development, psycho-behavioural elements and transferrable skills are most important for talent identification. Sport specific skills (physical, motor, perceptual and conceptual skills) are suggested to become better determinants of performance as athletes mature. Therefore, this model introduced a considerable change in the focus of talent identification. Where early talent identification models were mostly based on physiological aspects of talent development, this model introduced psychological aspects to talent identification and provided a framework to further investigate the effect of psychological skills on talent development.

A more theoretical approach to the inclusion of psychological and environmental aspects in talent development models was taken by Gagné (2004) in his Differentiated Model of Giftedness and Talent (DMGT). This (rather complex) model presents the talent development process as the transformation from outstanding natural abilities to outstanding systematically developed skills. The DMGT proposes that the catalysts function of intrapersonal skills (psychological skills and personality traits), the environment (sport, geographic, demographic, sociological factors) and chance predict whether someone will work towards the optimal integration of one's capabilities at every stage of one's life.

A limitation of the DMGT is that the difficulty to empirically test how the intrapersonal skills, the environment and chance influence talent development. Furthermore, to date, there is little empirical evidence that draws a relationship between psychological factors and the process of talent development. As such, this model has limited practical applicability.

In 2010, Henriksen created a holistic ecological approach to talent development (Henriksen, 2010; Henriksen, Stambulova, & Roessler, 2010a, b; Henriksen, Stambulova, & Roessler, 2011). In this overall Athletic Talent Development Environment model (ATDE) both athletic and non-athletic factors that influence the development of talented athletes on a macro and micro level were included. As such, Henriksen proposed a holistic model of the talent development of the junior athletes, and thus suggested that non-athletic factors such as school could influence development in sport. A series of studies conducted by Henriksen have suggested that talent development is influenced by experts, other crews/teams, coaches, peers, family, other athletes, and school (Henriksen, Stambulova, & Roessler, 2010a, b; Henriksen, Stambulova, & Roessler, 2011). As such, this model provided a framework to investigate a possible interactive relationship between sporting commitments and other aspects of the developing athletes' life.

Based on the models discussed above Gulbin, Croser, Morley, and Weissensteiner (2013) developed two models to describe talent development. In the first, FTEM model, Gulbin describes several stages in the sport development of athletes. According to the FTEM model athletes first go through three Foundation (F) stages in which basic movement skills are developed, extended, and related to the specific sport. Four Talent (T) stages follow these foundation stages, in which potential is demonstrated, confirmed, and intense practice is started. In the last T stage the athlete experiences a breakthrough. After the T stage athletes can grow into the Elite (E) stage, in this stage athletes represent their country and achieve podium success. The final stage in the FTEM is the Mastery (M) stage in which athletes achieve sustained success for over four years.

In his second 3D Athlete Development model (3D-AD), Gulbin et al. (2013) included the possible environmental (e.g. community, family, coaching) and athlete factors (e.g. psychological attributes, physiological capacity, socio-developmental background) which

could influence the athlete's development throughout the stages of the FTEM model. Gulbin et al. (2013) recommend future research to investigate the various factors that could influence talent development in each of the stages of the FTEM. Again, a limitation of this (complex) model of talent development is that it is difficult to test empirically.

While the focus of research in talent development shifted from sport performance excellence towards a more holistic perspective on the development of the junior athletes, the concern arose that the journey to become an elite athlete had come at the cost of the overall development of the adolescent (Miller & Kerr, 2002). Miller and Kerr (2002) therefore argued that an ideal sport model would use sport as a vehicle in which personal development (e.g., social and academic skills) occurs alongside talent development in sport. In other words, this proposition challenges researchers to develop a talent development model in which the aspiring athlete's well-being is central. In such a model, elite sport participation is developmentally appropriate, and the context of the athlete's overall health and well-being is considered (Miller & Kerr, 2002). As such, school should be an important consideration in talent development models. This sparked research on the dual careers (i.e., school and sport) of junior elite athletes.

Athletes are not dumb jocks

Research on the dual careers fulfilled by junior elite athletes has rapidly increased over the past decade or so. Junior elite athletes are expected to invest an increasing amount of time into their sporting career, therefore, the balancing act between school and sport becomes increasingly complex (Blom & Duijvestijn, 2008; Brettschneider, 1999). In this balancing act, school is therefore often perceived as a rival to sport in terms of time commitment (Christensen & Sørensen, 2009; Henriksen et al., 2010a). As mentioned in the first chapter, researchers have identified numerous potential stressors that junior elite athletes might face

when balancing their multiple life domains (Miller & Kerr, 2002a; Christensen & Sorensen, 2009; Godbert, 2012). However, junior elite athletes do acknowledge the importance of school, stating that it is a necessary safeguard in case they do not make it to an elite level in their sport (Henriksen et al., 2010a). As only one in three junior elite athletes make it to the senior elite ranks, this statement is justified (Gulbin, 2003). Additionally, even those athletes who do make it to an elite level in their sport are still likely to have to start a 'second career', (Metsä-Tokila, 2002; Wylleman & Reints, 2010).

Research investigating the effect of participating in high level sport on school performance has indicated that junior elite are more likely to achieve high school results and to attain the highest possible secondary school diploma compared to 'regular' scholars (Van Rens et al., 2015; Jonker, Elferink-Gemser, & Visscher, 2009). As such, the 'dumb jock stereotype' which assumes that talented athletes are less academically gifted compared to 'regular 'scholars has been refuted (Hartmann, 2008; Winiger & White, 2008).

Although junior elite athletes apparently outshine 'regular' students in secondary schools, many countries have still developed specialized 'Sport Schools' to aid talented athletes in their balancing act between school and sport (Radtke & Coalter, 2007). Research investigating the effectiveness of these Sport Schools has indicated that the school performance of junior athletes in these specialized Sport Schools was lower than their counterparts at 'mainstream' schools. Additionally, they were less likely to pursue further education at university level (De Bosscher & De Croock, 2010; Emrich, Frohlich, Klein, & Pitsch, 2009; Van Rens et al., 2015). These findings were unexpected, and could indicate a selection effect. For instance, junior athletes who expect to struggle to meet the demands from both school and sport might be more likely to attend a Sport School, while those who can manage the demands from school and sport with relative ease might be more likely to opt for a mainstream school. Furthermore, junior athletes who are less motivated for school

might be more inclined to pursue their education at a Sport School. However, it is also possible that the aid provided to junior athletes in Sport Schools weakens their ability to develop psychological skills – such as coping and time management skills - to manage their role demands.

Studies on the effect of the Sport Schools on the sporting performance of junior elite athletes have yielded mixed results. In Belgium, talented athletes who attended specialized 'Sport Schools' were more likely to win a medal at international events (De Bosscher & De Croock, 2010). In Germany, talented athletes who attended specialized 'Sport Schools' performed better in the Olympic winter games, but no differences in performance were found for the Olympic summer games (Emrich et al., 2009). In the Netherlands, no difference was found between the obtained sport performance levels of athletes who attended Sport Schools or mainstream schools (Van Rens et al., 2015).

A study amongst elite athletes (age 20-42) at universities in several European countries suggested different reasons as to why the junior elite athletes continued their dual career (Aquilina, 2013):

a) The athletes argued that school helped them to keep perspective in their lives, and stopped them from being fully consumed by the demands of sports.
b) The athletes felt that intellectual stimulation in an academic career helped them to break from the often regimented training sessions and as such helped them to stay motivated for their sport.
c) The athletes argued that school helped them to perform better in their sport, this was both due to money (receiving college grants), as well as that they felt that their concentration levels had increased.

d) The athletes believed that the two careers supported each-other; they believed that skills learned in their sporting career transferred to their academic pursuits and vice versa.
e) Many athletes considered school equally important to sport because a sporting career was unpredictable, it therefore was a misconception that most athletes found their sporting career more important than their academic career.
f) The athletes did not believe that having more time for sport lead to improved athletic performance. Athletes who previously took a break from education claimed they resumed their academic career because they started to 'waste' time and got distracted when they halted their education.
g) Likewise, athletes at universities held the belief that their chances of securing a job of their choice after their sporting career would increase if they gained an academic degree.

As such, the results of Aquilina's (2013) study suggest that school and sport do not necessarily need to be seen as rivals, but can also be perceived as complementary by athletes. However, a limitation of this study is that all interviewees decided to pursue both an academic career and a sporting career. Junior elite athletes who decided not to pursue any academic endeavours or who dropped out of their sport were not interviewed. Consequently, it remains unclear what the experiences of junior athletes who did not continue their educational or sporting career were.

The above mentioned research seems to indicate that the balancing act between school and sport can be difficult for some, but definitely not for all junior elite athletes. To illustrate, Christensen and Sørensen (2009) found that when athletes have some sort of natural academic ability, live close to their sport club, go to school close to home and the club and

can therefore maintain regular contact with friends and family the likelihood of them being able to balance school and sport is higher. However, if athletes are not in this position pursuing a career as an athlete can cause serious problems such as lower exam results, increased stress, dropping out of school, and mental breakdown (Christensen & Sørensen, 2009). As such, it is important to better understand how different types of strain associated with the dual careers of junior elite athletes affect the amount of stress they experience.

Stress, stressors and role strain

Aldwin (2007) proposed that the stress process consists of three components: stressors, transactions and strains. Stressors refer to external events that might cause stress, transactions refer to the cognitive appraisal of the stressor (mediator), whereas strain refers to the internal state or, physiological emotional reactions, of a person (Aldwin, 2007). When the demands of fulfilling multiple roles, tax or exceed the talented athlete's personal resources, a stress relationship between the junior elite athlete and the environment can occur (Lazarus, 1990).

This thesis is concerned with the stress process that might occur from the dual careers that junior elite athletes fulfil, and extends to strains experienced in other life relevant domains of the junior athletes (e.g., family and friendships). Two strain theories are of relevance to the current study: General Strain Theory (Agnew, 1992) and the role strain framework. These two theories are described in more detail below. Furthermore, Table 2.1 shows some relevant properties of each theory.

Table 2.1. Description of general strain theory and role strain.

Theory	**Field**	**Application**	**Tailored to adolescents**
General Strain Theory	Criminal Psychology	To predict criminal behaviour	No
Role strain	Organizational and Educational Psychology	To predict school performance, well-being, stress and burn-out	Yes

General Strain Theory (GST) originates from criminal psychology. It suggests that people experience strain when they (a) lose something of value, (b) are being treated in a negative manner, or (c) are unable to achieve certain goals (Agnew, 2001). This perspective could also be applied to adolescent athletes. The demands of balancing a dual career between school and sport can cause them to lose something of value (i.e., time with friends/family), they could be treated in a negative manner (i.e., a negative attitude from teachers at school) or feel unable to achieve a certain goal (i.e., achieve high school results). These strains could onset the stress process.

As previously mentioned, most research that has adopted the GST approach is of criminological nature. For example, findings of GST research indicate that strains are most likely to result in crime when the strains are seen as unjust, when they are seen as high in magnitude, when they are associated with low social control and when there is some incentive to engage in criminal coping (Agnew, 2001). These findings are difficult to translate to a sporting context. More recently, GST has also been adopted as an approach to predict organizational commitment amongst police officers (Moon & Jonson, 2012). This research suggested that failure to achieve positively valued goals, removal of positive stimuli, and being presented with unpleasant situations directly negatively influenced police officers' commitment to the agency (Moon & Jonson, 2012). These three components of the GST could potentially be relevant to the experiences of junior elite athletes. For example, failure to

achieve a valued goal such as getting selected for a national level team, could possibly decrease junior athletes' commitment to their respective sport.

Role strain (Goode, 1960) originates from educational psychology and refers to the difficulties people experience when struggling to meet role demands (Goode, 1960). Role strain has been used as a framework to investigate how role strain experienced in school relates students' performance, stress and well-being (Fenzel 1989a, 1989b, 2000; de Bruyn, 2005). Further, the role strain framework has been utilized to investigate strains experienced in dual careers (Nordenmark; 2004; Pitney, Stuart, & Parker, 2008). Research has suggested that role strain can emerge in each role a person fulfils, as well from a tension between roles (Bronfenbrenner, 1979; Hecht, 2001).

When comparing the applicability of GST and role strain as a framework to relate the strains experienced by talented athletes to their consequences, the role strain framework seems a better fit. Firstly, role strain has already been successfully used as a framework to identify stressors that adolescents experience in the school setting, a sample that is similar to the junior (adolescent) athletes discussed in this thesis. GST has mostly been used in (pathological) adult samples to investigate criminal behaviour, a sample rather dissimilar to junior athletes. Secondly, role strain has already successfully been used as a framework to measure the consequences of fulfilling dual careers, while GST has not. Thirdly, the consequences associated with experiences of role strain (e.g., stress and life satisfaction) are much more closely related to the consequences of strain we intend to measure, compared to those measured while using GST (criminal behaviour, organizational commitment). As such, a role strain framework (Fenzel, 1989a; Holt, 1982) approach was adopted for this thesis.

The role strain framework suggested that there are four components which encapsulate role strain. These components are: ambiguity, overload, conflict and underload

(Fenzel, 1989a; Holt, 1982). The sections below describe each of these four components of role strain in more detail.

Ambiguity

Ambiguity is described as a lack of understanding or clarity about one's responsibilities in single or multiple roles (Holt, 1982; Kahn et al., 1964). In general, ambiguity stems from a lack of information (Ilgen & Hollenbeck, 1991). An example of ambiguity is an athlete who is unsure which skills the trainer would like to him/her to improve on. Ambiguity is widely researched in the athlete role (Beauchamp, Bray, Eys, & Carron, 2002; Van Sell, Brief, & Schuler, 1981). Beauchamp et al. (2002) identified four sources of role ambiguity: (a) lack of knowledge about the scope of one's responsibilities, (b) lack of information on the expected methods/ behaviours that should be used to fulfil the role, (c) lack of knowledge as to how one's performance is evaluated, and (d) lack of information on the consequences of not fulfilling the role in accordance to the expectations. The consequences of experiencing ambiguity will be described below.

Overload

Fenzel (1989a) defined overload as "perceiving that the demands of the role exceed personal resources*"* (p. 20). Moreover, Hecht (2001) investigated the demands of those who balance spouse, parent and work roles, and observed that overload occurred "when an individual has too many role demands given the time to satisfy them" (p.112). There are two main differences between these definitions of overload.

Firstly, Fenzel defines overload as a factor that occurs within one role whereas Hecht refers to overload as a stressor that occurs between roles. Secondly, according to Hecht, overload is a consequence of time-resource imbalance, while Fenzel considers it a consequence of insufficient personal resources (e.g., time, mental and physical abilities) to meet expectations. In this thesis Fenzel's and Hecht's definitions were combined and

overload is described as a situation in which role demands exceed personal resources. This broader definition of overload encompasses overload experienced within a role, as well as between roles. In addition, it captures a scarcity of any personal resource which could lead to the experience of overload.

Conflict

According to Fenzel (1989a) conflict is a "discrepancy between expected behaviours or performance associated with a particular role and the individual's own interpretation of what constitutes acceptable behaviour or performance. Conflict also results from conflicting expectations of different role senders" (p. 20). Alternatively, Hecht (2001) defined conflict as a stressor that "occurs when demands associated with one role, interfere directly with one's ability to satisfy demands of another role" (p. 112).

The latter definition appears similar to the definition of role overload previously described, as the conflicting demands between roles could stem from the perceived lack of resources. On the contrary, Fenzel's definition clarifies that conflicting '*expectations'* lead to the experience of conflict, rather than a lack of resources, yet, his definition is limited to occur only within one role. The discrepancies between these two definitions of conflict illustrate the lack of clarity that currently exists about the role stressor 'conflict'. Chapter 4 of this thesis will further investigate experiences of conflict in junior elite athletes.

Underload

Underload is a perceived underutilization of one's resources (Holt, 1982). It reflects a perceived imbalance between high personal capabilities and the lack of challenge posed by the environment in one role (e.g., a high level alpine skier only has access to medium level ski slopes). Underload could also occur when an athlete feels that s/he could do more than what the combined role demands require.

The consequences of role strain and role stressors

To date, no research has investigated role strain experienced in the multiple life domains of junior athletes. However, some role stressors in the sporting domain have been investigated. Experiences of ambiguity were associated with poorer sport performance (Beauchamp et al., 2002) and lower athlete satisfaction in how their abilities are utilized (Eys, Carron, Bray, & Beauchamp, 2003). Further, ambiguity also predicted cognitive anxiety, competitive anxiety and, to some extent, somatic anxiety of athletes (Beauchamp, Bray, Eys, & Carron, 2003). The negative impact of ambiguity also extended to the athlete-coach relationship in terms of athletes' confidence in their coach's competence in leading the team through competitions and in diagnosing and formulating instructions during training sessions (Bosselut et al., 2012). In addition, elite athletes who had experienced burnout were more likely to report experiences of role overload and role conflict during their sporting career (Kjormo & Halvari, 2002).

Research that explored role strain experienced by adolescent scholars at school demonstrated that it was associated with poorer school performance, lower global self-worth, lower self-esteem and lower perceived competence (De Bruyn, 2005; Fenzel, 1989a, 1989b, 1992, 2000). It remains unknown how role strain experienced in other areas of the scholar's life (such as sport) might relate to school performance, also the effect of the total role strain in an adolescents life (i.e. stress, well-being, life satisfaction, performance etc.) remains unclear.

Research on role strain experienced by those fulfilling multiple roles has mainly focused on working parents who attempt to balance raising children and work (e.g., Holt, 1982; Nordenmark; 2004; Park & Liao, 2000). It suggests that housewives experienced less role strain and were physically healthier compared to working mothers (Holt, 1982; Park & Liao, 2000). Further, an increase in work and family demands was associated with an

increased likelihood of fatigue to occur and in a desire to reduce work commitments (Nordenmark, 2004).

Taken together, the above mentioned research suggests that role strain has the potential to be a relevant framework to further describe the stressors junior elite athletes experience when fulfilling dual careers during critical periods in their development. If deemed appropriate, this framework could be used to relate the different types of role stressors to their psychological, physical and performance related consequences. In doing so, a more holistic understanding of the challenges associated with the dual careers of junior elite athletes can be achieved.

Coping skills and life satisfaction

Coping skills

The stress that role strain causes is mediated or alleviated by the coping responses an individual uses (Bird, 1990). Lazarus and Folkman (1984) refer to this as the transactional process of coping. Coping can be described as the conscious attempts that are being made to manage situations that are perceived to be stressful and endangering to ones well-being (Compas, Connor-Smith, Saltzman, Thomsen, & Wadswort 2001; Lazarus & Folkman 1984).

Between the 1980's and 2014, 881,436 peer-reviewed journal articles have been published on coping (Frydenberg, 2014). This wealth of research has defined coping strategies in various higher order dimensions. Lazarus and Folkman (1984) proposed a two-dimensional approach in which problem-focused coping describes the techniques used to manage dealing with the stressor, whereas emotion-focused coping entails the techniques used to manage emotional stress. Compas et al. (2001) use a three-dimensional approach which includes task oriented coping, distraction-oriented coping and disengagement-oriented

coping. Other researchers describe dysfunctional and functional aspects of coping (Seiffgre-Krenke & Schulman, 1990). In the latter approach, functional, or 'productive' aspects of coping refer to attempts to solve the problem, with or without the help of others. Dysfunctional, or 'non-productive' coping strategies refer to aspects of coping such as worrying or self-blame (Frydenberg, 2008). An important side-note to this approach is that productive coping strategies are not necessarily 'good' coping strategies, similarly, 'non-productive' coping strategies are not necessarily 'bad'. Although classifying the coping techniques into these higher order dimensions might seem straightforward, issues arise because some coping strategies can be classified in more than one dimension (Compas, Worsham, Ey, & Howell, 1996; Skinner, Edge, Altman, & Sherwood, 2003).

During adolescence, the repertoire of coping strategies available for use expands (Aldwin, 2007; Seiffge-Krenke, 1995). Specifically, older adolescents are more likely to adopt non-productive coping strategies such as tension reduction and blaming themselves than productive coping strategies such as asking for help compared to younger adolescents (Frydenberg, 2008). However, the most often used coping strategy by adolescents is, regardless of their age, the productive coping strategy 'working hard' (Frydenberg, 2008).

Research has suggested that academically gifted adolescents are more likely to adopt 'productive' coping strategies such as working hard, and dealing directly with the problems, whilst 'regular' students were more likely to adopt non-productive coping strategies such as declaring a lack of strategies to deal with the problem (Frydenberg, 2008). The use of non-productive coping strategies (specifically those that are associated with ignoring the problem) was associated with higher perceived stress levels and lower well-being levels of adolescents at school (Ebata & Moos, 1991). Coping strategies that involved attempts to solve the problem and to seek social support were associated with higher levels of well-being and

lower levels of perceived stress (Frydenberg & Lewis, 2002; Galaif, Sussman, Chou, & Wills, 2002).

The use of coping skills by junior elite athletes in response to sport specific stressors has also been widely researched. Research amongst junior elite golfers showed that they used a wide range of coping styles. The most frequent reported coping response was blocking, a form of cognitive avoidance, which is classified as a non-productive coping strategy (Nicholls, Holt, Polman, & James, 2005). Similar to the work of Frydenberg (1993), Nicholls et al. (2005) also found that the junior elite golfers overall used productive, problem- focused coping strategies more often than other coping strategies.

Furthermore, Reeves, Nicholls, and McKenna (2009) found that mid adolescent premier league soccer players (14 to 16 years of age) used a wider range of coping strategies compared to early adolescents (11to13 years of age; Reeves, Nicholls, & McKenna, 2009). Specifically, the mid adolescents reported more productive problem solving and emotion based coping strategies, but fewer avoidance strategies than early adolescents.

Importantly, research has indicated that interventions can alter the coping strategies used by adolescents. For example, Nicholls (2007) managed to reduce the amount of non-productive coping strategies used by an adolescent golfer. Similarly, research that implemented a coping skills program for adolescents showed some modest improvements in coping skills, especially so for those students who were using the most unproductive coping strategies (Frydenberg et al., 2004).

This thesis will attempt to investigate the mediating effect coping skills might have on the levels of life satisfaction and stress reported by junior elite athletes. This information can inform the development of coping skills training programs which could benefit junior elite athletes by teaching them the coping skills to feel more satisfied with their lives and less stressed.

Life satisfaction

It has been argued in psychological literature that the mental health of youth is comprised of two domains: the absence of dysfunction (i.e., psychopathology such as depression) and optimal functioning (i.e., well-being; Kazdin, 1993). Historically, psychological research focused on studying psychological dysfunction. Seligman and Csikszentmihalyi (2000) therefore proposed that a science of positive psychology is necessary to also understand optimal functioning, and thus to fully understand mental health.

The concern whether excellence in sport has to come at the cost of the overall development of the athlete (Miller & Kerr, 2002) directed this thesis towards investigating the subjective well-being of junior elite athletes from a positive psychology perspective. Subjective well-being encompasses separate -albeit related- components: affect and life satisfaction (Diener, 1984; Argyle, Martin, & Crossland, 1989). Affect refers to short-lived positive and negative emotions, while life satisfaction refers to an individual's longer lasting cognitive appraisal of his/her overall quality of life (Veenhoven, 1996).

Life satisfaction is positively associated with the physical, mental, social and emotional functioning of adolescents, and has been deemed key in successful talent development (Huebner, 2004; Singer & Janelle, 1999). In other words, adolescent athletes with higher levels of life satisfaction are likely to be in better physical, mental, emotional and social health compared to those with lower levels of life satisfaction (Huebner, 2004). Additionally, those junior athletes with high levels of life satisfaction are more likely to become experts in their respective sports (Singer & Janelle, 1999).

Previous research has suggested that participation in forms of physical activity is positively associated with the life satisfaction of adolescents (Hollstein & Due, 1990; Valois, Zulling, Huebner, & Drane, 2004; Vilhjalmsson & Thorlindsson, 1992). Specifically,

Vilhjalmsson and Thorlidsson (1992) found that participation in club sport (e.g., Australian Rules Football) is more beneficial to adolescents' life satisfaction than group sport (e.g., exercise groups) and individual sport (e.g., gymnastics). A limitation of this work is that the strenuousness of the type of activity these adolescents were participating in could explain the results. As previously argued, the elite levels of sport junior elite athletes participate in are substantially different to recreational physical activity. As such, the positive effect of club sport on the life satisfaction of adolescents might not be transferrable to the experience of junior elite athletes in club sports.

Research on the well-being of junior elite athletes is limited and often neglects to adopt a holistic perspective that examines all life domains relevant to the development of junior elite athletes (Ivarsson et al., 2015). Research that did explore the life satisfaction of elite athletes has mainly focused on injuries and athletic retirement. In injured college athletes for example, higher perceived stress was associated with diminished life satisfaction for athletes with a major injury (Malinauskas, 2010). Research on the life satisfaction of retired athletes yielded no significant relationships between their athletic identity and their life satisfaction levels (Webb, Nasco, Riley, & Headrick, 1998).

Research on life satisfaction in youth did identify some determinants of adolescents' perceptions of a satisfying life. Personal characteristics such as the personality trait neuroticism, inabilities to meet personal standards and low self-efficacy are for instance associated with lower levels of life satisfaction amongst youth (Fogle, Huebner, & Laughlin, 2002; Gilman & Ashby, 2003; Maddux, 2002). The personality trait extraversion and perceived goal attainment are associated with increased life satisfaction amongst youth (Fogle et al., 2002; Emmons & Diener, 1986).

It remains unknown how the stressors and strains associated with the talent development process of junior elite athletes are related to their levels of life satisfaction.

Also, it is unclear how levels of life satisfaction of adolescent athletes compare to those of their non-elite peers. Therefore, this thesis will explore how the life satisfaction of junior elite athletes is affected by the role strain junior elite athletes may experience.

Purpose of this research

In summary, junior elite athletes have to manage several stressors when balancing their multiple life domains (e.g., sport, school and a social life). However, little is known about how these stressors influence the lives of these athletes. For instance, we do not know how the stressors junior elite athletes experience in their dual careers influence their life satisfaction or stress levels. Another area that needs developing is how teachable psychological skills, such as coping strategies could influence the effect these stressors have on the talented athlete's life.

Therefore, this thesis will investigate (a) whether junior athletes experience role strain while balancing their multiple life domains, (b) how the several components of role strain may relate to their life satisfaction, and (c) how coping skills may influence the relationship between role strain and life satisfaction, and role strain and stress.

CHAPTER 3

SCALE SELECTION

The aim of this chapter is to discuss the selection of standardized questionnaires that were used in this thesis. Standardized questionnaires are deemed appropriate for use with children who are older than 11 years of age (Scott, 2008). As such, this research method is appropriate for the adolescent participants in this thesis, who were expected to range from 12 to 19 years of age. However, when working with adolescents, some considerations need to be made in the selection of instruments to ensure the quality of the data collected.

First, the language use in the questionnaire should be appropriate for the reading levels of the participants (Scott, 2008). Second, the response format of the instruments should be easy to understand (Scott, 2008). Finally, the willingness of the adolescent participant to answer the questions influences data quality, therefore it is crucial to keep the instruments as brief as possible (Scott, 2008). As such, scales that were developed to assess the constructs of interest in adolescent samples were preferred over scales that were developed for adult samples, and shorter questionnaires were preferred over longer ones.

Equally important was the selection of instruments that measured the key constructs of this thesis (i.e., role strain, coping, life satisfaction and stress) in relation to the purpose of the thesis; achieving a holistic view on the experiences of junior athletes. As such, the selected instruments needed to capture the constructs of interest in relation to their relevant life domains (i.e., sport, school, and social life).

The psychometric properties of the instruments also played a vital role in the selection of the instruments used in this thesis. Instruments of which the validity and reliability was extensively tested on adolescent samples were preferred over those with unknown or poor psychometric properties. Furthermore, the predictive validity of the scales was considered in the selection process.

Each section in this chapter will discuss the psychometric properties and predictive validity of the scales relevant to this research, this information is also summarized in tables at

the end of each section (Tables 3.1 - 3.4). Once instrument selection was completed, questionnaire packages were created. To ensure the appropriateness of the instruments for the sample, both questionnaire packages were piloted by early adolescents. The complete questionnaire packages are attached in Appendix F and Appendix H.

Measurements of role strain

The selection of an instrument to assess the role strain experienced in the dual careers of junior athletes posed some challenges. Thus far, instruments are either limited to the school or sport domain of adolescents lives. No instruments have tapped into the role strain experienced in the multiple life domains of junior athletes. In the sport domain, two scales have been developed to assess ambiguity and conflict experienced by team sport athletes; Role Ambiguity Scale (Beauchamp & Bray, 2002) and the Role Conflict Scale (Beauchamp & Bray, 2001).

The Role Ambiguity Scale (RAS; Beauchamp & Bray, 2002) was designed to measure ambiguity in a team sport setting, and consists of four subscales that measure the lack of clarity associated with (a) personal responsibilities, (b) behaviour necessary to carry out these responsibilities, (c) how performance is evaluated, and (d) the consequences of failing to fulfil ones responsibilities. Example items of the RAS are '*I am unclear in what my role is within the team*', '*I understand exactly what my role is for the team to function effectively*', and '*I understand what adjustments to my play need to be made in specific situations*'. Responses to the RAS are measured on a 7-point Likert-type scale ranging from 1 = *strongly disagree* to 7 = *strongly agree*.

The factorial structure of the scale was confirmed in Confirmatory Factor Analysis. High ambiguity scores measured by the RAS were associated with poorer sport performance

(Beauchamp et al., 2002), lower athlete satisfaction in how their abilities are utilized (Eys et al., 2003), increased cognitive anxiety, increased competitive anxiety and, to some extent, increased somatic anxiety of athletes (Beauchamp et al., 2003). Furthermore, the negative impact of ambiguity also extended to the athlete-coach relationship in terms of athletes' confidence in their coach's competence in leading the team through competitions and in diagnosing and formulating instructions during training sessions (Bosselut et al., 2012)

The Role Conflict Scale (RCS; Beauchamp & Bray, 2001) was designed to measure three of the four aspects of conflict that were identified by Kahn et al. (1964). These aspects were (a) intrasender conflict, which refers to incongruent expectations from a team member regarding the role, (b) intersender conflict, which reflects incongruent expectations from two or more team members, and (c) person-role conflict, which refers to incongruities between the needs and values of a player and the demands of the role. The fourth component of conflict – interrole conflict – was purposely omitted in the RCS because the researchers were interested in assessing conflict solely in the domain of sport (Beauchamp & Bray, 2001). Example items of the RCS were '*I would rather fulfil a role that is fulfilled by another person'*, '*The role I am expected to play is inconsistent with the team's needs*', and '*I am sometimes provided with conflicting information of what my role is*'. Responses to the RCS are measured on a 7-point Likert-type scale ranging from 1 = *strongly disagree* to 7 = *strongly agree*. Psychometric properties of the RCS were confirmed in Exploratory Factor Analysis, but not in Confirmatory Factor Analysis. Conflict measured by the RCS was negatively associated with role efficacy (Beauchamp & Bray, 2001).

Because the above scales were not developed to assess role strain in the dual careers of junior elite athletes, they fail to measure the full role strain construct that junior athletes might experience. They each measure one component of role strain and no instruments were available to assess the experience of the overload and underload components of role strain in

junior athletes. Furthermore, both scales were purposely designed to assess role strain within a team sport setting, and are not suitable to assess ambiguity and conflict in individual sports, or in roles outside of sport (Beauchamp & Bray, 2001).

In the educational setting, Fenzel (1989a) developed the early Adolescent School Role Strain Inventory (EASRSI).This scale comprises of four components (a) peer interaction, (b) school demands, (c) parent control and (d) teacher relations and assesses the four components of role strain in the school setting (overload, underload, conflict and ambiguity). The factorial structure of the EASRSI was provided in an Exploratory Factor Analysis. A limitation of the EASRSI is the complex response format that is used. Participants first have to indicate whether an item is 'true' or 'false' for them. Only if the participant indicates that the item was 'true' for them, they have to specify 'how true' this item was for them on a 7-point Likert scale. Example items of the EASRSI were '*Kids ignore me at school*', '*Teachers give too much homework*', and '*Parents think I can do better in school*'. The validity of the EASRSI has been assessed using Exploratory Factor Analysis. The EASRSI is widely used to assess role strain in educational psychological related topics, and scores on the EASRSI have been found to predict school performance, global self-worth, self-esteem and perceived competence in various samples of children (De Bruyn, 2005; Fenzel, 1989a, 1989b, 1992, 2000).

To address the issue with the response scale of the EASRSI, Fenzel created a third generation version of this questionnaire, namely the Early Adolescent School Role Strain Inventory-R3 (EASRSI-R3; Fenzel, 1993). The EASRSI-R3 measures school role strain on four subscales similar to those of the EASRSI: peer influences, school demands, parent control, and teacher relations. The 32 items of the EASRSI-R3 are rated on a 4-point Likert-type scale anchored at 1 = *none* to 4 = *extreme*. The EARSRSI – R3 had an overall Cronbach's Alpha value of .90, and a test-retest reliability of .78 over a 15 month period

when administered to a sample of 8 to 16 year old children (Fenzel, 1993). No information was available on the factorial structure of this version of the scale. Example items of the EASRSI-R3 include '*Teachers give too much homework*', '*Kids ignore me at school*', and '*I don't get enough time in school to spend with my friends*'. In personal communication with Mickey Fenzel (February 7, 2013), he highly recommended the use of the EARSRSI-R3 over the original EASRSI.

Collectively, none of the existing scales were deemed suitable to assess the role strain junior elite athletes experience in their dual careers. Therefore, a primary aim of this thesis was to develop and validate a Role Strain Questionnaire for Junior Athletes. The predictive validity of the newly developed questionnaire will be evaluated against the EASRSI-R3 (in Chapter 4). Table 3.1 provides an overview of each of the role strain scales discussed and includes: the authors of the scale, a description of the scale, whether the scale was tested on adolescent samples, whether reliability of the scale was assessed, whether the validity of the scale was investigated and deemed acceptable in Exploratory Factor Analysis and Confirmatory Factor Analysis, whether they scale has shown predictive validity, any additional limitations of the scale, and whether the scale was used in this thesis.

Table 3.1. Measures of adolescent role strain

Author(s)	**Scale**	**Scale Description**	**Designed for adolescents**	**Reliability α>.70**	**Validity EFA**	**Validity CFA**	**Predictive Validity**	**Limitations**	**Used in thesis**
Fenzel, 1989a	Early Adolescent Role Strain Inventory	27 items True / False, if 'True' 7 point scale 4 factors	√	√	√	x	√	Assesses role strain in school domain only, complex response format.	x
Fenzel, 1993	Early Adolescent School Role Strain Inventory-R3	32 items 4 point scale 4 factors	√	√	x	x	x	Assesses role strain in school domain only.	√
Beauchamp & Bray, 2002	Role Ambiguity Scale	20 items for defense, 20 items for offence 9 point scale 4 factors	√	x	√	√	√	Only suitable to measure ambiguity in a team sport setting.	x
Beauchamp & Bray, 2001	Role Conflict Scale	12 items 7 point scale 1 factor	√	x	√	x	√	Only suitable to measure conflict in a team sport setting.	x

Notes. EFA = Exploratory Factor Analysis. CFA = Confirmatory Factor Analysis.

Measurements of coping

There are an overwhelming number of instruments available to assess an individual's coping strategies. Examples of coping scales that are frequently used within sport and/or educational psychology are the Adolescent Coping Orientation for Problem Experiences (Patterson & McCubbin, 1987), the COPE inventory (Carver et al., 1989), the Adolescent Coping Scale (Frydenberg & Lewis, 1993a), the modified Ways of Coping Checklist (Halstead, Johnson, & Cunningham, 1993), the M-Cope (Crocker & Graham, 1995), and the Coping Inventory for Competitive Sport (Gaudreau & Blondin, 2002). Table 3.2 (page 46) provides an overview of the properties of each of these scales.

Based on the properties of each of these questionnaires, the Adolescent Coping Scale II short version (ACS II; Frydenberg & Lewis, 2009a, b) was selected for this thesis. The ACS II is widely used in adolescent samples in educational psychology research (e.g., Stasiak, Hatcher, Frampton, & Merry, 2012; Cassidy & Giles, 2013; Tanner, Hasking, & Martin, 2014) and consists of 20 items, each of which represents a specific coping strategy. Participants indicate how they would cope with various concerns or problems. Examples of items are: '*Work hard*', '*Blame myself*', and '*Accept things as they are, because I've done my best*'. Responses are indicated on a 5-point Likert-type scale anchored at 1 = *never* to 5 = *very often*.

Exploratory Factor Analysis supported two main subscales of the ACS II short version: productive coping strategies (α = .71/.73) and non-productive coping strategies (α =.68/.62) (Frydenberg & Lewis, 2009a, b). The reliability of both subscales was acceptable considering that coping scales measure different coping styles rather than one underlying unidimensional strategy, which limits the applicability of estimates of internal consistency to assess the psychometric adequacy of coping scales (Frydenberg & Lewis, 2009a; Billings & Moos, 1981). In addition, two items measure a third dimension named 'other' coping

strategies (using humour and seeking spiritual support). However, this factor is usually not included in analyses.

Therefore, the ACS II short version is sometimes referred to as an 18 item scale that does not include these other coping strategies. This could indicate potential issues in the factorial structure of the ACS II short version. Neither Erica Frydenberg nor Ramon Lewis (E. Frydenberg, personal communication, March 3, 2015; R. Lewis, personal communication, March 16, 2015) was aware of any Confirmatory Factor Analysis conducted on the ACS II. This limitation of the scale was deemed slight as Stone et al., (1991) argued that the use of Confirmatory Factor Analyses is not always appropriate for the validation of coping scales that collaps different coping strategies into one factor (such as the ACS II).

The ACS II was chosen over other coping scales because of the brevity of the scale, and its previous use in Australian adolescent samples. Furthermore, the predictive validity of the ACS II in adolescent samples is strong, and provided by multiple studies that have investigated the relationship between coping strategies and, for example, stress in the school context, well-being and risk taking of adolescents (Cogan & Schwannauer, 2011; Frydenberg, Care, Freeman, & Chan, 2009; Barron, Castilla, Casullo, & Verdu, 2002). Broadly speaking, results from these studies indicated that productive coping strategies are generally associated with functional behaviour and positive effects, while the use of non-productive coping strategies was related to dysfunctional behaviour and negative effects.

Table 3.2. Measures of adolescent coping

Author(s)	**Scale**	**Scale Description**	**Designed for adolescents**	**Reliability α>.70**	**Validity EFA**	**Validity CFA**	**Predictive Validity**	**Comments**	**Used in thesis**
Carver et al., 1989	COPE inventory	60 items 4 point scale 15 factors	X	√	√	√	√	Many adjustments made over the years	x
Frydenberg & Lewis, 2009a	Adolescent Coping Scale II	80 items 5 point scale 3 factors	√	√	√	x	√	-	x
Frydenberg & Lewis, 2009a	Adolescent Coping Scale II short version	18 items 5 point scale 2 factors	√	√	√	x	√	-	√
Patterson & McCubbin, 1987	Adolescent Coping Orientation for Problem Experiences	54 items 5 point scale 12 factors	√	x	√	x	√	Problems replicating factorial structure	x
Halstead, Johnson, & Cunningham, 1993	Modified Ways of Coping Checklist	68 items 4 point scale 4 factors	√	√	√	√	√	-	x
Crocker & Graham, 1995	M-Cope	28 items 5 point scale 12 factors	x	√	√	√	√	Focus on performance outcomes.	x
Gaudreau & Blondin, 2002	Coping Inventory for Competitive Sport	28 items 5 point scale 9 factors	x	x	√	√	x	Sport specific measure	x

Notes. EFA = Exploratory Factor Analysis. CFA = Confirmatory Factor Analysis.

Measurements of life satisfaction

There are various validated life satisfaction questionnaires that are tailored to adolescents (Gilman & Huebner, 2000). Measures of life satisfaction are based on models that diverge with respect to whether life satisfaction should be assessed globally (i.e., through context free items such as '*I have a good life*'; Huebner, 2004) or multidimensionally by including relevant life domains (i.e., by including the context such as '*I have a good family life'*; Huebner, 2004). Since the purpose of this thesis was to investigate the lived experiences of junior elite athletes in their multiple life domains, a multidimensional approach that assesses the athletes' relevant life domains was chosen.

The Multidimensional Student's Life Satisfaction Scale (MSLSS; Huebner, 1994) therefore seemed particularly suitable for this thesis, as it measures adolescents' general life satisfaction in addition to life satisfaction with family, friends, school living environment and the self. However, since this questionnaire consists of 40 items, it was deemed too long for the current research. The six item Brief Multidimensional Student's Life Satisfaction Scale (BMSLSS), which measures the same constructs as the MSLSS, was deemed of more suitable length. The BMSLSS has yielded acceptable internal consistency estimates, with an α coefficient of .85 for adolescent students (Seligson, Huebner, & Valois, 2003; Funk, Huebner, & Valois, 2006).

Upon further investigation, the Peabody Treatment Progress Battery version of the Brief Multidimensional Student Life Satisfaction Scale (BMSLSS-PTPB; Bickman et al., 2010) was chosen for use in this thesis. Example items of the BMSLSS-PTPB are '*How satisfied are you with your family life*', '*How satisfied are you with your school experience*', and '*How satisfied are you with your life overall*'. The response format of the BMSLSS-PTPB was based on Item Response Theory analysis conducted on the BMSLSS, which

suggested that the 7-point Likert type scale that was previously being used was inappropriate, and recommended the use of a 5-point Likert type scale (Bickman et al., 2010). Therefore, the response format of the BMSLSS-PTPB ranged from 1= *very dissatisfied* to 5 = *very satisfied*.

Confirmatory Factor Analysis indicated that the BMSLSS-PTPB can be used as a single scale (CFI = 0.93, GFI = 0.97, SRMR = 0.05). Additionally, correlations between items of the BMSLSS and subscales of the MSLSS suggest that the subscales could potentially be used separately (*r* ranges from 0.66 to 0.81). The BMSLSS-PTPB has been extensively tested with children from ages 8 to 18 years (Bickman et al., 2010) and correlated significantly with youth's belief in whether they could make progress towards their goals, as well as youth mental health symptom severity (Cathey, Kelley, & Dew-Reeves, 2012).

A limitation of the BMSLSS-PTPB is that it does not assess life satisfaction in the 'sport' domain. Consequently, I created a seventh item for the questionnaire. This item was based on the item that measures the life satisfaction of adolescents in school and reads: '*How satisfied are you with your sport experience*' and is answered on the same 5-point Likert type scale as the other items of the scale. In order to assess the validity of the scale with this new item, Confirmatory Factor Analysis was conducted. The results can be found in Chapter 5, and showed a slightly improved model fit.

Table 3.3. Measures of adolescent life satisfaction

Author	**Scale**	**Scale Description**	**Tested on adolescents**	**Reliability α>.70**	**Validity EFA**	**Validity CFA/IRT**	**Predictive Validity**	**Limitations**	**Used in thesis**
Huebner, 1994	Multidimensional Student's Life Satisfaction Scale	40 items 4 point scales 5 factors	√	√	√	√	√	Does not capture the 'sport' domain	x
Seligson, Huebner, & Valois, 2003	Brief Multidimensional Life Satisfaction Scale	6 items 7 point scale 1 factor	√	√	√	x	√	Does not capture the 'sport' domain	x
Bickman et al. 2010	Brief Multidimensional Life Satisfaction Scale – PTPB	6 items 5 point scale 1 factor	√	√	√	√	√	Does not capture the 'sport' domain	√ (extra item added)

Notes. EFA = Exploratory Factor Analysis. CFA = Confirmatory Factor Analysis.

Measurements of stress

There are a number of measures that can assess stress levels in adolescents. The most prominent measure of stress used in adolescent samples is the Adolescent Stress Questionnaire (Byrne et al., 2007). However, as this questionnaire does not capture stress in the sport domain this questionnaire is not suitable for use in this thesis. Although not specifically developed for adolescents, the Perceived Stress Scale (PSS; Cohen, Kamarack, & Mermelstein, 1983) was then considered as a measure of stress. This measure captures non domain specific stress, using a brief 10 item scale. An example item of the PSS is '*In the past month, how often have you felt that you were unable to control the important things in your life?'*. Responses to the PSS are measured on a 5-point Likert type scale ranging from 0 = *Never*, to 4 = *Very often*. The PSS has shown acceptable model fit in Confirmatory Factor Analysis and has been reported to have good construct validity (Cohen et al., 1983; Cohen & Williamson, 1988; Smith, Gustafsson, & Hassmén, 2010). Further, the PSS has been used successfully with athletes to measure perceived stress (Gustafsson & Skoog, 2012). However, as there were concerns regarding the length of the total questionnaire package alternatives to this measure were sought.

The measurement of stress used in this study was a single item measure that is based on the stress thermometer (Stanton, 1991). This single item reads '*How much stress did you experience last month?'* and participants were asked to indicate their response on a 11 point scale ranging from 0 = *no stress at all,* to *10 = extreme stress.* The stress thermometer has been tested on athletes and demonstrated normal distribution properties (Kowalski & Crocker, 2001). The predictive validity of the stress thermometer is strong, and provided by multiple studies. Importantly, the stress thermometer has been used in research that suggests a negative relationship between stress and negative affect in adolescent swimmers (Hadd & Crocker, 2007).

Further research that utilized the stress thermometer in an athlete sample has suggested a negative relationship between stress and mental toughness, challenge, commitment, control of emotions, control of life, and confidence in their abilities (Kaiseler, Polman, & Nicholls, 2009).

Table 3.4. Measures of adolescent stress

Author	**Scale**	**Scale Description**	**Tested on adolescents**	**Reliability α>.70**	**Validity EFA**	**Validity CFA/IRT**	**Predictive Validity**	**Limitations**	**Used in thesis**
Byrne et al., 2007	Adolescent Stress Questionnaire	56 items 5 point scale 10 factors	√	√	√	√	√	Does not assess stress in the sport domain	x
Cohen, Kamarack, & Mermelstein, 1983	Perceived Stress Scale	10 items 5 point scale 1 factor	x	√	√	√	√	-	x
Stanton, 1991	Stress thermometer	1 item 11 point scale 1 factor	√	√	N/A	N/A	√	-	√

Notes. EFA = Exploratory Factor Analysis. CFA = Confirmatory Factor Analysis. IRT = Item Response Theory testing.

Measurements of school performance

When the methodology of this thesis was developed, it aimed to record the participants' school performance by asking the schools that participated in this project to provide the Grade Point Averages (GPA) of the students who consented to partake. Due to unforeseen circumstances the GPA of the students was not shared by the schools, despite previous approval for this approach by the university human research ethical committee, as well as the Department of Education and Early Childhood Development in the state of Victoria. The measurement of school performance was therefore amended to a self-reported measurement, asking participants to indicate their approximate GPA's for the subjects English and Mathematics (the only two common subjects in Australia throughout years 10, 11 and 12 of secondary school).

Although self-reported GPA's are widely used to measure school performance, a meta-analysis using 29 studies has indicated that self-reported GPA scores tend to differ significantly from official school records (Kunce, Credé, & Thomas, 2005). Pearson's correlations between overall high-school GPA's and self-reported GPA's were relatively high (r= .82). However, actual school performance moderated the relationship between official and self-reported GPA's, where those with relatively low GPA's were likely to over-report their scores. As such, self-reported GPA's represent, on average, somewhat inflated versions of actual GPA's. Therefore, the use of self-reported GPA's is a limitation in the measurement of school performance.

In the preliminary analysis of the measurements of school performance it became apparent that the self-reported measurement of school performance posed some severe problems for statistical analysis. About a third of the participants reported not knowing their approximate school grades, which had a detrimental effect on the (already modest) sample size. Further, preliminary analysis revealed severe violations of normality assumptions which could not be

resolved by transformation of the data. Consequently, the reliability of the data was deemed inadequate and the decision was made to dismiss school performance as an outcome variable in this thesis (see Chapter 7).

CHAPTER 4

THE ROLE STRAIN QUESTIONNAIRE FOR JUNIOR ATHLETES

Junior elite athletes fulfil dual careers (Wylleman & Lavallee, 2004). They are athletes and students, and are therefore required to fulfil both training and school commitments (Brettschneider, 1999; Debois et al., 2014). Given only one in three junior elite athletes progress to a senior elite level (Oldenziel et al., 2003), accomplishing a good secondary education is critical. Yet, school is typically perceived to conflict with sport in terms of time commitment (Henriksen, et al., 2010a, b) making balancing school and sport difficult (Blom & Duijvestijn, 2008; Debois et al., 2014). Accordingly, better understanding the interplay between school and sport within the lives of junior elite athletes is an important topic of research.

A number of studies have investigated the sport specific stressors that athletes experience (Hanton, Fletcher, & Coughlan, 2005; Nicholls & Polman, 2007a, b; Tamminen & Holt, 2010). This work extends to the dual careers of athletes and the interplay between school and sport demands (Christensen & Sørensen, 2009; Debois et al., 2014). Christensen and Sørensen's (2009) research indicates that the pressures athletes experience in their daily lives, and a lack of time for friends and leisure, are associated with dropping out of school and choosing courses of lower intensity. Debois et al. (2014) similarly emphasized dissatsifaction amongst athletes who were forced to make educational decisions based on the toll the subjects would take on their time, instead of their vocational preferences. Increasingly, professional sport organisations are beginnign to recognise that a well balanced dual career will increases sport performance of junior elite athletes (Pink, Saunders, & Stynes, 2014). Hence, the present study sought to untangle the interplay between school and sport by developing and validating a measure of athlete role strain.

Role strain

Role strain emerged from research in the workplace where it was defined as "the felt difficulty in fulfilling role obligations" (Goode, 1960, p. 483). This work extends to both within-role obligations, as well as tension between role obligations. Junior elite athletes experience role strain due to the sport role (e.g., training demands, performance expectations; Brenner, 2007), but also as a result of competing, personally meaningful, roles (e.g., friends, school, family; Christensen & Sørensen, 2009; Wylleman & Lavallee, 2004). Adopting this perspective, Fenzel (1989a) offered a framework of role strain for adolescents, which encapsulates four central components.

The first component of role strain is ambiguity and is described as a lack of understanding or clarity about one's responsibilities in one or multiple roles (Fenzel, 1989a; Holt, 1982; Kahn et al., 1964). For example, a junior athlete might be unsure about the training requirements associated with his/her sport and this uncertainty might breed associated stresses. Ambiguity has been widely examined in relation to fulfilment of the athlete role. In particular, studies employing the Role Ambiguity Scale (Eys, Carron, Beauchamp, & Bray, 2003) indicate that experiences of ambiguity are associated with increased anxiety (Beauchamp et al., 2003), lower athlete satisfaction (Eys et al., 2003), and less confidence in coach competence (Bosselut, McLaren, Eys & Heuzé, 2012).

The second component role strain is conflict (Fenzel, 1989a; Holt, 1982). It refers to a discrepancy between the expected behaviours or performance by others (e.g., coaches, parents) within a particular role and the athletes' personal schema of what constitutes acceptable behaviour (or performance). For instance, a junior athlete might be expected to show aggression in his/her game, but dislike doing so. This internal discrepancy has a number of costs for

athletes' performance and well-being. For instance, role conflict has been associated with lower self-efficacy and higher burnout in university and elite athletes (Beauchamp & Bray, 2001; Kjormo & Halvari, 2002).

The third component of role strain is overload. It refers to the perception that the demands placed on athletes within and between roles exceed the personal resources to meet them (Fenzel, 1989a; Holt, 1982). Overload can thus occur due to a depletion of physical and mental vigor, self-efficacy, social-support and time. An example of overload might be a perceived lack of time to fulfil both school and sport demands. Many researchers have identified overload, or a lack of recovery time, as a critical risk factor of stress and burnout amongst athletes (Brenner, 2007). This is similarly the case in school, with deficits in self-efficacy being important to students' development of burnout (Moen, 2013).

The final component of role strain is underload. It refers to a perceived underutilization of one's resources (Holt, 1982). Underload therefore manifests when an imbalance is perceived between high personal capabilities and a lack of challenge posed by the environment. A junior athlete in a rural area, for instance, might only have access to lower level sport clubs and thus not be challenged to further develop his/her sporting abilities. When perceived abilities outweigh perceived challenge in achievement domains, apathy and boredom are expected to result (Fredricks, Alfeld, & Eccles, 2010). In sport, boredom related to a lack of challenge has been identified as a significant antecedent to dropout amongst promising athletes (Enoksen, 2011).

While the role strain framework is clearly applicable to sport, it has not been applied in this context. To date, instruments have tapped into separate elements of role strain to examine individual stressors, but no measure is available to capture the full array of role strain dimensions. In domains other than sport, tools to directly measure role strain have been

developed (e.g., Early Adolescent Role Strain Inventory; Fenzel, 1989a). Research using this tool has demonstrated that higher role strain is associated with poorer school performance, lower global self-worth, lower self-esteem and lower perceived competence (De Bruyn, 2005; Fenzel, 1989a, 1989b, 1992, 2000). The available evidence therefore indicates that role strain is important for performance and health outcomes, and it has potentially important implications for junior elite athletes.

The present set of studies

The role strain framework provides a useful heuristic for the stressors that encapsulate role stain. Therefore, it is proposed that this framework has utility to explain important variability in athletes' lived experiences in the way they balance the competing demands of their relevant life domains (e.g., school, sport family and friendships). To test this, the experiences of role strain by junior elite athletes are investigated in a series of semi-structured interviews in study 1. Based on the findings of the interviews, in the second and third studies, a measure of role strain in junior athletes was developed and validated. Overall, these studies sought to advance the understanding of and whether role strain is experienced by junior elite athletes and provide a springboard for further research into its antecedents and consequences.

Study 1 – Exploring role strain

The purpose of Study 1 was to explore the role strain that junior elite athletes experience in their relevant life domains and to inform the item generation for study 2.

Method

Participants. Twenty Australian junior elite athletes who attended secondary school at the time of the study, were interviewed (aged 13-17 years; M_{age} =15.5 years; *SD* =.9). Athletes from the team sport Australian Rules Football (ARF) and two individual sports (tennis and gymnastics) were approached. Within each sport, participants were sampled based on their current sport performance level. The gymnasts (N=5) and tennis players (N=4) were identified by their respective sport federations as belonging to the 'National Top' in their age category. The ARF players were either identified by the AFL as belonging to the 'National Top' (ARF-AFL, N=5) or scouted by a Sports Academy as talented players (ARF-SA, N=6). ARF is mainly played competitively by men, therefore our sample predominantly consisted of young men (17 men, 3 women). The mean time spent on school, sport and travel varied across participant groups. On average gymnasts spent the most time on school, sport and travel (66 hours per week; see Table 4.1). The sample included participants attending both public and private schools.

Ethical approval was granted from the research ethics committee of Victoria University and the Department of Education and Early Childhood Development in Victoria. Written consent was received from parents/guardians, and the participants prior to commencement of the study.

Table 4.1. Mean amount of hours spent on school, sport and travel per week

	ARF-AFL (N=6)		ARF-SA (N=5)		Gymnastics (N=5)		Tennis (N=4)		Total (N=20)	
	M	SD	M	SD	M	SD	M	SD	M	SD
Sport	13	3.9	16	2.4	28	6.3	28	1.4	20	8.0
School	36	1.8	31	3.1	28	7.0	18	5.9	29	7.8
Travel	10	3.0	4	1.7	10	6.4	6	.6	8	4.5
Total	59	4.4	51	5.0	66	5.7	52	4.2	57	8.0

Note: The time spent on various activities was measured during competition season.

Interview procedure. Participants were asked to record their age, sport performance level and time commitments on a sheet to be returned to the researcher prior to their interview (see Appendix A and B). Each junior elite athlete was interviewed individually and agreed verbally to audio recording of their interview (Olympus WS-812 digital audio recorder). The interview times ranged from 22 to 46 minutes (M_{time} = 35 minutes; *SD* = 8).

To ensure that the participants felt at ease, a site familiar to the participant was chosen for the interview. For athletes classified as 'National Top', interviews were conducted in a closed room at their training centre. The ARF-SA athletes were interviewed in a closed room at their school.

The interviewer followed a semi-structured interview guide (see Appendix C) which included background information, the roles the participant fulfilled, role expectations, challenges in meeting role demands and in balancing multiple roles, and how successful the participants perceived themselves to be at balancing their roles. Example questions were: '*Which roles do you fulfil*?' and '*What is your experience of balancing all of your roles*?'. In order to ensure that no life role was omitted, the participants were encouraged to talk about all of their roles, which could entail school, sports, arts, family and religion (Marks & MacDermid, 1996). The interviews were conducted by the PhD candidate (N=18) and by the principal supervisor (N=2). For confidentiality, all participants were coded (e.g., P1, P2 etc.) and their respective sports were not mentioned.

Analysis. Interviews were transcribed verbatim and coded using the MAXQDA 11 software. A full interview transcript is attached to this thesis in Appendix D. A deductive approach was adopted for the initial thematic coding, as is recommended for qualitative analysis when existing theories are being tested (Elo & Kyngäs, 2008). Specifically, the researchers

initially coded the data using the definitions of the four role stressors identified in previous research. Only semantic themes were identified. Two investigators, (the PhD candidate and dr. Fiona Ling) who were both trained in qualitative research methods, conducted the coding process.

After this initial deductive approach, an inductive approach was taken to ensure that additional higher order themes were not omitted, and to allow for lower-order themes to emerge. Three random transcripts, one from each sport, were first coded by both investigators. Differences were discussed and resolved until mutual agreement was reached. A new higher order theme 'feeling misunderstood' was added. A second set of three interviews were coded by the two researchers. Minimal differences between the researchers' coding results were noted. These differences were discussed and the researchers agreed on the coding scheme. The researchers coded and compared two more interviews and agreed that the coding scheme appeared to have reached saturation. The PhD candidate coded the remaining 12 interviews and did not identify any additional higher or lower order themes. The coded higher and lower order segments were then analysed by the researcher. First, the meaning and severity of coded segments were analysed to gain a better understanding of the components of role strain. Second, the frequency of occurrence of the coded themes were counted both within and between participants' stories.

Results

Participant identified roles and role stressors. All participants reported being an athlete, student, family member and friend. In addition, some identified themselves with other roles including; an athlete in another sport (n= 1 state level; n = 5 local club/recreational); a part-

time employee (n=2); and, a boyfriend (n=1). One ARF player identified multiple athlete roles due to his involvement in different teams (within the same sport).

All participants mentioned experiences of overload at least once in the interview. All but one participant mentioned experiences of conflict (95%), while experiences of ambiguity were reported by 75% of the participants. Only one participant (5%) reported an experience of underload. For an overview of the findings see Table 4.2

Overload. All junior elite athletes reported experiences of role overload, instances in which the athletes felt that role demands exceeded their resources. Often, these experiences were not due to one specific role, rather it was the combination of roles that exceeded the athletes' resources. A perceived lack of time to fulfil all of their role demands was frequently reported. For example, "I can get through the work no problems, but making sure that I have enough time each day to do it, that's the hardest thing" (P14) and "I just get frustrated that there's so much to do, and I feel as if there's so little time … and, not really much I can do to change that." (P9). These experiences of overload were not constantly present, but occurred periodically at times of high strain, for instance when training camps clashed with exam periods in school.

Overload was, to a lesser extent, present in school, sport, friend and family roles. For instance, some had difficulties concentrating long enough to complete all their homework, others mentioned struggling to live up to their coaches' expectations, and in one case the divorce of parents taxed the athlete's psychological and time resources.

Conflict. Due to the perceived lack of resources to fulfil all the roles the athlete would like to fulfil (overload), the prioritization of one role over the other frequently occurred. This process of role prioritization, which often involved a degree of sacrifice, forms the basis of the conflict experienced by the talented athletes. Almost half of the athletes reported not being able

to spend as much time as they would like with family and friends because of other commitments. Strong feelings were associated with having to prioritize school and sport over family and friends:

> I was tempted to quit. Just because you don't see mates, you don't get to socialize as much as what you'd normally do. It's very difficult. Sometimes it is really frustrating, because, you know, I get invited to go out and have something to eat or have dinner with someone one night, and I have got training at night. And then I think then what should I go to? And then I think I should go to gym, and then I say we'll do it another time. And then they ask me again. It is the same thing. You know, I've got training that night. I can't do it. . . . It is not really depressing, but it's sad, because I always just have to say no (P11).

However, not all prioritizations were made reluctantly. When the athletes perceived that they were sacrificing an unfavourable activity, or sacrificing activities for the greater good they experienced minimal, or no reluctance, "Growing up now, it's turning into a lot of mates going out drinking and smoking and all that sort of stuff. . . . I don't see anything beneficial in it, so sacrificing those sort of social occasions has been good" (P11). Junior elite athletes thus do not always experience conflict when prioritizing one role over the other.

Conflict was, to a lesser extent, also experienced distinct from overload. The cause of these distinct experiences of conflict included the athletes' unwillingness to practice a certain drill, to study a certain subject at school or to do house chores. As such, these experiences of conflict related to conflict of wishes between the junior elite athlete and the role sender (coach, teacher, parent or peers).

Being misunderstood. Some junior elite athletes experienced a different type of discrepancy which could not be classified as conflict as it did not appear to relate to feelings of sacrifice, reluctance, or generally not wanting to do something. Rather some athletes reported that others did not understand the full set of demands that were placed on them. This included a negative attitude from some schoolteachers because they did not appear to understand why the athletes were 'only in school half of the time', as well as non-athlete peers and relatives who did not appear to understand the athlete's responsibilities and commitments. 'Being misunderstood' was reported by 20% of the athletes in the sample.

Ambiguity. Three quarters of the interviewed athletes mentioned experiences of a lack of clarity of what was expected of them. Frequently this lack of clarity was associated with getting different and conflicting instructions from multiple role senders. An example of this was an athlete who was advised to focus on working on his kick by one coach, while the other coach mentioned that his kick was fine and he should focus on another skill. In previous literature the different opinions of multiple external role senders were considered instances of role conflict (Fenzel, 1989a; Hecht, 2001), yet our findings indicate that these experiences of conflict are intertwined with ambiguity, as they caused a lack of clarity regarding the role demands. Experiences of ambiguity were most frequent in the sport, only two athletes reported experiencing ambiguity in the school.

Underload. Only one AFR player mentioned only one experience of underload. As such, experiences of underload appear to be uncommon amongst junior athletes. This particular instance of underload occurred in the sport role. The ARF player considered the competition at his age level was too easy, and thought that his physical abilities were being under-utilized by his

football team. To alleviate this experience of underload, this athlete decided to join a higher age level team, despite his coach's advice against this decision.

Table 4.2. Summary of findings on regarding components of role strain

Role Strain Component	**Main findings**	**Prevalence (N = 20)**
Overload	• Athletes felt that role demands exceeded their resources. • Mostly caused by combination of roles rather than a specific role	100%
Conflict	• Athletes felt that they couldn't fulfil some roles as they wanted to • Often a consequence of overload and forced role prioritisation • Also exists within roles	95%
Ambiguity	• Athletes experienced a lack of clarity of what was expected of them. • Frequently due to receiving conflicting instructions from multiple role senders • Most prominent in the sport role, but also occurs in school	75%
Underload	• One athletes experienced underutilisation of his abilities. • Only reported in the sport role	5%
Being misunderstood	• Athletes reported others did not understand the full set of demands that were placed on them	20%

Role strain as a whole. Overall, the interviews provided evidence for the four components of role strain in a sample of elite junior athletes. From the perspectives of competing resources, overload (especially the resource time) and conflict (especially sacrificing) appear symbiotic. However, these two role stressors also existed independent of each other. In addition, experienced of conflict caused by conflicting demands of two or more different role senders were a contributor to experiences of ambiguity amongst the junior athletes. Further, interactions between the role strain experienced in different life domains were observed. As such, the role strain experienced in one role or between roles could potentially trigger role strain in another role. Therefore, correlations between the different components of role strain would be expected.

In addition to the role strain concept, the interview transcripts of this study were used in study 2 to create items from verbatim quotes, which increased the items' credibility and face validity (Dawis, 1991).

Study 2 – Exploratory Factor Analysis

The purpose of study 2 was twofold. First, an item pool capturing the role strain experienced by junior athletes was created. Second, the factorial structure of the RSQ-JA was analysed using Exploratory Factor Analysis.

Method

Participants. The sample consisted of 296 adolescents who participated in at least one competitive sport and who were enrolled in a secondary school at the time of measurement. The participants were recruited from year levels 7, 9 and 11 of a sport school (N=116), a private school (N= 51), and year level 7 of a public school (N=68) in Melbourne, Australia. Further, junior national level soccer players (N=10) and ARF players (N=51) were recruited from the Australian Institute of Sport.

The sample consisted predominantly of male (213 male, 83 female) team sport players (see Table 4.2). The mean age of the participants was 14.4 years (*SD* = 1.8). The sample included 16 athletes who were injured at the time of measurement. There were 89 athletes who competed at a basic junior competition level (local club/school competition), 106 competed at an advanced junior competition level (regional or state level), 27 competed in national junior competitions and 57 athletes competed at international junior events.

Table 4.3. Amount of participants per sport and gender distribution

Sports	N Male	N Female	N Total
ARF	86	0	86
Basketball	28	11	39
Soccer	27	8	35
Netball	2	17	19
Tennis	13	5	18
Athletics	5	8	13
Hockey	8	5	13
Swimming	2	11	13
Volleyball	8	1	9
Rowing	4	4	8
Cricket	7	0	7
Martial arts	2	3	5
Cross-Country	3	1	4
Dancing	1	3	4
Other sports	7	19	26
Total	213	83	296

Procedure. Support for this study was provided by three local secondary schools and two national talent development centres affiliated with the Australian Institute of Sport. Ethical approval was granted from the Department of Education and Early Childhood Learning of Victoria and the human research ethics committee of Victoria University. Parental consent (see Appendix E) was provided by parents of the adolescent participants.

Data collection procedures varied based on the preferences of the school and sporting organizations. When the junior athletes had access to the internet during data collection they completed the questionnaire online using laptops or tablets (N=170). When access to the internet and/or electronic devices was not available the participants completed a paper version of the questionnaire (N=126). Two schools agreed for the completion of the questionnaire to be scheduled during class time (i.e. slots reserved in either health or English), at the private school the adolescents were asked to complete the questionnaire as part of their homework. The participants recruited via the sporting organizations completed the questionnaire at a sport site. A

researcher was present to help athletes with any queries they had at all school and sport sites where data collection took place. The questionnaire packages took junior athletes approximately 40 minutes to complete.

Measures.

The full questionnaire package of the first quantitative study can be found in Appendix F.

The Role Strain Questionnaire for Junior Athletes (RSQ-JA). The RSQ-JA was developed for this study. The initial item pool consisted of 65-items. Items consisted of statements and participants were asked to indicate to what extent they thought these statements were 'true for me' over the past month. A 5-point Likert scale measured 'how true' the statements were for the participants ('not at all true', 'a little true', 'somewhat true', 'mostly true' and 'very true'). The item pool reflected the four components of role strain as per Fenzel's (1989a) role strain model. Consistent with the findings of Study 1, some items were created to capture 'feeling misunderstood'. The interview transcripts of Study 1 were used in Study 2 to inform the themes that the items should cover. Further, as recommended by Dawis (1991), the interview transcripts were used to create items from verbatim quotes to increase the items' credibility and face validity. Finally, the Role Ambiguity Scale (Beauchamp, Bray, Eys, & Carron, 2002) and the Early Adolescent Role Strain Inventory (Fenzel, 1989a) were used for wording of some items and instructions to the questionnaire.

No reverse scored items were employed in our initial pool because 'the disadvantages of items worded in the opposite direction outweigh any benefits' (DeVellis, 2003, p. 70). Following the guidelines of the Delphi Method (Dalkey & Helmer, 1963), two external experts in psychological scale development and one external expert in adolescent role strain were

consulted. These consultations were completed to improve face and content validity of the item pool. Based on their suggestions some items were rephrased or removed.

To explore the face and content validity of the questionnaire for an adolescent sample, two methods were used (Vogt, King, & King, 2004). First, the item pool was piloted by two early adolescents. They were asked to read the items out loud to the researcher and explain how they interpreted the items. Some minor changes in the wording were made on the basis of adolescent piloting. Second, a Flesch-Kincaid Grade Level Test was conducted to estimate the reading proficiency needed to understand the items. This test was conducted in Microsoft Office Word (version 2010) and used a formula which considers the difficulty of each sentence in a document based on sentence length (SL) and the average number of syllables per word (SW). Items that required a high reading proficiency level were rephrased. The final 65 item pool is, according to the The Flesch-Kincaid Grade Level score, suitable for children in grade 4, which corresponds with children who are about 10 years of age. As the participants of this study were between 12 and 18 years old, the item pool was deemed appropriate for our participants' reading levels. The final themes of the questionnaire were extracted using explanatory factor analysis.

The Early Adolescent School Role Strain Inventory – R3 (EASRSI-R3). Role strain in school was assessed using the EASRSI – R3 (Fenzel, 1993). The EASRSI – R3 is a third generation version of the previously developed EASRSI (Fenzel, 1989a). The EASRSI – R3 measures school role strain on four subscales: school demands, peer influences, teacher relations and parent control. The EARSRSI – R3 had an overall Cronbach's Alpha value of .90, and a test-retest reliability of .78 over a 15 month period (Fenzel, 1993). The 32 items of the EASRSI-R3 are rated on a 4-point Likert-type scale anchored at 1 = *none* to 4 = *extreme*.

***The stress thermometer*.** The stress thermometer (Stanton, 1991) is a single item scale which is used as an indicator of stress intensity. The item (*How much stress did you experience last month?*) is answered on an 11 point scale, where 0 is anchored at 'no stress at all' and 10 is anchored at 'extreme stress'.

Data Analysis. Exploratory Factor Analysis was conducted on the 65 items of the RSQ-JA using Principal Components Analysis (PCA) to extract the factors. The suitability of the data for factor analysis was confirmed by the presence of many coefficients of 0.3 and above in the correlation matrix, as well as the Kaiser-Meyer-Oklin value of 0.91 (Kaiser, 1974) and a highly statistical significant score on the Bartlett's Test of Sphericity (Bartlett, 1954).

PCA revealed 16 components in the RSQ-JA exceeding an eigenvalue of 1, explaining 65.1% of the variance in total, and 27.4% to 1.6% individually. Breaks in the scree plot were apparent after the fourth and fifth component. These fourth and fifth factors explained 40.6% and 43.3% of the variance respectively. A four factor solution was supported by the Parallel Analysis, with four eigenvalues exceeding the corresponding criterion values for a randomly generated data matrix of the same size (65 items x 269 respondents). Four and five factor solutions were examined, and ultimately a five factor solution was preferred. As it is expected that the factors encapsulating role strain correlate, oblique (oblimin) rotation was used (Tabachnick & Fidell, 2007). Incremental validity was calculated correlating the results of the RSQ-JA to the EASRSI-R3 (Fenzel, 1993).

Results

In the first two iterations of the Exploratory Factor Analysis requesting 5 factors, a total of 17 items were eliminated because they failed to meet the minimum criteria of having a primary factor loading of .3 or above, and no cross-loading of .3 (Tinsley & Tinsley, 1987). In

addition, items were eliminated that conceptually appeared to load on the wrong factor. This process led to the removal of another 20 items after which a subsequent iteration was requested. In the following iteration, there were two further items with a factor loading under .3 and were thus removed. As well, at this stage, a further item was removed because it conceptually appeared to be loading in an incorrect factor. Following this, a final iteration was requested and, here, two items were deemed too similar to stronger loading items on the same factor, and a third item did not conceptually fit on its loaded sub-scale.

The final, 25 item, five-factor solution explained 54% of the variance in total, in which each of the factors explained 29%; 9%; 7%; 5% and 5% of variance respectively. The anti-image correlation matrix showed one correlation of .65 ('I am not challenged at school), all others were ≥ 0.84. Additionally, the Kaiser-Meyer Olkin measure of sampling was excellent (0.88) and the Bartlett's test of sphericity highly significant (χ^2 (300) = 2429.9; $p \leq 0.001$). Interpretation of these results indicated that the five factors were underload, ambiguity, overload in sport and between roles, school overload and conflict.

Construct reliability of the RSQ-JA was tested by calculating composite reliability scores. Threshold values of 0.7 or more are commonly acceptable, although values below 0.7 have previously been considered acceptable too (Hair, Andersen, Tatham, & Black, 1998). All factors exhibited composite reliabilities exceeding .70 (see Table 4.4).

Correlational analyses. The construct validity of the 25 item RSQ-JA was assessed by comparing the scale to an existing measure (Kilne, 1986). Role strain measured by the RSQ-JA had a large positive correlation with role strain measured by the EASRSI-R3 (r (294) = .64, p <.01), indicating that both scales measure a similar underlying construct (i.e., role strain), but that differences existed between both scales. Concurrent validity was assessed by examination of the correlation between role strain measured by the RSQ-JA and stress. A moderate positive

association between role strain measured by the RSQ-JA and stress was found (r (294) = .45, p < 0.01), this correlation was larger than the relationship between role strain measured by the EASRSI-R3 and stress (r (294) = .26, p < 0.01).

Table 4.4. Rotated factor loadings of the RSQ-JA items

	Loadings onto factors					CR
	1	2	3	4	5	ρ
Factor 1: Overload in sport and between roles						.80
My body is tired because I do a lot of sport	.785					
Sport takes up too much of my time*	.698					
My brain feels tired because I do a lot of sport	.678					
I can't spend enough time with my friends because I am too busy	.650					
I get so much advice on how to become a better athlete that it is hard to remember it all	.639					
It is difficult for me to get everything done because I spend a lot of time travelling (between home, school, sport and other activities)	.577		-.304			
My brain is usually tired at the end of the day	.576					
I can't spend enough time with my family because I am too busy	.474					
Factor 2: Ambiguity						.82
I don't know what to do to become a successful student		.692				
I don't know what to do to become a successful athlete		.654				
I don't know how my performance as an athlete is measured		.626				
I don't know what to do to be a good family member		.566				
I don't know what happens if I don't do my schoolwork		.546				
My coaches don't agree on what they want me to do*		.424				
Factor 3: Overload in school						.83
School and homework take up too much of my time			-.810			
My teachers give me too much homework			-.803			
I can't complete my schoolwork because too much is due at the same time			-.632			
My schoolwork is too difficult			-.558			
Factor 4: Underload						.76
I am not challenged at school				.691		
My roles aren't challenging enough				.623		
I am not challenged as an athlete				.621		
Factor 5: Conflict						.80
I don't always like to focus on the role which others expect me to focus on*			-.303	.494	.363	
I have to do things for my sport that I don't really want to do					.769	
I don't like parts of my training program					.608	
I don't feel like doing family chores					.502	

* Item removed during Confirmatory Factor Analysis.

Study 3 – Confirmatory Factor Analysis

The purpose of study 3 was to cross-validate the findings of study 2 by subjecting our 25-item RSQ-JA pool to a Confirmative Factor Analysis (CFA) to test the factorial structure of the RSQ-JA. Further, the concurrent validity of the RSQ-JA (as validated by CFA) was explored.

Method

Participants. The sample consisted of 124 male junior elite ARF players who were enrolled in secondary school at the time of measurement. The players were recruited from the Australian Football League (AFL) talent academy (N=45) and the regional talent development program of five 'TAC cup' teams (N=79). These TAC cup teams were located in metropolitan, regional and rural Victoria and play in the peak competition for adolescent ARF players. The AFL talent academy recruits its athletes from across Australia. The mean age of the participants was 16.8 years (*SD* = 0.7). The participants were following education in either in year 10 (N= 13), year 11 (N=45), or 12 (N= 46) of secondary school.

Measures.

The full questionnaire packages for the second quantitative study can be found in Appendix H**.**

The RSQ-JA. The pool of 25 items emerging from the Exploratory Factor Analysis in study 2 was used as the RSQ-JA.

***The stress thermometer*.** See study 2 for a description of the stress thermometer.

The Adolescent Coping Scale II (ACSII) short version. The short version of the Adolescent Coping Scale II (Frydenberg & Lewis, 2009a, b) was used to measure coping strategies that were adopted by the adolescents. This scale consists of 20 items, each of which represents a specific coping strategy. The items of the ACS II are rated on a 5-point Likert-type

scale anchored at 1 = *never* to 5 = *very often*. This short version of the ACS II consists of two main subscales; productive coping strategies (α = .71), and non-productive coping strategies (α =.68). In addition, two items measure a third dimension named 'other' coping strategies (using humour and seeking spiritual support).

Procedure. Support for the current study was provided by the AFL and the Victorian Football League, as well as the five participating TAC cup clubs. Parental consent was provided by parents of participants under 18 years of age, participants who were 18 years of age at the time of measurement signed the consent form themselves (see Appendix G). Data collection procedures varied based on the preferences of the participating football teams. Data from the AFL talent academy and the rural TAC cup team were collected using paper versions of the questionnaire (N=64), data of the four other TAC cup teams was collected using an online version of the questionnaire (N=60).

Data Analysis. The factorial structure of the 25-item RSQ-JA was examined with CFA using IBM SPSS Amos 20 (Arbuckle, 2011). One item from each of the five factors was fixed to 1.0 for the purposes of identification and latent variable scaling. There is some debate regarding the statistics that should be used for the assessment of model fit. Recently, it has been argued that the overall fit of the model should be assessed using values of several fit indices, rather than focusing on one statistic (Williams, Vandenberg, & Edwards, 2009). Furthermore, the cut-off values of these fit indices should be used as guides rather than absolute values as these statistics are prone to misspecification, dependent upon the sample size (Heene, Hilbert, Draxler, Ziegler, & Buhner, 2001). Since the current study had a relatively low sample size, fit indices that are reasonably robust to low sample size issues were selected. The adopted fit indices are described below.

The traditional measure for evaluation the overall model fit is the Chi-square value (Hu & Bentler, 1999). A good model fit would be indicated by an insignificant result at a 0.05 threshold (Barrett, 2007). However, the Chi-square statistic is sensitive to sample size, as is the case here, and so I relied upon other indices of model fit alongside the chi-square. First, the Root Mean Square Error of Approximation (RMSEA) was used to estimate how well the model would fit the populations' covariance matrix (Byrne, 1998). Second, the Comparative Fit Index (CFI, Bentler, 1990), a revised form of the Normed-Fit Index (NFI), was used because it performs well with low sample sizes (Tabachnick & Fidell, 2007). Finally, the standardized root mean square residual (SRMR) was used to represent the square root of the difference between the residuals of the sample covariance matrix and the hypothesized covariance model. Model fit was deemed adequate when; CFI > .90 and RMSEA and SRMR < .10 (Marsh, Hau, & Wen, 2004).

Results

Preliminary analyses. Only 0.003% of the possible data points were missing. As such, the missing data was assumed to be missing at random. The expectation maximization algorithm was used to impute missing values. The univariate skewness of the 25 items ranged from - 0.09 to 3.13, the univariate kurtosis ranged from - 0.92 to 9.4. Mardia's normalized coefficient indicated significant multivariate kurtosis (kurtosis = 106.358, critical ratio = 16.117). To address the non-normality, all CFA's were conducted using the maximum likelihood (ML) estimation and bootstrapping was employed (Nevitt & Hancock, 2001).

Confirmatory Factor Analysis. The initial CFA, using the 5 factor structure, suggested that modifications to the 25-item RSQ-JA were required: χ^2 (265) = 452.24, p = 0.07; RMSEA = .08; CFI = 0.82; SRMR = 0.08. In a sequence of CFAs three problematic items were removed (see Table 3), which increased the model fit: χ^2 (193) = 267.06, p = 0.32; RMSEA = 0.06; CFI =

0.91; SRMR = 0.08. These values indicate that the model is acceptable fit in accordance with the guidelines described above. The five factor structure of the RSQ-JA can be found in Figure 4.1.

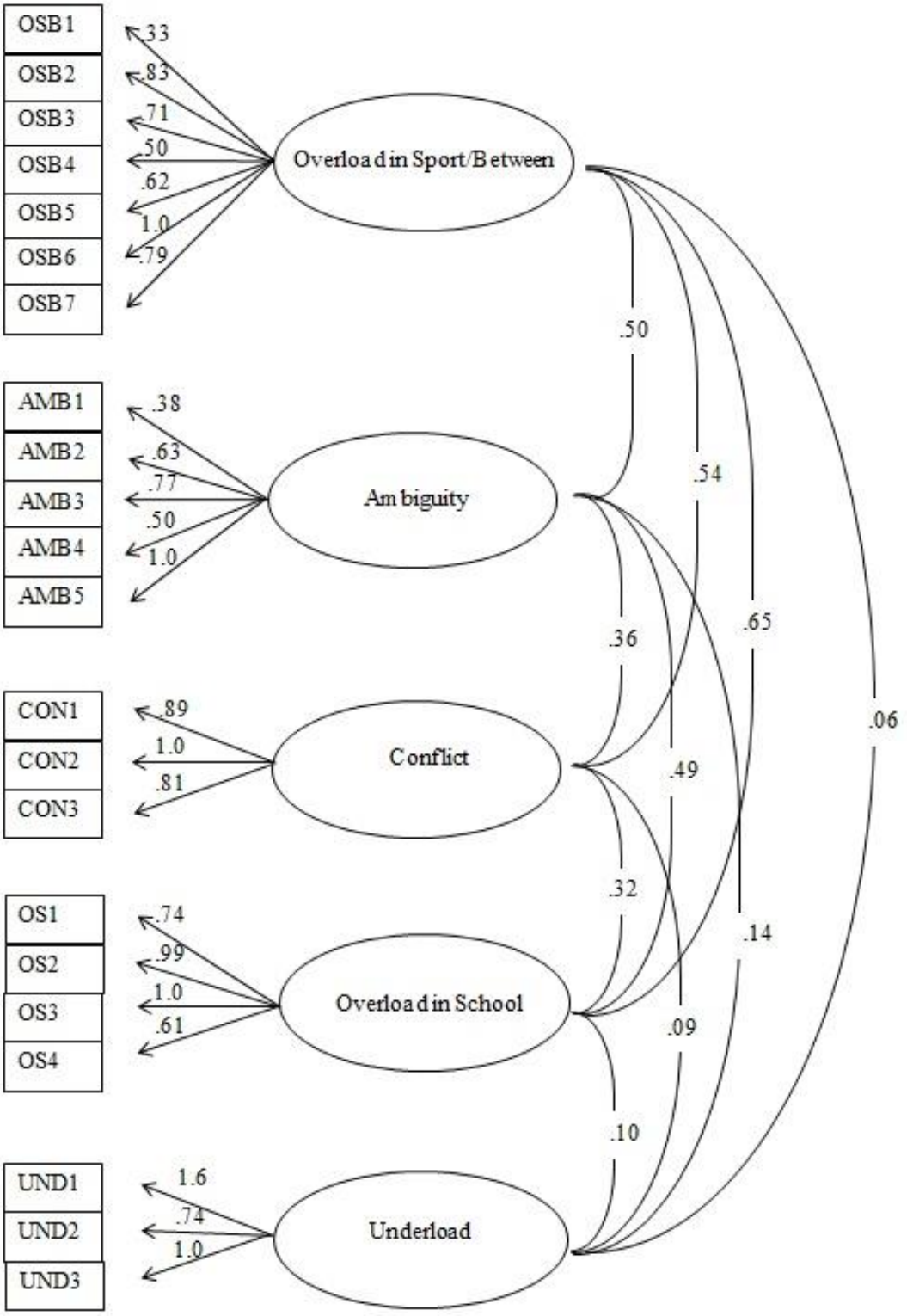

Figure 4.1. *Five factor structure of RSQ-JA*

Construct reliability of the RSQ-JA was tested by calculating composite reliability scores. Composite reliability values for overload in school ($\rho = 0.88$), overload in sport and between roles ($\rho = 0.84$), ambiguity ($\rho = 0.83$), underload ($\rho = 0.73$), and conflict scales ($\rho = 0.79$) indicated acceptable construct reliability. Subscale inter-correlations ranged from 0.17 to 0.59 and were all positive. Except for the correlation between underload and overload in sport and between roles, all correlations were significant ($p < 0.05$).

Some alternative models were run to assess whether the five factor 22 item RSQ-JA was the best fit to the observed data (Byrne, 2006; Jackson, Gillaspy, & Parc-Stephenson, 2009). Firstly, consistent with Fenzel's (1989)'s research on role strain a four factor structure was tested on all 25 items of the RSQ-JA, in which 'overload in school' and 'overload in sport and between roles' were encompassed in one 'overload' factor. The fit of this four factor model was worse than the five factor model: χ^2 (269) = 538.50, p = 0.003, RMSEA = 0.09, CFI = 0.73, SRMR = 0.09). Secondly, a hierarchical model was tested in which the five factor model was represented by one higher order 'role strain' factor (with the 22 items). The fit of this hierarchical measurement was adequate: χ^2 (199) = 297.74, p = 0.183, RMSEA = 0.06, CFI = 0.88, SRMR = 0.08, with a low CFI score, indicating that this model could have potential, but is not as good as the five factor first-order model. Figure 4.2 displays the hierarchical five factor structure of the RSQ-JA. Finally, a one-factor model was tested, which produced a very poor fit to the data: χ^2 (204) = 419.81, p = 0.007, RMSEA = 0.09, CFI = 0.74, SRMR = 0.09.

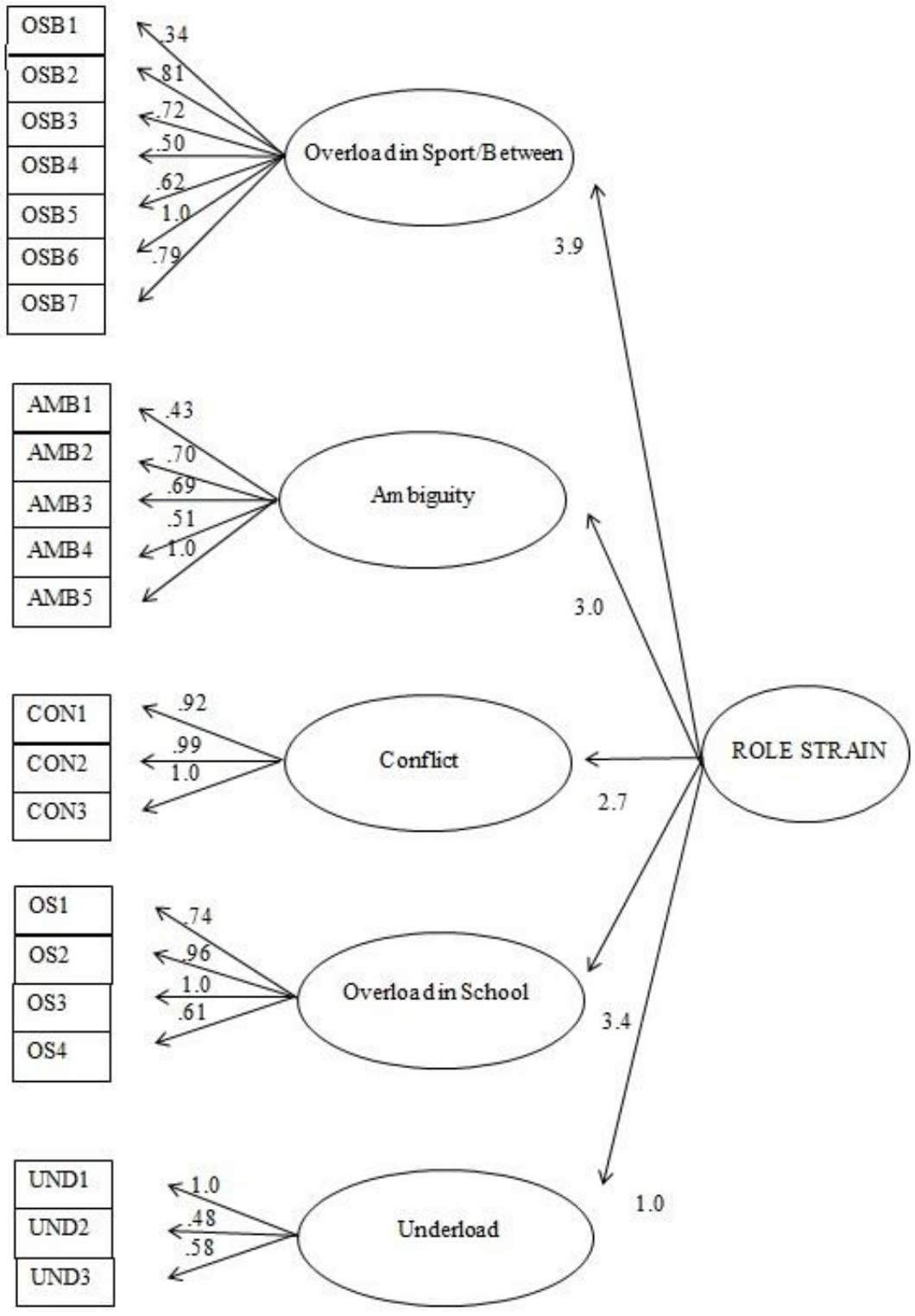

Figure 4.2. *Hierarchical five factor structure of RSQ-JA*

Correlational Analyses. Concurrent validity was assessed by examining the correlations between the RSQ-JA, stress and coping (see Table 4.5). The results indicated that role strain measured by the RSQ-JA was positively associated with stress (r (123) = .50, p <.01). Furthermore, the scores on the RSQ-JA were also positively associated with the use of non-productive coping strategies (r (123) = .55, p <.01).

Table 4.5. Pearson correlations between RSQ-JA subscales and the total scale, stress and ACS subscales.

	OSB	AMB	OS	UND	CON	RSQ-JA	Stress	ACS NP	ACS P
OSB	1	.500**	.560**	.173	.590**	.808**	.572**	.448**	-.015
AMB		1	.499**	.395**	.520**	.777**	.315**	.495**	-.195*
OS			1	.187*	.411**	.786**	.373**	.428**	-.021
UND				1	.200*	.452**	.179*	.154	-.173
CON					1	.766**	.340**	.428**	-.100
RSQ-JA						1	.503**	.549**	-.118
Stress							1	.449**	-.079
ACS NP								1	.059
ACS P									1

Notes. OSB = overload in sport and between roles. AMB = ambiguity. OS = overload in school. UND = underload. CON = conflict. RSQ-JA = Role Strain Questionnaire for Junior Athletes. ACS NP = Adolescent Coping Scale II 'Non Productive'. ACS P = Adolescent Coping Scale II 'Productive'.
* Significant at the 0.05 level (2-tailed).
** Significant at the 0.01 level (2-tailed).

Discussion

Across three studies, role strain was utilized as a framework to develop and validate an instrument assessing the role strain experienced by junior athletes. The first study investigated the strain junior athletes experience from managing the concurrent demands of their multiple life domains in twenty semi-structured interviews. Consistent with the Lifespan Model, all junior athletes mentioned fulfilling school, sport, friend and family roles (Wylleman & Lavallee, 2004). Results supported the applicability of the role strain framework (Fenzel, 1989a, Holt, 1982) to

investigate the stressors junior elite athletes' experience. Guided by these findings, studies 2 and 3 focused on the second aim of this paper: the development of the RSQ-JA, a measure to assess the levels of role strain that elite junior athletes experience.The second and third study demonstrated that the 22 item This RSQ-JA exhibited good psychometric properties and concurrent validity with regards to stress and coping strategies of junior athletes.

The RSQ-JA measures role strain using five subscales: (a) overload in sport and between roles, (b) conflict, (c) ambiguity, (d) underload, and (e) overload in school. The components conflict, ambiguity and underload were consistent with previous conceptualizations of role strain (Fenzel, 1989a; Holt 1982) as well as with the interviews conducted in study 1. The fifth component of role strain 'being misunderstood', which was discovered in study 1, did not emerge in the subsequent questionnaire validation in Exploratory Factor Analysis. The items that were created to measure 'being misunderstood' did not cluster together, rather they appeared to be randomly distributed over several factors in the Exploratory Factor Analysis, and mostly loaded low on these factors (< .3). Further, in an extension to the existing literature, perceived overload separated into two subcomponents, namely; overload in school, and overload in sport and between roles. These findings indicate that overload in school causes a different kind of strain in junior athletes than overload in sport and between roles. More research is needed to investigate this.

The concurrent validity of the RSQ-JA was assessed by examining its correlations with stress. A significant correlation was found for both total role strain, and all five subscales. Overload in sport and between roles correlated strongly with stress ($r > .50$) while the relationship between underload and stress was small/medium ($r < .30$). This finding is consistent with research by Shultz et al. (2010) that indicated significant relationships between overload

and underload and stress, where the relation between underload and stress was weaker compared to the relationship between overload and stress. Broadly, this finding indicates that overload is a greater contributor to stress compared to underload. Further empirical research is needed to investigate the relationship between the components of role strain and associated stress experienced by junior elite athletes, as well as the associations between underload and boredom (Fredricks et al., 2010).

The incremental validity of the scale was assessed by correlating the RSQ-JA and the EASRSI-R3 with stress. Both scales significantly correlated with stress, however the correlation between the EASRSI-R3 and stress was weaker. This suggests that stress experienced by adolescent athletes is better predicted by a scale that considers all of the roles elite junior athletes fulfil, compared to a scale that only measures role strain in school. The RSQ-JA also correlated significantly with the use of non-productive and productive coping strategies of the adolescent athletes. Specifically, higher levels of role strain were associated with increased use of non-productive coping strategies. These findings are congruent with past literature that suggest that adolescent athletes are not able to increase the use of productive coping strategies when role strain increases, and resort to coping strategies which are non-productive in dealing with the underlying issue (Ebata & Moos, 1991; Galaif et al., 2003). Future studies could explore how coping interventions might help adolescent athletes to better deal with role strain and how such interventions might help functioning and performance in their different roles.

Although this study successfully produced a measure of role strain in adolescent athletes, some limitations need to be addressed. Firstly, this research relied solely on self-report data. Although this provides insight in the adolescents' perception of role strain, self-report of stressors can be confounded (Spector, 1994). For instance, the 'mental toughness' culture that is

prevalent in ARF, could cause talented adolescent football players to indicate low scores on the RSQ-JA, as admitting vulnerability and emotions is perceived as 'weak' (Tibbert, Andersen & Morris, 2014). As a preventive measure, all participants were informed that no individual responses would be reported. Additionally, research has suggested that the AFL operates under the assumption that a balanced sport and off-field life will ensure not only their players' well-being, but also facilitates the players' on-field performance (Pink et al., 2014). All junior elite ARF players received support in their dual careers from 'talent development managers' who were specifically appointed by the AFL to assist players with their pursuits outside of sport. This support might decrease the role strain experienced by the players. As such, the findings of this study might underestimate the amount of role strain experienced by a wider population of junior elite athletes. Future research investigating the role strain experienced by elite junior athletes in a wide range of sports should address this limitation.

Second, although role strain appears to be a suitable framework to assess the relationship between stressors and their respective consequences, other strain theories could also potentially be used. For example, General Strain Theory - which suggests that people experience strain when they lose something of value, when they are being treated in a negative manner, or when they are unable to achieve certain goals (Agnew, 2001) could also be used to interpret the stressors talented athletes experience. However, we deem the applicability of role strain greater than General Strain Theory, as the latter does not emphasize the different roles individuals occupy. For elite junior athletes it is crucial to consider all roles they fulfil, therefore the role strain approach appears particularly suitable for them.

Third, like most research on expertise, issues with sample sizes were a recurrent constraint in this thesis. Especially the sample size used in study 3 was considered low (N=124).

Therefore, fit indices that are reasonably robust to issues with low sample size were used in study 3. As such, the sample sizes assembled for the studies in this chapter were acceptable for the statistical analyses conducted. Nonetheless, future research is encouraged to obtain larger sample sizes when further validating the RSQ-JA.

To conclude, the current research confirmed the utility of role strain as a framework to explain important variability in junior athletes' lived experiences in the difficulties they faced in fulfilling the concurrent demands of their dual careers, and showed promising psychometric properties for the RSQ-JA. However, continued validation should be conducted to confirm the factorial structure of the RSQ-JA. Further, this research provided some preliminary evidence for the importance of measuring role strain experienced by adolescent athletes in their sport, school, family and friend life domains by showing that role strain correlates with stress. From an applied perspective, the RSQ-JA may be a helpful tool for coaches and teachers to identify high and low strain periods, by tracking and monitoring role strain over time. Going forward, we hope that the RSQ-JA will be used to advance our understanding of the effect of role strain on the performance and well-being of junior athletes. Experiences of role strain in secondary school have already been associated with decreased school performance, life satisfaction, global self-worth, self-esteem and perceived competence in high school students (De Bruyn, 2005; Fenzel, 1989a, 1989b, 1992, 2000). It is thus important to understand how experiences of role strain in dual careers affect the well-being and school and sport performance of junior athletes so that these youngsters can be better supported.

CHAPTER 5

ROLE STRAIN AND LIFE SATISFACTION IN JUNIOR ATHLETES

Recent literature has emphasized the importance of a holistic perspective in athlete talent development, where the athlete is considered as a 'whole person' who fulfils dual careers as a student-athlete (Henriksen, 2010a, b; Wylleman & Lavallee, 2004). This holistic view highlights the importance of investigating the personal, environmental and organizational factors associated with the multiple life domains of an athlete if we are to develop a complete understanding of the lived experiences of this unique cohort (Henriksen 2010a, b; Wylleman & Lavallee, 2004). A concern that has arisen from work utilizing this holistic perspective of talent development is whether the focus placed on the junior elite athletes' sport performance comes at the cost of the overall development of the adolescent (Miller & Kerr, 2002). It has therefore been argued that it is crucial to further explore how the physical and psychological health of junior elite athletes can be facilitated (Strachan, Côte, & Deakin, 2011).

The importance of a holistic view on the experiences of junior elite athletes is further supported by findings of Christensen and Sørensen (2009). Their work indicated that athletes who have some sort of natural academic ability, live close to their sport club, go to school close to home and the club - and can therefore maintain regular contact with friends and family- are more likely to balance school and sport with relative ease. Young athletes who are not in this position can experience serious problems in their dual careers. Specifically, lower exam results, higher levels of stress, increased incidence of school dropout and mental breakdown have been reported (Christensen & Sørensen, 2009). As such, the pursuit of fulfilling dual careers could affect the well-being of student athletes. However, very few studies have examined how junior elite athletes' dual careers can impact these young athletes' well-being (Burgess & Naughton, 2010; Ivarsson et al., 2015).

It has been suggested that subjective well-being is composed of two separate, albeit related, components: affect and life satisfaction (Diener, 1993). Affect refers to short-lived emotional components of well-being, while life satisfaction refers to an individual's longer lasting cognitive appraisal of his/her overall quality of life (Veenhoven, 1996). Life satisfaction is positively associated with the physical, mental, social and emotional functioning of adolescents (Huebner, Suldo, Smith, & McKnight, 2004). In other words, adolescent athletes with higher levels of life satisfaction are likely to be in better physical, mental, emotional and social health compared to those with lower levels of life satisfaction.

Previous research has suggested that participation in physical activity is positively associated with the life satisfaction of adolescents (Hollstein, Ito, & Due 1990; Valois, Zulling, Huebner, & Drane, 2004; Vilhjalmsson & Thorlindsson, 1992). However, junior elite athletes are required to participate in a substantially different form of physical activity to the recreational physical activity considered in the above studies. Firstly, these differences between elite athletes and recreational athletes concern both training quantity and quality (Baker, Côté, & Abernethy, 2003; Baker, Horton, Robertson-Wilson, & Wall, 2003). Not only do junior elite athletes spend more time practicing their skills (Baker, Côté, & Abernethy, 2003), they also devote more time to participating in specific activities that are deemed relevant to developing other essential skills needed for expert performance, such as video training, competition and one on one coach instruction (Baker et al., 2003). Secondly, junior elite athletes are required to cope with disappointments such as failure and sport related injuries (Godbert, 2012). Further, junior elite athletes have to manage the mental stress associated with sport performance expectations, which are both self-imposed as well as originating from a wider social context, such as parents and coaches (Godbert, 2012).

The fulfilment of a dual career in junior elite sport and school therefore typically invokes a series of challenges, which are investigated in this thesis by adopting a role strain perspective. Role strain is described as the difficulties that junior elite athletes experience when fulfilling the demands from their dual careers, and is encapsulated as four interrelated stressors, namely; overload, underload, ambiguity and conflict (Fenzel, 1989a; Goode, 1960; Holt, 1982).

As mentioned in Chapter 4, overload refers to situations in which demands exceed personal resources (Fenzel, 1989a). Many researchers have identified physical overload, or a lack of recovery, as a risk factor that may lead to a junior athlete's burnout (Brenner, 2007; Kjormo & Halvari, 2002). Further, overload in school has been negatively associated with life satisfaction, school performance, global self-worth, self-esteem and perceived competence in high school students (De Bruyn, 2005; Fenzel, 1989a, 1989b, 1992, 2000). As such, experiences of overload by junior elite athletes are expected to lead to decreased life satisfaction.

Underload reflects a perceived underutilization of ones abilities (Fenzel, 1989a). In educational psychology, it is believed that progressively more difficult and challenging levels of skill are critical in achieving expert performance (Rogers, 2007). In academically and athletically gifted children, experiences of underload have been associated with boredom, decreased passion, a rise in psychological distress (existential depression), and increased stress (Csikszentmihalyi, Rathude, & Whalen, 1993; Fredricks, Alfeld, & Eccles, 2010). Findings of Chapter 4 have indicated that experiences of underload are uncommon amongst junior elite athletes. Yet, experiences of underload could potentially be associated with decreased life satisfaction in junior elite athletes.

Ambiguity refers to a lack of clarity of one's responsibilities (Holt, 1982; Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964). In the sporting domain four sources of role ambiguity have

been mentioned (a) a lack of knowledge about one's responsibilities, (b) lack of information on expected behaviour, (c) lack of knowledge on how one's performance is evaluated, and (d) the consequences of not meeting certain role demands are unclear (Beauchamp et al., 2002). Experiences of ambiguity by adolescent athletes in the sport context are associated with lower athlete satisfaction in how their abilities are utilized (Eys et al., 2003), increased cognitive anxiety, competitive anxiety and, to some extent, somatic anxiety (Beauchamp et al., 2003), as well as poorer sport performance (Beauchamp et al., 2002). These findings seem to allude to a possible negative association between athletes' experiences of ambiguity and their life satisfaction.

Conflict refers to a discrepancy between the athlete's wishes and demands placed on them by others (see Chapter 4). In other words, an example of conflict is a situation in which the athlete would like to skip a training session to spend time with friends, but cannot do so because the coach requires the athlete to be present at every training session. Most research investigating experiences of 'conflict', touches upon this friction between the requirements of multiple roles (and thus also captures the 'overload' component of role strain). Since the findings of Chapter 4 indicated that conflict and overload go hand in hand, one would expect that experiences of conflict are related to life satisfaction in a similar fashion as overload.

The aim of this study was to investigate whether experiences of the overload, ambiguity, conflict and underload components of role strain were associated with the life satisfaction of junior elite athletes. It was hypothesized that each of these components of role strain are negatively associated with the life satisfaction of junior elite athletes.

Method

Participants

Participants were 112 male junior elite ARF players who were, on average, 16.8 years of age (*SD*=.71). All participants were enrolled in either year 10 (N=13), year 11 (N= 57) or year 12 (N=42) at secondary school in Australia. The participants were part of state (TAC Cup, N=69) or national (N=42) AFL (AFL) talent academies.

Measures

The Role Strain Questionnaire for Junior Athletes (RSQ-JA). The RSQ-JA is a 22-item scale that is designed to measure role strain in the sport, school, family and friend roles of junior athletes. The RSQ-JA was developed and validated in Chapter 4 of this thesis and measures the four components of role strain (Fenzel, 1989a) using five subscales: underload, ambiguity, conflict, overload in school, and overload in sport and between roles. Example items are: '*I can't spend enough time with my friends because I am too busy*', '*My schoolwork is too difficult'*, and '*My roles aren't challenging enough*'. Responses are indicated on a 5-point Likert type scale which records how true each of the statements is for the participants ranging from 1= *not at all true*, to 5 = *very true*. The scale was validated using a Confirmatory Factor Analysis on a sample of junior athletes and had acceptable model fit (χ^2 (193) = 267.06, p = 0.32, RMSEA = 0.06, CFI = 0.91, SRMR = 0.08).

The Brief Multidimensional Student Athlete Life Satisfaction Scale (BMSALSS). The BMSALSS is an adapted version of the Peabody Treatment Progress Battery version of the Brief Multidimensional Student Life Satisfaction Scale (BMSLSS-PTPB; Bickman et al., 2010). The BMSLSS-PTPB in turn, is a modification of the BMSLSS (Seligson, Huebner, & Valois, 2003) in which the response format of the questionnaire was modified from a 7-point Likert-type scale

to a five point scale based on Item Response Theory analysis (Bickman et al., 2010). Example items of the BMSLSS-PTPB include: '*How satisfied are you with your family life*', '*How satisfied are you with your school experience*', and '*How satisfied are you with your life overall*'. Responses ranged from 1= *very dissatisfied* to 5= *very satisfied*.

The BMSLSS-PTPB can be used as a single scale (CFI = 0.93, GFI = 0.97, SRMR = 0.05), however scores on the unadjusted version of the BMSLSS correlate strongly with the longer Multidimensional Student Life Satisfaction Scale (r = 0.66 and 0.81), indicating that the items could potentially be used as separate scales. The BMSLSS-PTPB has been extensively tested in children aged 8 to 18 years (Bickman et al., 2010; Huebner et al., 2006).

An adaption to the BMSLSS-PTPB was necessary for this study because it does not assess life satisfaction in the 'sport' domain. Therefore, a seventh item was added to the questionnaire. This was based on the item that measures the life satisfaction of adolescents in school and reads: 'How satisfied are you with your sport experience' and is answered on the same 5-point Likert type scale as the BMSLSS-PTPB. The factorial structure of the BMSALSS is discussed in the results section of this study.

Procedure

Ethical approval was granted by the university Human Research Ethics Committee. Further, the AFL, Victorian Football league and five participating TAC cup clubs supported the current research. Data was collected at the training grounds of the TAC cup teams, and at the national training camp of the AFL talent academy. Of the five participating TAC cup teams, one was located in rural Victoria, two were located in regional Victoria, and one was located in Melbourne. Informed consent was provided by the parents of participants who were under 18

years of age, or by the participants themselves if they were 18 years of age at the time of measurement.

Results

Validity of the Brief Multidimensional Student Athlete Life Satisfaction Scale

In order to assess the validity of adaption of the BMSALSS a Confirmatory Factor Analysis was conducted using IBM SPSS Amos 20 (Arbuckle, 2011). The results supported the factorial structure of the BMSALSS and indicated a slightly improved model fit (p = 0.66, CFI=1.0, GFI = 0.98, SRMR = 0.04) compared to the BMSLSS-PTPB (CFI = 0.93, GFI = 0.97, SRMR = 0.05; Bickman et al., 2010).

Descriptive statistics

Mean scores of all life satisfaction domains on the 5-point scale ranged from 3.8 to 4.5. The average score for the total life satisfaction scale was 4.3, with scores ranging from 3.0-5.0 (see Table 5.1). These findings indicate high levels of life satisfaction amongst the junior elite ARF players. Players' experiences on the five subscales of role strain were low to moderate, with mean scores ranging from 1.3 to 2.6 on the 5-point scale. The total role strain score of the participants ranged from 1.0-2.9 with an average of 1.9 (see Table 5.1).

Table 5.1. Descriptive statistics role strain and life satisfaction

	Mean	SD	Minimum	Maximum
Overload in Sport and Between Roles	2.57	.69	1.00	4.29
Overload in School	2.22	.89	1.00	5.00
Ambiguity	1.53	.51	1.00	3.00
Conflict	1.90	.64	1.00	3.67
Underload	1.28	.43	1.00	3.33
Score on RSQ-JA	1.90	.43	1.00	2.80
Life Satisfaction with Family	4.29	.94	1	5
Life Satisfaction with Friendships	4.30	.77	1	5
Life Satisfaction with School	3.82	.93	1	5
Life Satisfaction with Sport	4.54	.77	1	5
Life Satisfaction with Yourself	4.19	.73	2	5
Life Satisfaction with Where you live	4.43	.76	2	5
Life Satisfaction with Overall life	4.43	.68	3	5
Score on BMSALSS	4.29	.52	3.00	5.00

Significant low to moderate negative correlations were found between all components of role strain, and the total life satisfaction of the players (p <0.05; see Table 5.2). Further, overload in sport and between roles was negatively associated with all domains of life satisfaction except for where the athletes lived. Similarly, ambiguity was negatively associated with all domains of life satisfaction except for the friendship domain. Overload in school was negatively associated with life satisfaction with family, friendships, school and overall life satisfaction. Experiences of conflict were negatively associated with life satisfaction in sport, and overall life satisfaction. Experiences of underload were negatively associated with life satisfaction in school, sport, yourself, where you live, and overall life satisfaction.

Relationships between the five components of role strain and life satisfaction

As there was no theoretical basis for predicting the strength of the relationship between the components of role strain and life satisfaction, a model building approach, rather than a model confirming approach of stepwise regressions was undertaken (Tabachnick & Fidell, 1996). Linear regression analyses between each of the components of role strain and life satisfaction yielded significant results. Overload in sport and between roles was the factor explaining most (14%) of the variance of life satisfaction ($F(1,110) = 19,18$, $p < 0.01$). Underload ($F(1,110) = 10.63$, $p < 0.01$) and ambiguity ($F(1,110) = 9.49$, $p < 0.01$) both explained 9% of the variance in life satisfaction. Overload in school ($F(1,110) = 9,49$, $p < 0.01$) and conflict ($F(1,110) = 5.52$, $p = 0.02$) contributed 7% and 4% of the variance in life satisfaction respectively.

A multiple linear regression analysis was conducted to examine the relationship between the five subscales of role strain and the total life satisfaction scores measured by the BMSALSS. The colinearity tolerance statistics of the multiple regression analysis ranged from .63 to .92, with VIF scores ranging from 1.1 to 1.6. As such, colinearity was not a reason for concern in data analysis (Hair, Anderson, Tatham, & Black, 1998).The five components of role strain explained 24% of the variance in life satisfaction ($F(5,111) = 6.51$, $p < 0.01$). The variables that significantly contributed to this model ($p < 0.05$) were underload and overload in sport and between roles (see Table 5.3).

Table 5.2. Intercorrelations between the components of role strain and domains of life satisfaction

	Role Strain						Life Satisfaction							
	OSBR	OS	Ambiguity	Conflict	Underload	RSQ-JA	Family	Friends	School	Sport	Yourself	Where you live	Overall life	BMSALSS
OSBR	1	.48**	.37**	.46**	.06	.76**	-.34**	-.32**	-.21*	-.26**	-.24*	-.01	-.37**	-.39**
OS		1	.41**	.25**	.17	.78**	-.24*	-.26**	-.30**	-.07	-.01	-.10	-.27**	-.28**
Ambiguity			1	.32**	.25**	.68**	-.24*	-.18	-.21*	-.06	-.21*	-.19*	-.24*	-.29**
Conflict				1	.05	.64**	-.13	-.13	-.14	-.23*	-.12	-.02	-.23*	-.22*
Underload					1	.37**	-.02	-.12	-.19*	-.21*	-.32**	-.29**	-.25**	-.30**
RSQ-JA						1	-.31**	-.32**	-.32**	-.24*	-.23*	-.16	-.41**	-.44**
Family							1	.65**	.37**	.24**	.33**	.31**	.52**	.77**
Friendships								1	.40**	.25**	.28**	.24*	.46**	.73**
School									1	.17	.25**	.19*	.51**	.66**
Sport										1	.15	.09	.39**	.50**
Yourself											1	.25**	.49**	.59**
Where you live												1	.25**	.50**
Overall life													1	.79**
BMSALSS														1

Notes. OSBR = Overload in Sport and Between Roles. OS = Overload in Sport. RSQ-JA = Role Strain Questionnaire for Junior Athletes. BMSALSS = Brief Multidimensional Student Athlete Life Satisfaction Scale.
* Significant at the 0.05 level (2-tailed).
** Significant at the 0.01 level (2-tailed).

Table 5.3. Regression analysis predicting the effect of the components of role strain on life satisfaction of junior elite ARF players.

	Life Satisfaction	
	β	t
Overload in Sport and Between Roles	-.23*	-2.81
Overload in School	-.03	-.53
Ambiguity	-.08	-.87
Conflict	-.02	-.27
Underload	-.30*	-2.79

* Significant at the 0.05 level (2-tailed).

Discussion

This study investigated whether experiences of role strain were associated with the life satisfaction of junior elite athletes. The results suggested that, on average, junior elite ARF players were very satisfied with their lives, and that they generally do not experience excessive role strain. Yet, a few players did indicate to experience substantial role strain in their dual careers, and reported to be (extremely) dissatisfied with some of their life domains. Consistent with the hypotheses, the results from correlational analyses and stepwise regression analyses indicated that all components of role strain were negatively associated with the overall life satisfaction of junior elite athletes. This suggests that the life satisfaction of junior elite athletes decreases when they experience role strain in their dual careers. Overload in sport and between roles and underload were revealed as the factors that contributed most to the variance in life satisfaction of the junior elite ARF players.

Although this study suggest that junior elite ARF players do not experience much role strain, it is important that those junior elite athletes who do experience excessive role strain and

low life satisfaction can be identified by the sporting organizations and schools, so that they can be provided with the necessary help to ease their role strain and enhance their life satisfaction. Both the RSQ-JA and the BMSALSS can be used by sporting organizations to identify these struggling athletes. Completing both questionnaires will only take about 15 minutes of the junior elite athletes' time.

The collective findings of this study confirm concerns that experiences of role strain in the dual careers of junior elite athletes could come at the cost of the adolescent's life satisfaction component of well-being (Miller & Kerr, 2002). This is an important outcome in itself, as research on the well-being of junior elite athletes is limited and often neglects to adopt a holistic perspective that examines all life domains relevant to the development of junior elite athletes (Ivarsson et al., 2015). The findings of this study therefore aid in understanding the determinants of a junior elite ARF players' perceptions of a satisfying life (Diener, Suh, Lucas, & Smith, 1999).

This study's contribution to the understanding of life satisfaction determinants for junior elite athletes also provides some interesting practical implications. As the multiple components of role strain each influence the life satisfaction of junior elite athletes, it is important for sporting organizations and schools to understand how to respond to each of these components of role strain. Until now, the common approach of sport schools is to assist struggling junior athletes by providing with facilities to decrease experiences of overload, such as; reduced classroom times, sport facilities on the school grounds, adapted the school curricula, and extensions on assignments and exams (Radtke & Coalter, 2007; Von Heijden et al., 2012). Although this approach seems appropriate to relieve overload between roles, and overload in school, this method is not deemed appropriate to relieve overload experienced in sport. Further,

easing role demands is not expected to relieve experiences of ambiguity, and might cause (or aggravate) experiences of underload. As experiences of underload are just as detrimental to the life satisfaction and stress of the junior athletes as overload, easing role demands might worsen the life satisfaction and stress of athletes who are not experiencing overload. It is therefore recommended that schools and sporting organizations develop strategies that could prevent the experiences of all components of role strain.

To prevent underload and overload, each individual role junior athletes fulfil should provide adequate challenges. Further, the combined demands of these roles should not exceed the junior athlete's physical, cognitive and time resources. When taking the specific circumstances of these junior elite ARF players into consideration, the amount of teams they play for could be considered a noteworthy threat to their life satisfaction. Participants reported simultaneously competing in up to four football teams; their school team, their local club, their state team, as well as the national talent academy. Consequently, the concurrent demands of playing for each of these teams could cause overload amongst junior elite ARF players. The logical extension of this is that athletes who play for more teams have to train and compete for each of these teams. As a result these athletes will spend more time on their sport and will have less time to spend on other pursuits compared to athletes who compete for fewer teams. Furthermore, the players might experience underload in the lower ranked school and club teams, in which the junior elite players are likely to be overqualified. As such, ceasing to participate in a lower ranked team could potentially decrease both underload and overload amongst the junior elite ARF players, and in turn increase life satisfaction amongst the players. Yet, not all players will be able to cease participation in their lower ranked school team, as some players' support from their school might depend on their participation in these teams.

To prevent experiences of conflict as a result of overload, it is important to recognize the importance of social roles of the athletes (i.e., family and friendships). When developing junior elite athletes' school and sport schedules, it is recommended to plan time for social roles. To further prevent conflict issues, the involvement of the athletes in setting school and sport demands (as well as class and training schedules) should be encouraged. This will prevent conflict as athletes' opinions on the concurrent role demands can be taken into consideration. Furthermore, previous work that adopted a Self Determination Theory approach has suggested that increased autonomy is a significant predictor of sport persistence amongst adolescent athletes (Calvo, Cervelló, Jiménez, Iglesias & Murcia, 2010; Deci & Ryan, 2002).

To prevent experiences of ambiguity, a consistent message regarding the athletes' responsibilities, expected behaviours, performance evaluation and the consequences of not fulfilling the role in accordance with these expectations needs to be communicated by all organizations involved in the dual careers of junior athletes (Beauchamp et al., 2002). These organizations would include the junior elite ARF players' school, and all of their football teams they play for. Further, these organizations need to ensure that this message is understood by the athlete to prevent ambiguity.

Further, the mean scores on each of the subscales of the RSQ-JA provided insight in the frequency in which the four components of role strain were experienced. The most frequently experience of role strain was overload. Specifically, overload in sport and between roles was slightly more often reported than overload in school. The second most experienced component of role strain was conflict, followed by experiences of ambiguity. Experiences of underload were rare. These results are consistent with the findings from the first study of Chapter 4.

The finding that underload is significantly associated with decreased life satisfaction is surprising, as the concept of underload has received little attention in previous literature. However, these findings are consistent with research in academically gifted children, which suggests that being challenged is essential to foster the passion and development of gifted children (Rodgers, 2007; Fredricks, Alfeld, & Eccles, 2010). The results of this study built on these findings by suggesting that underload experienced across life domains decreases the life satisfaction of junior elite athletes. Overload in school, conflict, and ambiguity contributed less to the decrease of life satisfaction in junior elite athletes.

A limitation of this study is that role strain was only measured at one moment in time; between mid-August and mid-September. The levels of role strain that junior elite athletes experience are expected to fluctuate throughout the year, with peaks expected around examination periods in school and academy selections in football. It is therefore recommended that future research track the experiences of role strain of junior elite athletes over time, so that periods of high and low strain can be identified.

Additionally, this study examined a rather homogenous sample of junior elite ARF players. This limits the generalizability of the results of this study to elite junior athletes who compete in other sports. Throughout this study it was apparent that the AFL supports the dual careers of its players, junior players are for instance encouraged to regularly meet with 'talent development managers' who are appointed by the AFL to assist players with their pursuits outside of sport. This observation is consistent with past research that suggested that the AFL operates under the assumption that a balanced sport and off-field life will ensure not only their players' well-being, but also facilitates the players' on-field performance (Pink, Saunders, & Stynes, 2014). This support might decrease the role strain the players experience in their dual

careers, and could lead to an underestimation of the amount of role strain experienced by a wider population of junior elite athletes. Therefore, future research is recommended to replicate this study with junior elite athletes who compete in a wider range of sports.

Despite the limitations of the current research, the results indicate that junior elite athletes' life satisfaction is affected by the difficulties they face in their dual careers. If the challenges related to junior elite athletes' dual careers become too high, their life satisfaction decreases. Similarly, if junior elite football players feel that their abilities are underutilized, their life satisfaction decreases too. As such, the findings of this study provides additional evidence to the growing body of literature which suggests that an holistic perspective is key in investigating junior athletes' dual careers (e.g., Henriksen 2010 a, b; North & Lavallee, 2004; Wylleman & Lavallee, 2004). The findings emphasize the need to provide junior elite athletes with the opportunity to develop in a challenging, but not too challenging environment. It is recommended that tools such as the RSQ-JA and BMSALSS are continued to be utilized by researchers and practitioners to increase the knowledge on the discriminants of life satisfaction and stress in the dual careers of junior elite athletes.

CHAPTER 6

INCREASING LIFE SATSFACTION AND DECREASING STRESS OF JUNIOR ATHLETES: THE MEDIATING EFFECT OF COPING

In Chapter 4 and 5 of this thesis, it has been established that junior elite athletes experience role strain when fulfilling the demands of their dual careers. Role strain refers to the difficulties that are experienced when meeting role demands (Goode, 1960). Each role that a junior elite athlete fulfils can be a potential source of role strain (see Chapter 4; Brenner, 2007; Fenzel, 1989a). When a junior elite athlete fulfils multiple roles, role strain can also occur as a result of the concurrent demands of these role obligations (Chapter 4; Christensen & Sørensen, 2009; Wylleman & Lavallee, 2004). Further, Chapter 5 of this thesis suggested that experiences of role strain in the dual careers of junior elite athletes are associated with decreased life satisfaction.

Some preliminary evidence has proposed that role strain is also associated with higher stress levels amongst junior athletes (Chapter 4). Stress refers to a person's internal state and concerns 'physiological, emotional and cellular reactions' (Aldwin, 2007, p. 25). Stress arises from a mismatch between a person's resources and environmental demands (Aldwin, 2007). Therefore, role strain can be considered a contributor to the stress that junior elite athletes' experience.

However, stressors such as role strain only partially influence the amount of stress that athletes experience. Internal characteristics of the athletes, such as the psychological skills they use in response to a discrepancy between personal resources available and environmental demands also influence the lived experiences of an individual (Aldwin, 2007). One relevant psychological skill that can be used in this so-called transactional process (Aldwin, 2007) between a stressor and emotional states (such as stress) is coping.

Coping refers to 'the behavioural and cognitive efforts used by individuals to manage the demands of a person-environment relationship' (Frydenberg, 2008, p. 23). As such, coping is a

psychological skill that could be used to alleviate stress by junior elite athletes. Previous literature has grouped coping strategies in two or three dimensions, namely (a) problem-focused coping and emotion-focused coping (Lazarus & Folkman, 1984) or (b) two aspects of functional coping and one aspect of dysfunctional coping (Seiffge-Krenke & Schulman, 1990). In the latter, functional, or productive, coping strategies represent efforts to deal with the problem at hand (Seiffge-Krenke & Schulman, 1990). Dysfunctional, or non-productive, coping strategies refer to strategies that do not directly involve dealing with the problem, such as blaming oneself and worrying (Seiffge-Krenke & Schulman, 1990). Studies that examined the effect of coping skills on stress and life satisfaction experienced by adolescents have indicated that the use of productive coping strategies is associated with increased well-being and lower levels of perceived stress (Frydenberg & Lewis, 2002; Galafi, Sussman, Chou, & Wills, 2002; Ebata & Moos, 1991). The use of non-productive coping strategies has been associated with increased distress, higher stress levels, and lower well-being in adolescents (Ebata & Moos, 1991).

This final study of this thesis will investigate the potential mediating effect of productive and non-productive coping skills on the relationship between role strain and life satisfaction and role strain and stress. It is hypothesized that (i) non-productive coping strategies will mediate the effect of role strain on life satisfaction by decreasing life satisfaction. Productive coping strategies are expected to mediate the relationship between role strain and life satisfaction, by increasing life satisfaction amongst junior elite athletes. Similarly, it is expected that (ii) non-productive coping strategies will mediate the effect of role strain on stress, where an increased usage of non-productive coping strategies will increase the stress experienced by junior elite athletes. Productive coping strategies are expected to mediate the relationship between role strain and stress too, by alleviating the amount of stress experienced by junior elite athletes.

Method

Participants

The data used for this study consisted of the 112 junior elite ARF players discussed in Chapter 5 (*M* age =16.8 years, *SD* = 0.71). All participants were enrolled in either in year level10 (N =13), 11 (N= 57) or 12 (N=42) of secondary schools in Australia at the time of measurement. Furthermore, all participants were selected into state (TAC Cup, N =69) or national (N =42) AFL talent academies.

Measures

The Role Strain Questionnaire for Junior Athletes (RSQ-JA). The RSQ-JA was developed and validated and discussed in Chapter 4 of this thesis. The RSQ-JA measures four components of role strain (Fenzel, 1989a) using five subscales: underload, ambiguity, conflict, overload in school, and overload in sport and between roles. Example items are: '*I can't spend enough time with my friends because I am too busy*', '*My schoolwork is too difficult*', and '*My roles aren't challenging enough*'. Participants indicate 'how true' each of the items if for them on a 5-point Likert type scale ranging from 1= *not at all true*, to 5 = *very true*. The scale has an acceptable model fit (χ^2 (193) = 267.06, p = 0.32, RMSEA = 0.06, CFI = 0.91, SRMR = 0.08).

The Adolescent Coping Scale II – short version (ACS-II). The ACS-II short (Frydenberg & Lewis, 2009a; Frydenberg & Lewis, 2009b) assesses how often adolescents use certain coping skills. The scale consists of 20 items, each of which represents a specific coping strategy. Example items are '*Work hard*', '*Look for support and encouragement from others*' and '*Blame myself*'. The items of the ACS II are rated on a 5-point Likert-type scale anchored at 1 = *never* to 5 = *very often*. The short version of the ACS II consists of two main subscales; productive coping strategies (α = .71), and non-productive coping strategies (α =.68). In addition,

two items measure a third dimension named ‘other’ coping strategies (using humour and seeking spiritual support).

The Brief Multidimensional Student Athlete Life Satisfaction Scale (BMSALSS). The BMSALSS (developed in Chapter 5 of this thesis) is an adjustment to the Brief Multidimensional Student Life Satisfaction Scale – PTPB (Bickman et al., 2010). The BMSALSS measures how satisfied junior athletes are with their school, sport, family, friendships, themselves, where they live, and their overall life. Example items are: ‘*How satisfied are you with your sport experience*’, ‘*How satisfied are you with your family life*’, and ‘*How satisfied are you with your overall life*’. Responses are indicated on a 5-point Likert type scale and ranged from ranged from 1= *very dissatisfied* to 5= *very satisfied*. The BMSALSS has an increased model fit (p = 0.66, CFI=1.0, GFI = 0.98, SRMR = 0.04; Chapter 5) compared to the BMSLSS-PTPB CFI = 0.93, GFI = 0.97, SRMR = 0.05; Bickman et al., 2010) in this sample of junior elite ARF players used in this study.

The stress thermometer. The stress thermometer (Stanton, 1991) is an indicator of stress intensity. Participants respond to the item ‘*How much stress did you experience last month?’* on an 11-point scale ranging from 0 = *no stress at all* to 10 = *extreme stress*.

Procedure

Ethical approval for this study was granted by the university’s research ethics committee. Further support for this study was provided by the AFL and the Victorian Football League, as well as the five participating TAC cup clubs. Parental consent was provided by parents of participants under 18 years of age, participants who were 18 years of age at the time of measurement signed the consent form themselves. Data from the AFL talent academy and the

rural TAC cup team were collected using paper versions of the questionnaire (N=64). Data of the four other TAC cup teams was collected using an online version of the questionnaire (N=60).

Results

The data were analysed using the multiple mediator model of the PROCESS tool (Hayes, 2013) for IBM SPSS (version 20). PROCESS uses a regression based approach to estimate the effect of an independent variable on a dependent variable, the effect of mediator variables on a dependent variable, and the effect of an independent variable on mediating variables. A considerable advantage of the PROCESS tool is the bootstrapping approach that it uses to determine the significance of these effects, which does not impose distributional assumptions (Hayes & Preacher, 2010).

Effects were estimated with bootstrap bias-corrected and accelerated (BCa) Confidence Intervals (95%) that were generated for 1000 samples. Effects were deemed significant when range between the Lower Limit Confidence Intervals (LLCI) and the Upper Limit Confidence Intervals (ULCI) did not include zero (Hayes & Preacher, 2010). In addition, unstandardized regression coefficients (β), standard errors (SE) were reported for each of the pathways in the multiple mediation analyses.

Role strain, coping and life satisfaction

The life satisfaction of the junior elite ARF players was negatively predicted by the amount of role strain they experienced (β = -.43, $p < 0.01$; see Table 6.1). A mediating effect of non-productive coping strategies on the relationship between role strain and life satisfaction was found (β = -.19, $p < 0.05$). The use of productive coping strategies did not mediate the

relationship between role strain and life satisfaction, however, a direct effect between productive coping strategies and life satisfaction was found (β = .42, p < 0.01). Taken together, the mediation model (see Figure 6.1) predicted 32% of the variance in life satisfaction of the junior elite athletes (F(3,108) = 16.6, p < 0.001).

Table 6.1. The mediating effect of productive and non-productive coping strategies on life satisfaction of junior elite athletes.

	β	SE	LLCI	ULCI	*P*
Role strain	-.43	.11	-.64	-.22	<.001
Productive coping	.42	.11	-.10	.07	<.001
Non-productive coping	-.19	.09	-.23	-.01	.02
Constant	4.12	.43	-.23	.04	<.001

Notes: B=unstandardized regression coefficient, SE = standard error, LLCI= Lower Limit Confidence Interval (95%), ULCI = Upper Limit Confidence interval

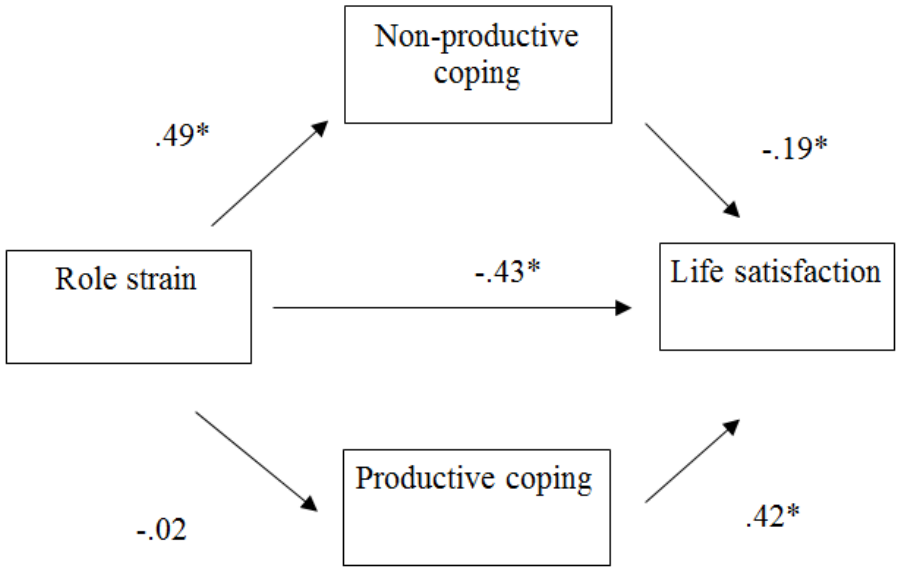

Figure 6.1. *The effects between role strain, unproductive and productive coping strategies and life satisfaction.*

*p<0.05

Role strain, coping and stress

The stress levels of the junior elite ARF players were positively predicted by the amount of role strain they experienced (β = 2.09, $p < 0.01$; see Table 6.2). Further, the use of unproductive coping skills significantly mediated the relationship between role strain and stress (β = .99, $p < 0.05$). No mediating effect of productive coping strategies on the relationship between role strain and stress was found (β = -.82, p = 0.14). The mediation model (see Figure 6.2) predicted 24% of the variance in stress ($F(3, 108) = 11.4$, $p < 0.001$).

*Table 6.2.*The mediating effect of productive and non-productive coping strategies on stress levels of junior elite athletes.

	β	SE	LLCI	ULCI	*P*
Role strain	2.09	.54	1.02	3.16	<.001
Productive coping	-.82	.55	-1.91	.27	.14
Non-productive coping	.99	.44	.12	1.85	.03
Constant	1.74	2.21	-2.65	6.13	.43

B=unstandardized regression coefficient, SE = standard error, LLCI= Lower Limit Confidence Interval (95%), ULCI = Upper Limit Confidence interval

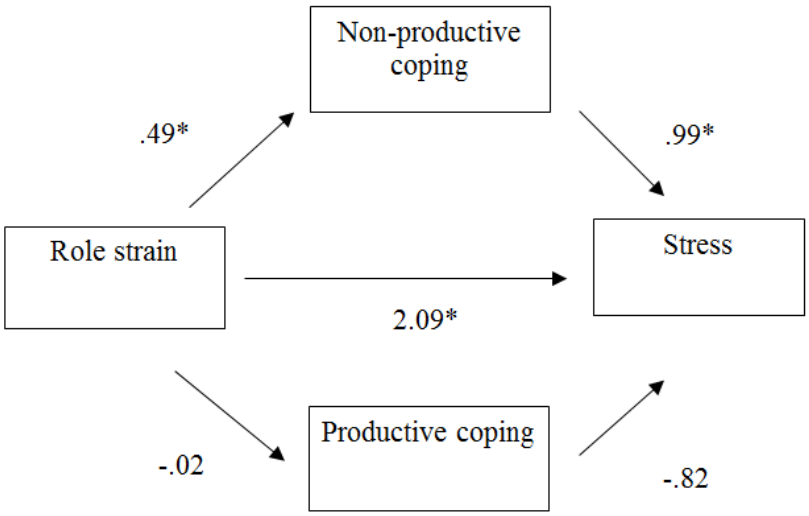

Figure 6.2. *The effects between role strain, unproductive and productive coping strategies and stress.*

*$p<0.05$

Discussion

This study investigated whether coping mediated the relationship between role strain and life satisfaction, and role strain and stress experienced by junior elite ARF players. A mediating effect of coping on the relationship between role strain and life satisfaction, and role strain and stress was found. Consistent with the hypothesis, the use of non-productive coping strategies mediated the effect of role strain by decreasing life satisfaction and increasing stress (Ebata & Moos, 1991). Contrary to the expectations, productive coping strategies did not mediate the relationship between role strain and life satisfaction, and role strain and stress (Frydenberg & Lewis, 2002; Galafi, Sussman, Chou, & Wills, 2002; Ebata & Moos, 1991). However, the use of productive coping strategies did significantly increase life satisfaction reported by junior elite

ARF players. Surprisingly, no relationship between the use of productive coping strategies and the stress reported by the participants was found.

The results of this research are novel as research on the life satisfaction and well-being of junior elite athletes is limited and often neglects to adopt a holistic perspective that examines all life domains relevant to the development of junior elite athletes (Ivarsson et al., 2015). Therefore, this research was the first to provide the insight that role strain and coping influence the life satisfaction and stress levels of junior elite athletes across life domains. Further, this study provides evidence for the effect of the fulfilment of dual careers on the stress junior elite athletes experience (e.g., Wylleman & Lavallee, 2004).

The findings of this study can aid in developing interventions aimed at improving life satisfaction of junior elite ARF players, and are of particular use for schools and sporting organizations. The findings of this study namely suggest that reducing role strain is not the only option to decrease stress levels and increase life satisfaction of junior elite athletes. Although experiences of role strain are detrimental to junior players' life satisfaction and stress levels, the use of non-productive coping strategies such as ignoring the problem were found to worsen life satisfaction stress, while the use of productive coping strategies such as working hard increased life satisfaction. Optimizing the coping strategies used by junior elite athletes could thus increase their life satisfaction and decrease the stress they experience.

Previous research (Frydenberg et al., 2004; Nicholls, 2007; Reeves, Nicholls, & McKenna, 2011) has showed promising effects of coping interventions in ecological settings. Specifically, these researchers managed to decrease the amount of non-productive coping strategies used by adolescents. This decrease of the use of non-productive coping skills was particularly evident in those adolescents who used the most non-productive and least productive

coping strategies (Frydenberg et al., 2004; Reeves, Nicholls, & McKenna, 2011). In doing so, these interventions increased the coping effectiveness of adolescents (Frydenberg et al., 2004; Nicholls, 2007; Reeves et al., 2011), which in turn improved the coping self-efficacy and subjective performance of five junior elite soccer players (Reeves et al., 2011).

Furthermore, the findings of this study might also contribute to understanding why previous research has yielded mixed results regarding the effectiveness of specialized Sport Schools (De Bosscher & De Croock, 2010; Emrich et al., 2009; Van Rens, Elling, & Reijgersberg, 2015). Sport Schools have been developed with the aim of helping junior elite athletes to manage their dual careers (Radtke & Coalter, 2007). Broadly speaking, Sport Schools attempt to help junior elite athletes managing their dual careers, for instance by reducing the time the athletes spend at school and by carefully scheduling examinations around the athletes' sport commitments (Radtke & Coalter, 2007). This help offered by Sport Schools is expected to lower role strain (especially overload) experienced by junior elite athletes. However, Van Rens, Elling, and Reijgersberg (2015) found that despite the efforts of (Dutch) Sport Schools, junior elite athletes were just as satisfied with their school experience when they attended a 'mainstream' school.

These findings could now potentially be explained by the coping strategies used by junior elite athletes at different types of schools. It could be suggested that the help of specialized Sport Schools might inhibit junior elite athletes' development of an optimal coping repertoire because there is no necessity for them to develop these, as the Sport Schools do a lot of problem solving for their student-athletes. Relying on others to solve a problem is a 'helplessness' coping approach, which is a non-productive coping strategy that can be detrimental to life satisfaction (Frydenberg & Lewis, 2002). In contrast, junior athletes who are attending schools that do not

provide this assistance in their dual careers might have to engage in more productive, problem solving coping strategies. These problem solving coping strategies are related to increased life satisfaction and decreased stress. Since the results of this study suggest that the relationships between productive coping strategies and life satisfaction, and role strain and life satisfaction are approximately equal, this could explain why the satisfaction of elite athletes at Sport Schools and mainstream schools is similar. Although fraught with practical difficulties, future research is recommended to further investigate the psychological skills that are adopted by junior elite athletes at different types of schools.

To conclude, the findings of this study indicate that the use of non-productive coping skills mediates the relationship between role strain and life satisfaction, and role strain and stress. Furthermore, the use of productive coping strategies was associated with an increase in life satisfaction amongst junior elite ARF players. Future research is recommended to investigate whether interventions aimed at optimizing the coping skills used by junior elite athletes could potentially increase the life satisfaction and decrease the stress experienced in the dual careers of junior elite athletes.

CHAPTER 7

GENERAL DISCUSSION

Overview of key findings

This thesis explored the interplay between demands from the multiple roles junior elite athletes fulfil and their personal characteristics. The purpose of this thesis was to investigate (a) whether junior athletes experience role strain while balancing their multiple life domains, (b) how the several components of role strain may relate to their life satisfaction, and (c) how coping skills may influence the relationship between role strain and life satisfaction, and role strain and stress.

The first study of this thesis (Chapter 4) qualitatively explored the role strain experienced by junior elite athletes in their multiple life domains via semi-structured interviews. This study provided evidence for the presence of the four commonly accepted components of role strain (i.e., overload, underload, conflict and ambiguity; Fenzel, 1989a; Holt, 1982) in the lives of junior elite athletes. Importantly, this study suggested that depletion of resources (i.e., overload) was mostly due to the combined demands of their multiple life domains, rather than just one role depleting the athletes' resources. In particular, a perceived lack of time to fulfil all role demands was a frequently reported experience causing role strain. Furthermore, this study revealed that experiences of the overload and conflict component of role strain often occurred simultaneously.

The findings of the first study also formed the basis for the development of a role strain questionnaire tailored to junior elite athletes. Based on the results of study 1, an initial 65 item pool of the RSQ-JA was developed, which was subjected to Exploratory Factor Analysis in study 2 of Chapter 4. The factors derived from this study were tested for factorial validity using Confirmatory Factor Analysis in study 3 of Chapter 4. Results supported a 22 item five factor structure for the RSQ-JA. These factors reflected five sources of role strain, namely; (a) overload in school, (b) overload in sport and between roles, (c) conflict, (d) underload and (e) ambiguity.

These five factors reflected the four components of role strain (Fenzel, 1989a; Holt, 1982), although the overload component of role strain was represented by two factors in the questionnaire. Furthermore, the RSQ-JA showed acceptable composite reliability and was a better predictor of the stress experienced by junior elite athletes compared to the EASRSI-R3 (Fenzel, 1993). The RSQ-JA therefore provides a valid measure to assess the role strain associated with the dual careers of junior elite athletes.

Chapter 5 used the newly developed RSQ-JA to investigate the relationship between role strain and life satisfaction of junior elite ARF players. A necessary adaption was made to the measure of life satisfaction (BMSLSS-PTPB; Brickman et al., 2010), as this scale did not assess life satisfaction in the sport domain. Therefore, an item that assessed life satisfaction with 'sport' was added to the scale. In doing so, the BMSALSS was created, and Confirmatory Factor Analysis revealed a slightly improved model fit of the BMSALSS compared to the BMSLSS-PTPB. The findings in Chapter 5 indicated that experiences of all components of role strain were associated with decreased life satisfaction of junior elite ARF players. Taken together, the five factors of the RSQ-JA explained almost a quarter of the variance in life satisfaction of the players. Specifically, experiences of 'underload' and 'overload in sport and between roles' contributed most to this negative relationship between role strain and decreased life satisfaction. These results emphasize the importance of a challenging, but not too challenging environment for the life satisfaction of junior elite ARF players.

Chapter 6 built on the findings from Chapter 5, by investigating the mediating effect of coping on the relationship between role strain and life satisfaction, and role strain and stress. A mediating effect of non-productive coping strategies on both the relationship between role strain and life satisfaction, and role strain and stress was found. In this mediation, role strain increased

the use of non-productive coping strategies, which in turn increased stress and decreased life satisfaction of the junior elite ARF players. Productive coping skills, such as working hard, did not mediate the relationship between role strain and stress and role strain and life satisfaction. However the results suggested a direct relationship between the use of productive coping skills and life satisfaction of the athletes. Specifically, the use of productive coping strategies was associated with an increase in life satisfaction amongst the junior elite ARF players. No significant relationship between productive coping skills and stress was found.

Theoretical considerations and applications

The theoretical considerations and applications of this thesis extend to four domains. First, the expansion of the knowledge of role strain will be discussed. Second, the impact of experiences of role strain on junior athletes is detailed. Third, the relevance of coping skills in the transactional process between role strain and life satisfaction and role strain and stress are discussed. Finally, the implications of this research for models of talent development are considered.

The nature of role strain

The collective findings of this thesis built on the knowledge of role strain (Fenzel, 1989a; Holt, 1982) by examining the nature and consequences of the full role strain construct in multiple life domains of junior elite athletes. Previous literature was namely either limited to investigating role strain in the student role (De Bruyn, 2005; Fenzel, 1989a, 1989b, 1992, 2000), or experiences of the ambiguity and conflict components in the team sport role (Beauchamp & Bray, 2001; Beauchamp et al., 2003; Bosselut et al., 2012; Eys et al., 2003). Research that did

investigate role strain associated with dual careers solely focused on adults, and centred on the role strain associated with having a family and a full time job (e.g., Nordenmark; 2004; Pitney, Stuart, & Parker, 2008).

Consistent with work in educational psychology (De Bruyn, 2005; Fenzel, 1989a, 1989b, 1992, 2000), this thesis revealed that role strain experienced in the multiple life domains of junior elite athletes consists of four main components: overload, underload, conflict and ambiguity. Furthermore, the findings of study 1(Chapter 4) built on the role strain framework (Fenzel, 1989a) by suggesting that these four components of role strain are not always distinct. Rather, experiences of especially overload and conflict often occurred simultaneously. Experiences of overload due to a lack of time typically forced athletes to prioritize one role over the other. For example, junior athletes felt frequently obliged to sacrifice time with friends in order to keep up with demands from school and sport. This process of role prioritization was commonly associated with experiences of conflict; some junior athletes reported feeling frustrated or sad that fulfilling their dual careers came at the cost of their social lives.

The finding that conflict often occurs as a result of overload could explain why previous research struggled to discriminate between overload and conflict, and why Hecht (2001) found that these two conceptual different components of role strain have often been used interchangeably. Interestingly, Hecht (2001) suggested that feelings of conflict influence the well-being of working mothers, whilst overload does not. Yet the findings of this thesis suggest the opposite, as the relationship between overload and the life satisfaction component of well-being was stronger than the relationship between conflict and life satisfaction. This inconsistency could be explained by the different measurements used in this thesis, compared to the measurement used in Hecht's (2001) study. Hecht measured conflict by asking participants to

indicate *'how often do you feel conflict between working and being a mother'*, overload was measured by an item stating *'how do you feel, in general, that you are just too busy to do everything you want to do'.* As such, the measurements used in this thesis were more extensive because they also included conflict and overload experienced within roles. Because of these differences it is hard to compare the results of these studies.

Further, the findings of this thesis suggest that overload experienced in the school domain is distinct to overload in the sport domain, and overload resulting from fulfilling multiple roles. These results were unexpected, but can be explained by the different demands placed on junior elite athletes by the school and sport domains. Demands from school, such as homework, are mainly focussed on improving verbal, numerical, and visio-spatial intelligence (e.g., Freudenthaler, Spinath, & Neubauer, 2008). Overload in the school domain is therefore expected to deplete cognitive resources. Training demands from (team) sport settings are likely to focus on improving athletes' flexibility, strength, muscular endurance and cardiovascular endurance (e.g., Parr, Hoover, Wilmore, Beahman, & Keflan, 1978; Pearson, Naughton, & Torode, 2006). The training demands associated with competition in elite sports are therefore expected to mainly deplete physical resources. It can thus be speculated that the reason for the distinction between 'overload in school' and 'overload in sport and between roles' is due to 'overload in sport' depleting physical resources, while 'overload in school' is expected to mainly deplete junior elite athletes' cognitive resources.

Additionally, the findings of study 1 (Chapter 4) indicated that some junior elite athletes felt that others did not understand the demands they were juggling. For example, junior athletes mentioned that some teachers did not understand why their sporting career sometimes caused them to miss classes at school. These findings are consistent with previous research by Elling,

Otterloo, and Hakkers (2014). They found that a quarter of the junior elite athletes who participated in the European Youth Olympic Festival thought that their teachers at school did not respect and understand their need to practice their sport and their sporting ambitions. However, feeling misunderstood did not emerge as a factor in the validation of the questionnaire. Yet it would not be unthinkable that feeling misunderstood could contribute to the stress experienced by junior athletes. Further research is recommended to investigate the implications of feeling misunderstood.

Finally, the studies in this thesis were the first to offer some insight of the frequency in which the four components of role strain were experienced by junior athletes. Importantly, most junior elite ARF players reported that they did not experience role strain frequently. That being said, a few players did indicate that they experienced role strain very often. Both the qualitative (Chapter 4, study 1) and quantitative (Chapter 5) components of this thesis suggested that the most frequently experienced component of role strain was overload. This was expected, as previous research already identified many stressors associated with the dual careers of junior elite athletes that could be categorized as overload (Miller & Kerr, 2002; Christensen & Sorensen, 2009; Godbert, 2012). Specifically, overload in sport and between roles was slightly more often reported than overload in school. The second most reported component of role strain was conflict, followed by experiences of ambiguity. Experiences of underload were rare, yet the impact of this component of role strain on the life satisfaction of junior elite athletes indicates that underload should not be overlooked.

The impact of role strain

Previous literature has expressed concerns as to whether the focus on performance excellence of junior elite athletes comes at the cost of the overall development of the adolescent

(Miller & Kerr, 2002). This concern was addressed by investigating whether the role strain associated with the dual careers of junior elite athletes affects their life satisfaction and stress levels. As such, these findings add to the understanding of well-being in junior elite athletes from a positive psychology perspective, by investigating optimal functioning rather than psychopathology (Kazdin, 1993).

The findings of study 4 and 5 (Chapter 5 and 6), indicated that indeed, role strain affects both junior elite athletes life satisfaction and stress levels. Chapter 5 showed that all five factors of role strain – as measured by the RSQ-JA – are negatively associated with life satisfaction. Further analysis showed that experiences of overload in sport and between roles, as well as underload, significantly decreased the life satisfaction of junior elite ARF players. Previous literature that investigated the stressors associated with the dual careers of elite junior athletes had already uncovered many stressors that could be categorized as overload as sources of strain (Miller & Kerr, 2002a, b; Christensen & Sorensen, 2009; Godbert, 2012). Underload has thus far been largely overlooked in literature concerning the dual careers of junior elite athletes, yet previous literature amongst academically gifted children indicated that an appropriate amount of challenge is necessary for the development of a gifted child (Enoksen, 2011; Fredricks, Alfeld, & Eccles, 2010). That underload too, is a source of strain that affects the life satisfaction of elite junior athletes is thus novel but not unexpected.

Further, these findings are consistent with Selye's (1974; 1987) proposition that that one can experience stress, without experiencing distress. Selye (1974) differentiated between a damaging or unpleasant component of stress (distress) and motivating and encouraging component of stress (eustress). In Selye's stress theory, the differentiation between eustress and distress is built on the idea an optimal level of stimulation results in eustress, while under- and

over-stimulation may lead to distress (Selye, 1987). Consistent with Selye's proposition, the findings of this research indicate that an optimal balance of role demands (i.e., absence of overload and underload) contributes to the life satisfaction of junior elite athletes.

Relevance of coping skills

Chapter 6 built on the findings of Chapter 5, by investigating how the coping skills that junior elite athletes use affect the relationship between role strain and life satisfaction and role strain and stress. Based on Aldwin's (2007) stress theory, coping can be considered part of the transactional process between a stressor (in this case, role strain) and the amount of stress a person experiences. As such, optimal use of one's coping skills could alleviate experiences of stress during moments of high role strain.

The effects of coping on the stress, performance and well-being of adolescent students (e.g., Ebata & Moos, 1991; Frydenberg & Lewis, 2002; Galaif et al., 2002) and athletes (e.g., Nicholls et al., 2005; Nicholls & Polman, 2007b; Reeves et al., 2009) have been widely researched. Yet this study was the first to investigate the effect of coping strategies on the relationship between role strain and stress, and role strain and life satisfaction in the context of junior athletes' dual careers. Consistent with previous literature (e.g., Ebata & Moos, 1991), Chapter 6 provided further evidence for the detrimental effect of the use of non-productive coping strategies such as avoiding the problem, or blaming oneself on life satisfaction and stress. These findings suggest that an optimal coping response to stressors associated with the dual careers of junior elite athletes would not include the use of non-productive coping strategies.

Furthermore, Chapter 6 provided additional evidence (e.g., Frydenberg & Lewis, 2002; Galaif et al., 2002) for the positive effect of productive coping skills such as working hard and asking for help on the life satisfaction of adolescents. Contrary to the relationship between non-

productive coping strategies and life satisfaction, the relationship between productive coping strategies and life satisfaction was direct. This means that the amount of productive coping strategies used by junior elite athletes is not affected by the amount of role strain they experienced, but that the use of productive coping strategies does increase their life satisfaction. This finding indicates that an optimal coping response to role strain would include using productive coping strategies.

The finding that the coping strategies used by junior elite athletes influence their life satisfaction could also contribute to understanding why, despite the efforts of (Dutch) Sport Schools, junior elite athletes who attended 'mainstream schools' were just as satisfied with their school experience (Van Rens, Elling, & Reijgersberg, 2015). Generally, Sport Schools attempt to help junior elite athletes managing their dual careers, for instance by reducing the time spend at school, and by carefully scheduling examinations around the athletes' sport commitments (Radtke & Coalter, 2007). It could be suggested that the support specialized Sport Schools provide might prevent their junior elite athletes' development of an optimal coping repertoire because most of the problems associated with the dual careers of these athletes are solved by the school. As such, there is no necessity for junior elite athletes who attended specialized Sport Schools to develop an optimal coping repertoire. Elite junior athletes who are attending schools that do not offer assistance will have to develop an optimal coping repertoire in order to be able to manage the concurrent demands from their dual careers. The findings of this thesis suggest that the strength of the relationship between role stain and life satisfaction is similar to the strength of the relationship between productive coping and life satisfaction. It is therefore possible that the use of (more) productive coping skills evens out the effect of (expected) higher levels of role strain in junior athletes who attend mainstream schools. Additionally, reliance on

other to solve a problem is a 'helplessness' coping approach, and previous research has suggested that this non-productive coping approach could be detrimental to life satisfaction (Frydenberg & Lewis, 2002). However, the self-regulatory skills of junior elite athletes could also play a role in the (in)effectiveness of Sport Schools.

Similar to coping strategies, self-regulatory skills could also be considered part of the transactional process in Aldwin's (2007) stress model. Recent research has associated more frequent use of the self-regulatory skills 'reflection' and 'effort' with elite sport performance levels in junior athletes (Toering, Elferink-Gemser, Jordet, & Visscher, 2009). Further, the self-regulatory skills 'planning' and 'self-efficacy' were associated with increased school performance amongst junior elite athletes (Jonker, Elferink-Gemser, & Visscher, 2011). It could thus also be speculated that the support specialized Sport Schools provide might elite junior athletes' development of optimal self-regulatory skills, because the schools do a lot of planning for them.

Research on the importance of psychological skills to the development of junior elite athletes in their dual careers is still in its early stages. As such, the findings of this thesis contribute to the knowledge that psychological skills, such as coping, are an important part of the transactional process between role strain and life satisfaction, and role strain and stress. It could be argued that, similar to self-regulatory skills, coping might serve additional transactional functions between role strain and school and sport performance. Likewise, self-regulatory skills might also play a role in the transactional process between role strain and life satisfaction, and role strain and stress. Although fraught with practical difficulties, future research is recommended to further investigate the psychological skills that might contribute to the well-being and performance of junior elite athletes at different types of schools.

Implications for talent development models

The findings of this thesis illustrate that junior athletes recognize that they fulfil multiple roles. All participants reported being a student, athlete, family member and friend. These findings are congruent with suggestions by the Lifespan Model (Wylleman & Lavallee, 2004; Wylleman & Reints, 2010) which predicts that junior athletes in the 'development phase' of their sport are adolescents (psychological domain), attend secondary school (academic domain), and that peers, parents and coaches are the junior athlete's greatest influences. The finding that some junior athletes also fulfilled additional roles such as being a boyfriend, an employee, an athlete in a different sport, and religion expanded on the Lifespan Model by suggesting that other roles might also be important to some junior elite athletes and should not be overlooked.

Additionally, study 1 indicated that experiences of components of role strain in one role can be the source of role strain experienced in another role. Experiences of overload could also occur as a result of tension between role demands, without experiencing overload in one specific role. As such, the importance of drawing connections between the athlete's age and their multiple life domains is further emphasized (Wylleman & Lavallee, 2004; Wylleman & Reints, 2010). Taken together, these findings provide support for holistic talent development models such as the ATDE (Henriksen, 2010; Henriksen, Stambulova, & Roessler, 2010a, 2010b; Henriksen, Stambulova, & Roessler, 2011) and the 3D-AD (Gulbin et al., 2013). Consistent with the findings of this thesis, both of these talent development models suggest that athletic and non-athletic factors influence the overall development of (junior) athletes.

Practical Implications

The practical implications of this thesis are divided into two sections. The first section discusses the practical implications concerning role strain. The second section considers the practical implications of this thesis with regards to the optimization of coping strategies used by junior elite athletes.

Role strain

On average the junior elite ARF players who participated in this thesis did not experience excessive role strain. However, these results might be caused by the AFL's assumption that their players will perform better on the football field when they are content off-field. Consequently, the AFL makes substantial efforts to help athletes to manage the concurrent demands from football, school and their social lives (Pink et al., 2014). Nonetheless, some players did report that they often experienced role strain. Since role strain increases stress and decreases life satisfaction, it is important that sporting organizations and schools identify those athletes who experience high role strain. The RSQ-JA, which was developed in this thesis, can be used in such practical contexts to identify those athletes who experience high role strain, and will only take about 10 minutes to complete.

As role strain experienced by junior elite athletes consists of four components, it is essential for sporting organizations and schools to understand how to respond to each of these four sources of role strain. Until now, the common approach was to assist struggling junior athletes in their dual careers by reducing time at school and providing extensions on schoolwork when necessary (Radtke & Coalter, 2007). Although this approach is suitable for those athletes who are experiencing overload in school or between roles, this method is not appropriate to deal experiences of other components of role strain. For example, if athletes only experience overload

in the sport role, an intervention based on reducing school demands is not likely to benefit them. Easing role demands is also not expected to decrease experiences ambiguity. Further, reducing time at school and providing extensions on schoolwork could potentially cause underload in those athletes who are not experiencing overload in school. As experiences of underload are just as detrimental to the life satisfaction and stress of the junior athletes as overload, easing role demands might be detrimental to the life satisfaction of athletes who did not need this decrease in school demands. It is therefore imperative that schools and sporting organizations tailor their assistance to the components of role strain experienced by the junior elite athletes.

To prevent experiences underload and overload, each individual role junior athletes fulfil should provide adequate challenges so that eustress (Selye, 1974) can be experienced. Further, the combined demands of the dual careers of the junior athletes should not exceed the athletes' physical and cognitive resources. This will be a challenge for the schools and sporting organisations involved in the development of junior elite athletes, as the zones of optimal functioning will vary between athletes based on their personal attributes (Woodman, Albinson, & Hardy, 1997).

As overload in sport and between roles was slightly more often reported than overload in school there seems to be a need to ease sport demands. Yet the organisations involved in the development of junior elite athletes appear to have a larger focus on decreasing school demands. When taking the specific circumstances of the junior elite ARF players into consideration, the number of teams they play for could be considered a noteworthy threat to their life satisfaction. It was common amongst the participants to simultaneously compete for up to four football teams; their school team, their local club, their state team, as well as the national talent academy. Consequently, the concurrent demands of these teams could cause overload amongst the junior

elite ARF players. Furthermore, the players might experience underload in the lower ranked school and club teams, in which the junior elite players are likely to be overqualified. As such, ceasing to participate in a lower ranked team could potentially decrease both underload and overload amongst the junior elite ARF players. This decrease in underload and overload could in turn increase life satisfaction amongst the players. Yet ceasing to participate in a lower ranked school team could come at the cost of some junior elite ARF players' scholarships to their secondary schools and is thus not always possible.

To prevent experiences of conflict, it is recommended to allow time for the adolescent's social roles as well as their school and sport roles. Further, giving junior elite athletes some autonomy with regards to their role demands, and to let junior athletes reflect on the consequences of the concurrent role demands of school and sport on their social lives could also decrease experiences of conflict. A plethora of research guided by Self Determination Theory (Deci & Ryan, 2002) has investigated the effects of autonomy supportive behaviour of coaches on athletes. Results showed positive effects of autonomy supportive behaviour on the athletes' sense of autonomy, competence, relatedness, sport persistence and well-being (Adie, Duda, & Ntoumantis, 2008; Bartholomew, Ntoumantis, Ryan, & Thøgersen-Ntoumani, 2011; Calvo, Cervelló, Jiménez, Iglesias, & Murcia, 2010; Gagné, Ryan, & Bargmann, 2003). More controlling coaching styles thwarted the feelings of athletes, and decreased autonomy, competence and relatedness. These thwarted feelings were in turn associated with increased disordered eating behaviours, stress, and depression amongst athletes (Bartholomew et al., 2011; Bartholomew, Ntoumanis, Ryan, Bosch, & Thøgersen-Ntoumani, 2011; Bartholomew, Ntoumanis, & Thøgersen-Ntoumani, 2011). Autonomy supportive behaviours of all organizations associated with the dual careers of adolescent athletes is thus expected to benefit

junior athletes by not only decreasing conflict, but also by affecting other aspects of their well-being.

Finally, to prevent experiences of ambiguity, all organizations involved with the development of the junior athletes are recommended to communicate a consistent message regarding the athletes' responsibilities, expected behaviours, performance evaluation and the consequences of not fulfilling the role in accordance with these expectations (Beauchamp et al., 2002). Further, these organizations need to ensure that this message is understood by the junior athletes. Schools and sporting organizations could do so by asking the junior elite athletes what they think the expected behaviours, performance evaluations, consequences of not fulfilling the role in accordance with these expectations, and their responsibilities are.

Coping

This thesis provided empirical evidence for the function of coping in the transactional process between role strain and life satisfaction and stress. Therefore, interventions aimed at optimizing the coping skills used by junior elite athletes could potentially increase their life satisfaction and decrease stress. Interventions aimed at coping skills provide sporting organizations and schools with the possibility to decrease stress and increase life satisfaction of junior athletes who experience overload without having to decrease role demands.

Previous research (Frydenberg et al., 2004; Nicholls, 2007; Reeves, Nicholls &McKenna, 2011) has showed promising effects of coping interventions in ecological settings. Frydenberg et al. (2004) managed to decrease the amount of non-productive coping strategies used by adolescents, particularly of those who used the most non-productive and least productive coping strategies using a school based intervention program.

In the sport setting, a case study by Nicholls (2007) was also successful in reducing the amount of ineffective coping strategies used by an adolescent golfer. In this case study, the adolescent golfer was introduced to cognitive, behavioural and emotional strategies for his client to use when he was feeling stressed. Additionally Nicholls educated the client about the ineffectiveness of specific non-productive coping strategies.

Reeves et al. (2011) improved not only coping effectiveness, but also coping self-efficacy and subjective performance in five junior elite soccer players. This was achieved by introducing Coping Effectiveness Training tailored to the needs of junior academy soccer players (CET; Chesney, Folkman, & Chambers, 1996). CET is a group-based intervention that is tailored to the needs of the specific target population. It proposes that effective coping is dependent on whether or not a stressor can be controlled (i.e., goodness of fit; Folkman, 1984). Folkman (1984) proposed that when a stressor can be controlled, problem-focused coping strategies aimed at dealing with the problem at hand, are deemed the most effective coping strategies. In situations in which the stressors cannot be controlled, emotion-focused coping strategies are deemed most efficient (Folkman, 1984). In Frydenberg's terminology (which was used throughout this thesis) these coping strategies both correspond with productive coping strategies.

Therefore, CET based coping interventions are recommended for those junior athletes who utilize non-productive coping strategies and experience low life satisfaction and/or high stress. This is because the findings of chapter 6 indicated that the use of non-productive coping strategies is associated with decreased life satisfaction and increased stress levels amongst junior elite athletes. As such, successful coping interventions, such as CET can have the potential to increase life satisfaction and decrease stress experienced in the dual careers of junior elite

athletes. Future research should explore the effect of CET interventions on life satisfaction and stress in the context of the dual careers of junior elite athletes.

Limitations and directions for future research

Although the findings of this thesis have considerable theoretical and practical implications, some limitations of this work need to be addressed. First, this thesis failed to reliably assess the school performance of junior elite athletes. As highlighted in Chapter 3, assessment of the school performance of the participating junior elite athletes was to be made by gathering their school grades via their respective schools. However, due to unforeseen circumstances it was not possible to collect the junior athletes' grades via their schools. Therefore, it was decided to rely on self-reported grades for the subjects Math and English as an indicator of school performance in the final study of this thesis. This decreased the reliability of the results, as self-reported GPA scores tend to differ significantly from official school records (Kunce, Credé, & Thomas, 2005). Unfortunately, almost a third of the junior elite ARF players reported that they did not know their approximate average grades for these subjects. As the sample size of the final study of this thesis was already modest (N=112) the amount of non-respondents to the school performance measure was cause of concern. Furthermore, the preliminary investigation of both English and Math grades showed complications in the distribution of the data. After multiple attempts to transform the data, the violations of normality were deemed insurmountable. As a result of the violation of normality assumptions the data was only suitable for non-parametric testing. Taken together, the setbacks in the collected school performance data lead to the decision to remove school performance as an outcome measure in this thesis as the collected data was deemed too unreliable to base any conclusions on. Future

research is recommended to work closely together with (Sport) Schools so that the Grade Point Averages of a large sample of junior elite athletes can be obtained.

Second, since this thesis investigated the role strain associated with the dual careers of junior elite athletes the samples in each of the studies of this thesis consisted of adolescents who were enrolled in secondary schools, and who were identified as junior elite athletes in their respective sports. As such, adolescents who had dropped out of sport or school were not included in this thesis. It is unknown whether those athletes who drop out of their sport experiences different amounts of role strain, or cope differently with role strain compared to those that remained participating in their sport at the highest level. Previous research by Enoksen (2011) has suggested that, after career ending injuries, the most frequently reported reason for dropout of sport of promising track and field athletes was school taking priority over sport. These findings indicate that the concurrent demands from school and sport (i.e., overload) could be a potential predictor of dropout in sport. Furthermore, junior elite athletes are less motivated to continue to participate in their sport, and are at higher risk for dropout if they believe that their sport prevents them to develop socially outside of sport (Patrick et al., 1999). As such, experiences of conflict might be associated with dropout amongst junior elite athletes. Taken together, this work indicates that role strain could be an important predictor of dropout. To address this limitation, future research should investigate the relationship between the four components of role strain and dropout amongst junior elite athletes. This requires researchers to start monitoring the role strain potential junior elite athletes experience at an earlier age (before they are formally identified as 'talented'). In doing so, those who might be vulnerable to drop-out because of high amounts of role strain or their inability to cope effectively with role strain can be detected at an early age, and can be provided with the necessary help.

Third, as only a limited amount of junior elite athletes exists, issues with sample sizes were a recurrent constraint in this thesis. In particular, the sample size used in the Confirmatory Factor Analysis in Chapter 4 of this thesis was considered low (N=124). It was therefore decided to use fit indices that are reasonably robust to issues with low sample size. As such, the sample sizes assembled for the studies in this thesis were deemed adequate for the statistical analyses conducted. However, the use of larger sample sizes would be preferred to for future research, especially when further validating the RSQ-JA.

Fourth, the findings relating the four components of role strain to life satisfaction and stress were based on a homogenous sample of junior elite ARF players. As ARF is a team sport that does not require early specialization, the findings of this study might not be generalizable to junior athletes who compete in sports that do require early specialization (Balyi & Hamilton, 2004). Early specialization sports, such as gymnastics, are argued to require high training from an early age (Balyi & Hamilton, 2004). These differences in training demands were demonstrated in study 1 by the amount of time national level junior elite ARF players spent on their sport (13 hours per week) compared to national level junior elite gymnast (28 hours per week). The findings of this thesis might therefore underestimate the role strain (especially overload) experienced by junior elite athletes who participate in early specialization sports. Further, the AFL makes substantial efforts to help athletes to manage the concurrent demands from football, school and their social lives (Pink et al., 2014). Generalizations of the results to the amount of role strain experienced by athletes who do not receive this support from their sporting organization would therefore be inadvisable. Further, research has shown that ‘mental toughness’ is praised in ARF, consequently football players might choose not to indicate scores on the RSQ-JA that admit to vulnerability in an attempt to avoid being perceived as ‘mentally

weak' (Tibbert, Andersen, & Morris, 2014). As such, the mental toughness culture in ARF could cause underestimation of the amount of role strain experienced by junior elite ARF players. Finally, the samples in this thesis mainly consisted of junior elite male athletes. It is unknown whether there are differences in the role strain experienced by male and female junior athletes. To address the limitations associated with the homogenous sample of junior elite ARF players used in Chapter 5 and 6 of this thesis, future research is recommended to investigate role strain experienced by junior elite athletes in a wider range of sports, and should include more female athletes.

Fifth, a recurrent methodological flaw of the studies in this thesis relates to the use of self-reported measurements. Self-reported measures are susceptible to common method variance. Inaccuracies could for instance occur due to social desirability, the mood states of the participants at the time of measurement, and acquiescence (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003; Podsakoff, MacKenzie, & Podsakoff, 2012). As such, triangulation of the data - for instance by collecting data from participants' teachers, coaches and parents - would help to calibrate findings and minimize these effects in future investigations.

Although beyond the scope of this thesis, it would be interesting to investigate the intricate relationships between the athletes' personal characteristics, the demands from their dual careers and the support junior athletes receive from their environment. Support provided by the junior athletes' school (Radtke & Coalter, 2007), sporting organization (Pink et al., 2014), and by junior athlete's parents (Bloom, 1985; Côté, 1999) were not investigated in this thesis as this was not directly related to the purpose of this research. However, some statements regarding environmental support were made by participants in study 1. It is therefore recommended to further explore the data gathered in study 1.

A further limitation of this thesis is that the role strain measurement presented in Chapters 5 and 6 was conducted in August and September, whilst the amount of role strain that junior elite athletes experience is expected to fluctuate throughout the year. Ivarsson, Johnson, Lindwall, Gustafsson, and Altermyr (2014) indicated that junior soccer players' stress levels were not stable over a ten week period. For example, role strain in school is expected to peak before exams, and role strain in sport may be expected to increase before important matches and/or (team) selections. During data collection, some teams sampled were about to play in the final series of the TAC cup while other teams sampled were not. Additionally, some players were in the middle of an exam period while others had already completed their exams. This has likely influenced the ARF players' responses on the RSQ-JA. To address the varying amount of role strain and stress experienced at several moments of the year, it is recommended that future research selectively administers the RSQ-JA throughout the year. In doing so, a more complete picture of the role strain experienced by junior elite athletes can be drawn. Further, although fraught with practical difficulties, adopting a longitudinal approach in assessing role strain, life satisfaction and school and sport performance could provide new insight into the experiences of junior elite athletes through-out their transitions in the talent development stages (e.g., Wylleman & Lavallee, 2004). By monitoring athletes across the season it will also be possible to develop interventions based on mental periodization. The concept of mental periodization stems from physical training in sport and refers to a strategy that plans mental skills training volume and intensity with the goal to maximize athletes' long term mental abilities and in turn increase sport performance (Holliday et al., 2008; Judge, Bell, Bellar & Wanless, 2010). Although there is little empirical evidence for the effectiveness of mental periodization, it has been suggested that

periodization of mental training could contribute to flow experiences amongst athletes (Judge et al., 2010).

Finally, further investigation is required to understand how role strain affects other aspects of junior elite athletes' development. For instance, the question whether school performance is not only affected by role strain in school (De Bruyn, 2005; Fenzel 1992) but also by role strain experienced in the 'sport' domain remains unexplored. Further, considering that social time is often sacrificed in order to meet demands from school and sport, attention is warranted regarding the development of the social skills of junior elite athletes. Finally, it would be interesting to investigate whether other psychological skills, such as time management and self-regulation, could also serve as potential mediators of role strain.

Final thoughts

When I first arrived in Australia, I had never heard of the sport Australian Rules Football. Yet somehow, only a few months into my PhD, I found myself at the AFL National Talent Academy Camp in Canberra where I was first confronted with what turned out to be the obvious: Australian Rules Football is a men's world. I vividly remember entering the meeting room where I met with 60 boys and 20 staff members. Not only was I surprised by the amount of people in the room, but also by absence of women. One of the coaches even joked that the players would be very cooperative, as they needed some female attention!

That being said, I really enjoyed my collaboration with the AFL and grew more and more accustomed to their internal culture. Further, I was impressed by the professional manner in

which the AFL handled the dual careers of their athletes. I am quite proud that the AFL intends to keep using the RSQ-JA as part of their National Talent Academy assessments.

In summary, this thesis has contributed to the understanding of the role strain associated with the dual careers of junior elite athletes, and provides insight in the effect role strain has on the athletes' life satisfaction and stress levels. I anticipate that the ideas proposed throughout this thesis will lead to further exploration of the effect of role strain on these athletes' overall development, with the main goal to help junior athletes flourish both on and off the field.

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APPENDIX A

CONSENT AND INFORMATION SHEETS FOR INTERVIEWS

INFORMATION TO PARENTS/GUARDIANS OF PARTICIPANTS INVOLVED IN RESEARCH

You are invited to participate

You have received this letter because your son/daughter has been selected to take part in the 'Sporting Success' project. This is a research project which is carried out by Victoria University, in conjunction with Gymnastics Australia and the Australian Institute of Sport. The study is being conducted by Fleur van Rens MSc., dr. Erika Borkoles, Prof. Damian Farrow and dr. Jason Berry.

Project explanation

The Sporting Success project is an initiative which will investigate psychological and fundamental movement factors that can contribute to achievement and enjoyment in sport and school.

As part of this project the current study aims to investigate how adolescents experience role strain (difficulties in meeting role demands) when trying to juggle both academic and sport commitments. Up till now, no research has ever investigated how talented athletes experience balancing these tasks.

The main goal of this study is to create better understanding about expectations put on adolescents and to create a questionnaire which can measure possible strains. Eventually this research will hopefully lead to knowledge which can be used to minimise the possible strains of competing tasks.

In this package you will find an information sheet explaining the research project for your son/daughter, two informed consent forms (one for you and one for your child) and a short questionnaire containing demographic and time management questions. If you voluntarily agree to your child's participation in this study I would like to request your child to complete the questionnaire and the informed consent form, in addition could you kindly sign the informed consent form for parents/guardians? Could you please remind your child to bring both informed consent forms and the questionnaire to the interview?

What will my son/daughter be asked to do?

- Each participant will be asked to complete a short questionnaire which contains demographic and time management questions.
- Furthermore your son/daughter will be asked to volunteer to participate in a face-to-face interview that will take approximately one hour. During this interview your child will be asked how s/he manages balancing a sport- and academic career. Also the expectations people have about your son/daughter with regards to being a student and an athlete will be discussed. The interview will be recorded on a digital audio recorder.
- If you would like to see the questions your child will be asked, you can request these from dr. Erika Borkoles (erika.borkoles@vu.edu.au).

What will my son/daughter gain from participating?

Although there are no immediate or direct benefits to participation in this study, the data from your son/daughter are going to inform future research on how we can help adolescents like your child to combine demanding activities like academic (school) work and training and competing for a sport. The information from the interviews will be used to increase understanding of the demands on adolescent scholars' arising from sport and academic requirements. This increased knowledge will lead to the development of a questionnaire, which will make it possible to measure the

demands within a large cohort of adolescents. The ultimate goal of this project is to find out how we can reduce role strain experienced by talented athletes in both their school and sport career, and alleviate their performance levels in both school and sport.

What are the potential risks of participating in this project?

There is a slight risk that your child might feel upset during the interview when discussing how he/she balances school and sport. The interviewer has a Working With Children and Police Check. If preferred you can request an extra adult to be present during the interview.

If your child gets upset during the interview the interview s/he can withdrawal from the study at any time. If the interviewer notices that your child gets upset during the interview the interview will also be stopped. For any anxiety that occurs as a result of participation in this study, we can refer your child to Professor Mark Andersen, a sport psychologist and counsellor at Victoria University. If you think your son/daughter has suffered any psychological issues due to the interview you can directly contact Professor Mark Andersen at 03 9919 9478.

How will the information be used?

The personal information that is provided to researchers will remain strictly confidential. The researchers affiliated with the study will be the only people to have access to your this information. All data obtained during the study will be stored in locked filling cabinets and password protected files on the computer. The study findings from this study may be reported as journal articles, conference presentations and a thesis. Any report or presentation resulting from this study will be written in a summarised form without personal information that may identify your child. The information your child discloses during the interview will not be communicated to parents, teachers, coaches, schools or sporting organisations. Only the study investigators will have access to the data.

How will this study be conducted?

The study will be conducted at either your child's sport club or on school grounds; either after school or prior to/after sports training. Your child can withdraw from the study or change his/her mind about including their data in analysis up till 7 days after the interview has taken place, without any consequences.

Who is conducting the study?

The interviews will be conducted by Fleur van Rens. If you have any queries regarding this study, please do not hesitate to contact Dr Erika Borkoles by phone (03 9919 5977) or via e-mail (erika.borkoles@vu.edu.au).

Thank you for considering participating in our study. We encourage you to discuss participation in this study with your family.

Fleur van Rens

dr. Erika Borkoles

Any queries about your participation in this project may be directed to the Chief Investigator listed above. If you have any queries or complaints about the way you have been treated, you may contact the Research Ethics and Biosafety Manager, Victoria University Human Research Ethics Committee, Victoria University, PO Box 14428, Melbourne, VIC, 8001 or phone (03) 9919 4148.

INFORMATION TO PARTICIPANTS INVOLVED IN RESEARCH

Hi there,

I am Fleur, and you have received this letter because you have been selected to take part in the 'Sporting Success' project. This is a research project which is carried out by Victoria University, in combination with Gymnastics Australia and the Australian Institute of Sport. The Sporting Success project is an initiative which will investigate psychological and fundamental movement factors that can contribute to achievement and enjoyment in sport and school. A part of this project is the study I am writing you about. This study will measure how adolescents experience role strain (difficulties in meeting expectations) when trying to juggle both academic and sports commitments. Up till now, no research has ever investigated how talented athletes experience balancing these tasks.

In this package you will find:

- an information sheet explaining the research project for your parent/guardian
- two informed consent forms (one for you and one for your parent/guardian)
- a short questionnaire containing demographic and time management questions.

If you voluntarily agree to participate in this study I would appreciate it if you could complete the questionnaire and the informed consent form, in addition could you ask your parent/guardian to sign the informed consent form for parents/guardians. Please remember to bring both informed consent forms and the questionnaire to the interview.

The study is being conducted by Fleur van Rens MSc., dr. Erika Borkoles, Prof. Damian Farrow and dr. Jason Berry.

Below I have answered some of the questions which you might have about this study.

What will I be asked to do?

- You will be asked to complete a short questionnaire which contains demographic and time management questions.
- You will be asked to volunteer to participate in a face-to-face interview that will take approximately one hour. During this interview I will ask you about how you experience when trying to balance school and sport. Also, expectations people have from you as a student and an athlete will be discussed. The interview will be recorded on a digital audio recorder. You will be interviewed in a familiar and comfortable setting, without the presence of any other people in the room. I have obtained a Working With Children and National Crime History Check in order to do so. If preferred you can request an extra adult to be present during the interview.

What will I gain from participating?

There are no immediate benefits of participation in this study to you. However the information you give me will increase understanding of the demands on adolescent talented athletes from both school and sport. This increased knowledge will lead to the development of a questionnaire, which will make it possible to measure the demands within a large group of adolescents. The ultimate goal of this project is to find out

The low probability risk associated with this study is that you might become upset because you struggle to meet demands. In case you show distress during the interview, the interview will be stopped, the data will not be used, and we will refer you to Professor Mark Andersen, a sport psychologist and counsellor at Victoria University. If you think you have suffered any psychological issues due to the interview you can directly contact Professor Mark Andersen at 03 9919 9478. In case you feel upset during the interview and I don't notice it, you can tell me to stop the interview. There will be no consequences if you decide to stop the interview and your information will not be used.

How will the information I give be used?

The information you provide to researchers will remain strictly confidential. The researchers affiliated with the study will be the only people to have access to your private information and data obtained during the study, which will be stored in locked filling cabinets. All reports about this study will be done in a summarised form without personal information that may identify you. The information you disclose during the interview will not be communicated to parents, teachers, coaches, schools or sporting organisations.

Who is conducting the study?

The interviews will be conducted by Fleur van Rens, of the Victoria University research team. If you have any queries regarding this study, please do not hesitate to contact dr. Erika Borkoles by phone (03 9919 5977) or via e-mail (erika.borkoles@vu.edu.au).

Erika Borkoles Fleur van Rens

Any queries about your participation in this project may be directed to the Chief Investigator listed above. If you have any queries or complaints about the way you have been treated, you may contact the Research Ethics and Biosafety Manager, Victoria University Human Research Ethics Committee, Victoria University, PO Box 14428, Melbourne, VIC, 8001 or phone (03) 9919 4148.

APPENDIX B

PARTICIPANT INFORMATION SHEET FOR INTERVIEWS

Participant information sheet

Participant number:_____

Date of birth
___/___/_____

Gender
Male / Female

Do you compete at the junior or senior level in your sport?

Junior level / Senior level

Please circle the level in which you currently compete (if multiple levels are applicable please circle the highest level)

- Local club level
- Regional level
- State level
- National level
- International level

Time management: Overview of your weekly activities when you compete
Please indicate how much time you spend on the following activities during a regular school week in competition season:
- School: time spend at school and time spend on homework
- Travelling: travelling to school, home, sport venue etc.
- Sport: all activities that have to do with sport; such as training, video analysis, coaching etc.
- Friends: time spend with friends, not during school hours or sport practice
- Family: time spend with family
- Other: other important activities you undertake regularly during a school week (like for instance music practice)

Example:

	Monday
School	7 hours
Travelling	2 hours
Sport	4 hours
Friends	
Family	0.5 hour
Other namely	-

You can fill your schedule out on the next page

Your schedule during your sport season

	Monday	*Tuesday*	*Wednesday*	*Thursday*	*Friday*	*Saturday*	*Sunday*
School							
Travelling							
Sport							
Friends							
Family							
Other namely							
Other namely							

Thank you for completing this information sheet
Please remember to bring this sheet with you to the interview

APPENDIX C

INTERVIEW SCHEDULE

Interview schedule regarding role strain in athletes

Intro:

- Explain purpose of meeting and confidentiality
- How did you get into sport
- How many competitions do you compete in? – Which ones
- People involved with your training and competitions
- How would you describe your school?

Take look at sheet:

- How would you describe your usual week during sport season
- How would you describe your usual week off season
- How do you feel on Friday evening, after your weekend, about the upcoming week

Roles:

- What kind of roles do you fulfil *for instance your PE teacher would be a teacher, a sport coach, being a husband, a father etc.*
- Which of these roles is most important to you?

About every role:

- How important is this role on a scale from 1-10
- Why do you do role this *(duty, because, i like it etc.)*
- Have you ever felt difficulties in carrying out this role? *If yes, example +how did you manage this difficulty?*
- What is expected from you in this role
- Is it clear to you what is expected from you in this role
- Who is expecting this from you *Parents, teachers, family friends, teammates friends coaches YOURSELF*
- Do the expectations from these people sometimes conflict? *H*ow often does this happen, examples
- How much effort does it take to meet these expectations,
- To what extent can you meet these expectations,
- What happens when you can't meet the expectations.
- Sometimes too much or too little expected from you?
- What do you think you need to doing to get to do as good in this role as possible?

Balancing roles:

- What is your experience of balancing all of your roles?
- How often do you in general feel that you cannot do everything you would like to?

- How well do you think you do in balancing ALL of your roles
- What is your experience balancing **school and sport** in particular (example)
- What do you need to be doing to balance school and sport successfully
- Can you meet all of the expectations put on you in school and sport? How much effort does it take? Examples.
- Have you ever experienced an unbalance combining school and sport– If yes, example – How often does this happen
- What can help you to meet the expectations, and achieve a better balance between school and sport?
- How well do you think you do in balancing school and sport (scale 1-10), why
- Differences between you and 'regular' students/other athletes
- In an ideal world; what would you change on the schedule

Anything you would like to add to this interview?

Thank you ☺

APPENDIX D

EXAMPLE INTERVIEW TRANSCRIPT

Example Interview transcript

Fleur van Rens: My first question to you is how did you get into gymnastics?
Interviewee: Um, I can remember about seven or eight years ago, my sister was really just interested in gymnastics and, um, the way it works here is pretty much you go into the gym for, like, a trial-day so they pick out what group you're going to be allocated to and, I came along and all I could help but do is go and bounce on the trampoline. So, of course, I wanted to try gymnastics. And before I realized, gymnastics also included apparatus, I was pretty much just bouncing on the tramp really so that's actually how it all started so…
Fleur: And now obviously you're doing a lot of competitions.
Interviewee: Yeah.
Fleur: What happened in the meanwhile?
Interviewee: Uh, what do you mean? What happened from then to the lead up now?
Fleur: Yeah.
Interviewee: Um, I skipped a couple of levels at the start. Um, just kept moving up, and then by about level six I was on my first, uh, State Team, to go to Nationals. Um, and then made it to Nationals ever since, um, and was slowly climbing ranks whilst doing it. Uh, and then, start of this year, I made it into the Australian Youth Olympic Festival, um, which is a big step, 'cause it's the international comp, so it was steep learning curve, so.
Fleur: So you're saying you're now competing in your first international competitions? What kind of other competitions do you compete in?
Interviewee: Um, mainly it's, uh, invitationals. Uh, and trials to get into Victorian and National Championships, um, but other than that, not a lot.
Fleur: Obviously you also go to school, because you're still in the schooling age. What kind of school do you go to?
Interviewee: Um, I go to a public school; Rowville Secondary College. Um, I'd say it's a good school for what it is. Yeah.
Fleur: How would you describe it? Is it a sporty school or an academic school?
Interviewee: Um, there, at there, we have two campuses. Um, I was at the East, uh, which has, three categories. So you got the Sports Academy, um, which is, you know, basketball, soccer. Um, then we've got, uh, RIA which is the Institute of the Arts so music, dancing, and stuff. And then you've got mainstream, which is just normal school. Um, and because they offered no gymnastics program, um, I just basically stayed in mainstream.
Fleur: Yep.
Interviewee: And then now I've transferred to the West, um, and still in mainstream, so.
Fleur: Okay. One of these papers you filled-out, you filled out a little overview of your week. Can, can you tell me a little bit about your week. What is your normal week like to you?
Interviewee: Um, normal week is nothing but a schedule. Um, it's basically, uh, wake-up, get ready to school, go to school, come back, get homework done, um, because I know if I don't get homework done, I'll be basically screwed for the whole week. [laughs] Um, and then training from 6:00 to 9:00, uh, on week nights. Um, and then I come home at 9:00 and basically dinner and bed. And then Saturdays I do what I can study-wise in the morning, uh, then training from one o'clock 'til four-thirty, uh, and sometimes five o'clock, um, then come home, and that's just

about it. Uh, and then Sunday usually spend it with the family, umm. And then that's pretty much my weekly routine.
Fleur: And say on Friday eve, how do you generally feel at the end of the week?
Interviewee: Um, end of the week I'm usually very relieved. Um, but definitely tired. It's very – you have to very – you have to make sure you're going to bed at the right time. Um, because if I go to bed too late, I'd be, you know, too tired for the next day to be able to train and that could create injuries. So it's definitely a lot of time management.
Fleur: And what is your Sunday evening like for you?
Interviewee: Sunday evening, is usually a movie with the family, and that's just about it really.
Fleur: So on Sunday are you feeling relaxed, or are you…?
Interviewee: Oh yeah, yes. Sunday's normally just the day to recharge the batteries for next week and then get back into it for Monday.
Fleur: So now the following question is basically about the roles you fulfill in your life. So if I give an example about myself, I would say I'm a student, 'cause I go to University, I'm a family member, I play a bit of music, so maybe I'm a musician. How would you describe the roles you have?
Interviewee: Um, I'd say, um, student, family-member, um, athlete, and basically just a mate. There's not really too many other stuff that I do, um, other than, uh, schooling and gym. I mean, that's all I've really done for the past seven or eight years.
Fleur: Of those four roles, which one is the most important to you?
Interviewee: Um, although gymnastics takes up a very big part of my life, um, I'd still choose family member, um, just because I mean it's family, you know.
Fleur: So we start to talk about your family first, huh?
Interviewee: Yeah.
Fleur: Uh, what's your family like? Can you tell me a little bit about it?
Interviewee: My family is very, um, very fast-paced. Um, like, like, comparing it to my best mate, when I go to his house, they're very relaxed. They don't really plan anything; they just go out and do what they want. My family consists of schedule …
Fleur: Uh-huh.
Interviewee: … which is good, because, you know, you know exactly what you're doing and then you can work things around it, like go and see mates and stuff like that. Um, but yeah, it's basically just a schedule. You know, dad usually chucks in the occasional 'go out and do something' like go to the beach, which is really nice. Um, so yeah. But other than that, it's a schedule.
Fleur: Your sister, does she also go to – does gymnastics?
Interviewee: Um, yeah, she's got a poster on the wall. The posters along that wall are for people who have made level 10, and I got my 10 two comps ago, um, so I'll be getting a poster on the wall at the end of the year. But Kirsty [sp] basically, I'm with her for the whole day, um, because you know, same school. Um, I always see her there and then I've got training so, um, yeah, my relationship with her is really strong. That you know, gives that push as well, because we always, you know, say out to each other, "Come and watch this, or record this," or something like that, so yeah.
Fleur: Would you say your family's a sporty family?
Interviewee: Very sporty. Um, my oldest sister, did swimming before she quit. She, I think she went to National Championships, um, and then dad was a ex-football player. And mum used

to do badminton as well. Um, so sport is definitely a very large part of our life. And so I can't really remember when no one was out of the house on a weeknight training, you know.
Fleur: In your family, are there certain expectations of you – you should be a good family member?
Interviewee: There is a lot of expectations. Um, which is good, because it keeps you in line. Um, but you know, expectations would be, um, prioritizing, um, make sure your priorities are set so that you stay on top of training commitments and school commitments.
You have to be doing well at school. I've even got an English tutor, now, on Thursday nights before training just to be able to take the pressure off, um, you know, getting more and more homework because I'm going through Year 11, so yeah.
Fleur: So most of the expectations in your family are about school and sports?
Interviewee: Yeah. There's not a lot of … there's not a lot of expectations with sport, because I'm a very self-motivated person. Um, and it works well sometimes, but it works the exact opposite when I get frustrated with something. Um, but with sporting expectations, there's not a lot, it's just mainly self-motivation, getting through it and then Dad, and Mum, and the rest of the family support pretty much.
Fleur: And are there also expectations that you do stuff around the house to help with chores?
Interviewee: Yeah, yeah, I do lack that sometimes. There are expectations to, you know, make sure you keep your room tidy, you know, that sort of stuff, you know, normal stuff. Um, that's pretty much expectations, just to be, um, a working part of the family. Not someone that just sits around and does nothing, so.
Fleur: How difficult is it for you to be a good family member?
Interviewee: Um, it's full on, because you know, basically I soon as I get home from school I go straight upstairs, um, to be able to keep up with homework. And I go upstairs, basically so that no one is able to distract me, umm, and it gets a bit full-on because I've also got to deal with family commitments, like doing things around the house with Dad and stuff like that, you know. So having to juggle with it that does get a bit struggling sometimes just 'cause there's, umm, you know, too much going on, umm, but, you know, you get through the day so …
Fleur: So if you would have to rate how difficult it is to be a good family member, a 10 would be really, really difficult?
Interviewee: I'd give it a solid seven.
Fleur: Seven, yeah. So let's talk about your school role, your student role. You already talked a little bit about your school.
Interviewee: Umm.
Fleur: Umm, can you tell me what is expected from you at school?
Interviewee: Umm, from an academic point of view?
Fleur: Yeah.
Interviewee: Umm, definitely, I mean like, it's … it's in my personality to be a self-motivated person. I've always wanted to do well at school. I've always wanted to do well at gym and there's nothing, really, that I've given up on. No matter how frustrated I get, I keep going and going until it basically breaks me.
Fleur: What do you mean by doing well in school; like what to you is doing well?
Interviewee: Umm, I … whenever I'm doing a test or [indecipherable 11:28] or … or exams I always have a standard over ... of 80 percent. Anything below it doesn't matter how far below it is, it's almost not acceptable. Umm, so that is definitely, umm, self-motivating in itself because,

you know, it's the standard that you need to set for yourself. So it's good to do that I guess, just to be able to set a standard. And when, you know, you get the results, it's really motivating in itself just to keep going and get on to the next subject and get above 80 in that so …
Fleur: So you're saying you set those standards basically for yourself?
Interviewee: Yeah.
Fleur: Are there also standards from teachers, for example?
Interviewee: Umm, well I mean, for setting a standard for teachers is basically respect them and they'll respect you. I've always thought of that and you know, you have the occasional student that does the exact opposite but I really don't think that that's in my personality to do that. And because, you know, before, the umm, younger kids came up, umm I was training with 22, 23 year olds so I pretty exposed to umm, you know, young adults, umm, to become friends with them. So I guess it's already in a way to almost see teachers as, ahh, friends rather than teachers. Umm, so it's really good getting along with them and, you know, being able to learn from them is … is good.
Fleur: And how important is school to you?
Interviewee: Umm, I've always thought that schooling is far more important than gymnastics, mainly because, you know, it's what you're going to build your life off, and that is your whole … it comes into the whole thing of priorities, umm, you know, take ... even taking lunch at school to keep up on assignments and stuff like that. Umm, so it's definitely a lot more important than gymnastics and stuff like that, umm, just for ... to live up to, you know your career and stuff like because there's no money in this sport so … yeah.
Fleur: So on the scale from one to ten, how important would school be to you, ten being most important?
Interviewee: Probably nine or 10.
Fleur: And how difficult is it for you to live up to your own expectations of school?
Interviewee: It's so far … so far it's being pretty smooth sailing. But, you know, you have the occasional time of the year, you know, you slip-up and you get yourself back into gear pretty much and then it's … and then it's back to normal but on a scale of one to 10 it will probably about ... about an eight.
Fleur: And being an athlete is a big part of your life?
Interviewee: Yeah.
Fleur: Can you tell me a little bit about you as an athlete? What do you wanna achieve?
Interviewee: Oh, umm, basically my … me and my Dad have talked about this before, you know, sitting in the car, going to gym on nights that it's only I … I already know it's only me training and that no one else is wanting to train. Umm, but I know that training for that will benefit me. So very strong-minded and I guess it's more wanting to get … I mean, it doesn't really matter what level I reach as long as I think that I have done enough.
And being able to do Youth Olympic Festival at the start of the year, it definitely set ... it was motivating and it set a standard of what everyone else is doing around the world, and I was … I was two years younger than everyone that I was taking on. And I still placed top ten in Youth for the Olympics. So it's … it's definitely, you know, building the rank, so getting further up there. So I think I'd be happy if I made top five before I go on. So it's that standard again with school and the gym that I've always used, so yeah.
Fleur: Do you have any favorite apparatus?
Interviewee: Umm, my favorite apparatus is probably my most frustrating apparatus. [laughs]

Fleur: Which is?
Interviewee: It would be High Bar definitely, just because it's … it's a risky apparatus and it gives you, I mean, compared to other apparatus when you get new skills like Pommel, for example. If you were to get a new skill on that, it gives you no adrenalin rush compared to High Bar, especially getting new releases … that really gives you a rush to keep, you know, pursuing new skills. So, definitely High Bar would be my favorite apparatus.
Fleur: Which people are involved in your athletic career?
Interviewee: Umm, my Dad plays a very big part in it. Umm, he motivates me when, you know, I've … I've been tempted to quit because, you know, when you … I mean, when me and Deon, the guy that trains me, we're talking … we always say like, "You train for four competitions a year and you only have one chance to do a routine," you know. And your hit-ratio has to be perfect. So Deon is quite a very big part and just to keep me on track and my coach obviously. And someone that has come recently to play a very big role in my development so far, as a junior turning senior athlete, is my physio. Because she's actually an international judge as well. And so she's very on top of skills and … and everything going around the international scale. And also I've realized, that whenever I go to a different physio, they don't know what I'm talking about. Like, if I get injured doing a skill, it's a lot easier to say to my physio what I did and she knows exactly what happened.
I mean if I go to a - another physio that I've never had before and I try to say it they have no idea what's going on so I'm gonna try and explain it and if I get wrong then, you know, I don't get a proper treatment. So yes, she's played a very big role in … in my gymnastics so far.
Fleur: So at the moment do you only have one coach or do you also have coaches in other places?
Interviewee: Umm, my current coach would be Jojo. But when I go onto international comps and national comps and stuff like that, where I am on a team and I have head coaches which for nationals is usually Greg Calusio which is from the men's high performance center, you know, and then John Curtin which is the Australian head coach. So those are the two only coaches that I've … I've had.
Fleur: So do most people and especially coaches expect the same things from you, or do they expect different things from you?
Interviewee: Umm, I've realized over the years that every coach is different. Every coach is gonna teach you different and definitely different techniques for skills. I've grown very attached to Jojo because he, umm … his techniques I always agree with and, umm, I always see what he's trying to show. Umm, there are some coaches that I don't think are good coaches …mainly just because of the technique. But, umm, that's probably why I've grown attached to Jojo because he … the way he coaches is a relaxed style and because I'm motivated he doesn't really need to push me. Umm, and h-he explains it, short and sharp, instead of, you know, constantly keeping on going so it gets blurred, just straight out, "We need to change," and then go, so yeah.
Fleur: So, how do you feel when you're working with another coach?
Interviewee: Last [laughs], last time I was working with another coach, I got injured because of what they told me to do. Umm, and that injured me, ahh, I think a month out of Youth Olympic Festival. Umm ... so, and I was injured for about two and a half weeks and my physio got me back on schedule, otherwise I would have been out for like, probably 6 weeks. Umm, so I got back into it and I had, umm, I think it was one or two days training before I had a control test, which is like a trial to get onto the team. Umm, and the head coach that was responsible for

coaching me that day, umm, was actually the head coach that was going to Youth Festival so I definitely grew, umm, a rather negative attitude towards him. Umm, I … now because he's… because he ... h-he … because o-of who he is…
Interviewee: Umm, I wouldn't say, "No, don't coach me," but I would definitely think about it before doing it.
Fleur: Mhm.
Interviewee: Umm, if Jojo was to tell me to change something I would do it, no matter what, how crazy it is. Umm, but definitely with other coaches I'm a lot more cautious when it comes to that, so yeah.
Fleur: So how difficult is it for you to live up to what you want from yourself as an athlete?
Interviewee: It's sometimes, sometimes it's very easy, and then other times it's extremely hard.
Fleur: Can you explain that?
Interviewee: Umm, perfect example would be probably my release move on high bar… Umm, where it is very; I don't have a lot of catches, so I don't, I don't usually catch it. Umm, I'm getting it better now, which is very thankful but umm, that self-motivation with it also is almost like a self-destruction, just because I will not stop and rest until I do it. Umm, so reaching the expectation that I set is sometimes very difficult and that's a perfect example 'cause not cat...not catching it, he'll say, "What are you doing? Fix it now!", and then I try to fix it, fix it too much and then I'll over correct and then end up hurting myself, you know. It's so I get self-motivation. So it is almost like self-destruction if it doesn't work so…
Fleur: And you say sometimes it's easy as well? When is it easy for you?
Interviewee: It works when I find a skill easy.
Fleur: Mhm, mhm.
Interviewee: Umm, like on floor I do my second tumble passes, round a back flip, a back double twist.
Fleur: Mhm, mhm.
Interviewee: Umm, it's usually, it's, well it's always really easy I'm … basically a slow walk into it, I don't even need to run for it. Umm, and just correcting it is just that much easier because I get the lift. Umm, that's basically just how it's so easy to reach the expectations that I've set. So, it just really depends on the difficulty of the skill. So yeah.
Fleur: And then one role we didn't talk about yet is your role as a friend. And can you tell me a bit about your friends?
Interviewee: Umm, my friends are [laughs] I have…I've almost split them into 2 categories, I've got school friends and I've got gym friends. Umm, my school friends, umm, know about my gym commitments…
Fleur: Mhm, mhm.
Interviewee: …and they know about how it takes up basically, like, 90 percent of my free time. Umm, and whenever they want to organise something as a group, umm, they always take into account that I've got training every night. Umm, so we usually reserve it for, umm, Saturday mornings or Sunday morning or afternoon.
Fleur: Mhm, mhm.
Interviewee: I can still spend time with the family in the afternoon of Sunday. Umm, so they're very loyal when it comes to that. And I'd be doing the same for them as well. Umm, so that's with school mates and then you've got umm, gym mates, ahh, umm; you know Bryce and Griffin which are down on the floor training. Umm, I'm ... I act very different around them.

Umm, just because ... if I was to ... say I'd turn up at school the next day and I say "Oh look I got this", umm, and they have no idea what I'm saying. Umm, but if I was to, umm, say to Griffin or Bryce you know, umm, "I got this skill", and they'd know exactly what I'm talking about. Umm, so I guess it's the understanding or … almost like a communication barrier.
Fleur: Mhm, mhm.
Interviewee: Umm, so then, ... but then at the same time, umm, my best mate at school umm, he's starting to get really interested with gymnastics. Umm, and he's wanting to look at the code of points, which is basically like the skill booklet of every skill in gym, and umm, he's starting to learn skills. So he's starting to get through that barrier and become basically a school and gym mate, when you think about it. So yeah, it's … friends-wise – it's 2 categories pretty much.
Fleur: So what do you think you should be doing to be a good friend?
Interviewee: Umm, to be a good friend. Umm, loyalty is definitely one of my big things. Umm, if you're not loyal to a mate you're not a mate in the first place. Umm, and just basically, don't leave a man hanging, you know. Umm, and if they do something, umm, you've got to pick them up and dust them off and keep them going and I expect the same, to receive. Umm, so yeah it's defin… I also like Anthony who's the very… my lazy mate. [laughs] Whenever I'm with him, umm, I've always got that schedule sort of thing.
Fleur: Mhm, mhm.
Interviewee: Umm, and always planning and he's just like "Oh, maybe we should do this", and then "Maybe we should do that", and I'm like "No, we're doing this – that's it." So definitely keeping, umm, you know just checking in with them to see how everything's going and to steer them on the right course, so…
Fleur: How difficult is it for you to be a good friend to them?
Interviewee: It's difficult at times, umm, 'cause my fr...I've had people who… I've had friends before that have suffered depression.
Fleur: Mhm, mhm.
Interviewee: Umm, and although they've had, you know, therapy and stuff like that and get them back on track … they always need their friends.
Fleur: Yep
Interviewee: Umm, so it's definitely really pressuring at times.
Fleur: Mhm, mhm.
Interviewee: Cause I've also got to be here and, you know, I can't really be talking to them whilst I'm training.
Fleur: Yep.
Interviewee: Umm, so it's really very crucial for time management to basically, umm, have time for gym, have time for school, and have time for them. Just keep them going umm, so yeah. It's pretty much ... everything's just casual when you think about me in a nutshell.
Fleur: Yeah, so on scale of from one to 10, how important are your friends to you?
Interviewee: Umm, I am a very friend-orientated person. Umm, my relationships with them, my relationships with my family's very important. Umm, so I'd give them a nine, just because I consider all my mates as almost like brothers to me.
Fleur: Yeah.
Interviewee: So, yeah.
Fleur: So now we sort of spoke about all of your roles separately but, in your life, all of these roles come together. What happens when everything comes together?

Interviewee: [laughs] Everything at once - it'd be chaos.
Interviewee: Umm, I would have no idea what to do. I'd have no idea where to go, umm, because, you know, school's important, gym's important, friends are important, family's important, you know, four aspects. And if they come all together, umm, it'd just get too much to handle and I won't be able to, pretty much, do anything. Umm, so that's when, umm, being raised as very scheduled, you know, having know what - that's what you've got to do, you've got to do that after and that after, umm, has been really beneficial for it.
Fleur: Mhm, mhm.
Interviewee: Just because I can, I can really picture, you know, timetable and cut out times for when training starts, training finishes, school finishes, you know. Just get everything done, umm, so it doesn't become one giant ball and all messed up. So yeah…
Fleur: So you're sort of saying that you're being raised to work with time schedules?
Interviewee: Yeah.
Fleur: re there other facets in which you get support to try to balance school, sport, family, and friends?
Interviewee: Umm. I'd say yes and no. Umm, mainly because you know, there's not ... I haven't ... I haven't met any normal school student so far, umm, you know just through normal schooling and not from gym, that does the amount of hours that I do training…
Fleur: Mhm, mhm.
Interviewee: Umm…and only the people that I train with understand how much, you know, pressure a gym is, and the amount of training hours you've got to commit to ... umm, so, but my dad has told me before how he always used to push himself for football when he was used to training. You know, he had a very scheduled life himself. So he probably would be the one factor that would be keeping me on track of what I am now so…
Fleur: So you get a lot of support from your father?
Interviewee: Definitely, yeah.
Fleur: Does the school sometimes help you out?
Interviewee: The school does, umm, they have a Connected program which is two periods a week talking about prioritising for studying and work and school. And a lot of people these days, heading into year 11 and 12 are starting to work, so they're talking a lot more about managing school and work. And when I think about it, this is basically my work. So it's ... for them, school and work, and for me, school and gym. So they basically teach us, you know, time management and scheduling and time tabling which most people aren't really used to, but I am really used to now. It is really easy to pick up, so, yeah …
Fleur: What happens when you are away, for instance, for the Youth Olympics or for Nationals? How do you do that with school?
Interviewee: Umm, usually I go to the teachers of my subjects about a week or a week and half early prior to when I leave. And ask me… or ask them, what homework or what stuff we'd be covering for the next week or however long I'd be gone for. Then I get a list going of all the stuff I need to do, and all the stuff I need to take away. And basically, be doing twice the amount of homework on the week or the week-and-a-half leading up to it, and then take all the stuff that I haven't done to the competition in the event.
'Cause when I was in youth festival, I was basically coming home… coming back from the training gym and youth festival, doing homework and then going to bed. So it is definitely trying to keep up with the work. So that when I get back, I am not like going to class, they talk

about something, and I am just like, "What are you talking about...? I haven't done this before." So yeah, keeping on top of it is very crucial.
Fleur: How about your time management? Does it sometimes happen that you have to pick something to do, or actually you would like to be doing something different?
Interviewee: Yeah, it ... there is a lot of sacrifice … I was, um … it's ... there was ...on the way up to youth festival when I hurt my shoulder, umm, we ... after we had my injury. And then we had one day training and then the first control test which is like the first … it is like a semi-final, when you think about it, which two gymnasts were cut in the finals. And then I had a month to train, and then I had a second control test, and then it was the week of competition straight off. Umm, so I had that month to be training and my gym was closed for that period, because it was over the Christmas holiday break. So I had nowhere to train.
So we, ahh, basically were, you know, going around to different gyms in Victoria saying, "Can you give me somewhere to train. I really need to get this done. Umm, and we managed to get a couple days in here, umm, just with me training and Jojo. So it was only me and Jojo training in the whole gym. Umm, and then I went to BTYC which is in Donvale. [laughs] They opened up a gym for me. It was the only one that was training. Umm, so and then, of course, whilst I normally expect for Christmas holidays to be really relaxed, taking time off and not doing anything, going to see mates. It was definitely a really big change, just because it was training every day.
Fleur: Uhu.
Interviewee: So I missed out pretty much on my entire holiday break, because it was just training, train, train, train, train. So yeah it was a lot of sacrifice during that time.
Fleur: Are there any other examples that you had to sacrifice other things?
Interviewee: Umm, I've … because I prioritise schooling before gym, I have had times before where I have had assignments due, and I don't have … I've thought to myself, "I won't be able to have enough time if I keep training. Maybe I should take tonight off and tomorrow night off, just to be able to get the stuff done." Umm, you know, sacrificing training for doing that. I see the benefits in it, if I do it. But then you think about, you know, sacrifices of bad things like ... growing up now, it's turning into a lot of mates going out drinking and smoking and all that sort of stuff. And I've so far… [laughs] I have said to them, "No, I have got to go to training which is, I think, really good because, you know, picking up that drink won't be good. And I don't see anything beneficial in it, so sacrificing those sorts of social occasions has been good. Although sacrificing social occasions where, you know, going out to the movies, or going out to get something to eat ... has not been good at all. It has sometimes been really frustrating, just because I haven't been able to go out, go out and socialise. Umm, and I have had mates before that have been training that have said, "I am going to quit." And I've said, "Why is that?" And he's said, "Oh, you don't have a social life with this sport," and I completely agreed with him.
Fleur: Mmm-mm.
Interviewee: Umm, and I have actually had that similar stage, and I was tempted to quit. Just because you don't see mates, you don't get to socialise as much as what you'd normally do. But then you think about all the benefits of what gym gives you, and it gives you that, you know, time schedule and getting used to a schedule for future, umm, future roles or careers or anything like that. So, and that is why I have really stuck with it, so…
Fleur: So how difficult is it for you to manage your time and try to do everything you would like to do?

Interviewee: Umm, it's very difficult. Sometimes it is really frustrating, because, you know, I get invited to go out, umm, and have something to eat or have dinner with someone one night, and, you know, I have got training at night. And then I think then what should I go to? And then I think I should go to gym, and then I say we'll do it another time. And then they ask me again, and then it is the same thing. You know, I've got training that night. I can't do it, and then, umm, you know, it's really … it is not… it is not really depressing, but it's sad, because I always just have to say no.
Fleur: Uhu..
Interviewee: I haven't been able to and ... and especially when it is something out of the blue, you know. I get a message or something from someone, "Oh, come out tonight." I actually got one of those today, and I said to him, "Oh, no, I can't. I've got training." So yeah, it is sad sometimes so… Yeah.
Fleur: And this whole interview is basically about one concept, and that is called 'role strain.' Does that word ring any bells to you?
Interviewee: Yeah, I've read it before.
Fleur: What do you think it means?
Interviewee: Umm, almost like interconnected ... like it is almost like… almost tension. So you've got, umm, that is your life, and you've got strings off it, and, you know, umm, that's basically balanced. And if you were to prioritise more towards schooling, you'd put more attention on gym, umm, so then you have to make more commitments to try and get back into the centre**.** Umm, so, I guess when you say 'role strain' it's really prioritising ...
Fleur: Mm-mm.
Interviewee: ... comes to my mind. Just to be able to avoid the strain, so…
Fleur: Yep. Like officially it's been defined as having difficulties in meeting demands of roles. When you hear that, do you think role strain is something that you sometimes experience?
Interviewee: Yes, definitely. Umm, I have had some times before when I have had assignments due in, in school and I haven't been able to finish them, and that puts strain on school, because then teachers think that you are not dependable, and you are not responsible for your time. Umm, and then you've got things in gym where, you know, you don't turn up to training, and you feel as though you're, you know, losing muscle mass, or you're not, or you are losing your form, or you are not working the skill. And when competition comes you won't be able to able to put in your routine.
Fleur: Mm-mm.
Interviewee: So if you were to prioritise, it gets rid of the strain, although sometimes it gets too much, and then that is when the strain comes in so…
Fleur: Those were basically all the questions I wanted to ask you. I don't know if… if there is anything you think I should know about your life that we haven't covered yet?
Interviewee: Umm, [laughs] when I think about it, my life in dot points is school, family, friends, and gym and that is basically, you know, my life. There is nothing really else that I have done. I don't have any musical talent, I don't, you know, sing and dance or anything like that. That's me. So yeah, other than that, that's all, really, that I've got to say. So, yeah.

End of Audio

APPENDIX E

CONSENT AND INFORMATION SHEETS QUANTITATIVE STUDY 1

CONSENT FORM FOR PARTICIPANTS INVOLVED IN RESEARCH

Children at [secondary school] are invited to take part in a research project being conducted by Victoria University about how children balance school with other activities. This project will monitor children from grade 7, 9 and 11 in 2013 to 8, 10, and 12 in 2014. The project aims, to identify the growth of participating adolescents' psychological strategies to balance multiple roles. While the information resulting from this project may be of limited immediate benefit to your child, the knowledge gained from the research will help us to deliver effective interventions to target difficulties in balancing multiple roles, which is associated with higher school performance levels.

To help us carry out this research we request your child's assistance. Two times per year, for the remainder of your child's secondary school career, your child will be asked to complete a questionnaire that is designed to measure the amount of activities s/he undertakes, the expectations that accompany these activities, his/her time management skills, self-regulated learning skills and coping strategies. Your child's participation in this research project is voluntary and he/she is free to withdraw at any time without prejudice. Your child's responses to the questionnaires will be completely confidential and only group results will be reported (i.e., it will not be possible to identify any individual). There are low potential risks associated with this study:
1) Children may realize that they have a lot on and struggling to cope with role demands.
2) Potential risk of fatigue and excessive strain caused by length of questionnaire.

This project has received the full support of the Research Ethics Committee at Victoria University. Upon request, I will be happy to supply a written report on the research findings once the investigation has been completed. For further information about the research, or information about your child's rights as a participant, you can contact Dr. Erika Borkoles, Project leader of the Sporting Success Project. Her telephone number is (03) 9919 5977, or you can contact her by email at erika.borkoles@vu.edu.au.

CERTIFICATION BY PARENT/ GUARDIAN

I ……., certify that I am voluntarily giving consent for my son/daughter (name)

…… to participate in the study: "Sporting success: a longitudinal study on the effect of role strain on academic and sport performance of talented athletes and 'regular scholars'.

I certify that the objectives of the study, together with any risks and safeguards associated with the procedures listed hereunder to be carried out in the research, have been fully explained to me and that I freely consent to participation involving the 'Balancing Activities Questionnaire, twice per year.

I certify that I have had the opportunity to have any questions answered and that I understand that I can withdraw my child from this study at any time and that this withdrawal will not jeopardize me or my child in any way.

I have been informed that the information provided will be kept confidential

Signed:

_____ _____

Parent Child

Date: _____/_____/_____

If you have any queries or complaints about the way you have been treated, you may contact the Research Ethics and Biosafety Manager, Victoria University Human Research Ethics Committee, Victoria University, PO Box 14428, Melbourne, VIC, 8001 or phone (03) 9919 4148.

CONSENT FORM FOR ACCESS TO RECORDS OF PARTICIPANTS INVOLVED IN RESEARCH

Children at [secondary school] are invited to take part in a research project being conducted by Victoria University interested in finding out about sports participation. This project will monitor children from grade 7, 9 and 11 in 2013 to 8, 10, and 12 in 2014. The project aims, to identify the growth of participating adolescents' psychological strategies to balance multiple roles. While the information resulting from this project may be of limited immediate benefit to your child, the knowledge gained from the research will help us to deliver effective interventions to target difficulties in balancing multiple roles, which is associated with higher school performance levels.

To help us carry out this research we request access to your child's academic records held at their school up to grade 12. We require this information so that we can begin to draw relationships between their time commitments, psychological strategies to balance multiple roles and their performance in school. Your child's records will be handled in accordance with current Victorian data protection legislate (VIP act, 2000) and will be made available only to the chief investigator (Dr Erika Borkoles) and the Sporting Success PhD researcher Fleur van Rens. Your child's records will only be identifiable to the chief investigator and PhD research via their student ID number reducing the likelihood of personal identification. This information will, at all times, be kept on a password protected hard drive and destroyed 7 years after the research is completed. At all times during the period of this investigation, you retain the right to withdraw your consent for our access to these records.

Having access to children's academic and sports records has received the full support of the Research Ethics Committee at Victoria University. For more information about your rights as a participant, or if you would like more information about the use of your child's records, you can contact Dr. Erika Borkoles Project leader of the Sporting Success Project. Her telephone number is (03) 9919 5977, or you can contact her by email at erika.borkoles@vu.edu.au.

CERTIFICATION BY PARENT/ GUARDIAN

I ……., certify that I am voluntarily giving consent for my son's/daughter's (name) …… academic and sporting records to be made available for use in the study: "the study: "Sporting success: a longitudinal study on the effect of role strain on academic and sport performance levels of talented athletes and 'regular scholars' conducted by Victoria University.

I certify that the objectives of the study, together with any risks and safeguards associated with the procedures listed hereunder to be carried out in the research, have been fully explained to me by Fleur van Rens and that I freely consent to participation involving the below mentioned procedures:

- Access to academic and sporting records

I certify that I have had the opportunity to have any questions answered and that I understand that I can withdraw my consent for my child's records to be used in this study at any time and that this withdrawal will not jeopardize me or my child in any way.

I have been informed that the information provided will be kept confidential

Signed:

_____

Date: _____/_____/_____

If you have any queries or complaints about the way you have been treated, you may contact the Research Ethics and Biosafety Manager, Victoria University Human Research Ethics Committee, Victoria University, PO Box 14428, Melbourne, VIC, 8001 or phone (03) 9919 4148.

INFORMATION TO PARTICIPANTS INVOLVED IN RESEARCH

You are invited to participate

Children at [secondary school] are invited to take part in the study: "Sporting success: a longitudinal study on the effect of role strain on academic and sport performance of talented athletes and 'regular scholars'.
This project is being conducted by a student researcher, Fleur van Rens as part of a PhD study at Victoria University under the supervision of Dr. Erika Borkoles and Prof. Damian Farrow.

Project explanation

This project aims to investigate how the amount and intensity of time commitments adolescents have influences their academic achievements in school, and where relevant in sport. Also we will look at the influence of their own personal strategies to manage their time influences their performance.

What will my child be asked to do?

This project will monitor children from grade 7, 9 and 11 in 2013 to 8, 10, and 12 in 2014. The project aims, to identify the growth of participating adolescents' psychological strategies to balance multiple roles. The children will be asked to fill out an online questionnaire at the school, twice a year. The questionnaire will take less than an hour to complete. In order to relate the information we will gather in the questionnaire to the school performance level of your child we would also like access to your child's academic records (de-identified by these records being provided relative to your child's school identification number rather than their name).

What will my child gain from participating?

While the information resulting from this project may be of limited immediate benefit to your child, the knowledge gained from the research will help us to deliver effective interventions to target difficulties in balancing multiple roles, which is associated with higher school performance levels.

How will the information I give be used?

The personal information that is provided to researchers will remain strictly confidential, only the researchers affiliated with the study will have access to your information. All data obtained during the study will be stored in locked filling cabinets and password protected files on the computer. The study findings from this study may be reported as journal articles, conference presentations and a thesis. Any report or presentation resulting from this study will be written in a summarised form without personal information that may identify your child. The information your child discloses will not be communicated to parents, teachers, coaches, schools or sporting organisations.

What are the potential risks of participating in this project?

1) Children may realize that they have a lot on and struggling to cope with role demands.
2) Potential risk of fatigue and excessive strain caused by length of questionnaire.

How will this project be conducted?

The researchers will come into the school twice a year, and will have the questionnaire installed on the computers at school. The children will fill the questionnaire out on the computer during their regular IT session during school time.

In case your child is absent at the time of measurement a link to the online questionnaire, including the personal login codes of your child will be send to you, your child is then asked to fill the questionnaire out in his/her own time.

Who is conducting the study?

This research project will be conducted by the 'Sporting Success' research team of Victoria University, Melbourne, Australia. You can find the contact details of the chief investigator and student investigator below.

If you would like further information about the research we would be happy to discuss this project with you.
Thank-you for considering this request and we are looking forward to hearing from you at your earliest convenience.

Kind regards,

Chief Investigator
Dr. Erika Borkoles
Victoria University
PO Box 14428
Melbourne VIC 8001
Tel: 03 9919 5977
E-mail: erika.borkoles@vu.edu.au

Student Investigator
Fleur van Rens, MSc.
Victoria University
PO Box 14428
Melbourne VIC 8001

E-mail: florentina.vanrens@live.vu.edu.au

Any queries about your participation in this project may be directed to the Chief Investigator listed above.
If you have any queries or complaints about the way you have been treated, you may contact the Ethics Secretary, Victoria University Human Research Ethics Committee, Office for Research, Victoria University, PO Box 14428, Melbourne, VIC, 8001 or phone (03) 9919 4781.

APPENDIX F

QUESTIONNAIRE QUANTIATIVE STUDY 1

Activities Questionnaire for ATHLETES

This questionnaire is about all of the things you do in your life, with a focus on school and sport. Please take your time to read the questions and think about your answer. There are no right or wrong answers to the questions. Your participation in this research project is voluntary and you are free to withdraw at any time without any consequences. Your responses to the questionnaire will be completely confidential and only group results will be reported. For further information about the research, or information about your rights as a participant, you can contact Fleur van Rens (e-mail: florentina.vanrens@live.vu.edu.au).

Section 1. Demographic information

What is your name?	**Gender**	**Your Date of Birth** (D/M/Y)
First name _____	☐ Male ☐ Female	____/_____/_____
Last name_____		**Your age:** _____

What is your student ID number: _____

How many brothers and sisters do you have?

____ Brothers ____ Sisters

In your family are you...

- ☐ The youngest child
- ☐ The oldest child
- ☐ The middle child
- ☐ The only child

Were both of your parents born in Australia?

☐ No: My mother was born in: _____

My father was born in: _____

☐ Yes

☐ I don't know

Are you from indigenous background?

☐ No

☐ Yes, namely

- ☐ Aboriginal
- ☐ Torres Strait Islander
- ☐ Both Aboriginal and Torres Strait Islander

Do you usually speak English at home?
☐ No
☐ Yes

Which of the following statements describes your living situation best?
☐ I live at home with my parent(s)/guardian(s)
☐ Home stay (boarding) with a family
☐ Residential (boarding) at my school
☐ Residential (boarding) at the AIS
☐ Independent
☐ Other, please specify:

_____

Section 2. School and sport information

1. Which secondary school do you currently attend?
☐ Victoria University Secondary College
☐ Maribyrnong College
☐ Wesley College
☐ Mount Waverley Secondary College
☐ Other school, I am an athlete at the Australian Institute of Sport
☐ Other school, I am a gymnast of Gymnastics Australia
☐ I have already finished secondary school → END OF QUESTIONNAIRE

2. What year level are you currently in?
☐ Year 7
☐ Year 8
☐ Year 9
☐ Year 10
☐ Year 11
☐ Year 12

3. Do you currently participate in <u>recreational</u> sports (e.g. play a sport but do not compete)?
☐ No
☐ Yes

4. Do you <u>currently compete</u> in competitive sports (e.g. compete in competitions for your sport)?

☐ No
☐ Yes
☐ Normally yes, but I am injured

5. What is your <u>main</u> sport? *Please tick only one answer.*

☐ Australian Rules Football ☐ Athletics ☐ Badminton ☐ Basketball ☐ Cricket

☐ Cross-country ☐ Diving ☐ Gymnastics ☐ Hockey ☐ Horse riding

☐ Lacrosse ☐ Martial Arts ☐ Netball ☐ Rowing ☐ Rugby

☐ Snowsports ☐ Soccer ☐ Softball ☐ Surf lifesaving

☐ Swimming ☐ Tennis ☐Touch Football ☐ Volleyball ☐ Waterpolo

☐ Other sport namely _____

6. Do you <u>currently compete</u> in a second sport?

☐ No
☐ Yes, please specify sport below:

☐ Australian Rules Football ☐ Athletics ☐ Badminton ☐ Basketball ☐ Cricket

☐ Cross-country ☐ Diving ☐ Gymnastics ☐ Hockey ☐ Horse riding

☐ Lacrosse ☐ Martial Arts ☐ Netball ☐ Rowing ☐ Rugby

☐ Snowsports ☐ Soccer ☐ Softball ☐ Surf lifesaving

☐ Swimming ☐ Tennis ☐Touch Football ☐ Volleyball ☐ Waterpolo

☐ Other sport namely _____

7. **Do you currently have an injury that has stopped you from competing in your sport for at least a month, or have had such an injury over the past six months?**

☐ No
☐ Yes, please detail your injury and the time you were/are not able to participate in your sport:

_____

_____

_____

8. **What is your <u>current</u> level of competition in your <u>main sport</u> at the JUNIOR level?**
In case multiple levels are applicable please indicate your <u>highest</u> level.

☐ No competition
☐ I am currently injured so I am not competing
☐ (Junior) Basic competition (please indicate sublevel below)
  ☐ I compete in a local club competition
  ☐ I compete in my school competition
☐ Advanced competition (please indicate sublevel below)
  ☐ I compete in a regional competition/in a rep team
  ☐ I compete at state level
☐ Pre-elite level (please indicate sublevel below)
  ☐ National level
  ☐ International level or part of AFL draft camp
  ☐ Top 16 in the world
  ☐ Top 8 in the world
  ☐ Top 3 in the world

9. What is your <u>current</u> level of competition in your <u>main sport</u> at the SENIOR level?
In case multiple levels are applicable please indicate your <u>highest</u> level.

☐ No competition
☐ I am currently injured so I am not competing
☐ Basic competition e.g. local club level
☐ Advanced competition e.g. Regional level
☐ Pre-elite level e.g. State level
☐ Elite level (please indicate sublevel below)
- ☐ National level
- ☐ International level or AFL drafted
- ☐ Top 16 in the world
- ☐ Top 8 in the world
- ☐ Top 3 in the world

10. If you compete in a second sport...

a) What is your <u>current</u> level of competition in your <u>second sport</u> at the JUNIOR level?
In case multiple levels are applicable please indicate your <u>highest</u> level.

☐ No competition
☐ I am currently injured so I am not competing
☐ (Junior) Basic competition (please indicate sublevel below)
  ☐ I compete in a local club competition
  ☐ I compete in my school competition
☐ Advanced competition (please indicate sublevel below)
  ☐ I compete in a regional competition/in a rep team
  ☐ I compete at state level
☐ Pre-elite level (please indicate sublevel below)
  ☐ National level
  ☐ International level or part of AFL draft camp
  ☐ Top 16 in the world
  ☐ Top 8 in the world
  ☐ Top 3 in the world

b) What is your <u>current</u> level of competition in your second <u>sport</u> at the SENIOR level?
In case multiple levels are applicable please indicate your <u>highest</u> level.

☐ No competition
☐ I am currently injured so I am not competing
☐ Basic competition e.g. local club level
☐ Advanced competition e.g. Regional level
☐ Pre-elite level e.g. State level
☐ Elite level (please indicate sublevel below)
  ☐ National level
  ☐ International level or AFL drafted
  ☐ Top 16 in the world
  ☐ Top 8 in the world
  ☐ Top 3 in the world

11. What stage of the season was your <u>main</u> sport in last week?

☐ Off-season
☐ Pre-season
☐ In season

12. If you compete in a second sport; What stage of the season was your <u>second</u> sport in last week?

☐ Off-season
☐ Pre-season
☐ In season

Section 3. Roles in your life

A. All children fulfil different roles in their lives. Please rate below how important each individual role is to you on a scale from 1 to 10. A 1 means not important, a 10 means extremely important. If you do not fulfil the role, please tick the 'not applicable' box.

	Not important → extremely important										Not Applicable
	1	2	3	4	5	6	7	8	9	10	
Student	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Family member	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Friend	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Athlete	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Musician	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Artist	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Casual job	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Boyfriend/girlfriend	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Other role 1, namely _____	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Other role 2, namely _____	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

B. We would now like to know more about your roles as a student, friend, family member and athlete. Different children experience different demands from their roles, which may cause conflict. We would like to know your experiences. Please indicate below how true each statement is for you by ticking the box that corresponds with how you felt during the **past month**.

How true for you DURING THE PAST MONTH?	**Not at all true**	**A little true**	**Somewhat true**	**Mostly true**	**Very true**
My brain feels tired because I do a lot of sport.	☐	☐	☐	☐	☐
My parents expect me to do better in sport than I feel I can.	☐	☐	☐	☐	☐
Classmates make fun of me because I do well at school.	☐	☐	☐	☐	☐
I have so many things to do that I sometimes can't do them all.	☐	☐	☐	☐	☐
When my routine gets disrupted I can't balance my roles well.	☐	☐	☐	☐	☐
I don't know what to do to become a successful student.	☐	☐	☐	☐	☐
I don't know what would happen if I don't meet my commitments.	☐	☐	☐	☐	☐
School and homework take up too much of my time.	☐	☐	☐	☐	☐
The expectations on me are too high.	☐	☐	☐	☐	☐
Sport takes up too much of my time.	☐	☐	☐	☐	☐
My body is tired because I do a lot of sport.	☐	☐	☐	☐	☐
I don't have enough support to do as well in school as I can.	☐	☐	☐	☐	☐
I have too many expectations on me.	☐	☐	☐	☐	☐
I would rather focus on one role than balance many.	☐	☐	☐	☐	☐
My friends want me to go to parties but I don't want to go.	☐	☐	☐	☐	☐
My schoolwork is too difficult.	☐	☐	☐	☐	☐
I don't know what would happen if I fail to meet my commitments as an athlete.	☐	☐	☐	☐	☐
My family takes up too much of my time.	☐	☐	☐	☐	☐
I don't know what happens if I don't do my schoolwork.	☐	☐	☐	☐	☐
The things I do for my family are too much for me.	☐	☐	☐	☐	☐
My coaches expect me to do better in school than I feel I can.	☐	☐	☐	☐	☐

How true for you DURING THE PAST MONTH?	**Not at all true**	**A little true**	**Somewhat true**	**Mostly true**	**Very true**
I don't know how my performance as an athlete is measured.	☐	☐	☐	☐	☐
I don't have enough time to spend on my school work because of other commitments.	☐	☐	☐	☐	☐
I don't know what to do to become a successful athlete.	☐	☐	☐	☐	☐
I can't concentrate long enough to do all my schoolwork.	☐	☐	☐	☐	☐
I prefer to do other things than complete all my work.	☐	☐	☐	☐	☐
I don't know how my performance at school is measured.	☐	☐	☐	☐	☐
It is difficult for me to get everything done because I spend a lot of time travelling (between home, school and other activities).	☐	☐	☐	☐	☐
My coaches expect me to do better in my sport than I feel I can.	☐	☐	☐	☐	☐
I struggle to balance my roles because I don't get enough support.	☐	☐	☐	☐	☐
I am not getting the support I need to be the best athlete I can be.	☐	☐	☐	☐	☐
My friends don't ask much of me.	☐	☐	☐	☐	☐
I can't put as much mental effort into my sport as I should.	☐	☐	☐	☐	☐
I don't have enough schoolwork.	☐	☐	☐	☐	☐
I can't spend enough time with my friends because I am too busy.	☐	☐	☐	☐	☐
My coaches don't agree on what they want me to do.	☐	☐	☐	☐	☐
My brain is usually tired at the end of the day.	☐	☐	☐	☐	☐
I am not challenged at school.	☐	☐	☐	☐	☐
I get so much advice on how to become a better athlete that it is hard to remember it all.	☐	☐	☐	☐	☐
I don't feel like doing my schoolwork.	☐	☐	☐	☐	☐
I can't spend enough time with my family because I am too busy.	☐	☐	☐	☐	☐
My teachers give me too much homework.	☐	☐	☐	☐	☐
I feel that others don't understand the demands placed on me.	☐	☐	☐	☐	☐
There are not enough expectations of me as an athlete.	☐	☐	☐	☐	☐
I can't complete my schoolwork because too much is due at the same time.	☐	☐	☐	☐	☐
I don't know what to do to be a good family member.	☐	☐	☐	☐	☐
My body often feels tired.	☐	☐	☐	☐	☐
My sport asks too little from me.	☐	☐	☐	☐	☐
I am not performing as well as I should in school.	☐	☐	☐	☐	☐
My friends don't understand the commitments I have.	☐	☐	☐	☐	☐
I don't feel like doing my family chores.	☐	☐	☐	☐	☐

How true for you DURING THE PAST MONTH?

	Not at all true	A little true	Somewhat true	Mostly true	Very true
I don't know what to do to be a good friend.	☐	☐	☐	☐	☐
My parents expect me to do better in school than I feel I can.	☐	☐	☐	☐	☐
I am not challenged as an athlete.	☐	☐	☐	☐	☐
My roles aren't challenging enough.	☐	☐	☐	☐	☐
My body is not in as good a shape as my sport demands.	☐	☐	☐	☐	☐
My friends take up too much of my time.	☐	☐	☐	☐	☐
I don't have enough time to do everything I should be doing.	☐	☐	☐	☐	☐
I can't put as much physical effort into my sport as I should.	☐	☐	☐	☐	☐
I have to do things for my sport that I don't really want to do.	☐	☐	☐	☐	☐
I can't hang out with my friends because I have other things to do.	☐	☐	☐	☐	☐
My family doesn't ask much from me.	☐	☐	☐	☐	☐
I don't know what I should do to balance my roles successfully.	☐	☐	☐	☐	☐
I don't like parts of my training program.	☐	☐	☐	☐	☐

B. How difficult was it for you to meet the demands in all of your roles last month? Please circle the corresponding number.

Not difficult at all										Extremely difficult
0	1	2	3	4	5	6	7	8	9	10

C. How much stress did you experience last month? Please circle the corresponding number.

Not stress at all										Extreme stress
0	1	2	3	4	5	6	7	8	9	10

Section 4. The next series of questions are about LAST WEEK ONLY

1. Was last week a typical week for you?

☐ No (e.g. you were sick, on holiday etc.) → CONTINUE TO SECTION 6
☐ Yes

2. How many hours of academic classes did you attend at school <u>last week</u>? Academic classes are for instance maths, languages, science; PE is not considered an academic class.

_____ hours last week

3. Thinking about the <u>past week</u>, how many hours did you spend on the following activities each day?

	Monday	***Tuesday***	***Wednesday***	***Thursday***	***Friday***	***Saturday***	***Sunday***
School and homework	____*hours*	____*hours*	____*hours*	____*hours*	____*hours*	____*hours*	____*hours*
All sport activities except for PE	____*hours*	____*hours*	____*hours*	____*hours*	____*hours*	____*hours*	____*hours*
Travel time *(school – home – other activities)*	____*hours*	____*hours*	____*hours*	____*hours*	____*hours*	____*hours*	____*hours*
Family & Friends (not at school or in sport)	____*hours*	____*hours*	____*hours*	____*hours*	____*hours*	____*hours*	____*hours*
Other activities (job, music, drama, volunteer work etc.)	____*hours*	____*hours*	____*hours*	____*hours*	____*hours*	____*hours*	____*hours*

3. **How much of your time spend with 'family and friends' <u>last week</u> did you approximately spend with your family?**

☐ 0% ☐ 10% ☐ 20% ☐ 30% ☐ 40% ☐ 50% ☐ 60% ☐ 70% ☐ 80% ☐ 90% ☐ 100%

Section 5. Coping

In school and elsewhere (in sport, at home, with friends, etc.), there are sometimes things that concern or bother you in general. Please rate the items on the next few pages based on how you would cope with various concerns or problems. Please tick the appropriate box to the right of the statement to indicate how often you use this response to cope with your concerns or worries.

	Never	Seldom	Sometimes	Often	Very Often
Look for support and encouragement from others.	☐	☐	☐	☐	☐
Work hard.	☐	☐	☐	☐	☐
Worry about what will happen to me.	☐	☐	☐	☐	☐
Wish a miracle will happen to make things turn out well.	☐	☐	☐	☐	☐
Join with others to deal with the problem, e.g. organize a petition, attend a meeting.	☐	☐	☐	☐	☐
Blame myself.	☐	☐	☐	☐	☐
Don't let others know about my problem.	☐	☐	☐	☐	☐
Pray for God to look after me.	☐	☐	☐	☐	☐
Look on the bright side of things and think of all that is good.	☐	☐	☐	☐	☐
Ask a teacher or other professional person for help.	☐	☐	☐	☐	☐
Relax, e.g. watch TV, play computer games, go for a walk.	☐	☐	☐	☐	☐
Keep fit and healthy, e.g. play sport.	☐	☐	☐	☐	☐
Act up and make life difficult for those around me.	☐	☐	☐	☐	☐
Try to be funny.	☐	☐	☐	☐	☐
Get sick.	☐	☐	☐	☐	☐
Accept things as they are, because I've done my best.	☐	☐	☐	☐	☐
Shut myself off from the problem so I can try and ignore it.	☐	☐	☐	☐	☐
Spend more time with a good friend.	☐	☐	☐	☐	☐
Work out a way of dealing with the problem.	☐	☐	☐	☐	☐
Find a way to let off steam, e.g. cry, scream, drink, take drugs.	☐	☐	☐	☐	☐

Section 6. School

The following statements describe situations that are sources of frustration or stress for some students from time to time. Read each statement and tick the box in accordance to <u>how much frustration or stress</u> each situation described has created for you during the <u>past month of school.</u>

	None	Slight	Moderate	Extreme
My teachers give too much homework.	☐	☐	☐	☐
Kids ignore me at school.	☐	☐	☐	☐
I don't get enough time in school to spend with my friends.	☐	☐	☐	☐
My teachers expect too much work from me.	☐	☐	☐	☐
My school has too many rules.	☐	☐	☐	☐
Teachers don't seem to like me.	☐	☐	☐	☐
Kids make fun of me if I do well in school.	☐	☐	☐	☐
Teachers expect us to do work that hasn't been taught to us.	☐	☐	☐	☐
Some kids in school don't want me to work with them on projects.	☐	☐	☐	☐
My parents don't let me spend enough time with school friends.	☐	☐	☐	☐
My parents get upset about poor reports from my teacher.	☐	☐	☐	☐
Some kids are mean to me at school.	☐	☐	☐	☐
Teachers don't treat me fairly.	☐	☐	☐	☐
My parents make me go to bed too early on school nights.	☐	☐	☐	☐
Teachers don't let me know if I'm doing well or not.	☐	☐	☐	☐
Other kids in school don't want me on their team.	☐	☐	☐	☐
School isn't much fun.	☐	☐	☐	☐
Teachers blame me for things I don't do.	☐	☐	☐	☐
My parents hassle me about getting my homework done.	☐	☐	☐	☐
I don't get invited to go to the homes of my classmates much.	☐	☐	☐	☐
Much of the work we do in school is boring.	☐	☐	☐	☐
My parents think I can do better in school than I really can.	☐	☐	☐	☐
I sometimes get pushed or hit by other kids at school.	☐	☐	☐	☐
I don't feel like many teachers know me.	☐	☐	☐	☐
My parents seem to find out about problems I have in school	☐	☐	☐	☐
Kids make fun of me at school.	☐	☐	☐	☐
Teachers get upset when you give a wrong answer in class.	☐	☐	☐	☐
It's difficult to get help from teachers when you need it.	☐	☐	☐	☐
I sometimes don't get enough time to finish school assignments.	☐	☐	☐	☐
I have so much schoolwork it's hard to find time for other things I like.	☐	☐	☐	☐

	None	Slight	Moderate	Extreme
Students don't have any power in school.	☐	☐	☐	☐
I do my work the way the teacher says, but then I get a bad grade for it.	☐	☐	☐	☐

THANK YOU FOR YOUR TIME AND EFFORT IN COMPLETING THIS SURVEY,

YOUR RESPONSE IS VERY MUCH APPRECIATED

APPENDIX G

CONSENT AND INFORMATION SHEETS QUANTITATIVE STUDY 2

VICTORIA UNIVERSITY MELBOURNE AUSTRALIA | ISEAL INSTITUTE OF SPORT, EXERCISE AND ACTIVE LIVING

CONSENT FORM FOR PARENTS OF PARTICIPANTS INVOLVED IN RESEARCH

TAC Cup players of the Victorian Football League are invited to take part in a study conducted by Victoria University. The goal of this study is to explore how TAC cup players balance their sporting career with school, friendships and family time. The knowledge gained from the group results of this research will be shared with the TAC cup teams and the AFL so they can use this information to develop programs tailored to TAC cup players' needs.

To help us carry out this research we request your son's assistance. We would like your son to complete an on-line questionnaire which will take about 30 minutes. Your son's participation in this research project is voluntary and he is free to withdraw at any given time without prejudice or consequences. Your son's responses to the questionnaires will be completely confidential; your son's responses will not be identifiable by the TAC Cup, VFL or AFL and the results of all participating TAC Cup teams will be compiled into one report. There are low potential risks associated with this study: your son may realise that he has a lot on and struggles to cope with role demands.

This project has received the full support of the Research Ethics Committee at Victoria University, your TAC cup team and the AFL. Upon request, we will supply a written report of the research findings once the investigation has been completed. For further information about the research, or information about your son's rights as a participant, you can contact Prof. Damian Farrow, his telephone number is 99195001 or you can email him at damian.farrow@vu.edu.au.

CERTIFICATION BY SUBJECT

I,…… (your name), of…..……..……..(your suburb) certify that I am at least 18 years old and that I am voluntarily giving my consent for my son, ……..……(your son's name) to participate in the study: 'Balancing a sporting career with school' being conducted at Victoria University by Prof. Damian Farrow.

I certify that the objectives of the study, together with any risks and safeguards associated with the procedures listed hereunder to be carried out in the research, have been fully explained to me by Fleur van Rens and that I freely consent to participation involving the below mentioned procedures:

- Complete an on-line questionnaire

I certify that I have had the opportunity to have any questions answered and that I understand that I can withdraw from this study at any time and that this withdrawal will not jeopardise me in any way.

I have been informed that the information I provide will be kept confidential.

Signed:……

Date: ……../……../……

Preferred email address to receive the link to the questionnaire on:

……@……..……..
(this email address will not be used for any other purposes)

Any queries about your participation in this project may be directed Prof. Damian Farrow, phone: 99195001. If you have any queries or complaints about the way you have been treated, you may contact the Ethics Secretary, Victoria University Human Research Ethics Committee, Office for Research, Victoria University, PO Box 14428, Melbourne, VIC, 8001, email Researchethics@vu.edu.au or phone (03) 9919 4781 or 4461.

VICTORIA UNIVERSITY MELBOURNE AUSTRALIA | ISEAL INSTITUTE OF SPORT, EXERCISE AND ACTIVE LIVING

INFORMATION TO PARENTS OF PARTICIPANTS INVOLVED IN RESEARCH

Your son is invited to participate

TAC Cup players are invited to take part in the study 'Balancing a sporting career with school' conducted by Prof. Damian Farrow, Prof. Remco Polman, Dr. Erika Borkoles and Fleur van Rens MSc. of Victoria University.

Project explanation

This study will explore the psychological skills (such as time management) TAC cup players use to juggle the demands from their sporting career with school, and a social life. We will also explore how some psychological skills could potentially reduce the challenges that the football players may experience.

What will my son be asked to do?

We would like your son to complete an online questionnaire, which will take about 30 minutes. A link to this online questionnaire will be sent to the preferred email address that you indicate on the attached consent form. The questionnaire is designed to measure the time he spends on various activities, whether he come across any challenges when trying to juggle sporting demands with school, and how satisfied he is with various aspects of his life. Your son's participation in this research project is voluntary and he is free to withdraw at any given time without prejudice or consequences.

What will my son gain from participating?

The knowledge gained from this research will be shared with the participating TAC cup teams and the AFL so they can use this information to develop programs tailored to TAC cup players' needs. Only group data will be shared with the AFL and the TAC cup, as such they will not know your son's answers to the various questions presented to him.

How will the information my son gives be used?

The personal information that is provided to researchers will remain strictly confidential. The information your son discloses will not be communicated to parents, teachers, coaches, schools or sporting organisations. The findings may be reported as a report to the TAC cup and AFL, journal articles, conference presentations and a thesis. Any report or presentation resulting from this study will be written in a summarised form without personal information that may identify your son.

What are the potential risks of participating in this project?

Your son may realise that he has a lot on and that he struggles to cope with role demands. If your son is upset due to participation in this study, Dr. Harriet Speed from Victoria University (harriet.speed@vu.edu.au; Ph: 399195412) can be contacted for advice regarding counselling services.

Who is conducting the study?

This research project will be conducted by Victoria University, Melbourne, Australia. You can find the contact details of the chief investigator and student investigator below.

Thank-you for considering this request, If you would like further information about the research we would be happy to discuss this project with you.

Prof. Damian Farrow and Fleur van Rens, MSc.
Tel: +61 3 9919-5001
E-mail: damian.farrow@vu.edu.au or florentina.vanrens@lvu.edu.au

If you have any queries or complaints about the way you have been treated, you may contact the Research Ethics and Biosafety Manager, Victoria University Human Research Ethics Committee, Victoria University, PO Box 14428, Melbourne, VIC, 8001 or phone (03) 9919 4781.

APPENDIX H

QUESTIONNAIRE QUANTITATIVE STUDY 2

VICTORIA UNIVERSITY MELBOURNE AUSTRALIA | ISEAL INSTITUTE OF SPORT, EXERCISE AND ACTIVE LIVING

Activities Questionnaire for TAC cup player

This questionnaire is about all of the things you do in your life, with a focus on football and school. Please take your time to read the questions and think about your answer. There are no right or wrong answers to the questions. Your participation in this research project is voluntary and you are free to withdraw at any time without any consequences. Your responses to the questionnaire will be completely confidential and only group results will be reported. For further information about the research, or information about your rights as a participant, you can contact Fleur van Rens (e-mail: florentina.vanrens@live.vu.edu.au).

Section 1. Demographic information

Your name:

First name _____

Last name _____

Your Date of Birth (DD/MM/YYYY)

____/_____/_____

Your age

_____

Were both of your parents born in Australia?

☐ No: My mother was born in: _____

My father was born in: _____

☐ Yes

☐ I don't know

Are you from indigenous background?

☐ No

☐ Yes, namely

- ☐ Aboriginal
- ☐ Torres Strait Islander
- ☐ Both Aboriginal and Torres Strait Islander

Which of the following statements describes your living situation best?
☐ I live at home with my parent(s)/guardian(s)
☐ Home stay (boarding) with a family
☐ Residential (boarding) at my school
☐ Independent
☐ Other, please specify:

_____

Section 2. School information

13. Are you still in secondary school?
☐ No → you do not need to fill out the questionnaire.
☐ Yes

14. What year level are you currently in?
☐ Year 9
☐ Year 10
☐ Year 11
☐ Year 12

15. Is your school a private or a public school?
☐ A private school
☐ A public school
☐ I don't know

16. Does your school have extra facilities to help you combine school and sport?
☐ No
☐ Not officially but they do help me out sometimes
☐ Yes
☐ I don't know

17. Does your school work together with your TAC cup team?
☐ No
☐ Yes
☐ I don't know

18. What is the name of your school?

_____

19. What is your average mark for English this year?

_____ average ☐ I don't know my average

20. What is your average mark for Mathematics this year?

_____ average ☐ I don't know my average

Section 3. Sport information

1. Which TAC team do you play for?

☐ Geelong Falcons ☐ Eastern Ranges ☐ Dandenong Stingrays

☐ Calder Cannons ☐ Western Jets ☐ Northern Knights

☐ Gippsland Power ☐ Murray Bushrangers ☐ Sandringham Dragons

☐ Oakleigh Chargers ☐ Bendigo Pioneers ☐ North Ballarat Rebels

2. **What other teams do you play for?** *Multiple answers possible:*
   - ☐ My school's football team
   - ☐ My local club team (junior level)
   - ☐ My local club team (senior level)
   - ☐ The AFL U18 draft team

3. Do you currently have an injury that has stopped you from competing in your sport for at least a month, or have had such an injury over the past six months?

☐ No

☐ Yes, please detail your injury and the time you were/are not able to participate in your sport:

_____

_____

_____

4. What stage of the football season are you in?

☐ Off-season
☐ Pre-season
☐ In season

Section 4. Roles in your life

A. All TAC cup players fulfil different roles in their lives. Please rate below how important each individual role is to you on a scale from 1 to 10. A 1 means not important, a 10 means extremely important. If you do not fulfil the role, please tick the 'not applicable' box. If there is a role you fulfil but it's not on the list, feel free to add it to the list.

	Not important to me → extremely important to me										Not
	1	2	3	4	5	6	7	8	9	10	Applicable
Student	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Family member	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Friend	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Athlete	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Musician	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Artist	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Casual job	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Boyfriend	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Other role 1, namely _____	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Other role 2, namely _____	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

B. We would now like to know more about your roles as a student, friend, family member and athlete. Please indicate below how true each statement is for you by ticking the box that corresponds with how you felt during the **past month**.

How true for you DURING THE PAST MONTH?	**Not at all true**	**A little true**	**Somewhat true**	**Mostly true**	**Very true**
I don't know what to do to be a good family member	☐	☐	☐	☐	☐
Sport takes up too much of my time	☐	☐	☐	☐	☐
I don't know what to do to become a successful athlete	☐	☐	☐	☐	☐
I get so much advice on how to become a better athlete that it is hard to remember it all	☐	☐	☐	☐	☐
My roles aren't challenging enough	☐	☐	☐	☐	☐
I don't know what to do to become a successful student	☐	☐	☐	☐	☐
I am not challenged as an athlete	☐	☐	☐	☐	☐
School and homework take up too much of my time	☐	☐	☐	☐	☐
I don't like parts of my training program	☐	☐	☐	☐	☐
My brain is usually tired at the end of the day	☐	☐	☐	☐	☐
It is difficult for me to get everything done because I spend a lot of time travelling (between home, school, sport and other activities)	☐	☐	☐	☐	☐
I have to do things for my sport that I don't really want to do	☐	☐	☐	☐	☐
I don't feel like doing my family chores	☐	☐	☐	☐	☐
I am not challenged at school	☐	☐	☐	☐	☐
I can't spend enough time with my family because I am too busy	☐	☐	☐	☐	☐
I don't know what happens if I don't do my schoolwork	☐	☐	☐	☐	☐
My coaches don't agree on what they want me to do	☐	☐	☐	☐	☐
I can't complete my schoolwork because too much is due at the same time	☐	☐	☐	☐	☐
I don't always like to focus on the role which others expect me to focus on	☐	☐	☐	☐	☐
I can't spend enough time with my friends because I am too busy	☐	☐	☐	☐	☐
My teachers give me too much homework:	☐	☐	☐	☐	☐
I don't know how my performance as an athlete is measured	☐	☐	☐	☐	☐
My schoolwork is too difficult	☐	☐	☐	☐	☐
My brain feels tired because I do a lot of sport	☐	☐	☐	☐	☐

My body is tired because I do a lot of sport	☐	☐	☐	☐	☐

C. How difficult was it for you to meet the demands in all of your roles last month? Please circle the corresponding number.

Not difficult at all										Extremely difficult
0	1	2	3	4	5	6	7	8	9	10

D. How much stress did you experience last month? Please circle the corresponding number.

Not stress at all										Extreme stress
0	1	2	3	4	5	6	7	8	9	10

Section 5. Time spent on activities

How many hours <u>per week</u> do you approximately spend on <u>football</u>?
Please add up training for all of your clubs, all of your matches, fitness training, video analysis etc. Please round to full hours.

_____ hours

How many hours <u>per week</u> do you approximately spend on <u>school</u>?
Please include both the time you are at school, and the time you spend on your homework. Please round to full hours.

_____hours

How many hours <u>per week</u> do you approximately spend <u>travelling</u> between your home, school and your football club(s)? *Please round to full hours.*

_____hours

How many hours <u>per week</u> do you approximately spend with your <u>friends outside school or football</u>?
Please round to full hours.

_____ hours

How many hours <u>per week</u> do you approximately spend on <u>quality time with your family</u> outside of football (for instance, having dinner together)? *Please round to full hours.*

_____ hours

How many hours of <u>relaxing time</u> do you usually have <u>per week</u>? *Please round to full hours.*

_____ hours

How many hours of <u>sleep</u> do you usually get <u>per day</u>? *Please round to full hours.*

____ hours

Section 6. Life satisfaction

Please tick the box that best indicates how satisfied or dissatisfied you CURRENTLY are with each item below.

How satisfied are you with…	Very dissatisfied	Somewhat Dissatisfied	Neither satisfied nor dissatisfied	Somewhat satisfied	Very satisfied
Your family life	☐	☐	☐	☐	☐
Your friendships	☐	☐	☐	☐	☐
Your school experience	☐	☐	☐	☐	☐
Your sport experience	☐	☐	☐	☐	☐
Yourself	☐	☐	☐	☐	☐
Where you live	☐	☐	☐	☐	☐
Your life overall	☐	☐	☐	☐	☐

Section 7. Coping

In school and elsewhere (in football, at home, with friends, etc.), there are sometimes things that concern or bother you in general. Please rate the items on the next few pages based on how you would cope with various concerns or problems. Please tick the appropriate box to the right of the statement to indicate how often you use this response to cope with your concerns or worries.

	Never	Seldom	Sometimes	Often	Very Often
Look for support and encouragement from others.	☐	☐	☐	☐	☐
Work hard.	☐	☐	☐	☐	☐
Worry about what will happen to me.	☐	☐	☐	☐	☐
Wish a miracle will happen to make things turn out well.	☐	☐	☐	☐	☐
Join with others to deal with the problem, e.g. organize a petition, attend a meeting.	☐	☐	☐	☐	☐
Blame myself.	☐	☐	☐	☐	☐
Don't let others know about my problem.	☐	☐	☐	☐	☐
Pray for God to look after me.	☐	☐	☐	☐	☐
Look on the bright side of things and think of all that is good.	☐	☐	☐	☐	☐
Ask a teacher or other professional person for help.	☐	☐	☐	☐	☐
Relax, e.g. watch TV, play computer games, go for a walk.	☐	☐	☐	☐	☐
Keep fit and healthy, e.g. play sport.	☐	☐	☐	☐	☐
Act up and make life difficult for those around me.	☐	☐	☐	☐	☐
Try to be funny.	☐	☐	☐	☐	☐
Get sick.	☐	☐	☐	☐	☐
Accept things as they are, because I've done my best.	☐	☐	☐	☐	☐
Shut myself off from the problem so I can try and ignore it.	☐	☐	☐	☐	☐
Spend more time with a good friend.	☐	☐	☐	☐	☐
Work out a way of dealing with the problem.	☐	☐	☐	☐	☐
Find a way to let off steam, e.g. cry, scream, drink, take drugs.	☐	☐	☐	☐	☐

THANK YOU FOR YOUR TIME AND EFFORT IN COMPLETING THIS

SURVEY, YOUR RESPONSE IS VERY MUCH APPRECIATED