UNIVERSITY OF SOUTHERN QUEENSLAND

The Impact of Demographic Characteristics, Aspects of Achievement, and Retirement Status upon the Self-identity, Athletic Identity, and Psychological Well-being of Australian Elite Athletes

A Dissertation submitted by

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Abstract

Despite the intuitive appeal of the notion of an "athletic identity", a growing body of research and theory continues to indicate that identity is a complex multidimensional construct. The primary purpose of this dissertation was to investigate the self-identity characteristics possessed by Australian elite athletes, including athletic identity, and the impact that a range of personal and situational factors have upon both the endorsement of multiple dimensions of their self-identity, and their psychological well-being.

Study 1 aimed to investigate the impact of age, gender, aspects of achievement (perceived academic achievement and level of athletic achievement), and retirement status upon levels of athletic identity, endorsed self-identity characteristics, as well as indicators of psychological well-being (self-esteem and life satisfaction). It also aimed to determine whether a distinctive athletic profile exists in relation to the dominant dimensions of identity endorsed by elite athletes. The relationship between the athletic identity levels, life satisfaction, and self-esteem of elite athletes was also explored. A total of 917 athletes on sporting scholarships linked with the Australian Institute of Sport were surveyed using the Athletic Identity Measurement Scale (AIMS), Self-Description Questionnaire III-summary items (SDQ III-summary items), General Esteem Questionnaire (GEQ), and Life Satisfaction Scale (LSS). Study 2 employed cross-validation techniques to investigate the findings of Study 1 using a subsequent data set (N = 310) aiming to see if the results remained consistent over two different samples of the same population.

Results indicated that Australian elite athletes exhibit a common identity profile that is operating largely independently of the level to which they identify with the athlete role. It was also found that the passion they have for their sport is not restricting them from valuing non sports-related life roles or aspects of self, and therefore is not impacting upon the

multidimensionality of their self-identity. Athletic identity, along with the importance placed upon both sporting/physical ability and academic ability, was found to decline with age. Athletes considering retirement from sport displayed significantly lower levels of athletic identity than those athletes with no plans to retire. Athletic identity was found to be unrelated to life satisfaction; however, further investigation is required into the relationship between athletic identity and self-esteem.

Study 3 was a longitudinal study which aimed to investigate whether the retirement status of elite athletes has a role to play in the self-identity characteristics endorsed, levels of athletic identity, and psychological well-being of athletes over time. It also aimed to explore the impact of the voluntariness of retirement upon all of these factors. Participants were 62 Australian elite athletes from three different career transition phases (intending; current; retired). The same survey used in the two previous studies was administered on two occasions, five years apart. On the second administration, the survey included a qualitative retirement questionnaire.

The same identity profile reported in both Studies 1 and 2 was found to continue in this study. Athletes who retired over the five-year period reported a significant increase in life satisfaction, while retirement status was found to have no impact on athletes' levels of self-esteem. Results also indicated that the extent to which an individual identifies with the athlete role may significantly decrease before he or she actually begins to consider retirement. In light of past research in this area, these results may be interpreted as being an indication that Australian elite athletes may experience a positive transition to post-sport life. Despite this, it appears that those athletes who face an involuntary retirement continue to be at the most risk of experiencing adjustment issues.

The findings of this research can be used to guide individuals who are working with athletes. Athletes should be encouraged to broaden their sense of self while still competing in order to ensure that they are equipped with sufficient coping resources when faced with significant life events, such as injury and career termination, and their life after sport. Recommendations are made as to ways that Australian elite athletes can be supported at government, institute, and individual level.

Keywords: athletes, self-identity, athletic identity, life satisfaction, transition

Certification of Thesis

I certify that the ideas, experimental work, results, analyses, software, and conclusions reported in this dissertation are entirely my own effort, except where otherwise acknowledged. I also certify that the work is original and has not been previously submitted for any other award, except where otherwise acknowledged.

_____ _____

Lisa Anne Fraser Date

ENDORSEMENT

_____ _____

Professor Gerard Fogarty (Supervisor) Date

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I would like to acknowledge a number of people for helping me traverse the rocky terrain which stood between the start and finish of this document.

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To my supervisors – Gerry and Majella. Thank you for giving me the opportunity to work on this interesting project and for imparting your knowledge. Majella – I hope that you are enjoying your retirement with your grandchildren.

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The quote that sat on my desk for the final year of this project read, “You got yourself this far—you just got to keep going” (Don Ward). I think it suffices to say that to have finally *completed* is a new and welcome feeling.

Dedication

I would like to dedicate this thesis to my friend, Miss Katie Sutter, who left this world on 8th April 2011. The sun no longer shines quite as brightly without you here. You were both my support and my inspiration through the tougher times of the past few years. As you decided to put your own PhD aside, I completed this one for both of us.

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Chapter 1 – Introduction

1.1 Structure of the Dissertation

This dissertation consists of six chapters. This chapter provides an overview of the subject matter and theory on which the next five chapters are based. It also provides an outline of the research design, an explanation of the main aims of each of the three studies undertaken, and the epistemology behind this investigation. Chapter 2 consists of a detailed literature review, with Studies 1, 2, and 3 covered in Chapters 3, 4, and 5 respectively. The dissertation concludes with an overall summary discussion in Chapter 6.

1.2 Statement of the Problem

Members of the public and researchers alike are intrigued by the unique and highly structured lifestyles that elite athletes lead, which comes about as a result of their commitment to their sport. How they navigate through life, maintain their motivation levels and passion for their sport, and adjust to major events that take place in their lives, such as injury and retirement, are topics that have been the focus of much psychological research.

Sport has always been a meaningful and important part of the Australian culture (Cashman, 2002). Despite its humble beginnings, sport in Australia has slowly risen above its amateur foundations and evolved into a complex and highly competitive activity, making it big business (Massey, 1996). This is reflected in the high level of media attention that sport enjoys in Australia, as well as in the large salaries being offered to Australian professional athletes, both domestically and internationally, to compete in their sport of choice. Two recent examples of the kinds of lucrative opportunities presented to Australian athletes come to mind. The first is the offer of $1.4 million by the Indian Premier League team Kings XI Punjab, which attracted Australian cricketer David Hussey to play for them in

the 2011 season. The second is the equally attractive offer of $US937, 195 accepted by 21-year old Australian basketball player Patrick Mills to play for the Portland Trail Blazers in the 2010/2011 season of the American National Basketball Association (NBA) league, with his qualifying contract for the 2011/2012 season set to increase to approximately $US1.1 million. In addition, 24-year old Australian golfer Jason Day has earned over $US9.4 million in career earnings, and has been on the international PGA Tour for only the past five years.

In witnessing opportunities such as these, as well as the fame and fortune that come with being a professional athlete, aspiring young athletes are spurred on to devote much of their physical and mental energy to the practice of their sport, in the hope that one day their athletic talents may lead to a full-time professional career. Sport, therefore, becomes a central part of their daily lives, as well as an activity which has the potential to influence their feelings of self-worth and self-esteem (Brewer, 1993; McPherson, 1980; Saint Phard, Van Dorsten, Marx, & York, 1999). The amount of time and effort directed into this pursuit, usually from an early age, can result in the strengthening of the individual's athletic identity, or "the degree to which an individual identifies with the athlete role" (Brewer, Van Raalte, & Linder, 1993, p. 237).

Athletic identity represents only one aspect of an individual's self-identity. The construct of self-identity is widely accepted as being multidimensional in nature, coming about as a result of the complex interaction between an individual's cognitions, emotions, and social experiences (Greenwald, 1980; Reicher, 2000). As this dissertation aims to thoroughly investigate the self-identity and athletic identity of Australian elite athletes, as well as their psychological well-being, it is important that these components be properly introduced. Prior to discussing athletic identity, it is necessary to firstly define the construct

of self-identity and explain its relevance to human behaviour. Towards the end of this section, the indicators of psychological well-being to be used in this dissertation will also be introduced.

Self-identity can be defined as the images we hold of ourselves which we believe to be an accurate description of our past, present, and future selves (Reicher, 2000). It is an important construct which has been shown to both motivate and direct behaviour (Cantor, Markus, Niedenthal, & Nurius, 1986). It can play a positive role by providing individuals with a sense of meaning, as well as a reference point to assist with making choices related to future behaviour or life direction (Markus & Nurius, 1986).

Many different definitions and usages of the terms *self*, *self-image*, *self-concept*, and *self-identity* are acknowledged as existing across various theoretical perspectives, from the works of James (1890/1950) and Cooley (1902/1922), to those of Mead (1934) and Rosenberg (1965, 1979). However, despite the existence of slight differences between these terms, they are commonly used interchangeably (Ashmore & Jussim, 1997). In this dissertation, self-identity refers to the way individuals think about and view themselves. It is the aspect of self which provides the answer to the question, "Who am I?", which, according to Duda (1999), may include an assortment of roles, attributes, and behaviours which are acknowledged by the individual as aspects of self that can be used to adequately describe him or herself (e.g., a mother; an athlete; an honest person; a problem-solver). This dissertation will also draw upon certain elements of the literature associated with self-concept, which has been defined as the individual's mental representation of him or herself (Bosma, Graafsma, Grotevant, & de Levita, 1994; Coleman & Hendry, 1990). A number of studies have

acknowledged the close relationship which exists between the two constructs (Adamson, Hartman, & Lyxell, 1999; Adamson & Lyxell, 1996; Harter, 1983).

A popular contemporary theory that attempts to link self-identity to the role-related relationships and behaviours of individuals is that of identity theory (Stryker & Serpe, 1982). Identity theory is considered to be particularly appropriate for use with the elite athlete population as it proposes that identity is the "parts of a self composed of the meanings that persons attach to the multiple roles they typically play …" (Stryker & Burke, 2000, p. 284). It is proposed that individuals may identify with a number of roles, also known as identity roles, to varying degrees throughout their lives (Markus & Nurius, 1986). Such identity roles may be athletic, occupational, social, academic, or familial in nature, and might include individuals identifying themselves as being a friend, a student, an artist, a parent, or a swimmer, among others. Individuals have been found to develop, and then cast off, many different identities throughout their lives (Markus & Nurius, 1986). The roles that individuals consider to be more important, and that they show a greater level of commitment to, are proposed to be those that are most symbolic of the content of their identity (Stryker, 1968; Stryker & Burke, 2000). Situational influences have been reported as the reason why one role may become more salient than another (Turner, Oakes, Haslam, & McGarty, 1994). For this reason, identity, or self-categorisation, is said to be a dynamic process that reflects an individual's changing social reality (Turner et al., 1994).

Past research has indicated that a strong athletic identity is linked to a greater importance of athletics in an individual's life (Brewer et al., 1993). Much of the psychological literature associated with this construct has focused on elite athletes and student-athletes. These high-level athletes are of particular interest to researchers as, in order

to achieve the heights which they do in their chosen sport, these athletes must commit to living a highly structured lifestyle which results in a high degree of attention being placed upon their physical ability and physical fitness, as well as their overall general health. This lifestyle commonly incorporates training 30–40 hours per week, getting adequate rest and sleep, adhering to a strict, healthy diet, and making frequent visits to see health professionals in order to aid them in their physical and psychological recovery and to prevent injury. All of these activities, along with the increased social recognition and status frequently enjoyed by athletes, can serve to strengthen their athletic identity.

The formation of a strong athletic identity has been found to significantly impact an individual's physiological, social, and psychological development in a number of positive and negative ways (Brewer et al., 1993). An article by Tasiemski, Kennedy, Gardner, and Blaikley (2004) summarised these findings, with high levels of athletic identity found to be associated with positive outcomes such as good physiological health, increased sport and exercise participation rates, high levels of self-esteem and self-confidence, and the development of social skills and relationships. Other researchers have also found a strong athletic identity to have a positive relationship with athletic performance (Shavelson & Bolus, 1982; Werthner & Orlick, 1986).

On the negative side, however, athletes who develop a strong and exclusive athletic identity—that is, if they fail to develop any alternate identity roles to that of being an athlete—have been found to be at an increased risk of post-injury emotional distress, identity foreclosure issues, social isolation, delays in career maturity, and adjustment difficulties following retirement from sport (Tasiemski et al., 2004). According to self-complexity theory, another contemporary theory of identity, athletes would experience difficulties such

as these due to their having a low level of self-complexity, that is, a lack of differentiation in the way that they define themselves (Linville, 1985, 1987). Self-complexity theory proposes that if athletes define themselves in reference to many self-aspects, rather than as being just *an elite athlete* and a *team player*, this can make them less susceptible to stress, depression and illness (Linville, 1985, 1987). Once again, this theory acknowledges the large role that the individual's social environment has in influencing his or her self-identity.

A considerable amount of research has focused on documenting the way athletes adjust to or cope with retiring from sport, a time which is also referred to in the psychological literature as career transition, or career termination (Alfermann, 2000; Coakley, 1983; McPherson, 1980; Stambulova, 2000; Wylleman & Lavallee, 2004). The structured nature of an elite athlete's lifestyle has often been described as effectively sheltering, or protecting, him or her from any external distractions which may have a detrimental impact upon athletic performance (Stephan, Bilard, Ninot, & Delignières, 2003b; Werthner & Orlick, 1986). From studies exploring the perceptions of retired athletes, it has been suggested that exposure to such an environment, whereby the general management of daily life can be largely deferred to others, may lead to the athlete experiencing a lack of self-efficacy in relation to their ability to make decisions within their own lives (Kerr & Dacyshyn, 2000; Werthner & Orlick, 1986). Therefore, when athletes face retirement, they are essentially faced with a dramatic lifestyle shift which can impact upon them on a number of fronts, whether it be socially, financially, psychologically, or occupationally (Taylor & Ogilvie, 1994).

Further to this, throughout their sporting careers, many elite athletes are often of an age where they are not yet fully mature adults, with much of their identity development ahead of them. Developmental psychologist James Marcia (1966) indicated that the presence

of a period of exploration, where an individual is free to embark on an active search for personal meaning, is particularly important to the development of a stable sense of self-identity, the achievement of which is considered to have important positive repercussions for an individual's psychological adjustment in later life, as well as their ability to engage in intimate relationships (Erikson, 1980). According to Marcia, this personal quest usually begins during adolescence (12–18 years of age), a period which has been found to be critical to identity formation, in which the individual pursues new experiences—which can include experimenting with alternative lifestyles, occupations, values, or beliefs—in search of information about different aspects of life or self. Following this period of exploration, Marcia purports that individuals are likely to make a personal commitment to the particular experience, for example, an occupation or goal, that they feel best suits who they are at that time.

As the majority of high-level athletes spend much of their adolescent years consumed in their sport, it is thought that many may miss the opportunity to explore other aspects of their self, other than those that are sport-related. As a result of this, there is a general concern for the psychological well-being of these individuals, especially in relation to their ability to cope when faced with significant life events which threaten their athletic identity, such as injury or career termination.

Athletes who possess a strong and exclusive level of athletic identity when they retire have been found to take longer to adapt to their post-sport career life, and to be more prone to experiencing significant professional, social, and emotional difficulties (Alfermann, Stambulova, & Zemaityte, 2004; Brewer et al., 1993; Cecic Erpic, Wylleman, & Zupancic, 2004; Grove, Lavallee, & Gordon, 1997). Adjustment difficulties such as these are

commonly found to be associated with an unbalanced or ill-defined identity (Marcia, 1980). There is research to suggest that the possession of a strong and exclusive level of athletic identity hinders the development of an individual's multidimensional self-identity, resulting in over-commitment to the athletic role and disregard of all other possible life roles (Wiechman & Williams, 1997a; Woolfolk, Novalany, Gara, Allen, & Polino, 1995).

Despite the aforementioned studies linking athletic identity to a restricted self-identity, other research has reported conflicting results, showing individuals with high levels of athletic identity to rank the athletic role no higher in their lives than those individuals with lower levels of athletic identity (Curry & Parr, 1988; Horton & Mack, 2000). Horton and Mack (2000) found that adult marathon runners with both high and low levels of athletic identity rated the relative importance of being a marathon runner no differently when comparing this role to five other identities (e.g., family member, friend, employee, religious member, romantic partner). However, to date, there have been no studies that have conducted this type of research using Australian athletes, elite or otherwise. In fact, there is limited research exploring any other aspect of self-identity in relation to elite athletes, apart from that of athletic identity.

This dissertation aims to develop a better understanding of the self-identity characteristics endorsed by Australian elite athletes as being accurate representations of who they feel that they are as people, as well as those characteristics that they consider to be important to their self-view. The impact of a range of personal and situational factors upon these endorsements, as well as on the athletic identity and psychological well-being of this population, will also be explored.

Furthermore, this dissertation seeks to determine whether the identity profile of this unique population is governed, or dominated, by their commitment to the athlete role, or whether a multidimensional self-identity profile is found to emerge. In a multidimensional self-identity profile, athletes would be shown to be just as likely to endorse non-sporting aspects of self as accurate and important contributors to their self-view as to endorse those that are related to their sporting self. The life satisfaction and levels of self-esteem of these athletes will also be explored in order to ascertain whether the athletic identity levels of this population have a detrimental effect upon their psychological well-being, and also whether they are at risk of experiencing adjustment difficulties as they make the transition from active participation in sport through to retirement.

Through taking the time to understand more about the internal environment of Australian elite athletes, which in this dissertation refers to the self-identity and athletic identity of this population, it is hoped that two main outcomes will be achieved. The information derived can be used to identify those athletes who are more likely to be at risk of experiencing psychological and emotional adjustment issues post-sport, and to provide those working with elite athletes with recommendations that will allow them to offer the education and support necessary to assist their athletes to develop a stable sense of identity as they attempt to reach their sporting potential.

1.3 Research Design and Broad Aims of the Studies

This dissertation addresses the research question – *Do demographic characteristics, aspects of achievement, and retirement status impact upon the self-identity, athletic identity and psychological well-being of Australian elite athletes?* To answer this question, three studies were undertaken. A flow chart of the research design is provided in Figure 1 in order

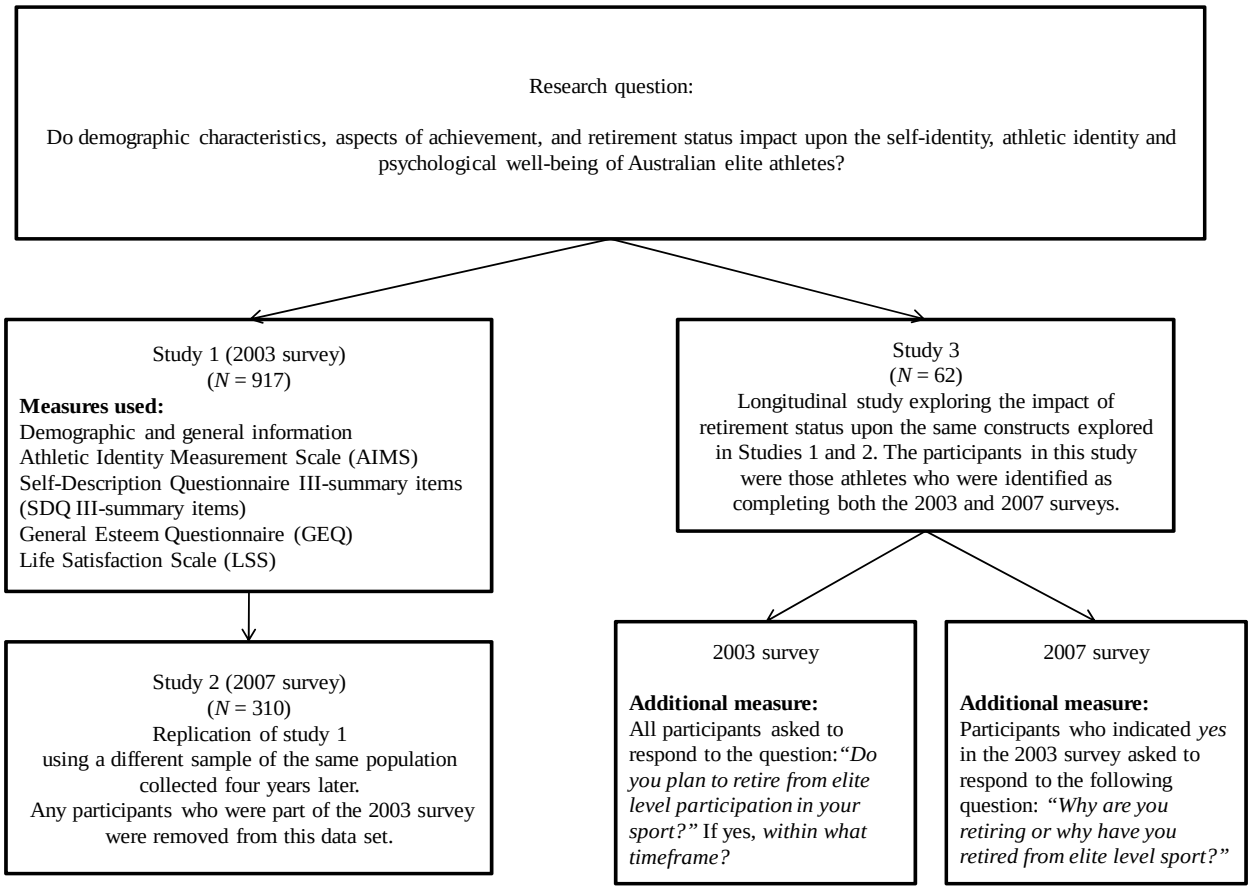

Figure 1. The research design.

to clarify the structure of this dissertation.

As indicated by the list of measures used, the data are primarily quantitative, with the use of multiple questionnaires throughout all three studies. However, some qualitative data were incorporated into Study 3 in order to gain a better understanding of the specific reasons athletes had for retiring from their sport.

The first study aimed to investigate the self-identity characteristics endorsed by Australian elite athletes, and the impact that a range of personal and situational factors have upon these endorsements. It also aimed to investigate the impact of these

variables upon levels of athletic identity, self-esteem, and life satisfaction. Further, there was an intention to determine whether a distinctive athletic profile exists in relation to the self-identity characteristics expressed by this population through the exploration of the relationship between their levels of athletic identity and the self-identity characteristics endorsed. Finally, this first study aimed to explore the relationship between the athletic identity levels, life satisfaction, and self-esteem of Australian elite athletes.

Study 1, using data collected in 2003 (N = 917), examined Australian elite athletes as a group, but also checked for effects of gender, age, aspects of achievement, including self-reported perceived level of academic achievement (e.g., well below average, below average, average, etc.) and level of athletic achievement (e.g., regional/state, national, or international), as well as retirement status (comparing those athletes intending to retire within the next four years with those with no intention to retire) in relation to each of the constructs explored.

Study 2, using data collected in 2007 (N = 310), employed cross-validation techniques to investigate the findings of Study 1 using a subsequent data set in order to see if the results remained consistent over two different samples of the same population. Any of the participants who were part of the 2003 survey were removed from this data set.

The third and final study used data collected from 62 Australian elite athletes who were identified as completing both the 2003 and 2007 surveys. This study not only took a longitudinal approach, following the participants over the five-year period, but also encompassed athletes from a number of different career transition phases. It firstly aimed to explore any changes in athletic identity, self-esteem, and life satisfaction over this time, and to ascertain whether an athlete's retirement status played a role in any of the changes

identified. Secondly, it aimed to track the changes in the self-identity characteristics endorsed by Australian elite athletes over time, as well as in relation to differing phases of transition from active participation in sport through to retirement. The final aim of this study was to investigate the impact of the voluntariness of retirement on the self-identity characteristics, levels of athletic identity, self-esteem, and life satisfaction of athletes who were both retired from elite level sport, and those who were intending to retire within the next four years.

This dissertation adopted a social constructionist approach as its epistemological perspective. Social constructionists believe that an individual's view of the world is greatly influenced by a broad range of factors including, but not limited to, social surroundings, culture, and the system of values or principles in place for that culture, past experiences, cognitive abilities, and feelings of self-efficacy (Crotty, 1998). Therefore, social constructionists believe that all perceptions of reality are socially constructed by the individual, making them a function of shared meanings that are developed, maintained and reproduced through social interactions (Crotty, 1998). This dissertation placed an emphasis upon acknowledging the role that an individual's social environment, or interaction with others, plays in the construction of his or her self-view. As with any social role, the extent to which one views oneself as being an athlete can develop and be influenced by the types of social company individuals keep (Heyman, 1986). This can include friends, family members, coaches, and the media. In addition, the extent to which athletes identify with their sporting team, club, or institute of sport will also have an impact upon their levels of athletic identity.

The social environment has also been identified as playing a central role in an individual's identity formation. Both of the theories chosen to form the foundation for this dissertation—identity theory (Stryker & Serpe, 1982) and self-complexity theory (Linville, 1985, 1987)—were chosen because they take the social environment of the individual into consideration when attempting to explain the nature of self. After all, humans are social entities who are influenced and/or shaped through these constant interactions.

1.4 Context of the Research

The data used for this dissertation were collected during a five-year longitudinal study (2003–2007) investigating the impact of athletes' participation in the Athlete Career and Education (ACE) program. The author was involved in this project. The project aimed to investigate athletes' attitudes to, and awareness of, the ACE program and to measure the program's effectiveness. This evaluation study was conducted by a research team from the Centre for Organisational Research and Evaluation (CORE) at the University of Southern Queensland (USQ) after being commissioned by the Australian Institute of Sport (AIS) and the Australian Sports Commission (ASC).

1.4.1 The National Athlete Career and Education program. Interest in the holistic development of athletes emerged from studies indicating that athletes experience many difficulties with development of life skills, career planning, decision-making, identity foreclosure, and transition away from sport (e.g., Chartrand & Lent, 1987; Kennedy & Dimick, 1987; Ogilvie & Howe, 1986; Pearson & Petitpas, 1990; Thomas & Ermler, 1988; Werthner & Orlick, 1986). The National ACE program was set up to address these issues by providing an integrated program of support for Australia's elite athletes. Based on the Victorian Institute of Sport ACE program which commenced in 1990, the National ACE

program was developed in 1994 and implemented in 1995. The program provides personal development workshops, career and education guidance, transition services, and education support, among other services. The essential aim of these services is to assist athletes in meeting the demands of their sporting careers while concurrently developing educational and vocational skills (Anderson & Morris, 2000).

Jointly funded by the Australian and state and territory governments, the ACE program is managed by the ASC and is delivered through the AIS and state and territory institutes and academies of sport. In order to be eligible for the program, athletes must be involved in a national senior squad or be on a scholarship with the AIS or a state institute or academy of sport. All participants in this dissertation met these high standards of athletic achievement and, therefore, were eligible to access the ACE program. These same criteria were used to guide the way that *elite athletes* were defined in this dissertation. Therefore, it is these same criteria that provide the definition of what an *Australian elite athlete* is in this dissertation; an athlete involved in a national senior squad or on a scholarship with the Australian Institute of Sport or a state institute or academy of sport.

Chapter 2 – Literature Review

2.1 Introduction to the Review

An overview of the content of the literature review will be outlined in this section. Prior to further discussing the construct of self-identity, a brief overview of the philosophical underpinnings of this and other self-related concepts—that of the theory of self (James, 1890/1950)—will be given. Relevant literature related to identity formation will then be outlined, including that which highlights adolescence to be the critical stage for the development of human identity. Consideration will also be given to the proposal of a new stage of human development, known as emerging adulthood, which, as a result of a shift in the normative patterns in industrialised societies, is purported to be the new period where much of an individual's identity construction occurs.

Following this, two contemporary theories of identity, identity theory and self-complexity theory, will be introduced. A brief review of the methods used to measure aspects of identity will also be covered, including a description of the Self-Description Questionnaire III-summary items (SDQ III-summary items), which will be used in this study.

As previously mentioned, this review will draw upon certain elements of the literature associated with self-concept. There is a significant amount of research which has been conducted within this area which has relevance to this study. Therefore, an overview of the differences in self-concept between athletes and non-athletes, as well as between elite and non-elite athletes, will be provided. Changes in self-concept in relation to age and gender will also be discussed.

The construct of athletic identity will then be introduced and past studies highlighting it as having important repercussions for individuals, both positive and negative, will be explored. Studies which have investigated the impact of age and gender, as well as those

which have explored the changes that occur to this construct as a result of both personal and situational influences, will also be reviewed.

Of particular relevance to this study is the question as to whether the possession of a strong and exclusive level of athletic identity hinders the development of an individual's multidimensional self-identity. Research from both sides of this argument will be presented, along with an overview of the studies which highlight levels of athletic identity as being associated with athletes experiencing adjustment difficulties following their retirement from sport.

Moving on from here, this review will provide an overview of the few studies which have attempted to explore the relationship between athletic identity and other aspects of self-identity, such as gender role orientation. Finally, life satisfaction and self-esteem, the two constructs to be used as psychological indicators of well-being in this dissertation, will be defined and discussed. Where current and previous literature is available, both general and sport-related research outcomes related to these factors will be presented, as well as any studies outlining the relationship between these two constructs and athletic identity.

2.2 The Self

In Western society, due to a strong emphasis being placed upon individual achievements, there is much psychological theory and research which focuses on individual processes and interpersonal interaction (Hofstede, 1980; Triandis, 1989). Much of this research has stemmed from the work of William James (1890/1950), an American pragmatist and psychologist, who is widely recognised as the first scholar to investigate the theory of the self empirically (Ashmore & Jussim, 1997; Perry & Marsh, 2000). The self has been defined as the "psychological apparatus that allows organisms to think consciously about themselves"

(Leary & Price Tangney, 2003, p. 8). This construct is thought to develop as a result of social experience and to share a reciprocal relationship with the social world, with each constantly impacting upon the other (Gecas & Burke, 1995; Stets & Burke, 2003). In his book, *The Consciousness of Self*, James drew the distinction between two fundamentally different components of the psychological self. These became known as the *I* self, or the *thought* aspect of self, involved in all forms of self-regulation, and the *Me* self, the *empirical* aspect of self, consisting of what is known about oneself (James, 1890/1950).

James (1890/1950) did not regard the I self as being of assistance in understanding human behaviour, thereby banishing it to the realm of philosophy. The Me self, however, which is the more tangible or measurable aspect of self, was further subdivided into three categories, each of which was purported to provide the individual with information which may contribute to their self-view, or to answering the question, "Who am I?" These categories are known as the material self, including the body and one's material possessions, the social self, which is based on the feedback that one receives from others, and the spiritual self, which is defined as one's "inner or subjective being, psychic faculties or dispositions" (James, 1890/1950, p. 296). A quote from James' work efficiently describes the Me self, stating that:

> A man's (sic) Self is the sum total of all that he can call his, not only his body and his psychic powers, but his clothes and his wife and children, his ancestors and friends, his reputation and works, his lands and horses, and yacht and bank account (p. 291).

James' argument, therefore, was that an individual's sense of self incorporates not only values, interests, and traits, but also relationships and possessions.

2.3 What is Identity?

Identity is a complex concept that can be understood from many perspectives. *Self, ego, identity, I,* and *me,* have all been used by psychologists when attempting to discuss this construct. When exploring the early psychological and philosophical literature related to identity, it became apparent that, prior to the work of James (1890/1950), there was a lack of consensus about the meaning of this term. In the early 1700s, writers postulated that identity was some sort of inner essence or inner core of the self, which was both unobservable and uncharacterisable, laying outside the realm of investigation (Hume, 1737/1975). These difficulties were summarised by Jones (1978) in her chapter on personal identity by stating that there is "no agreement on the meaning of 'identity', and no clear view about our means of apprehending or judging this 'identity'" (p. 21). However, due to the pioneering work of James and others who followed him, identity is an area which has developed considerably over the past century.

Developmental psychologist and psychoanalyst Erik Erikson (1968) defined identity as being a subjective feeling of self-sameness and continuity over time. That is, one still feels like they are the same person across multiple contexts. Also, others react to that person "they know", thereby recognising this continuity of character.

According to Erikson (1968), one's sense of ego identity, or the conscious sense of self that is developed through social interaction, is the result of three elements. Firstly, one's sense of *bodily self* is influenced by physiological characteristics such as gender, physical appearance, abilities, and limitations, as well as the changes that occur in these areas over time. Secondly, one's sense of I, refers to an individual's psychological aspects which remain constant over time, such as interests, needs, emotions, and defences. Thirdly, one's social

and cultural environment allows opportunities for expression and recognition of the physiological and psychological needs and interests.

Erikson's (1968) notion of an ego identity can be likened to James' (1890/1950) Me aspect of self, except that it puts more emphasis on the impact of an individual's environment on the expression of self, rather than focusing on the spiritual aspects of self, which are, as previously mentioned, harder to investigate empirically. This view is particularly relevant when investigating the identity of elite athletes. Researchers suggest that the degree to which an individual identifies with the athlete role is not only strongly influenced by the social component attached to this identity (Heyman, 1986), but also has consequences for the development of social skills and relationships, as well as confidence in other areas of life (Petitpas, 1978; Richards & Aries, 1999). These and other aspects related to athletic identity will be discussed in more detail later in this review.

According to prominent personality psychologists, the development and maintenance of a consistent identity plays a key role in human behaviour and psychological well-being (Jourard, 1965; Maslow, 1954; Rogers, 1951). A positive self-view has been shown to play a key role in adaptive functioning and everyday happiness of the individual (Harter, 1986, 1988). In the sport and exercise psychology literature, a positive self-identity has frequently been proposed as a mediating variable, playing a key role in the attainment of desired outcomes such as physical skills, health-related physical fitness, physical activity, and exercise adherence (Fox & Corbin, 1986; Marsh, 1997; Maslow, 1954; Sonstroem, 1978). In both sport and educational research, links have also been made between self-concept and achievement, with elite athlete self-concept and academic self-concept shown to have a

relationship with sporting performance and academic achievement respectively (Marsh & Perry, 2005; Rogers, 1951).

As mentioned in Chapter 1, it is often thought that elite athletes may miss the opportunity to explore other aspects of their self due to the lack of time they have available to explore other activities and aspects of self outside of the sporting domain. One of the aims of this dissertation was to look at any differences in the athletic identity levels and self-identity characteristics endorsed by athletes from different developmental stages. The following section will provide a brief overview of the literature which has highlighted the period of adolescence as being critical to the formation of an individual's identity (Erikson, 1963; Marcia, 1966), as well as some more recent literature which has proposed a new developmental stage, known as emerging adulthood, as being the time where much of an individual's identity construction occurs (Arnett, 2000).

2.4 Identity Formation

2.4.1. Adolescence: A critical stage for human identity.

2.4.1.1 Erik Erikson. Erikson's (1963) theory of psychosocial development provided a significant contribution to the field of human identity and personality development. Even today, Erikson's work continues to act as a catalyst for identity-related research. According to Erikson (1968), healthy development of ego will result when one's social environment complements his or her physiological and psychological capacities and interests (Erikson, 1968).

Erikson (1963) developed the theory of psychosocial development which proposed that individuals pass through eight developmental stages over their lifetime, which help to determine their personality characteristics. The theory is based on the premise that optimal

psychosocial development is achieved as a result of the individual facing, and overcoming, a series of increasingly difficult challenges or crises throughout life (Erikson, 1963).

Erikson theorised that much of identity construction takes place during adolescence (12–18 years of age), a stage where the individual is experiencing a lot of changes, both physically and cognitively (Erikson, 1963). He purports that it is during this developmental stage that individuals are faced with the task of identity versus identity confusion, the fifth stage of the eight stage framework (Erikson, 1963). During this process, an individual starts to define him or herself as a unique being by pondering the question, "Who am I?" It is also during this time that individuals are purported to experience an identity crisis, where they take the opportunity to explore a range of different identities, including those related to such things as relationships, religion, politics, and vocational choices (Erikson, 1963).

During this period, individuals also begin to question what they are good at and what roles they feel they will be most suited to later in life (Erikson, 1963). If an individual fails to resolve the crisis, Erikson (1963) theorises that this may impact profoundly upon identity development, resulting in psychosocial issues arising later in life. These may be related to the individual experiencing difficulties maintaining intimate personal relationships, or with other issues such as delinquency or identity confusion (Erikson, 1963).

Erikson (1963) highlighted two factors as being particularly important contributors to the development of a stronger sense of identity. He purported these to be a strong sense of self, and the assistance and support of peers or significant others (Erikson, 1963). Individuals are more likely to experience internal conflict or identity confusion when one or both of these factors are not present, particularly when they are faced with important life decisions, or if they are attempting to integrate into a new or unfamiliar environment or society (e.g., an elite

athlete facing life after sport). Conversely, a positive identity results when an individual is able to successfully resolve the identity crises faced during this phase of the proposed eight stage process, thereby allowing the individual's psychosocial development to continue.

2.4.1.2 James Marcia. Developmental psychologist, James Marcia, elaborated on Erikson's work by highlighting the importance of the exploration process to an individual's psychosocial development, putting forward a new view of the process of identity formation, as well as the issue of identity confusion (Marcia, 1966). Marcia (1980) defined identity as "a self-structure – an internal, self-constructed, dynamic organisation of drives, abilities, beliefs, and individual history" (p. 161).

Rather than supporting Erikson's notion of the presence of a conflict between identity resolution and identity confusion during adolescence, Marcia's (1980) paradigm focuses on choice and commitment as being central in determining an individual's sense of identity during this same developmental period. His theory discusses a variety of domains of identity, including gender roles, politics, religion, intimate relationships, friendships and occupations, and the impact of these areas upon identity formation. It highlights the importance of the individual's depth of exploration of the choices available to him or her in each of these areas, as well as the level of commitment he or she is prepared to make to certain roles, values, or goals (Marcia, 1980).

The first status, *identity diffusion*, occurs when individuals have not explored any alternatives, or shown any commitment to the domains mentioned earlier (Marcia, 1966). The status of *identity foreclosure* is present when an individual prematurely commits to a particular role, value, or goal without taking time to explore other possible choices (Marcia,

1966). This foreclosure may be due to pressure from external sources, such as parents, sporting or religious organisations, and other societal influences.

Marcia (1966) implied that a healthier alternative to identity diffusion and foreclosure is the status known as *identity moratorium*. This phase is one of exploration, where individuals experience a crisis in one or more of the domains. Although they are in the process of considering a number of possible identities, they have not yet made a commitment to the identity they deem to be most acceptable. Individuals in this stage are thought to suffer from (necessary) anxiety and confusion as they attempt to make sense of who they are in the world (Marcia, 1966).

The ideal final status, *identity achievement*, occurs when individuals have considered all the choices available to them in a particular domain by engaging in a period of active exploration, and have committed to a certain value or role. It is suggested that, when individuals have reached this status, they have developed a higher level of self-acceptance and a more stable sense of identity.

2.4.2 Emerging adulthood: A new stage of human development

2.4.2.1 Jeffrey Arnett. The period of adolescence was highlighted by Erikson (1963) and Marcia (1966) as being the critical developmental stage in relation to the development of an individual's identity. However, more recently, there has been a shift in the normative patterns in industrialised societies, where it has been shown that young people pursue post-secondary education opportunities, marry later, and become parents later than they did in the past (e.g., Arnett & Taber, 1994; White, 2003). As a result of this shift, a new stage of human development has been proposed.

This period, known as emerging adulthood, occurs between adolescence and adulthood, spanning from 18 to 25 years of age (Arnett, 2000). Arnett (2000) asserted that Erikson's (1963) theory of psychosocial development, which proposed that adolescence was the critical developmental period where much of an individual's identity construction occurred, was no longer fitting as it was developed at a time when the majority of individuals in industrialised societies got married and entered stable full-time employment by the time that they were approximately 20 years of age. However, as young people are delaying committing to traditional adult roles, Arnett (2004) proposed that it is during emerging adulthood where young people in industrialised countries engage in identity exploration.

He asserts that it is during this period where individuals take the time to explore the options available to them in regards to relationships and occupations (Arnett, 2004). Many young people were purported to be delaying their commitment to "settling into long-term adult roles in relation to love and work" (Arnett, 2007, p. 69), and instead choosing to explore their worlds and have different experiences before making these longer term choices. It is during this period that Arnett (2004) proposes that there is the least amount of social control exerted upon individuals by binding relationships, and the greatest amount of opportunity for being autonomous (making own decisions). Despite this, emerging adulthood has also been highlighted as a developmental stage where the closeness aspects of relationships become increasingly important (Arnett, 2000; Montgomery, 2005). It is also during this period that individuals have been found to be more able to be less egocentric and better at seeing things from the perspective of others, particularly their parents (Aquilino, 2006).

Emerging adulthood has been described as being "not merely a transition but a separate period of the life course" (Arnett, 2007, p. 69). Since its conception in 2000, the term emerging adulthood has become increasingly widespread (e.g., Ehrsensaft et al., 2003; Hagan & Foster, 2003), with the theory having been widely used in a range of disciplines including psychology, education, epidemiology, nursing and law. The lack of resistance (or acceptance), in relation to the adoption of the new paradigm, suggests that scholars were ready to embrace a new concept, or felt that Erikson's (1963) structure of human development was no longer working or required an upgrade. For these reasons, the emerging adulthood stage, as opposed to the adolescent stage, was explored further by this dissertation when looking at the impact of age on various constructs.

2.5 Theories of Identity

Two theories of identity were chosen to form the foundation for this dissertation; identity theory (Stryker & Serpe, 1982) and self-complexity theory (Linville, 1985, 1987). Identity theory is a popular theory rooted in the Eriksonian paradigm that attempts to link self-identities to the role relationships and role-related behaviour of individuals (Stryker & Serpe, 1982). Linville's (1985, 1987) self-complexity theory focuses on relationships, traits and behaviours. These two contemporary theories, as with all theories, have their limitations. However, it is felt that they are both useful in assisting to interpret the results of this study, as both theories acknowledge the individual's social environment as being particularly important to the understanding of the self, playing a part in both the development and maintenance of particular views of self. These theories, therefore, are reflective of the social constructionist approach (Crotty, 1998) underlying this dissertation.

2.5.1 Identity theory. Identity theory posits that the self consists of a collection of identities, each of which is derived from the roles individuals play in society, the groups they belong to, and their personal characteristics (Stryker, 1968; Stryker & Burke, 2000; Stryker & Serpe, 1982). This theory was considered to be relevant to this dissertation as much of the research related to the identity of athletes, as discussed in Chapter 1, has focused upon the extent to which they identify with the athlete role, and the impact of this upon their physiological and psychosocial development. However, in addition to athletic roles, there is no doubt that other life roles, such as those pertaining to the roles they play within their families, as well as other social roles, also contribute significantly to an athlete's identity formation.

Identity theory likens the structure of an individual's identity to a ladder, where the steps are symbolic of the number of differing roles with which the individual identifies (Stryker & Serpe, 1982). The two aspects which form much of the foundation of identity theory are that of salience and commitment. The roles that are considered to be more important, or that the individual has a greater level of commitment to, are said to be located at the top. Research conducted by Harter (1999) reported that this priority order of selves is related to the perceived value of significance of that aspect of self. The higher-ranked roles are known as salient identities, and have been found to influence a person's behaviour, in that an individual will spend more time engaging in a role that is more salient, than another which may be located further down the identity hierarchy.

This notion of salience is reflective of the earlier work of James (1890/1950), where it was acknowledged that particular aspects of self will become more central to an individual, stating that:

> Different characters may conceivably at the outset of life be alike possible to a man. But to make any one of them actual, the rest must more or less be suppressed. So the seeker of his truest, strongest, deepest self must review the list carefully, and pick out the one on which to stake his salvation (p. 310).

This quote suggests that an individual does not necessarily identify with elements from all three aspects of the Me self equally, conceding that certain elements of self may naturally become a higher priority than others, which, in turn, will be reflected in an individual's actions or behaviour.

Identity theory also posits that, due to certain roles dominating a person's time, more salient identities are likely to be invoked and to emerge across a number of diverse situations, regardless of the context (Hogg, Terry, & White, 1995). According to Stryker (1980), higher levels of commitment to a particular identity sees that identity placed higher in the individual's hierarchy of roles. The number and importance of social relationships tied to any particular role impacts upon an individual's level of commitment to a particular identity role, thereby increasing its salience (Stryker & Serpe, 1982). Therefore, identity theory highlights the individual's social environment as being particularly important to the understanding of the self, playing a part in both the maintenance and salience of particular identity roles (Stryker & Serpe, 1982). It also highlights an individual's perceptions of others' expectations and reactions to certain role-related behaviours as playing a role in regulating their behaviour (Stets & Burke, 2003). That is, individuals will modify their behaviour to fall into line with how they perceive others would expect them to behave in certain situations (Stets & Burke, 2003; Stryker & Burke, 2000). Stets and Burke (2003)

reported that any disparity which exists between an individual's identity and behaviour can result in negative emotions being experienced by the individual.

Researchers suggest that a strong relationship exists between identity salience, commitment and an individual's behaviour. Separate studies conducted by Stryker and Serpe (1982), who explored blood-donor identity, and Callero (1985), who investigated religious identity, found that the level of commitment to each of the identities predicted the salience of that identity, as well as the amount of time spent engaging in frequency of blood donation activities and religious activities respectively. Further to this, a study conducted by Nuttbrock and Freudinger (1991) with a sample of first-time mothers reported that the salience of identity as a mother predicted the acceptance of the motherhood role, as well as the mother's willingness to make sacrifices for her children. These studies not only reinforce the usefulness of identity theory in predicting behaviour, but also the importance in measuring the value placed upon different identities when researching within this domain.

From the findings of these studies, when looking into the salient aspects of self-identity identified by elite athletes, it would be predicted that attributes related to their physical or sporting ability would likely be ranked high. As sport is a largely social activity, it would be predicted that athletes would have a number of social connections with others involved in their sport, which, according to identity theory (Stryker & Serpe, 1982), would assist in strengthening their level of commitment to their role as an athlete. However, it would be predicted that these social connections would change significantly when the athlete retired from sport, thereby impacting upon the attributes supported. Similarly, when a high school student graduates from high school, the amount of contact with school friends would diminish over time as more time is spent on other aspects of life, such as travelling, working,

or undertaking further studies at tertiary institutions. The disparity which may exist between an athlete's identity and behaviour following retirement from sport may also be seen to contribute to any adjustment issues they may face (Stets & Burke, 2003).

2.5.2 Self-complexity theory. Linville's (1985, 1987) popular theory of self-complexity also takes the social environment of the individual into consideration when attempting to explain the nature of self. Linville's model viewed the self as containing an array of self-aspects, each of which represents a way that individuals interact with others. Rather than viewing these interactions as being centred only around the roles people play, Linville purported that a self-aspect can consist of a relationship such as being a *team mate*, a role such as a *student*, or an activity such as *going to the gym*. The theory proposes that there are different traits and behaviours attached to each self-aspect, such as *caring*, *hardworking*, and *committed* (Linville & Carlston, 1994). Some of these traits and behaviours, however, may be attached to a number of different self-aspects. That is, the self-aspect of student and team mate may both be linked to the same traits (e.g., caring and hardworking).

According to Linville (1987), high self-complexity involves "cognitively organizing self-knowledge in terms of greater number of self-aspects and maintaining greater distinctions among self-aspects" (p. 664). That is, individuals are said to have high self-complexity when they define themselves in reference to many self-aspects, with little overlapping traits and behaviours attached to each aspect. The theory proposes that these conditions lead to a highly differentiated self-concept which can then act as a buffer, making people less susceptible to stress, depression, and illness (Linville, 1987). Therefore, Linville proposes that individuals with less self-complexity are likely to experience higher highs, and lower lows, reacting more intensely to life events, whether positive or negative. According

to Linville (1985), this occurs as a result of the individual "putting all their eggs in one cognitive basket" (p. 94). A study conducted by McConnell, Strain, and Brown (2009) examined this view, finding that the presence of more favourable life circumstances can moderate the relationship between self-complexity and wellbeing. The three-part study found that individuals with lower self-complexity are more likely to show greater well-being (i.e. greater levels of self-esteem, less depression, and fewer illnesses) when they have greater levels of social support, when they possess more desirable personality characteristics, and when they have more positive life histories (McConnell et al., 2009). One of the limitations of this study that may have had an influence on the overall results was that it used undergraduate students as participants who, as acknowledged by the authors, have "on average, relatively positive lives" (McConnell et al., 2009, p. 833).

When attempting to apply self-complexity theory to explain the behaviour of elite athletes, it would be hypothesised that athletes who are low in self-complexity, that is, those who only define themselves as being an elite athlete and a team player, are more prone to experiencing greater difficulty with coping with the stress of retiring from sport, for example, than an athlete with higher levels of self-complexity. This is because the negative emotions related to the event *spill over* into all aspects of self. However, on the other hand, if they exhibit a more multidimensional sense of identity—defining themselves as being a daughter, a university student, a friend, as well as being an athlete, and each self-aspect has quite separate traits and behaviours associated with them—the theory purports that there will be less spread of negative emotions, as they will have other aspects of self to focus on, and therefore will not be as psychologically burdened by the event (Linville, 1987).

The evidence, though, is far from conclusive, with some studies providing support for a positive relationship between self-complexity and coping (Brook, Garcia, & Fleming, 2008; Linville, 1985, 1987; Sonstroem, 1998; Steinberg, Pineles, Gardner, & Mineka, 2003), while others have both reported a negative relationship and failed to find evidence of this relationship at all (Gorely, Bruce, & Teale, 1998; Woolfolk et al., 1999; Woolfolk, et al., 1995). A recent meta-analysis of the self-complexity literature reported great variation in positive and negative effect sizes found across the 70 studies included in the synthesis (Rafaeli-Mor & Steinberg, 2002). Overall, however, a weak negative relationship was found to exist between self-complexity and well-being (Rafaeli-Mor & Steinberg, 2002).

2.6 Measurement of Self-identity

There are a range of questionnaires which aim to measure self-identity. The Ego Identity Process Questionnaire (EIPQ; Marsh, Byrne, & Yeung, 1999) identifies participant levels of exploration and commitment in four ideological domains (politics, religion, occupation, and values) and four interpersonal domains (friendships, dating, gender roles, and family). The Extended Objective Measure of Ego-Identity Status II (EOM-EIS II; Pearson & Petitpas, 1990) is a 64-statement questionnaire which targets each of the four identity statuses proposed by Marcia (1966), as previously discussed. Marcia's Identity Status Interview (Marcia, Waterman, Matteson, Archer, & Orlofsky, 1993) has also been proven to be a valid and reliable instrument in determining where an individual is at in relation to their identity formation. This interview aims to decipher the extent to which young people have either established a commitment to a particular occupation or ideology, or are currently engaged in an exploration period of alternatives. Following this, the individual is assigned to one of the four specific identity statuses (Marcia et al., 1993).

A further method of measuring identity, which is more in line with the tenets of identity theory, is the procedures developed by Hoelter (2004a). In this method, participants are provided with an opportunity to rank order a range of specific life roles, such as parent, spouse, homemaker, and club member, in relation to those roles they feel best reflect how they think about themselves, as well as those they consider to be most and least important to them, from an identity role perspective. As previously mentioned when discussing identity theory, the higher ranked roles are known as salient identities, and have been found to influence a person's behaviour more so than another which may be ranked lower in importance (Stryker & Serpe, 1982).

Identity has also been studied by incorporating the theoretical model of self-concept, which proposes individuals to have different perceptions of themselves in relation to a variety of aspects of their lives (Shavelson, Hubner, & Stanton, 1976). In a study conducted by Adamson et al. (1999), semi-structured interviews were carried out with the aim of developing a model of adolescent identity. Participants were asked four main questions, the responses of which then underwent a qualitative analysis using an inductive approach before the authors arrived at a proposed model. The two questions asked which related to self-concept were, "Please tell me who you are" and "What do you find important in your life right now, what do you often find yourself thinking about?" Although the self-descriptions given varied substantially, they were grouped into 12 content groups and labelled as "part-aspects of the self-concept", examples of which included interacting with others, activities, and self-related emotions (Adamson, et al., 1999, p. 24).

A number of valid and reliable inventories have also been developed to quantitatively measure and distinguish between the specific domains of self-concept. One of these

measures is the Self-Description Questionnaire III (SDQ III; Marsh & O'Neill, 1984), a validated multidimensional scale which has been used extensively to measure self-concept in adolescent and adult populations.

2.6.1 Self-Description Questionnaire III. Based upon the work of Shavelson et al. (1976), it is now widely accepted that a person's self-concept is multidimensional in nature, hierarchically organised, and becomes increasingly differentiated with age (Marsh, Byrne, & Shavelson, 1988). At the apex of the hierarchy is the total self-concept. The hierarchy then divides into two components, which consists of both academic and non-academic components, (e.g., people have perceptions of their academic abilities as well as their physical abilities), each of which then further subdivides into more specific domains at the base of the model (Shavelson et al., 1976).

The academic component of self-concept is purported to separate into three content areas, verbal (English and reading), mathematics, and general academic. The non-academic component also divides into three separate areas, those related to social, physical, and emotional aspects of self-concept (Shavelson et al., 1976). Each of these three areas covers separate aspects such as parent and peer relations, physical appearance, physical abilities, and emotional stability, among others. However, the structure of the hierarchy and exact break-down of the global components into specific categories is a continuing debate that extends beyond the scope of this literature review.

Validated multidimensional scales, such as the Self-Description Questionnaire (SDQ; Marsh, 1992b), Self-Description Questionnaire II (SDQ II; Marsh, 1992a), and the Self-Description Questionnaire III (SDQ III; Marsh & O'Neill, 1984) have been used extensively, with each measuring both academic and non-academic areas of self-concept for pre-

adolescent, early adolescent and late adolescent/adult populations respectively. Each of the instruments measures similar aspects of self-concept, with the SDQ and SDQ II containing 11 and 12 subscales respectively, and the SDQ III measuring 13 factors. The full version of the SDQ III (Marsh & O'Neill, 1984) consists of 136 items, with 10 to 12 items used to measure each dimension. An overview of the 13 subscales of the SDQ III is provided in Table 1.

2.6.2 Self-Description Questionnaire III-summary items. As mentioned in Chapter 1, in this dissertation, self-identity is defined as the way individuals think about and view themselves. An abbreviated version of the SDQ III, known as the SDQ III-summary items (Marsh & O'Neill, 1984), was used to measure this construct. While other identity measures were considered for use, they were all found to be highly irrelevant to the aims of this study, measuring factors such as identity status (Pearson & Petitpas, 1990) or degrees of exploration and commitment (Balistreri et al., 1999), rather than content and salience. The SDQ III-summary items (Marsh & O'Neill, 1984) was considered to be an appropriate measure as it provides a broad array of self-descriptors for participants to rate on two separate scales, whereby they can rate both the accuracy, as well as the importance, of each self-descriptor to their self-view.

For this dissertation, the item related to general self-esteem was removed, as this construct was to be measured separately, leaving the measure to consist of 12 items (known as summary description items) each of which reflects the scales measured by the SDQ III (see Table 1). Each summary description item can be easily matched to a variety of life roles, such as those which are social, athletic, and academic in nature, as well as to personal characteristics, such as honesty and emotional stability, each of which are of interest to the

Table 1

SDQ III Factors With Descriptions (Marsh & O'Neill, 1984)

Factor	**Description**
Mathematical ability	Ratings of skills and ability in mathematics.
Physical appearance	Ratings of physical attractiveness, how appearance compares with others, and how others think they look.
General esteem	Ratings of effectiveness, capability with individuals, who are proud and satisfied with the way they are.
Honesty/trustworthiness	Ratings of honesty and trustworthiness
Sporting/physical abilities	Ratings of skills and interest in sports, games and physical activities.
Verbal skills	Ratings of skills and ability in English and reading.
Emotional stability	Ratings of themselves as being calm and relaxed, emotional stability, and how much they worry.
Parent relationships	Ratings of relationship with parents, whether they like their parents, and the quality of interactions with their parents.
Academic ability	Ratings of general academic skills and ability
Same-sex relationships	Ratings of popularity with members of the same sex and how easily they make friends with members of the same sex.
Opposite-sex relationships	Ratings of popularity with members of the opposite sex and how easily they make friends with members of the opposite sex.
Spiritual values/religion	Perceptions of own spiritual values and beliefs
Problem-solving ability	Ratings of own capability to engage in problem-solving.

researchers in relation to the athletic population. For example, the item related to having good interactions with parents can be viewed to be indicative of the role of being a son or a daughter, the item related same sex relationships can be regarded as being representative of the role of being a good friend, and so on.

The inclusion of the importance scale of the SDQ III-summary items was also particularly useful to this study, because, as previously mentioned when discussing identity theory, the importance placed upon certain aspects of self has been shown to be an indicator of strength, or salience, within an individual's self-view (Stryker & Serpe, 1982). It has also been found that increments in importance will increase the likelihood that individuals will behave in ways that are compatible with their self-view (Pelham, 1991). For example, an athlete who rates sports ability to be important will show higher levels of commitment to training than an athlete who rates sports ability as a relatively unimportant aspect of his or her self-view. Therefore, the responses to this scale will play a critical role in this study when looking at the way that Australian elite athletes rate the importance of each of the self-descriptors.

The SDQ III-summary items measure was also selected as the overall surveys used throughout this project were quite lengthy, consisting of a number of different inventories (see Appendix C and D). Therefore, in order to reduce response burden on participants, the usage of such a brief measure of self-identity was ideal. More details related to the SDQ III-summary items, along with the psychometric properties of the scale, will be discussed in the Methods section of Chapter 3.

2.7 Self-concept Research Outcomes

As previously mentioned, this review will draw upon certain elements of the literature associated with self-concept. There is a significant amount of research which has been conducted with both athletic and nonathletic populations, which has relevance to this study. In this section, an overview of the differences in self-concept between athletes and non-athletes, as well as between elite and non-elite athletes, will be provided. Further to this, changes in self-concept in relation to age and gender will also be discussed.

2.7.1 Differences in self-concept between athletes and non-athletes. Previous studies have analysed differences between athletes (i.e., sportspersons) and non-athletes (i.e., non-sportspersons) on multiple dimensions of self-concept (Asci, Gokmen, Tiryaki, & Asci, 1997; Curry & Rehm, 1997; Marsh & Jackson, 1986; Marsh, Perry, Horsely, & Roche, 1995). A study conducted by Marsh et al. (1995) compared the self-concepts of a sample of 83 Australian elite athletes with those of a normative sample of 2436 non-athletes using the 136-item SDQ III instrument. The study found the athlete group to have significantly higher physical ability and social (interactions with the same sex, opposite sex, and parents) self-concepts than the non-athlete group. No significant differences, however, were found between the two groups in relation to physical appearance, emotional stability, or academic (verbal, maths, academic, and problem-solving skills) self-concepts (Marsh et al., 1995). Non-athletes were also found to have significantly higher spirituality/religiosity and honesty self-concepts than athletes.

A study by Marsh and Jackson (1986) compared female athletes and non-athletes using four scales of the multi-item SDQ III (Marsh, 1990b) instrument. The results supported the findings of the previous study, reporting athletes to have significantly higher

physical ability self-concepts than non-athletes, but finding no significant differences in relation to emotional stability and physical appearance self-concept scores. It is unsurprising that athletes would have higher level of physical ability self-concepts than non-athletes, as they would most likely spend more of their time focusing on the development of this aspect of self, thereby strengthening it. Marsh and Jackson also compared female athletes and non-athletes on 12 areas of self-concept using the SDQ III-summary items (Marsh & O'Neill, 1984). Once again, athletes were reported to have a significantly higher physical ability self-concept when compared with non-athletes, with no significant differences detected in relation to physical appearance.

Asci et al. (1997) conducted a study which aimed to determine whether there were any differences in self-concept and body image satisfaction between 174 Turkish high school male athletes and 174 non-athletes. The study found participation in physical activity to be significantly related to higher levels of self-concept for high school males, particularly in relation to social acceptance, athletic competence, and physical appearance (Asci et al., 1997).

A further study aimed to compare the self-perceptions of a group of competitive, elite female collegiate athletes with those of a group of non-athletic female controls. The Self-perception Profile for College Students (Harter & Neeman, 1986), a 98-item instrument with 12 content subscales similar to those of the SDQ III, as well as a Global Self-worth subscale, was used to measure participant self-perceptions. Each of the 12 subscales was rated on both importance and competence. The study found that although the female athletes derived much of their self-worth from their perceived athletic competence, they did not rate athletics as

being more important than their non-athletic counterparts when adjusted for age. In addition, the importance of athletics was shown to decrease significantly for both groups with age.

Overall, these studies have shown athletes to have significantly higher physical ability self-concepts than non-athletes, and to not differ in relation to aspects of self-concept such as emotional stability and physical appearance (Marsh & Jackson, 1986; Marsh et al., 1995). While there are a number of studies, such as those previously mentioned, which look to make distinctions between the self-concept of athletes and non-athletes, there are limited studies which investigate the characteristics of self-concept endorsed by elite athletes, or by athletes that compete at different levels of competition (e.g., state, national, international).

2.7.2 Differences in self-concept between elite and non-elite athletes. Only one research study which explored the differences in the self-concept of elite and non-elite athletes was found. The study, conducted by Marsh, Hey, Roche, and Perry (1997), looked at the physical self-concepts of two groups of elite student-athletes in comparison to two groups of non-elite student-athletes. As was found between athletes and non-athletes, it was reported that the elite groups had higher physical self-concepts than the non-elite groups, and that males had higher physical self-concepts than females, although these gender effects were smaller within the elite athlete groups (Marsh et al., 1997).

One of the main aims of this dissertation was to uncover more information related to the self-view of Australian elite athletes by comparing the self-report responses of two separate samples of this unique population. As a result of this investigation, a better understanding of the self-identity characteristics endorsed by these individuals will be developed. The impact of an athlete's specific level of athletic achievement, for example,

national representation versus international representation, upon such endorsements will also be explored.

A considerable amount of literature has been published within the self-concept domain which has looked at the impact of age and gender upon the self-concept of the general population, as well as upon the physical self-concept of elite athletes. This review will now provide an overview of such research.

2.7.3 Gender differences in self-concept. There have been some research studies conducted which have reported no significant differences between sexes for overall self-concept (Piers, 1984; Wylie, 1979). Despite this, a study conducted by Marsh (1989a) reported significant gender differences, favouring boys. Marsh's study was comprehensive, analysing 12,266 normative archive responses to the three SDQ instruments (SDQ I; SDQ II; SDQ III), with the aim of gauging the self-concepts of individuals of both genders ranging from preadolescence to young adulthood (Marsh, 1989a). Boys in this age range were found to have significantly higher overall self-concepts than their female counterparts across all three SDQ instruments (Marsh, 1989a).

Despite these inconsistencies in the exploration of gender differences in relation to overall self-concept, there is general consensus in the literature that significant differences exist between sexes in relation to specific components of self-concept (Dusek & Flaherty, 1981; Marsh, Barnes, Cairns, & Tidman, 1984). These differences have been found to be aligned with traditional sex stereotypes. For example, males have been shown to have higher maths self-concepts, while females have been known to have higher verbal and academic self-concepts (Crain, 1996; Hattie, 1992; Marsh, 1989b; Marsh et al., 1988; Meece, Parsons, Kaczala, Goff, & Futterman, 1982).

Marsh's (1989a) study reported males to have higher levels of self-concept for physical ability, appearance, emotional stability, problem-solving, and general esteem, and females to have significant higher self-concepts than males in relation to honesty/trustworthiness and spirituality/religiosity. For all three instruments, however, there were no significant differences between genders in relation to the interactions with parents subscale. Marsh reported the largest gender differences between adolescents and late-adolescents to be related to the appearance subscale. These results have been further supported by a study conducted with 100 Grade 11 students, which found, among other results, that males were more satisfied with their weight, appearance, and perceived physical attractiveness than their female counterparts (Bowker, Gadbois, & Cornock, 2003). Marsh's study also provided evidence that the gender differences cited are reasonably consistent from preadolescence through to early adulthood.

Marsh (1998) went on to conduct a study which focused on comparing the physical self-concepts of Australian adolescent elite athletes and non-athletes over a two-year period. The study found that males had higher physical self-concepts than females, a finding which has been consistent across other studies (Hayes, Crocker, & Kowalski, 1999; Sonstroem, 1998). The athlete group was also found to have smaller gender differences than non-athletes (Marsh, 1998).

This dissertation aimed to investigate the impact of gender upon the self-identity characteristics endorsed by Australian elite athletes. It is of interest also as to whether or not the same traditional sex stereotypes found within the general population will generalise across to an athletic population.

2.7.4 Differences in self-concept with age. It is widely accepted that a person's self-concept becomes more distinct with age (Marsh et al., 1988). It has been proposed that individual self-concept starts off quite high in young children, with changes in competency self-ratings becoming more realistic with age, and more closely associated with the appraisals of significant others (Eccles, Wigfield, Harold, & Blumfeld, 1993; Wigfield, Eccles, MacIver, Reuman, & Midgley, 1991; Wigfield et al., 1997).

Studies by Marsh and his colleagues have endeavoured to detail this process of differentiation (Marsh, 1990c; Marsh et al., 1984; Marsh, Craven, & Debus, 1991). In the previously mentioned study which analysed over 12,000 responses to the three SDQ instruments, Marsh (1989a) reported small yet consistent changes in self-concept in relation to age. Preadolescence (9–11 years) was shown to be a developmental period where self-concept decreases for both genders. These findings support previous research findings which reported declines in specific areas of self-perceived ability, such as "smartness" (Stipek, 1981) and physical ability (Ruble, Boggiano, Feldman, & Loebl, 1980), for individuals in this age-group. For adolescent responses, a U-shaped effect was reported, with self-concept found to continue to decline from preadolescence (9–11 years) through to early adolescence (12–14 years), before levelling out during middle adolescence (ages 15–17 years), and rising again from late adolescence (18–21 years; Marsh, 1989a). This purported early decline in an individual's self-concept has been supported by previous research related to the psychological well-being and self-concept of adolescents conducted by Rosenberg (1985). This work concluded that it was during early adolescence where the greatest disturbances occurred for most dimensions of an individual's self-concept (Rosenberg, 1985).

Marsh (1989a) reported reductions in multiple domains of self-concept of adolescents, especially those in Grades 8 and 9 (13–14 years of age), particularly related to self-perceived physical ability, appearance, along with social and academic self-concept. Other studies have reported similar reductions in social self-concept in Grade 6, and in maths self-concept in Grade 7 (Eccles et al., 1989). Such declines have been suggested to be influenced in part by the transition between primary and secondary schools that individuals experience during this stage of development (Wigfield et al., 1991). However, individuals have also been found to differ in their responses to such transitions (Block & Robbins, 1993; Harter, 1998), with some adolescents reported as experiencing increases in self-concept during this phase (Harter, 1986, 1998).

There are many other factors which have been found to impact upon the stability of self-concept, such as the amount of importance different individuals place upon different domains of competence (Eccles et al., 1989), the effects of personality variables (Block & Robbins, 1993), as well as educational and environmental differences (Eccles & Midgley, 1989; Hoge, Smit, & Hanson, 1990). Such findings make it difficult to predict what specific aspects of self-concept will be impacted when exploring different populations.

As individuals become older and receive feedback, both from their own experiences and from those around them, their mean levels of self-concept have been shown to decline for those areas that become perceived personal weaknesses, allowing the areas of perceived competence to flourish and remain a strong component of the individual's self-concept (Marsh, 1990c; Marsh et al., 1984; Marsh et al., 1991). Results such as these may be seen to be particularly relevant to elite athletes reaching adolescence, with these individuals no doubt perceiving their physical abilities as being a strength, thereby helping to explain why this

population has been shown to have significantly higher levels of physical self-concept than their non-athlete adolescent counterparts (Marsh, 1998).

As previously mentioned, it is not until late adolescence that self-concept has been reported to increase steadily once again (Marsh, 1989a). This increase was found to continue through to early adulthood. Further to this, Marsh's (1998) study, which compared the physical self-concepts of Australian adolescent elite athletes and non-athletes, documented the changes that occurred in physical self-concept during the adolescent period of development. Marsh divided the adolescent period into four age cohorts, as a function of the year in school from Grade 7 through to Grade 10, and assessed physical self-concept for each cohort on four occasions over a two-year period. It was found that levels of physical self-concept remained stable over the four age cohorts (Marsh, 1998). Despite this, elite athletes and males were consistently found to possess significantly higher levels of physical self-concept than their non-athlete and female counterparts respectively (Marsh, 1998). Similar results have been found in cross-cultural studies, with minor age effects being found in relation to physical self-concept for Turkish and German adolescents (Asci, 2002; Brettschnieder & Bräutigam, 1990).

In summary, findings have also indicated adolescence to be a particularly important time in relation to noted changes in self-concept. This is understandable, as this developmental stage has been highlighted as being the period where much of our identity formation occurs (Erikson, 1963; Marcia, 1966), as previously mentioned. This dissertation aimed to further investigate the self-identity characteristics that are endorsed by Australian elite athletes at different stages of development.

As discussed in Chapter 1, one dimension of self-identity that has received much attention in the psychological literature, particularly by those studies seeking to explore the overall psychological health and emotional adjustment of elite athletes, is that of athletic identity. The next section will provide a theoretical background to this construct, as well as present an in-depth overview of, not only the psychological, but also the social and physiological impacts of an athlete's level of athletic identity.

2.8 Athletic Identity

Athletic identity is the degree to which an individual thinks and feels like an athlete (Brewer et al., 1993). The large amount of interest in this concept is unsurprising due to the rising level of professionalism in sport over the past two decades throughout the world, especially in Australia. In line with this, athletes continue to increase the amount of physical and mental energy that they devote to both practice and competition in the hope that one day their athletic talents will lead to a full-time professional career.

2.8.1 Positive outcomes associated with a strong athletic identity. A number of positive physiological and psychosocial outcomes have been shown to have an association with the possession of a strong athletic identity for both athletes and non-athletes alike. These include higher sport and exercise participation rates (Brewer, et al., 1993; Fox & Corbin, 1986), good health and physical fitness (Marsh, 1993), good time and obligation management (Cornelius, 1995), and greater global self-esteem (Marsh et al., 1995). Very high levels of athletic identity have also been found to have a positive relationship with athletic performance (Werther & Orlick, 1986). Further studies report that identification with the athletic role is an important social aspect of an individual's self-concept, having positive

consequences for the development of social skills and relationships, as well as confidence in other areas of life (Petitpas, 1978; Richards & Aries, 1999).

2.8.2 Negative outcomes associated with a strong athletic identity. However, while a strong athletic identity is considered in many ways to be a positive thing, it has been argued that the possession of high levels of athletic identity can also be a potential problem, as it can signal an over-commitment to the athlete role. This means that a large amount of an individual's sense of self and self-worth is dependent on being an athlete. Research has shown that if individuals develop a strong and exclusive athletic identity, that is, if they fail to develop any alternate identity roles to that of being an athlete, it puts them at an increased risk of experiencing psychosocial and career identity issues later in life (Brewer et al., 1993; Kornspan & Etzel, 2001; Wiechman & Williams, 1997b).

There are a number of factors which see this aspect of self-identity as being particularly vulnerable to over-commitment issues. Firstly, athletic talents are commonly discovered and developed early in life. Therefore, by the time the individual has progressed into adolescence, which has been identified as a key period in relation to identity development, a significant amount of time and psychological commitment has been invested in the athletic role (Webb, Nasco, Riley, & Headrick, 1998).

Secondly, there is also a large social component that comes from being involved in sport which serves to further solidify an individual's athletic identity, especially if he or she experiences success. A positive self-identity has been shown to be correlated with positive self-esteem (Rosenberg, 1985; Tajfel & Turner, 1986). Therefore, the praise or attention that individuals receive from coaches, teammates, parents, friends, fans, or the media when they

perform well can serve to reinforce their awareness of their talents and athletic potential. This social recognition can also, ultimately, impact upon their identity.

Friends and acquaintances have also been shown to have an impact upon the extent to which people view themselves as an athlete (Heyman, 1986). Much of this is due to the close relationships that are commonly formed with like-minded people, such as coaches and fellow athletes. In addition to this, the level to which athletes identify with their sporting team, club, or institute of sport can also play a role in the strengthening their levels of athletic identity. As mentioned in relation to identity theory, social factors such as those previously listed would result in an increase in salience of the athletic role, as well as further commitment being dedicated to this aspect of self-identity (Stryker & Serpe, 1982).

An article by Tasiemski et al. (2004) presented a summary of the negative outcomes that have been found to be associated with the possession of a strong and exclusive level of athletic identity. These outcomes include the restricted development of a multi-dimensional self, adjustment difficulties following retirement from sport, post-injury emotional distress, social isolation, identity foreclosure issues and delays in career maturity, among others (Tasiemski et al., 2004). Individuals who over-identify with the athletic role have also been found to have less interest in achieving academically (Cornelius, 1995), be more prone to experiencing poor levels of academic achievement, and to have reduced career options (Brown & Hartley, 1998; Miller & Kerr, 2003). A number of studies have reported findings which challenge some of these outcomes (Curry & Parr, 1988; Horton & Mack, 2000). These studies will be summarised later in this section of the review.

2.8.3 Gender differences in athletic identity. Athletic identity has been shown by some studies to be stronger in males than females (Brewer, 1993; Brewer & Cornelius, 2001;

Brewer et al., 1993; Van Raalte, Brewer, Brewer, & Linder, 1992; Van Raalte, Brewer, & Schmelzer, 1997). It has been suggested that these results may be due to there being fewer professional sport opportunities open to female athletes than to their male counterparts. This results in females committing to the exploration of alternate opportunities outside of sport thereby reducing their athletic identity levels. Despite this, other research has not found this same gender effect, with a number of studies showing no significant differences between the athletic identity levels of male and female athletes (Good, Brewer, Petitpas, Van Raalte, & Mahar, 1993; G. M. Murphy, Petitpas, & Brewer, 1996).

Many of the aforementioned studies investigating athletic identity used intercollegiate samples from the United States of America (USA), rather than Australian athletes (Hale, James, & Stambulova, 1999). The increased emphasis placed on sport for males, as opposed to females, within American society has been one reason that has been proposed as to why males are found to commonly have significantly higher levels of athletic identity than females (Coakley, 1990; Diener, Emmons, Larsen, & Griffin, 1985). According to Coakley (1990), such a climate contributes to girls becoming “less likely to learn that physical activities and achievements in sport can, or should, be uniquely important sources of rewards in their lives” (p. 192), thereby reducing their likelihood of developing a strong sense of athletic identity.

A study conducted by Mignano, Brewer, Winter, and Van Raalte (1983) investigated the impact that the social environment can have upon an athlete's level of athletic identity. The study explored the athletic identity levels of female athletes attending a co-educational college, in comparison to those attending a women's college. It was found that those athletes attending the women's college had significantly higher levels of athletic identity then their

co-educational counterparts. One of the reasons given by Mignano et al. for these results was that the females in the all-woman environment may have felt able to "fully embrace their athletic role, rid themselves of societal pressures to be stereotypically feminine, and receive full support to the athletic pursuits" (p. 462).

The highly-structured athletic culture of the USA, which involves the existence of a close link between education and athletic development, differs considerably from that of Australia. This is particularly important to recognise if attempting to make comparisons with athletes operating within different contexts. Over the past 10 years, the Australian government has worked hard to address gender equity issues in sport, introducing a number of new initiatives to support women's sport. These initiatives have involved the development of a variety of scholarship and grant programs which not only aim to assist national and international women's leagues, competitions, teams and athletes to better market and promote themselves, but also to create more opportunities for women to take on more leadership and decision-making roles in sport. The most recent initiative, a $1.4 million grants program aimed at enhancing women's sport in the Australian media, was announced as part of the 2010-2011 Federal budget. While it is acknowledged that it is difficult to comment on the impact of such programs upon the athletic identity of female athletes, according to Coakley, Hallinan, and McDonald (2011), the popularity of female sport has increased considerably, with more sport-related opportunities now available to women. As much of the cited research is dated, and considering that the role of gender in our society is dynamic, one of the aims of the current dissertation was to further explore the relationship between athletic identity levels and gender in Australian elite athletes.

2.8.4 Differences in athletic identity with age. Developmental trends in athletic identity have been reported, with levels of athletic identity found to be negatively correlated with age (Brewer et al., 1993). Two separate studies conducted by Brewer et al. (1993) and Greendorfer and Blinde (1985) have found athletic identity levels to decline with age following high school. The cross-sectional study conducted by Brewer et al. with a sample of collegiate student-athletes reported a negative relationship between athletic identity and age. An earlier retrospective longitudinal study conducted by Greendorfer and Blinde reported different results, however it should be noted that this study investigated the importance of sport to a sample of retired athletes over time rather than their levels of athletic identity. Greendorfer and Blinde found that a curvilinear relationship existed between the importance of sport and age. That is, athletes reported an increase in the importance of sport to their lives throughout their high school years, followed by a gradual decline commencing from the start of their freshman year at college to the end of their senior year (Greendorfer & Blinde, 1985).

A qualitative study conducted by Miller and Kerr (2003) also found that the importance of the athlete role decreased over time as student-athletes matured. However, this decline was reported to occur later than documented by Greendorfer and Blinde, commencing mid-way through the third-year of the athlete's university career, and decreasing steadily all the way through to the end of their final year of study. In direct contrast to the results of Greendorfer and Blinde, Miller and Kerr actually found that commitment to the athlete role was found to intensify, rather than to decline, during the freshman year.

A recent two-part retrospective study conducted by Houle, Brewer, and Kluck (2010) investigated changes in athletic identity in relation to age. The first study investigated gymnasts at three developmental periods, 10 years (preteen), 15 years (teen), and current age in college (adulthood). The second study investigated athletes from a variety of sports, as well as individuals who were not athletes. The results of this study were not consistent with previous research, in that athletic identity of the gymnasts in Study 1 was found to increase significantly from age 10 to 15 years, and then to remain stable, with no further significant changes, from age 15 to current age (Houle et al., 2010). The findings of Study 2 were similar to those of Study 1, with current and former athletes showing significant increases in their levels of athletic identity between 10 and 15 years of age, and current athletes maintaining these levels of athletic identity through to current age with no further significant changes (Houle et al., 2010). Former athletes were found to have significantly lower levels of athletic identity when compared to current athletes at their current age, a finding which is consistent with previous studies showing athletic identity to decrease significantly following retirement from sport (Grove, Fish, & Eklund, 2004; Shachar, Brewer, Cornelius, & Petitpas, 2004). Non-athletes were also found to have significantly lower levels of athletic identity than current or retired athletes. This was found across all three developmental periods investigated (Houle et al., 2010).

However, while many of the studies discussed provide valuable information related to developmental trends in this area, a primary limitation is that the athletic identity of athletes is commonly explored using a retrospective research design with quite small samples. This dissertation used a cross-sectional research design and aimed to investigate changes in

athletic identity in relation to developmental stage with two larger and more diverse groups of elite athletes.

2.8.5 Athletic identity as a malleable construct. Although Brewer et al. (1993) originally conceptualised athletic identity to be a trait-like construct, there is sufficient evidence available from previous research which suggests that this construct is more malleable than first thought, susceptible to the impact of both personal and situational influences (Brewer, Selby, Linder, & Petitpas, 1999; Fish, Grove, & Eklund, 1999; Lavallee, Gordon, & Grove, 1997; Shachar et al., 2004).

Brewer, Selby, Lindner, and Petitpas (1999) showed athletic identity to change in relation to athlete perceptions of success or failure, with the athletic identity scores of athletes who had endured a losing season and reported being dissatisfied with their performance being significantly lower than those of athletes who had enjoyed a winning season and felt happy with their performance. A significant drop in athletic identity scores was also reported as occurring following state team deselection by Fish et al. (1999), with the athletic identity scores of those athletes selected into the team shown to remain consistently high.

The same outcomes were also reported in a more recent study by the same authors, whereby the athletic identity scores of 47 female athletes who were all vying for state team selection was taken on three occasions, one week before selections, on the day of team selections, and two weeks post-announcement (Grove et al., 2004). For the players that were cut, athletic identity scores decreased significantly during the two weeks immediately following selection announcements. However, the athletic identity scores of the players who were selected remained stable.

This dissertation aimed to add to this literature base and investigate whether further personal and situational factors impact upon the athletic identity levels of elite athletes. More specifically, this dissertation aimed to explore whether athletic identity is influenced by the perceptions that athletes have of their level of academic achievement (e.g., below average, average, or above average), or by the level at which they compete in their sport (e.g., state, national, or international).

2.8.5.1 Self-protection hypothesis. Previous research has found that individuals can protect themselves from negative feedback that challenges their self-views in a particular domain by psychologically disengaging from, or devaluing, that particular aspect of self (Major & Schmader, 1998). In line with this, the previously-mentioned decrease in athletic identity by those athletes who were unsuccessful in making the state team was suggested to be a form of self-protection employed in an attempt to maintain a positive image of self and their feeling of self-worth (Grove et al., 2004).

Further studies have also shown significant reductions in athletes' levels of athletic identity as a result of a variety of circumstances including rehabilitating from anterior cruciate ligament surgery (Brewer, Cornelius, Stephan, & Van Raalte, 2010), and retirement from sport (Lavallee, Gordon, et al., 1997). A recent longitudinal, prospective study in the athletic retirement literature showed evidence of athletes safeguarding their identities, documenting athletes as proactively decreasing the prominence of their athletic identities in preparation for their retirement (Lally, 2007). The study tracked the changes in identity that took place for six Canadian student-athletes at three time-points from pre-retirement through to one-year post-retirement. Results revealed that the athletes had anticipated disruptions to their identities as retirement approached, and decided to deemphasise the importance of their

athletic identity by employing a variety of coping strategies, such as involving themselves in other physical and academic pursuits, in order to avoid experiencing a major identity crisis (Lally, 2007). It was also found that some of the athletes began to negotiate their new sense of self long before they actually retired (Lally, 2007). As a result, the athletes were reported to experience a relatively smooth transition into retirement. Such findings also support the notion that an individual's identity, or self-categorisation, is a dynamic process that reflects an individual's changing social reality (Turner et al., 1994).

This dissertation aimed to follow a similar track to that of the Lally (2007) study and investigate the changes that occur in the athletic identity levels of Australian elite athletes, not only after they retire from sport, but also when they are begin to contemplate their retirement. Any changes in the endorsement of both academic and non-academic self-identity characteristics, as measured by the SDQ III-summary items, as well as the impact upon the psychological well-being (life satisfaction and self-esteem) of these individuals, will also be explored.

2.8.6 Athletic identity and the multi-dimensional self. As discussed in Chapter 1, there is research that suggests the possession of a strong and exclusive level of athletic identity can hinder the development of an individual's multidimensional self-identity, resulting in athletes investing heavily in their athletic selves and disregarding all other possible life roles (Wiechman & Williams, 1997a; Woolfolk, et al., 1995). Much of the research in this area has been conducted with the student-athlete population, focusing more on the impact that their engagement in sport has upon their investment in their studies.

2.8.6.1 Athletic identity and the student role. It is feared that individuals with a high athletic identity may perceive their *life role* as being an athlete, and therefore direct all of

their time and focus into their sport, neglecting their studies as a consequence. In accordance with this fear, a number of research studies have confirmed that those individuals with a strong athletic identity are less likely to plan for their future vocations before retirement (Gordon, 1995; Lavallee, Gordon, et al., 1997; Pearson & Petitpas, 1990; Thomas & Ermler, 1988), while other studies have reported that athletes put off thinking about their post-sport career as they feel that is will interfere with, or threaten, their sporting goals (Kennedy & Dimick, 1987). Further to this, in a study of Australian elite athletes, Albion and Fogarty (2003) reported higher levels of athletic identity to be associated with a lack of knowledge about occupations, as well as a general level of uncertainty expressed by these athletes as to where they could get further information to help them to make a career decision. With only 7% of aspiring young athletes reported to actually reach their ultimate goal in sport (Coakley, 2001), such outcomes may have significant negative repercussions in relation to the career opportunities open to those athletes who do not go on to fulfil their dream of being a professional athlete.

In their book titled *Backboards and Blackboards*, based on investigations of the way the life roles of the team members of a successful intercollegiate basketball team changed over the course of four seasons, Adler and Adler (1991) found that athletes started college with multiple competing life roles. It was noted that, as time went by, athletes slowly started to withdraw from all other roles, such as that of being a student, as their athletic role became more salient. An earlier study by Adler and Adler (1985), based on observations of the same sample, reported that the athletes began with optimistic expectations related to their academic careers, however, as a result of their progressive detachment from academics, gradually resigned themselves to inferior academic performance. In line with such findings,

Simons, Van Rheenen, and Covington (2008) reported the Grade Point Averages (GPAs) of Division I college student-athletes to be negatively correlated with their commitment to athletics, thereby lending support to the idea that an increased commitment to the athletic role may lead to a decrease in commitment to the academic role.

Carrying on with this same theme, a qualitative cross-sectional study conducted by Meyer (1990) investigated the athletic, academic, and social experiences of student-athlete college volleyball and basketball players, and the impact of gender on attitudes towards the academic role. Results indicated that the women showed an increased commitment towards their studies throughout their college careers, largely as a result of their academic, athletic, and social environments which helped them to maintain their positive attitude and commitment to the academic role. In contrast, it was reported that male athletes tended to lose interest with this role following freshman year (Meyer, 1990). In line with these findings, a study by Settles, Sellers, and Damas (2002) found female college athletes to outperform male athletes academically. This research highlights the existence of potential gender differences in relation to the endorsement of the academic role in some sporting contexts.

A more recent qualitative study of fourth and fifth year Canadian student-athletes conducted by Miller and Kerr (2003) reported that academic achievement was often compromised during freshman year due to athletic aspirations, thereby supporting the findings of Adler and Adler (1991). Despite this, athletes still reported the academic role to be important to them during this time, however acknowledged that they were unable to give it the attention that was required to perform well due to their sporting commitments. The study found that it was not until the athletes realised that their sporting goals would not be

met, that a shift in focus to the academic role followed. This resulted in a readjustment of their athletic goals, and a renewed enthusiasm for academics. This shift was found to occur towards their senior years (Miller & Kerr, 2003). Such results differ from those documented by Adler and Adler, but show support for the findings of Markus and Nurius (1986) that individuals develop and cast off many different identities throughout their lives. They also highlight the impact that situational influences can have upon the salience placed upon different life roles, as previously report by Turner et al. (1994).

2.8.6.2 Athletic identity and a balanced sense of self. Despite the results of the previously-mentioned studies, Horton and Mack (2000) found no evidence that a strong athletic identity causes an athlete to neglect other aspects of life, reporting that individuals with high levels of athletic identity ranked the athletic role no higher in their lives than those individuals with lower levels of athletic identity, and therefore were not considered to be restricted from experiencing other life roles. They found that adult marathon runners with both high and low levels of athletic identity rated the relative importance of being a marathon runner no differently when comparing this role to five other identities (e.g., family member, friend, employee, religious member, romantic partner).

Curry and Parr (1988) investigated the different identities of student-athletes attending a Christian college. It was found that, even though the athletes had high levels of athletic identity, they ranked their religious identity, as well as other identities, such as those related to family, academic, friend and romantic aspects of self, higher than their sport identity (Curry & Parr, 1988). Therefore, even though an athlete may be classified as having a high level of athletic identity, the importance of this aspect of themselves, when compared

to other aspects, such as their friendships, or doing well academically, may not rank as highly within their self-identity hierarchy.

A study conducted by Settles et al. (2002) with 200 intercollegiate student-athletes also found both academic and athletic roles to be rated as being highly important to their self-identities. Furthermore, this study reported that those athletes who were able to delineate between the two roles, that is, view them as being separate and not interfering with one another, rather than viewing them as being a single role, were found to have higher levels of psychological well-being (Settles et al., 2002). Such results offer support to Linville's (1987) self-complexity theory, and suggest that athletes can be well-rounded individuals who define themselves in relation to academic and social roles in addition to the athletic role.

Further to this, an earlier study conducted by Miller and Kerr (2002) reported that those athletes who maintain a good sport-life balance, that is, invest their time in academic and social goals, along with athletic goals, as opposed to devoting all of their time to their sport, perform better in the sporting arena, with many achieving personal bests. Such results provide an incentive for athletes to diversify their interests.

Again, as all of the aforementioned studies have used either intercollegiate or high school student-athletes from the USA, or athletes who compete in a particular sport (e.g., marathon running), it is questionable as to the extent to which the results can be generalized. One of the aims of this study is to investigate the levels of importance Australian elite athletes place upon both academic and non-academic aspects of self-identity. It is of interest as to whether the sport-related aspects of self will dominate the salience hierarchies of these athletes in relation to endorsed self-identity characteristics, or whether the non-sport related aspects will be equally acknowledged.

2.8.7 Athletic identity and retirement from sport. As previously mentioned, one of the negative outcomes that has been found to be associated with the possession of a strong and exclusive level of athletic identity is adjustment difficulties following retirement from sport. Athletes who possess a strong and exclusive level of athletic identity when they retire have been found to take longer to adapt to their post-sport career life, and to be more prone to experiencing significant professional, social, and emotional difficulties (Alfermann et al., 2004; Brewer et al., 1993; Cecic Erpic et al., 2004; Grove et al., 1997). It has also been reported that the longer it takes athletes to decrease the level to which they identify with the athlete role, the more prolonged this transition period will be (Cecic Erpic et al., 2004). Such results support Linville's (1985, 1987) notion that individuals with lower levels of self-complexity (i.e., less independent aspects of self) are more likely to react more intensely, and are less likely to cope, when faced with a significant life event, such as that which confronts an athlete when retiring from sport.

Lavallee, Gordon, et al. (1997) found that significant decreases in athletic identity were associated with perceived success in coping with retirement following their comparison of recently-retired athletes' current and retrospective athletic identity scores from three years earlier. These results suggest that the quality of adjustment may be facilitated if an athlete's level of athletic identity decreases (Lavallee, Gordon, et al., 1997). In light of this, and as mentioned previously, in order to avoid experiencing adjustment issues post-sport, athletes have been documented as successfully implementing coping strategies with the aim of redefining their identities prior to retirement in a deliberate attempt to decrease their level of engagement with the athlete role (Lally, 2007).

While the topic of athletic identity has attracted much attention in the career transition literature, there is a lack of studies examining the changes which may occur for athletes pre-retirement, once they have expressed their intention to retire from their sport. Changes may be in relation to not only their athletic identity, but also other aspects of their self-identity, and their psychological well-being. Therefore, a further aim of this dissertation was to investigate whether these constructs remain stable or change during the transition period from active participation in elite sport to retirement.

2.9 Relationships Between Athletic Identity and Self-identity Characteristics

This dissertation also sought to further investigate the relationship between an athlete's level of athletic identity and certain characteristics of self-identity endorsed by these individuals. Despite a significant amount of research being focused on the positive and negative impacts of athletic identity (see Tasiemski et al., 2004), and the changes that occur to this construct when an athlete faces transition difficulties (Alfermann et al., 2004; Brewer et al., 1993; Cecic Erpic et al., 2004; Grove et al., 1997), there is a limited amount of information available which identifies dominant dimensions of self-identity characteristics commonly possessed by individuals who have high levels of athletic identity.

Despite this, there have been some studies which have attempted to explore athletes' gender role orientations in order to see whether any links could be made between masculinity and the degree to which individuals identify themselves as an athlete. Both male and female athletes have been found to endorse the masculine gender role more so than non-athletes (Hinkle, 1994; Houseworth, Peplow, & Thirer, 1989). Furthermore, a study by Lantz and Schroeder (1999) reported high levels of athletic identity to be positively correlated with masculinity, and negatively related with femininity. This is unsurprising, due to the fact that

competitive sport has been linked to a number of *masculine* traits, such as dominance, tough-mindedness, and aggression (Aamodt, Alexander, & Kimbrough, 1982; Colley, Roberts, & Chipps, 1985).

This dissertation sought to determine whether a distinctive athletic profile exists in relation to the dimensions of self-identity characteristics (academic and non-academic) endorsed by elite athletes with high levels of athletic identity. It also aimed to explore whether there was evidence to suggest that the self-identity of elite athletes with high levels of athletic identity was dominated by the endorsement of physical characteristics, or if other non sports-related aspects of self-identity would be found to hold equal importance in determining how they feel about themselves.

2.10 Psychological Well-being

A further aim of this dissertation was to explore the influence of gender and age, aspects of achievement, and retirement status on the psychological well-being of this population. There are many different views in relation to what constitutes psychological well-being. A broad array of indicators have been shown to be central aspects of positive psychological functioning. These include self-acceptance, having positive relationships with others, having the capacity to effectively manage life and surroundings, a sense of self determination, a sense of continued growth and development as a person, and having a sense of purpose and meaning in life (Miller & Kerr, 2002; Van Raalte et al., 1997). However, in this dissertation, two constructs were used as indicators of general psychological well-being. These constructs are self-esteem and life satisfaction, both of which will combine to provide an indication of the positive evaluation of one's self and one's life. To follow is a review of the literature related to each of these constructs relevant to this research.

2.10.1 Self-esteem and life satisfaction. Life satisfaction has been defined as a cognitive evaluation of one's life as a whole (Shin & Johnson, 1978). It is important to note that a person's life satisfaction judgement depends upon the individual's comparison of his or her circumstances with a self-set standard, and therefore, is not something which is externally imposed upon the individual (Shin & Johnson, 1978).

Global or general self-esteem is defined by Harter (1999) as the evaluative aspect of the self-concept, or "the overall value that one places on the self as a person" (p. 67). An individual who has high levels of self-esteem has been defined as feeling satisfied with his/herself or to be of the belief that they are a person of worth (Rosenberg, 1985). For this reason, the term global self-esteem is also commonly referred to as self-worth.

Self-esteem is considered to be a good indicator of an individual's well-being (S. Harter, 1999; Rosenberg, 1986). Previous research within the general population has shown individuals possessing high levels of self-esteem to be more psychologically healthy (S. E. Taylor & Brown, 1988), less prone to depression (Tennen & Affleck, 1993), and to have higher levels of life satisfaction (Diener, 1984) than those with low self-esteem.

Within the sporting context, it has been found that self-esteem can be governed by athletic performance if the individual is highly committed to his or her sport (McPherson, 1980). A study conducted by Saint Phard, Van Dorsten, Marx, and York (1999) found perceived athletic competence to play an important role in the self-worth of female elite athletes. However, it was not shown to be an exclusive component or contributor, with other factors, such as appearance, social acceptance, relationships with friends and parents, and academic ability, also found to have an influence (Saint Phard et al., 1999). Further to this, a

study by Marsh et al. (1995) found global self-esteem to be related to a self-concept focused upon physical performance and appearance.

2.10.2 Differences in self-esteem and life satisfaction with age. Both life satisfaction and self-esteem are constructs which have been found to remain quite stable over time (Cummins, 1998; Trzesniewski, Donnellan, & Robins, 2003). Mroczek and Spiro (2005) conducted the first longitudinal study of life satisfaction, collecting data from 1927 males over a 22-year period. The results found significant individual differences which suggested that people can change at different rates, with some not changing at all. However, overall, life satisfaction was shown to increase to approximately age 65–70 years, before declining (Mroczek & Spiro, 2005). Impending death was one factor found to be associated with rate of change. A 12-year longitudinal study conducted by Gerstorf, Ram, Röcke, Lindenberger, and Smith (1999) with older individuals (age 70-103 years in the first occasion) also reported mortality-related decline (i.e., distance-to-death) in life satisfaction at the end of life.

A cross-sectional study conducted by Lang and Heckhausen (2001) also reported a curvilinear association between chronological age and subjective well-being (SWB), which included measures of both life satisfaction and experiences of positive and negative affect. The study used a sample of 480 adults aged from 20–90 years of age, also exploring whether perceived personal control had a role to play within this relationship. It found that a strong sense of control was not associated with benefits to SWB at all stages of development. Although high positive perceptions of control were found to protect young and middle-aged adults against the detrimental effects of failure and loss, many times such beliefs were more likely to be associated with lowered SWB in later adulthood. Therefore, it was concluded

that a strong sense of control can be of benefit to younger and middle-aged individuals, especially when faced with experiences which commonly result in negative affect (Lang & Heckhausen, 2001). This may have relevance to the transition experiences of athletic populations and their subsequent psychological well-being.

Levels of global self-esteem have been shown to change only slightly over long periods of time (Rosenberg, 1986). That is, if an individual is found to have a relatively high level of self-esteem at one point in time, it is highly likely that they will have this same high level of self-esteem if they were to be retested some years later. Despite this, there is general consensus as to the types of changes that occur in general self-esteem over the life-span, with studies reporting it to start at a relatively high level during childhood, to decline during adolescence, particularly for females, before rising gradually throughout adulthood, and declining in old age (Robins & Trzesniewski, 2005; Robins, Trzesniewski, Tracy, Gosling, & Potter, 2002). However, while previous research has shown that elite athletes have higher levels of self-esteem than both non-elite athletes and non-athletes (Kamal, Blais, Kelly, & Ekstrand, 1995; Mahoney, 1989; Marsh et al., 1997; Marsh et al., 1995), little is known about the self-esteem changes which occur across developmental periods in relation to this population.

2.10.3 Gender differences in self-esteem and life satisfaction. Research studies which have explored gender differences in self-esteem have produced mixed results, with many reporting females to have lower levels of self-esteem than males (Alpert-Gillis & Connell, 1989; Cate & Sugawara, 1986; Martinez & Dukes, 1991), while others have reported no consistent gender differences (Hayes et al., 1999; Maccoby & Jacklin, 1974; Wylie, 1979). There is, however, considerable research to suggest that consistent gender

differences in self-esteem occur during the period of adolescence, with boys found to typically report higher levels of self-esteem than girls (Block & Robins, 1993; Nottelmann, 1987; Wigfield et al., 1991). This has been found to be the case particularly during early adolescence (12–14 years of age), with girls shown to experience decreases in their levels of self-esteem during this period, while the self-esteem levels of boys have been shown to increase over this same stage of development (Block & Robins, 1993; Blyth, Simmons, & Carlton-Ford, 1983). Longitudinal studies have reported this difference between the self-esteem levels of boys and girls to grow larger, rather than reduce, by late adolescence (Block & Robins, 1993; Simmons & Rosenberg, 1975). A study by Rosenberg (1986) suggested that these gender differences are due to females experiencing more physical changes during this period of development (puberty) than their male counterparts. In relation to life satisfaction, males and females have been found to have similar overall levels of this construct (Diener, Suh, Lucas, & Smith, 1999).

2.11 Self-esteem, Life Satisfaction, and Athletic Identity

The final aim of this dissertation was to investigate whether any relationships existed between levels of athletic identity, life satisfaction, and self-esteem. While previous research has shown self-esteem to be a strong predictor of life satisfaction (Boschen, 1996; King, Richards, & Stemmerich, 1998; Raphael, Rukholm, Brown, & Hill-Bailey, 1996), studies which investigate the relationship between the athletic identity levels of athletes and these two constructs are limited and dated.

2.11.1 Athletic identity and psychological well-being. Those studies that have looked at the levels of life satisfaction of athletes have commonly focused upon the significant declines in this area following an athlete's retirement from elite sport (Cecic

Erpic, 1998; Werthner & Orlick, 1986). As previously mentioned, high levels of athletic identity have been found to be related to increased psychosocial problems during the transition period from active sport involvement to retirement, and have also been included as a measure in many of these studies. Despite this, life satisfaction has been found to be unrelated to this construct (Webb et al., 1998). The study conducted by Webb et al. (1998) aimed to investigate the relationship between athletic identity, psychological adjustment to retirement from sport, and the reason for career termination. Participants were 91 athletes who had competed at numerous levels from high school to professional sports. It was found that although athletic identity was related to retirement difficulties, there was no relationship between athletic identity and life satisfaction. Therefore, athletic identity was found to be related to the problems inherent in the retirement event, but unrelated to life satisfaction overall. That is, athletes with strong athletic identities do not necessarily report diminished life satisfaction following retirement (Webb et al., 1998).

Shachar et al. (2004) looked at the differences in athletic identity, transitional adjustment difficulties and life satisfaction of former athletes who chose to be coaches, and those who chose a career unrelated to sport following their retirement. Using retrospective recall, it was found that the two groups did not differ in athletic identity at the time of retirement; however, at the time of assessment, non-coaches were found to have significantly lower levels of athletic identity than those who had chosen to become coaches. There were no significant differences found in relation to transitional adjustment difficulties or life satisfaction of the two groups (Shachar et al., 2004), indicating that changes in athletic identity do not necessarily influence these factors.

Finally, as mentioned in Chapter 1, a positive self-identity has been shown to be correlated with positive self-esteem (Rosenberg, 1985; Tajfel & Turner, 1986). With this is mind, it would be assumed that a strong athletic identity would also have a positive impact upon an athlete's self-esteem. Despite this, there are no studies which have reported a direct relationship between these two constructs in elite athletes. However, previous studies have provided some evidence that high levels of athletic identity have some role to play in relation to an individual's feelings of self-worth. Brewer (1993) reported athletes with high levels of athletic identity to be more vulnerable to experiencing depressed mood following injury, due to the disruption it caused to their ability to engage in their sport, a role which these individuals use to define their worth. Also, as previously mentioned in relation to the self-protection hypothesis, athletes who face situations which challenge their identity as an athlete have been found to psychologically disengage from, or devalue, that particular aspect of self in order to maintain a positive image of self and feelings of self-worth (Brewer, et al., 2010; Lally, 2007; Major & Schmader, 1998).

Apart from investigating whether any relationships exist between levels of athletic identity, life satisfaction, and self-esteem, the present dissertation also seeks to explore any changes in athletic identity, self-esteem, and life satisfaction which occur over time, and to ascertain whether an athlete's retirement status has a role to play in any changes identified.

2.12 Conclusion

This chapter presented relevant literature related to the topics to be further investigated by this dissertation. These topics included the construct of self-identity and related identity theories, identity formation, and certain aspects of the self-concept literature. Research related to athletic identity, particularly the impact of personal factors, such as age

and gender, upon this construct were also discussed. Studies highlighting the positive and negative physical and psychosocial outcomes associated with the possession of a strong and exclusive level of athletic identity were summarised, along with the implications that this type of athletic identity has been found to have upon the transition experiences of athletes. The two indicators of psychological well-being to be used in this dissertation were defined and discussed, along with the studies outlining the relationship between these two constructs and athletic identity. Where available, results specific to elite athletes were presented.

The questions that this dissertation sought to address relevant to each of these main topics were presented within this review. The following three chapters relate to each of the three studies previously outlined in Chapter 1 respectively. The specific aims and objectives for each of these studies are presented at the start of each of these chapters.

Chapter 3 – Study 1

3.1 Introduction

The main purpose of this study was to further investigate aspects of the self-identities, including the athletic identity, of Australian elite athletes, and to explore the impact of a range of personal and situational influences upon these constructs, as well as upon the psychological well-being of these individuals. The data used for this study were collected in 2003 and consisted of a large sample of Australian elite athletes. It is hoped that the information derived from this study can provide some useful results which can then be further investigated by Study 2, which is a replication study using a different sample of the same population.

3.2 Overview of Study Aims and Hypotheses

This study had four main aims:

1. To investigate the self-identity characteristics endorsed by this sample, and the impact that demographic characteristics (gender and age), aspects of achievement (perceived academic achievement and level of athletic achievement), and retirement status (intention to retire versus no intention to retire) have upon these endorsements.
2. To investigate the impact of demographic characteristics, aspects of achievement, and retirement status upon levels of athletic identity, self-esteem, and life satisfaction.
3. To investigate the relationship between elite athletes' levels of athletic identity and the self-identity characteristics endorsed by these individuals to determine whether a distinctive athletic profile exists in relation to the identity characteristics expressed by this population.

4. To explore the relationship between the athletic identity levels, life satisfaction, and self-esteem of elite athletes.

The hypotheses of Study 1 are:

1. That elite athletes will strongly endorse the item of the SDQ III-summary items measure related to sporting/physical ability as being both an accurate representation of who they are as people, and as being important in determining their self-view.
2. That traditional sex stereotypes will be reflected in the differences between male and female athletes in relation to their endorsement of the accuracy of specific self-identity characteristics, with males found to have higher maths self-identity and females to show higher verbal and academic self-identity. It is further predicted that male athletes will also have higher physical ability and appearance self-identity than their female counterparts.
3. That very few significant differences will be found between the self-identity characteristics that athletes in both the teenage and emerging adulthood stages of development use to describe themselves.
4. That the importance ratings of sporting/physical ability will decrease significantly with age.
5. That those individuals in the emerging adulthood developmental stage would rate the items of the SDQ III importance scale related to relationships (i.e., with parents, members of same sex, and opposite sex) as being significantly more important than those individuals in other developmental stages.
6. That athletic identity will decrease significantly with age.
7. That life satisfaction and self-esteem scores will remain stable over time.

8. That elite athletes with higher levels of athletic identity, regardless of gender or developmental stage, will be more likely to rate sporting/physical ability as being an important determinant of their feelings about themselves.
9. That those athletes with no plans to retire will have significantly higher levels of athletic identity than those athletes who report intentions to retire from their sport within the next four years.
10. That life satisfaction will have a strong positive relationship with self-esteem.
11. That athletic identity will be unrelated to life satisfaction.
12. That there will be no significant gender differences in life satisfaction scores.

3.3 Method

The data used for this study were taken from the initial phase of data collection from the survey data collected during the five year longitudinal study (2003–2007) discussed in Chapter 1. The project received ethics clearance from the Australian Sports Commission's Human Research Ethics Committee (see Appendix A). As part of this larger project, information relating to athletic identity, self-identity, self-esteem, and life satisfaction was collected. It is this information which forms the basis of this study. The cover letter sent to the ACE advisers, who assisted in the distribution of surveys, and the full survey used for this phase of the study can be viewed in Appendix B and Appendix C respectively.

3.3.1 Participants

Participants in this study were from the first set of survey data collected during 2003. This was the largest data set collected over the five-year period of the study. The sample consisted of 917 elite athletes (476 females, 441 males) on scholarship at Australia's state or territory academies or institutes of sport. Participants ranged in age from 11 to 60 years (M = 19.3, SD = 4.9). These athletes represented all states and territories and 49 different sports,

with the largest numbers involved with basketball (99), soccer (83), swimming (80), hockey (73), cricket (61), rowing (60), water polo (57), netball (49), athletics (48), and baseball (44). All participants had access to the National ACE program. A total of 651 participants (71.3% of the sample) indicated that they had used ACE services.

As one of the aims of this study was to explore differences between individuals based on their developmental stage, the sample was broken into age groups accordingly. Initially, the ages of the sample were visually inspected, and it was found that the majority of the participants were aged between 12 and 40 years of age. This age range is commonly broken into two groups, known by Erikson (1959) as the adolescent (12–18 years) and young adult (19–40 years) developmental stages. However, this grouping excluded eight participants from the sample due to their failure to fall within these age ranges, with one participant of school-age (6–11 years), and five participants being in what Erikson would describe as the middle adult stage (41–65 years) of development. However, in acknowledgement of Arnett's (2000, 2004) concept of emerging adulthood (18–25 year olds), which was introduced in Chapter 2, the sample was broken into three groups accordingly. These groups included the *teenage* group, composed of those athletes 12 to 17 years (n = 405), the *emerging adulthood* group, composed of those athletes aged 18 to 25 years (n = 423), and the *adulthood* group, which included those athletes aged 26 years and over (n = 85). This grouping excluded the one school-age participant, along with three participants who did not specify their age. A total of four participants were therefore excluded from the sample, leaving 913 participants (476 females) with a mean age of 19.3 years (SD = 4.9).

3.3.2 Measures

3.3.2.1 Demographic and general information. The demographic data that were collected from participants included personal details, such as their names and the institute of sport they attended. The participant's age, gender, and type of sport with which he or she is involved were also recorded. Participants were also presented with five categories that encompassed all the services offered by the Athlete Career and Education (ACE) program (e.g. Education guidance and counselling, career counselling, etc.) and asked to indicate whether they had either *used,* were *aware but have not used,* or were *unaware* of each of the services. This was used as a general measure as to whether the participant had utilised any of the services offered by the ACE program. Details of the highest education level reached (e.g., completed high school, degree, etc.), as well as perception of current level of academic achievement (with options ranging from *well below average* to *above average*), were also self-reported by participants.

Responses to this latter section of the survey resulted in three groups of the *perceived level of academic achievement* factor being formed, which is one of two *aspects of achievement* to be investigated in this study. The three groups will be referred to as *below average*, which incorporated the athletes who indicated in the 2003 survey that they were either well below average or below average in academic achievement, and the *average* and *above average* groups, which are self-explanatory in relation to the categories represented.

Participants were also asked to indicate their highest level of athletic achievement. The options provided in the survey were *regional*, *state*, *national*, and *international* representation. Responses to this section of the survey resulted in three groups pertaining to the *level of athletic achievement* factor being formed, which is the second of the *aspects of*

achievement to be explored by this study. These groups will be referred to as *regional/state*, which incorporated the athletes who indicated they had competed at these two levels, and the *national* and *international* groups, which are self-explanatory in relation to the categories represented.

Finally, participants were asked about their intention to retire from active participation in their sport. They were asked the following initial question; "Do you plan to retire from elite level participation in your sport?" Four different timeframes to consider were given. These timeframes were *within the next 12 months?*, *within the next 2 years?*, *within the next 3 years?*, and *within the next 4 years?* Participants were then asked to indicate either *yes* or *no* for each of these timeframes.

Responses to this section of the survey resulted in two groups being formed to make the *retirement status* variable. Those participants who responded yes to any of the questions became known as the *intending* group, as they expressed an intention to retire from their sport within the next four years. Those participants who answered no to the initial question will be referred to as the *current* group, as they remain current in their sport with no intention to retire.

3.3.2.2 Athletic Identity Measurement Scale. The Athletic Identity Measurement Scale (AIMS; Brewer et al., 1993) is a 10-item scale which provides a measure of the extent to which an individual identifies as an athlete. A sample item is "I spend more time thinking about sport than anything else". Respondents indicate their level of agreement with the ten statements on a 5-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (s*trongly agree*). The total score is used to provide an overall measure of athletic identity, with higher scores indicating stronger identification with the athletic role. The reliability and construct validity

properties of the AIMS were established by Brewer et al. (1993). A study conducted by Daniels, Sincharoen, and Leaper (2005) using the 5-point scale response format, reported a Cronbach's alpha co-efficient for the scale of .82. A Cronbach's alpha of at least .70 is considered to be an acceptable level of adequacy (Netemeyer, Bearden, & Sharma, 2003; Ryff, 1995). Therefore, this result is indicative that the scale had a good level of internal consistency. The reliability estimates for this and other scales used in the current study will be provided in the Results section.

3.3.2.3 Self-Description Questionnaire III–summary items. Self-identity was measured using the Self-Description Questionnaire III-summary items (SDQ III-summary items; Marsh & O'Neill, 1984), a measure based on the multidimensional self-concept model proposed by Shavelson et al. (1976). The 12 summary description items are designed to parallel the multi-item self-concept scales on the SDQ III. As this measure was one of many included in the overall survey, for logistical reasons the SDQ III-summary items (12 questions) were chosen over the SDQ III multi-item (136 questions). The summary items measure 12 different facets of self-concept. These facets are: mathematical ability, physical appearance, honesty/reliability/trustworthiness, sporting/physical ability, verbal skills, emotional stability, parent relationships, academic ability (general), same-sex relationships, opposite-sex relationships, spirituality/religiosity, and problem-solving ability (see Table 1 located in Chapter 2 for further details related to each facet).

For this study, each summary item represented an aspect of self. Respondents were presented with a statement about each of these aspects and asked to indicate the item's accuracy (i.e., how accurate (true) the statement is as a description of themselves) and the item's importance (i.e., how important the description is in determining how they feel about

themselves). Items were rated on a 9-point scale, with 1 indicating *not accurate* or *not important*, and 9 indicating *very accurate* or *very important*. These scales were considered separately.

The full version of the SDQ III is one of the strongest multi-dimensional instruments available to measure the self-concept of populations within the late adolescent to early adulthood age group in terms of psychometric properties and construct validation (Byrne, 1996; Hattie, 1992). The external validity of the scale, as well as the reliabilities of the subscales, which range from the .80s to the low-.90s, has been demonstrated. A study conducted by Marsh (1986) investigated the reliability and validity of the 12-item measure and stated that the single-item summary scales provide an acceptable estimate of the scales of the multi-item measure that they are designed to parallel. Further studies have also confirmed the SDQ III-summary items measure to be psychometrically suitable for research purposes (Hardy & Moriarty, 2006; Marsh, Barnes, & Hocevar, 1985; Marsh & Jackson, 1986). The SDQ III-summary items measure will be referred to throughout this dissertation, from this point onwards, as the SDQ III.

3.3.2.4 General Esteem Questionnaire. Self-esteem was measured using a modified version of the General Esteem scale, which is the 13th subscale of the SDQ III (Marsh, 1990b). For this study, this amended scale will be referred to as the General Esteem Questionnaire (GEQ; Marsh, 1990b). Both the manual for the SDQ III (Marsh, 1990b), and two separate reports conducted by Hunter and Stringer (1993) and Maltby (1995) support the reliability and validity of the scale. Consisting of six statements related to perceptions of self, respondents were asked to indicate their level of agreement with these statements on a 7-point scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). It includes items such

as, “Overall, I don’t have much respect for myself”, and “Overall, I have a pretty positive feeling about myself”. The total score is used to provide an overall measure of general self-esteem ranging from 6 to 42, with values closer to 6 indicating lower levels of self-esteem.

3.3.2.5 Satisfaction With Life Scale. Satisfaction with life was measured using the Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985). This short and widely-used scale measures a person’s subjective evaluation of his or her life (Diener et al., 1985). Consisting of five statements related to life satisfaction, respondents are asked to indicate their level of agreement with these statements on a 7-point scale, ranging from 1 (*strongly disagree*) to 9 (*strongly agree*). It includes items such as, “I am satisfied with my life” and “In most ways my life is close to my ideal”. The total score is used to provide an overall measure of life satisfaction with scores ranging from 5 to 35, with values closer to 5 indicating lower levels of life satisfaction (Diener et al., 1985). Studies have demonstrated the validity and reliability properties of this scale (Arrindell, Meeuwesen, & Huyse, 1991; Diener et al., 1985; Lewis, Shevlin, Bunting, & Joseph, 1995; Pavot, Diener, Randall, & Sandvik, 1991; Shevlin, Brunsden, & Miles, 1998).

3.3.3 Procedure

Survey forms were sent to ACE advisers at all of Australia’s State or Territory Academies or Institutes of Sport. These surveys were then distributed to all athletes on scholarship (N = 2915) at these institutes and academies in 2003. Completed surveys were returned by 917 (476 females) athletes, giving a response rate of 31.5%.

3.4 Results

The first aim of this study was to investigate the self-identity characteristics possessed by elite athletes. In order to do this, the SDQ III was used to measure the characteristics of self-identity that elite athletes report as being accurate representations of who they are as a

person, and how important they rate specific dimensions of self to be. Therefore, this section firstly explored the athletes' mean ratings of the 12 items of the SDQ III for both the accuracy and importance scales in order to present some data related to those characteristics which are strongly endorsed by the sample for each scale, and those that are not.

MANOVAs were then performed to investigate whether there were any significant differences in the SDQ III accuracy and importance mean ratings as a result of participant demographic characteristics (gender and age), aspects of achievement (perceived academic achievement and athletic achievement), and retirement status, and whether any significant interactions exist between the factors explored within each of these three areas.

The second aim of this study was to explore the impact of age and gender, aspects of achievement, and retirement intentions upon levels of athletic identity (AIMS), self-esteem (GEQ), and life satisfaction (LSS). Therefore, MANOVAs were conducted to investigate whether significant differences were evident in the AIMS, GEQ, and LSS scores of male and female athletes, among the three developmental groups (teenage; emerging adulthood; adulthood), across the three academic achievement groups (below average; average; above average), as well as the three levels of athletic achievement (regional/state; national; international) explored within this study. An ANOVA was also conducted to ascertain whether the scores across these three measures differed significantly for those athletes with intentions to retire within the next four years and those with no intentions to retire.

The third aim of this study was to determine whether a distinctive athletic profile exists in relation to the identity characteristics expressed by this population. Correlation analyses were therefore performed to investigate the relationship between AIMS scores and both the accuracy and importance items of the SDQ III.

The fourth aim was to explore the relationship between the athletic identity levels, self-esteem, and life satisfaction of elite athletes, correlation analyses were performed to investigate the relationships between these three constructs. Before presenting the results of the hypothesis testing, the means and standard deviations for each of the 12 items of the accuracy and importance scales for the group as a whole were inspected in order to investigate which characteristics were most strongly endorsed by the group as being accurate representations of who they feel they are as a person, as well as which aspects they considered to be important to their self-view.

3.4.1 SDQ III Accuracy and Importance Item Rankings

3.4.1.1 Total sample. The means and standard deviations for each of the 12 items of the accuracy and importance scales of the SDQ III were computed for the total sample and are shown in Table 2. With N = 913, even trivial differences in means are significant, so no statistical tests were employed. From a visual inspection of the data, characteristics that were least endorsed were physical attractiveness (M = 5.87) and spirituality/religiosity (M = 4.03). The rank orders of attributes were shown to change slightly when athletes rated their importance. The characteristics rated as the most important determinants as to how they view themselves were honesty/reliability/trustworthiness (M = 8.19), good interactions with parents (M = 8.05), and emotional stability (M = 7.60). While sporting/physical ability was ranked as the most accurate descriptor, thereby supporting the hypothesis that this item of the SDQ III would be strongly endorsed as being an accurate self-descriptor, it was not as highly endorsed on the importance scale. This aspect of self was rated as being less important than many other attributes, ranking fifth behind verbal skills (M = 7.54). Academic ability (M = 7.17) was ranked sixth in the list, behind sporting/physical ability (M = 7.37). Just as

Table 2

SDQ III Accuracy and Importance Item Means and Standard Deviations for the Total Sample (N = 913)

	Accuracy		Importance	
Item	*M*	*SD*	*M*	*SD*
Sporting/physical ability	7.83	1.4	7.37	1.6
Physical attractiveness	5.87	1.7	5.56	2.1
Interactions opposite sex	7.00	1.7	6.93	1.7
Interactions same sex	7.30	1.6	7.14	1.7
Interactions with parents	7.57	1.7	8.05	1.5
Emotional stability	7.09	1.7	7.60	1.6
Spirituality/religiosity	4.03	2.5	4.07	2.6
Honest/reliable/trust	7.72	1.4	8.19	1.4
Verbal skills	7.10	1.5	7.54	1.5
Mathematical ability	6.51	1.7	6.66	1.8
Academic ability	6.76	1.7	7.17	1.7
Problem-solving ability	6.59	1.7	6.86	1.8

respondents had been least likely to describe themselves as physically attractive or spiritual/religious, they also considered these to be the least important determinants to how they see themselves when compared with their ratings of the other self-descriptors.

When considering the absolute values, the means of most items for both scales were found to be well above the mid-point (4.5) of the 9-point response scale. These results indicate that respondents felt that many of the characteristics listed by the SDQ III were both

accurate representations of who they feel they are as a person, as well as aspects they consider to be important to how they view themselves. The only item from both the accuracy and importance scale to be rated below the mid-point was that related to spirituality/ religiosity, with means of 4.03 and 4.07 respectively. This item was also found to have the largest standard deviation for both scales (2.5 and 2.6 respectively).

All other items, except for physical attractiveness, were found to be negatively skewed for both the accuracy and importance scales, with a large proportion responding to items as being very accurate and very important. The physical attractiveness item, when rated for both accuracy and importance, was the only item found to be normally distributed, indicating that the majority of athletes rated this item more towards the middle of each of the scales.

3.4.2 Testing for Group Differences: Demographic Characteristics

3.4.2.1 Gender. There is a limited amount of literature available which attempts to identify gender differences when exploring the specific dimensions of self-identity endorsed by elite athletes. One of the aims of this dissertation was to further explore these differences. It was hypothesised that traditional sex stereotypes, which, as previously discussed, have been shown to exist within self-concept research, would be reflected in the differences between male and female athletes on specific characteristics of self-identity, with males found to rate the maths-related item of the SDQ III higher than females, and females to rate their verbal and academic abilities significantly higher than their male counterparts. In addition, it was hypothesised that male athletes would rate their physical ability and physical attractiveness significantly higher than the female athletes.

For ease of inspection, the descriptive statistics for gender and age will be presented separately before testing main effects and interactions in a multivariate ANOVA. Accuracy and importance ratings will be analysed separately.

Because the descriptive statistics for the whole sample have already been shown (see Table 2), to conserve space in the main body of the dissertation, tables of descriptive statistics for various subgroups are reported as appendices. The means and standard deviations for each of the 12 subscales of the SDQ III for both accuracy and importance in relation to gender are shown in Appendix E.

As for the group as a whole, the mean scores for both the male and female groups were found to be well above the mid-point of the 9-point response scale for most items. Spirituality/religiosity was, once again, the only item from both the accuracy and importance scales to be rated below the mid-point, and to have the largest standard deviation scores. This was the case for both males and females.

The frequency histograms for each of the items were also inspected with similar results found. All items, except those related to spirituality/religiosity and physical attractiveness, were found to be skewed towards the negative end of the scale (very accurate or very important) for both groups. The spirituality/religiosity item was found to have a relatively flat, yet positively skewed, distribution for males and females, while the physical attractiveness item was found to be normally distributed for both scales for females, and normally distributed, yet slightly negatively skewed for males for both the accuracy and importance scales.

3.4.2.2 Age. This study aimed to investigate any differences in the self-identity dimensions endorsed by elite athletes from different developmental stages. The means and

standard deviations for each of the 12 subscales of the SDQ III for both accuracy and importance in relation to age are shown in Appendix F.

A visual inspection of the means confirmed a similar pattern to those discussed for previous groups, with most items well above the mid-point of the 9-point response scale, and the spirituality/religiosity item, once again, the only item rated below the mid-point of the scale for both the accuracy and importance scales for all groups.

The frequency histograms for the teenage and emerging adulthood groups were the same as those previously reported for both genders and the group as a whole. However, those for the adulthood group differed in that, rather than being negatively skewed, the item related to mathematical ability was found to be normally distributed, and the two items associated with relationships (with members of both the same and opposite sex) were found to shift slightly, peaking at a score of 7, rather than being more skewed towards ratings of 8 or 9. Further analyses will determine whether or not these observed differences between age group responses were, in fact, significant.

3.4.2.3 Analysis of group differences on the SDQ III accuracy scale. A 2 x 3 MANOVA was performed to investigate gender (female/male) and age differences (teenage/emerging adulthood/adulthood) in relation to the mean scores of the SDQ III accuracy ratings of self-descriptors, and as to whether a significant interaction between age and gender would be found. A significant difference was found for gender, $F(12, 853) = 8.78$, $p < .01$, and for age, $F(24, 1706) = 2.72$, $p < .01$, however, there was no significant interaction found between gender and age, $F(24, 1706) = 1.16$, $p > .05$.

Univariate tests were then conducted on the SDQ III accuracy items to investigate the source of differences between genders at the item level. To account for multiple testing, the

Bonferroni correction was used. The items significant at this level were found to be those related to sporting/physical ability, $F(1, 864) = 5.55$, $p < .05$, physical attractiveness, $F(1, 864) = 30.30$, $p < .01$, interactions with the opposite sex, $F(1, 864) = 6.65$, $p < .05$, emotional stability, $F(1, 864) = 15.73$, $p < .01$, mathematical ability, $F(1, 864) = 4.34$, $p < .05$, and problem-solving ability, $F(1, 864) = 11.31$, $p < .01$.

Male athletes were found to rate each of these items significantly higher than female athletes. These results support the hypothesis made that male athletes would report higher levels of physical ability and physical attractiveness than their female counterparts. Despite this, the hypothesis related to traditional sex stereotypes being reflected in the gender differences found was only partly supported. Male athletes were found to rate themselves as being better at mathematics than females, thereby supporting the hypothesis. However, female athletes were not found to rate themselves as having better verbal skills than their male counterparts.

When the SDQ III accuracy items were considered separately for age, it was found that there was a significant difference in relation to emotional stability, $F(2, 864) = 3.43$, $p < .05$, and academic ability $F(2, 864) = 4.72$, $p < .01$. Post-hoc tests using the Bonferroni correction were used to identify which groups differed in relation to these items. It was found that the teenage group (12–17 year olds) rated both their level of emotional stability and academic ability significantly higher than the emerging adulthood group (18–25 year olds). These results supported the hypothesis that there would be very few significant differences found between the self-identity characteristics that athletes in both the teenage and emerging adulthood stages of development use to describe themselves. There were no significant differences found in relation to the adulthood group for this item.

3.4.2.4 Analysis of group differences on the SDQ III importance scale. The same analyses (2 x 3 MANOVA) were performed to investigate gender and age differences in relation to the mean scores of the SDQ III importance ratings of self-descriptors. A significant difference was found for gender, $F(12, 845) = 3.13$, $p < .01$, and for age, $F(24, 1690) = 3.85$, $p < .01$, however, there was no significant interaction found between gender and age, $F(24, 1690) = 1.16$, $p > .05$.

When the SDQ III importance items were considered separately for gender, the only item found to be significant was that related to interactions with the opposite sex, $F(1, 856) = 4.16$, $p < .05$. Male athletes were found to rate this item significantly higher than their female counterparts.

Four items were found to be significant in relation to age. These items related to sporting/physical ability, $F(2, 856) = 9.13$, $p < .01$, interactions with the same sex, $F(2, 856) = 3.46$, $p < .05$, mathematical ability, $F(2, 856) = 4.25$, $p < .05$, and academic ability, $F(2, 856) = 11.48$, $p < .01$. Post-hoc tests using the Bonferroni correction found the teenage group to rate the importance of sporting/physical ability significantly higher than both the emerging adulthood and adulthood groups, and the emerging adulthood group to rate the importance of this item significantly higher than the adulthood group. These results support the hypothesis that the importance of sport/physical ability would be shown to decrease significantly with age.

The teenage group was also found to rate the importance of interactions with members of the same sex significantly higher than the adulthood group. In relation to mathematical ability, the teenage group rated this item significantly higher than the emerging adulthood group in terms of importance, while it was the teenage group that was found to rate

academic ability as being more important than both of the older (emerging adulthood and adulthood) groups.

3.4.3 Testing for Group Differences: Aspects of Achievement

3.4.3.1 Perceived academic achievement. A further aim of this study was to investigate any differences in the self-identity dimensions endorsed by elite athletes with differing perceptions of their academic achievements. The means and standard deviations for each of the 12 subscales of the SDQ III for both accuracy and importance in relation to perceived academic achievement are shown in Appendix G.

Once again, there were similar patterns in the overall ratings and frequency histograms for both the accuracy and importance scales of the SDQ III to those discussed for the demographic characteristic groups. The only differences observed were in relation to the frequency histograms for the last four items (verbal skills; mathematical ability; academic ability; problem-solving ability) of the accuracy scale, all of which are related to differing aspects of academic self-identity. The observed differences related to the average group being found to have more normally distributed responses (with peaks from 5–7 out of 9) to these items, while the responses of the above average group were negatively skewed (with peaks from 7–9). These results were unsurprising due to the fact that the groups were based upon athlete perceptions of their academic achievement.

3.4.3.2 Level of athletic achievement. Along with exploring differences in relation to perceived academic achievement, this study also sought to explore whether self-identity dimensions endorsed by elite athletes changed as a result of the different levels of athletic achievement reached in their sport. The means and standard deviations for each of the 12

subscales of the SDQ III for both accuracy and importance in relation to the level of athletic achievement are shown in Appendix H.

A visual inspection of the means confirms that the same patterns continue to re-emerge as has been found for all other groups as far, with most items well above the mid-point of the 9-point response scale, the spirituality/religiosity item being the only item rated below the mid-point of the scale for both the accuracy and importance scales for all groups, and the frequency histograms showing the same outcomes as was found for the groups related to both age and gender.

3.4.3.3 Analysis of group differences on the SDQ III accuracy scale. A 3 x 3 MANOVA was performed to investigate perceived academic achievement (below average/average/above average) and level of athletic achievement (state-regional/national/international) in relation to the mean scores of the SDQ III accuracy ratings of self-descriptors, and as to whether a significant interaction between these two factors would be found. A significant difference was found for perceived academic achievement, $F(24, 1636) = 8.82$, $p < .01$, however, there was no significant main effect for level of athletic achievement, $F(24, 1636) = 1.36$, $p > .05$, and no significant interaction between the two factors, $F(48, 3153) = 1.02$, $p > .05$.

Univariate tests were then conducted on the SDQ III accuracy items to investigate the source of differences between the three academic achievement groups at the item level. To account for multiple testing, the Bonferroni correction was used. The items significant at this level were found to be those related to honesty/reliability/ trustworthiness, $F(1, 829) = 5.82$, $p < .05$, verbal skills, $F(1, 829) = 4.65$, $p < .01$, mathematical ability, $F(1, 829) = 31.50$, $p < .01$, academic ability, $F(1, 829) = 89.02$, $p < .01$, and problem-solving ability, $F(1, 829) =$

20.77, $p < .01$. The above average group were found to rate the items related to honesty/reliability/trustworthiness, verbal skills, and problem-solving ability significantly higher than those athletes in the average group. The above average group were also found to rate themselves significantly higher in problem-solving ability item than the below average group. All three groups were shown to be significantly different in their responses to the items related to mathematical ability and academic ability. Athletes who were higher in their perceived academic achievement were found to have higher accuracy ratings in relation to both the mathematical and academic ability items. That is, athletes who perceived themselves to be above average in academic achievement scored themselves as having better academic and mathematical abilities than those athletes who felt that their academic achievements were of a lower standard.

3.4.3.4 Analysis of group differences on the SDQ III importance scale. A 3 x 3 MANOVA was performed to investigate achievement differences in relation to the mean scores of the SDQ III importance ratings of self-descriptors. Once again a significant main effect was found for perceived academic achievement, $F(24, 1620) = 2.70$, $p < .01$, but not for level of athletic achievement, $F(24, 1620) = 1.32$, $p > .05$. There was no significant interaction found between academic and athletic achievement, $F(48, 3122) = 1.15$, $p > .05$.

When the SDQ III importance items were considered separately for perceived academic achievement, the three items found to be significant were those related to mathematical ability, $F(2, 821) = 9.94$, $p < .01$, academic ability, $F(2, 821) = 20.25$, $p < .01$, and problem-solving ability, $F(2, 821) = 7.06$, $p < .01$. The above average academic group rated the items related to mathematical ability and problem-solving ability as being significantly more important than did those athletes in both the below average and average

academic groups. All three groups were shown to be significantly different in their ratings of the importance of academic ability, with the ratings of importance found to decrease with perceptions of academic achievement. Therefore, elite athletes with lower perceptions of their academic achievements were found to place less importance on the academic aspects of their self-identity.

3.4.4 Testing for Group Differences: Retirement Status.

3.4.4.1 Retirement status. A further aim of this study was to investigate any differences in the self-identity dimensions endorsed by elite athletes with and without intentions to retire from elite sport. The means and standard deviations for each of the 12 subscales of the SDQ III for both accuracy and importance in relation to retirement intentions are shown in Appendix I.

From a visual inspection of the means, it was shown that the items related to sporting/physical ability, honesty/reliability/trustworthiness, and having good interactions with parents continued to be the most highly rated items on the accuracy scale for both groups, with the top two importance items (honesty/reliable/trustworthy and interactions with parents) also holding their positions. There were no remarkable changes found in the frequency histograms for the items of both of the scales, with most items found to be negatively skewed, except for the items related to physical attractiveness, which continued to be normally distributed, and the spirituality/religiosity items, which were slightly positively skewed.

There was one notable difference observed within the data which related to the importance ranking of the sporting/physical ability item both between the two retirement status groups, as well as when comparing the importance scale rankings of this item to that of

the group as a whole. The sporting/physical ability item was previously found to be ranked fifth in terms of importance by the overall group (N = 913). However, this item was ranked seventh behind verbal skills, emotional stability, academic ability and problem-solving ability by the athletes from the intending group, and fifth by the athletes from the current group behind the items related to emotional stability and verbal skills. Therefore, those athletes with no intentions to retire were found to rank this item similarly to the overall group, whereas those athletes who indicated their intention to retire rated their sporting/physical ability to be less important. The following section will determine whether these differences between groups were significant.

3.4.4.2 Analysis of group differences on the SDQ III accuracy scale. A MANOVA was performed to investigate the impact of retirement status on the mean scores of the SDQ III accuracy ratings of self-descriptors. No significant differences were observed between those athletes who had intentions to retire within a four year period and those who did not, $F(12, 847) = 1.57$, $p > .05$.

3.4.4.3 Analysis of group differences on the SDQ III importance scale. A MANOVA was then performed to explore the influence of athletes with and without retirement intentions on the mean scores of the SDQ III importance ratings of self-descriptors. Significant differences were found, $F(12, 840) = 3.84$, $p < .01$, with univariate tests finding these differences to be linked to the items related to sporting/physical ability, $F(1, 851) = 17.19$, $p < .01$, and interactions with members of the same sex, $F(1, 851) = 4.98$, $p < .05$. Athletes who had no plans for retirement were found to rate both items as being significantly more important than those athletes who expressed an intention to retire within the next four years.

3.4.5 Athletic Identity, Self-esteem, and Life Satisfaction

A further aim of this study was to investigate the impact of age and gender, aspects of achievement, and retirement intentions upon levels of athletic identity, self-esteem, and life satisfaction. Based on the outcomes of previous research, it was hypothesised that athletic identity levels would decrease with age, from the teenage stage of development through to adulthood. However, it was predicted that there would be no significant changes in levels of life satisfaction or self-esteem as a result of age. Furthermore, it was hypothesised that there would be no significant gender differences in life satisfaction scores.

Prior to testing hypotheses, reliability estimates, as measured by Cronbach's alpha (1951), were calculated for each of the three scales to assess internal consistency. As mentioned in the Method section, a Cronbach's alpha of .70 or over is considered to be an acceptable level of adequacy for research purposes (Netemeyer, et al., 2003; Ryff, 1995). It was established that all scales were reliable measures, with Cronbach's alpha of .78, .74, and .79 for the AIMS, GEQ, and the LSS respectively.

3.4.5.1 Analysis of group differences. The means and standard deviations for each of the three measures in relation to the respective groups associated with gender, age, perceived academic achievement, level of athletic achievement, and retirement intentions are displayed in Table 3.

In order to investigate whether any differences exist in relation to AIMS, GEQ, and LSS scores both within and between the groups within the three main variables (age and gender, aspects of achievement, retirement intentions), a series of MANOVAs were conducted. The results will now be presented.

Table 3

Means and Standard Deviations for the AIMS, GEQ, and LSS for all Groups Related to Age and Gender, Aspects of Achievement, and Retirement Status.

			AIMS		GEQ		LSS	
Variable	Groups	n	M	SD	M	SD	M	SD
Gender	Male	437	36.63	5.8	33.58	5.4	25.39	5.5
	Female	476	36.06	5.2	32.36	5.5	24.54	5.1
Age	Teenage	405	37.14	5.6	32.51	5.9	25.02	5.3
	Emerging Adult	423	36.07	5.2	33.15	5.2	24.82	5.3
	Adult	85	33.82	5.4	33.99	5.2	25.24	5.2
Academic	Below average	18	38.50	7.1	31.17	6.2	25.44	5.9
Achievement	Average	366	37.27	5.6	31.96	5.5	24.34	5.2
	Above average	500	35.59	5.2	33.82	5.3	25.36	5.3
Athletic	Regional/State	92	37.45	5.0	31.05	5.4	23.81	5.2
Achievement	National	369	36.54	5.6	32.55	5.2	24.90	5.2
	International	446	35.98	5.5	33.65	5.6	25.22	5.3
Retirement	Intending	180	34.07	5.5	32.62	5.7	24.14	5.3
status	Current	721	36.95	5.3	33.06	5.4	25.15	5.3

3.4.5.2 Age and gender. A two-way between groups (2 x 3) ANOVA was performed to investigate age and gender differences in relation to AIMS, GEQ, and LSS scores, and as to whether there was a significant interaction between these two demographic characteristics. A significant difference was found for age, $F(6, 1702) = 6.58$, $p < .01$, and for gender, $F(3,$

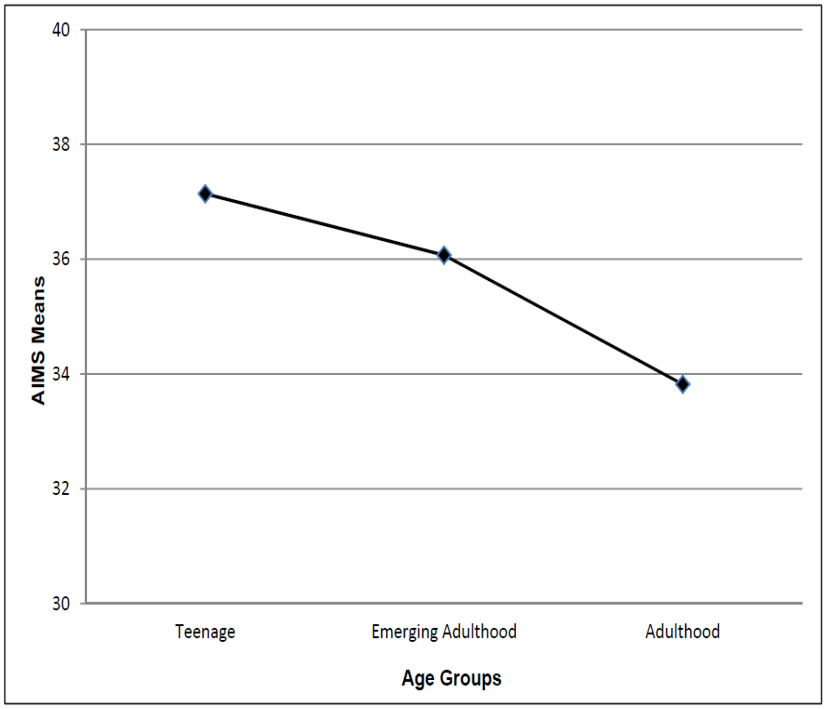

Figure 2. AIMS means across the three age groups for Study 1.

851) = 3.18, $p < .05$. However, there was no significant interaction found between age and gender, $F(6, 1702) = 2.08$, $p > .05$.

In relation to age, significant differences were found for both athletic identity, $F(2, 853) = 15.16$, $p < .01$, and self-esteem, $F(2, 853) = 3.98$, $p < .05$. Figures 2 and 3 show a graphical representation of the AIMS and GEQ means across the three age groups respectively. Post-hoc tests using the Bonferroni correction revealed all three age groups to have significantly different AIMS scores. The teenage group reported the highest athletic identity levels, following by the emerging adulthood group, and then the adulthood group. These results supported the hypothesis that athletic identity would decrease significantly with age.

In relation to self-esteem levels, significant differences were found between the adulthood group and the teenage group, with the adulthood group reporting significantly

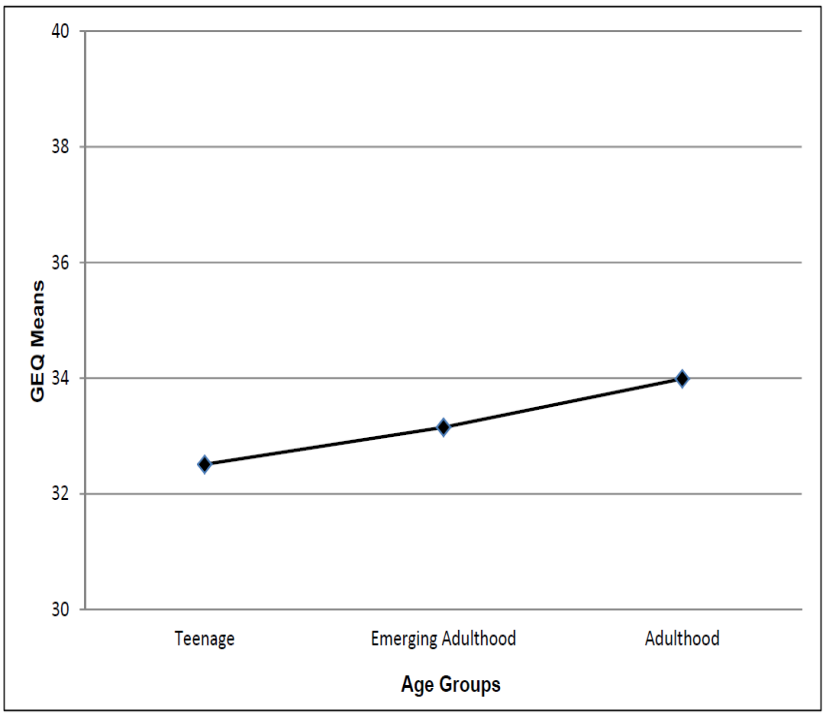

Figure 3. GEQ means across the three age groups for Study 1.

higher levels of self-esteem. These results indicate that self-esteem levels increased with age, thereby not supporting the hypothesis that self-esteem levels would remain stable over time. In terms of life satisfaction, no significant differences were found in relation to LSS scores as a result of age. These results support the hypothesis that life satisfaction would not change significantly over time.

When it came to gender, significant differences were found for self-esteem, $F(1, 853) = 9.19$, $p < .01$, with males found to have significantly higher levels of self-esteem than their female counterparts. However, no significant gender differences were shown to exist in relation to life satisfaction. Therefore, the hypothesis that there would be no significant gender differences in life satisfaction scores was supported.

3.4.5.3 Aspects of achievement. A two-way between groups (2 x 3) ANOVA was performed to investigate differences in the AIMS, GEQ, and LSS scores in relation to

perceived academic achievement and levels of athletic achievement, and as to whether a significant interaction between these two variables would be found. A significant difference was found for perceived academic achievement, $F(6, 1626) = 5.45$, $p < .01$, and for level of athletic achievement, $F(6, 1626) = 2.40$, $p < .05$. However, there was no significant interaction found, $F(12, 2151) = 1.25$, $p > .05$.

Significant differences were found for both perceived academic achievement, $F(2, 815) = 7.08$, $p < .01$, and level of athletic achievement, $F(2, 815) = 3.88$, $p < .05$, in relation to the AIMS. Figures 4 and 5 show a graphical representation of the AIMS means across the perceived academic achievement groups and athletic achievement groups respectively.

For perceived academic achievement, post-hoc tests using the Bonferroni correction revealed the average group to have significantly higher levels of athletic identity levels than the above average group. In terms of level of athletic achievement, the regional/state group were shown to have significantly higher levels of athletic identity than the international group.

There were also significant differences in self-esteem found in relation to perceived academic achievement, $F(2, 815) = 7.83$, $p < .01$, with post-hoc tests using the Bonferroni correction showing the above average group to have significantly higher levels of self-esteem than the average group. Figure 6 provides a graphical representation of the GEQ means across the perceived academic achievement groups.

3.4.5.4 Retirement status. A MANOVA was performed to explore the impact of an athlete's retirement status upon AIMS, GEQ, and LSS scores. A significant difference was found for the intending group, $F(3, 845) = 16.18$, $p < .01$. Significant differences were

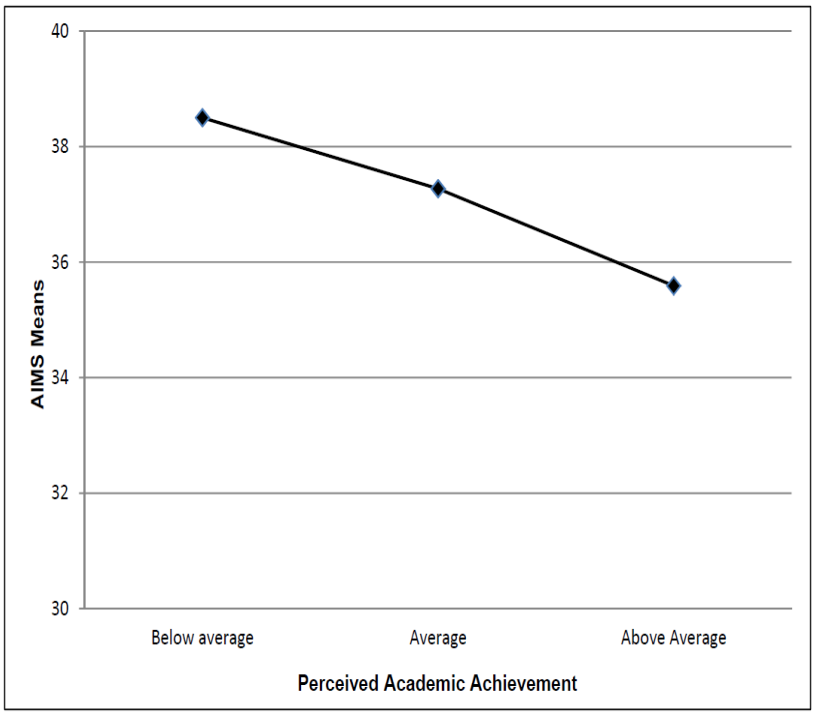

Figure 4. AIMS means for the three perceived academic achievement groups for Study 1.

shown to exist for both AIMS scores, $F(1, 847) = 41.32$, $p < .01$, and LSS scores, $F(1, 847) = 5.22$, $p < .05$. Those athletes who had no plans to retire were found to have significantly higher levels of athletic identity than those athletes who indicated they planned to retire within the next four years, thereby supporting the hypothesis. They were also found to have significantly higher levels of life satisfaction than those athletes with retirement intentions.

3.4.6 Analysing Relationships

3.4.6.1 Athletic identity and self-identity characteristics. This study also aimed to explore relations between athletic identity as measured by AIMS, and endorsed self-identity characteristics as measured by SDQ III. It was hypothesised that the importance of sporting/physical ability would significantly correlate with athletic identity. The correlations for the total sample are presented in Table 4. In terms of the accuracy component of the SDQ III, athletic identity was negatively correlated with mathematical ability ($r = -.121$, $p < .01$)

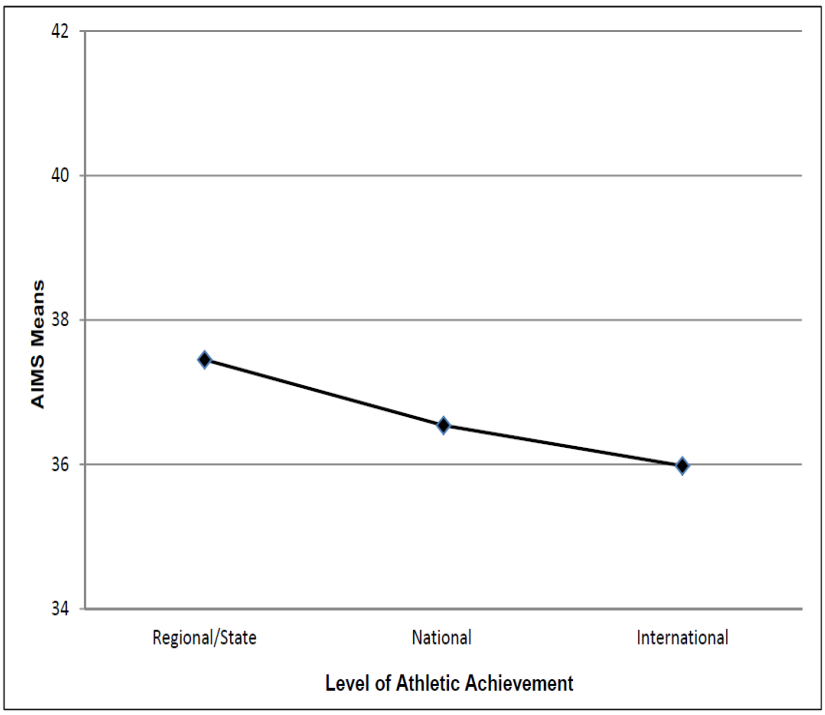

Figure 5. AIMS means for the three levels of athletic achievement for Study 1.

and academic ability (r = -.113, p < .01). In terms the importance component of the SDQ III, athletic identity was significantly correlated with sporting/physical ability (r = .260, p < .01), thereby supporting the hypothesis. Athletic identity was also found to share a significant positive relationship with the verbal skills item (r = .101, p < .01). While significant, these correlations are less than .30 and, therefore, each would be considered to be a weak effect (Cohen, 1988).

3.4.6.2 Athletic Identity, Self-esteem and Life Satisfaction. This study also aimed to explore the relationship between the athletic identity levels, self-esteem, and life satisfaction of Australian elite athletes. It was hypothesised that while there would be no relationship found between athletic identity and life satisfaction, levels of athletic identity would be found to be significantly associated with self-esteem scores. Also, it was predicted that life satisfaction and self-esteem levels would be positively correlated.

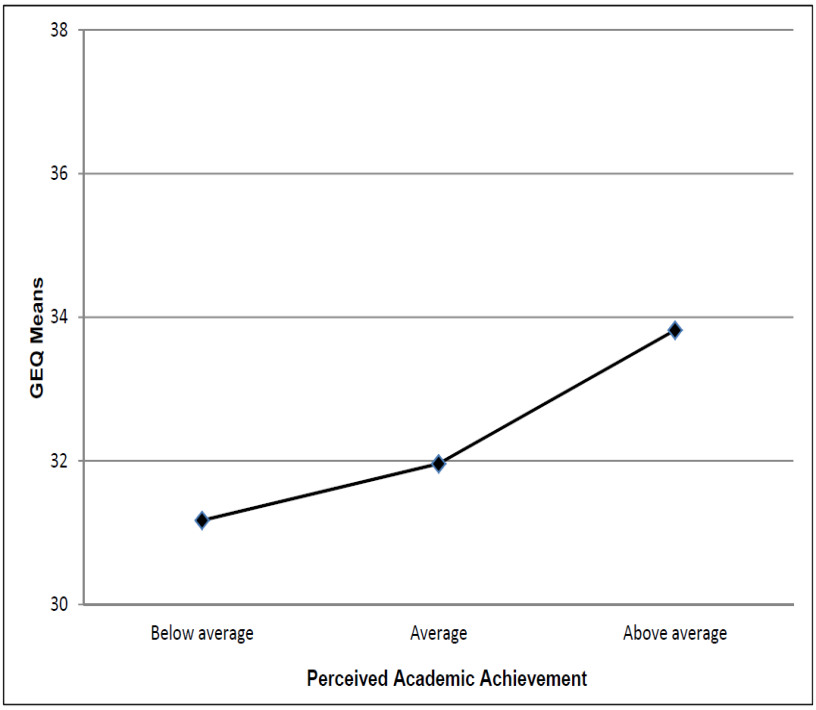

Figure 6. GEQ means for the three perceived academic achievement groups for Study 1.

As hypothesised, no significant relationship was shown to exist between life satisfaction and athletic identity scores (r = -.055, p > .05). However, self-esteem and athletic identity scores were found to have a significant negative relationship (r = -.089, p <.01). As the correlation coefficient was <.3, the effect size was weak (Cohen, 1988). These results indicate that as AIMS scores increase, self-esteem levels have a slight tendency to decrease. In order to further investigate this significant result, analyses were conducted to check whether the significant correlation between athletic identity, as measured by the AIMS, and self-esteem, as measured by the GEQ, was moderated by the demographic variables of age and gender, which were already examined. These two variables were not found to moderate the relations shown. As hypothesised, life satisfaction and levels of self-esteem were found to be positively correlated (r = .606, p < .01), thereby supporting previous studies (Boschen, 1996; King, et al., 1998; Raphael, et al., 1996). These results indicate that athletes with high life

Table 4

Pearson Correlations Between AIMS and SDQ III for the Total Sample (N = 889)

SDQ III Items	Accuracy	Importance
Sporting/physical ability	.037	.260**
Physical attractiveness	-.022	.058
Interactions opposite sex	-.014	-.010
Interactions same sex	.008	.048
Interactions with parents	-.015	.008
Emotional stability	-.025	-.022
Spirituality/religiosity	-.004	-.028
Honest/reliable/trust	-.017	.014
Verbal skills	.066	.101**
Mathematical ability	-.121**	.000
Academic ability	-.113**	-.026
Problem-solving ability	-.085*	-.033

Note: * $p < .05$. ** $p < .01$.

satisfaction scores are likely to also score highly in relation to their self-esteem. As the correlation coefficient was >.50, this effect size was strong (Cohen, 1988).

3.5 Discussion

This section will provide a summary of the significant findings of the current study. As the following study (Study 2) will attempt to replicate these findings with a different sample of Australian elite athletes, further elaboration related to the reasons for, and

implications of, the results will be deferred until these analyses have been performed and provided in the discussion section of Study 2.

In the current study, the characteristics of self-identity that athletes reported as being accurate representations of who they are as people, and how important they rated specific dimensions of self to be in determining this view were found to be consistent, transcending both gender and stage of development. A strong pattern was established, with the athletes continually identifying themselves as possessing a high level of sporting/physical ability, as being honest and reliable individuals, and as having good interactions with their parents. They also were consistently found to rate honesty and the interactions they shared with their parents as two aspects that were particularly important in determining how they felt about themselves. On the other end of the scale, physical attractiveness and spirituality/religiosity were rated as being both the least accurate and the least important determinants of self-identity when compared with the other SDQ III items.

The data obtained from this study were compared to the descriptive SDQ III data collected by Marsh et al. (1995) in their study comparing the self-concepts of elite athletes and those of the general population. Although Marsh et al.'s study had a small elite athlete sample (N = 83) from which to draw their comparisons, as well as using the full 136-item SDQ III instrument with an 8-point response scale (1 = *definitely false* to 8 = *definitely true*), as opposed to the SDQ III-summary items measure with a 9-point response scale used in this study, the final results of both studies were very similar. In the Marsh et al. study, both male (n = 36) and female (n = 47) elite athletes were found to rate the physical ability and parent interaction scales of the SDQ III as their highest two self-concepts respectively, with the spirituality/religiosity scale rated as the lowest for both genders. The honesty scale was the

third highest-rated self-concept for female athletes, while the same-sex interactions scale was rated in the same position for the male sample. The consistency of the aspects of self-concept supported by both male and female athletes across all developmental stages for the current study, as well as the similarity to results from the Marsh et al. study, suggests that these are characteristics of self which are commonly endorsed by this population.

A number of gender differences were found in relation to the accuracy ratings of the SDQ III self-descriptors. Male athletes felt that they had more sporting/physical ability, were more attractive, had better interactions with the opposite sex, were more emotionally stable, and were better at mathematics and problem-solving than their female counterparts.

There was only one significant difference observed between genders in relation to the importance ratings of the SDQ III. Male athletes were found to rate interactions with the opposite sex significantly higher in importance than female athletes. Apart from this one significant result, it appears that both genders have similar perspectives in terms of the importance of the 12 aspects of self-concept presented by the SDQ III.

Viewing the data from a purely descriptive point of view, sporting/physical ability was rated in fifth position by both genders in terms of importance. It is necessary to highlight that, even though this item was not rated within the top three important characteristics, it was still shown to be strongly endorsed by both male and female athletes, with mean ratings of 7.40 and 7.34 respectively out of a possible 9 on the response scale. This result is particularly noteworthy as it indicates that, even though elite athletes report sporting/physical ability as being an important characteristic in determining how they feel about themselves, there are other specific non sport-related aspects of their lives and self, such as being honest and having a strong relationship with their parents, that they consider to

be equally, if not more, important in this respect. This outcome will be further discussed at the end of Study 2 in relation to identity theory (Stryker & Serpe, 1982) if replicated.

On the other end of the scale, physical attractiveness and spirituality/religiosity remained the two lowest rated attributes in relation to both accuracy and importance for both genders, with the spirituality/religiosity item consistently being the only one of the twelve items of the SDQ III to be rated below the mid-point (4.5) of each of the response scales. However, as discussed, the frequency histograms of the responses for this item were consistently found to have a relatively flat, yet negatively-skewed, distribution, as well as the largest standard deviation scores in comparison to all other items. These results indicate that the responses to this item were the most variable of all attributes addressed, suggesting that while some athletes do not consider themselves to be spiritual or religious, there are certainly those that consider the spiritual/religious element to be an important part of their lives.

Developmentally, there were limited differences found when comparing athletes in relation to the SDQ III accuracy self-descriptors they endorsed. The younger (teenage) athletes were found to rate themselves higher than the older (emerging adulthood) athletes in two areas: emotional stability and academic ability. These results support the hypothesis that very few significant differences would be found between the self-identity characteristics that athletes in both the teenage and emerging adulthood stages of development use to describe themselves. There were no significant differences observed between athletes in emerging adulthood and those in the adulthood group.

When viewed descriptively, the data show the emerging adulthood group to have higher mean scores for four of the SDQ III accuracy items. These items were those associated with physical attractiveness, interaction with parents,

honesty/reliability/responsibility, and verbal skills. It will be of interest to see whether the same significant differences and data trends are replicated in Study 2 with a different sample of the same population, the reasons for which will be elaborated upon at that time.

The importance of academic ability and sporting/physical ability in determining how individuals felt about themselves was highlighted as a point of difference between the younger and older athletes, with the teenage athletes rating these aspects significantly higher overall. The importance rating of academic ability was found to decline with increasing age, with the teenage group rating it as significantly more important than both of the older groups. Teenage athletes also rated the importance of their mathematical ability significantly higher than the emerging adulthood athletes. These results are understandable given the majority of athletes in the teenage stage of development would still be attending high school, thereby reinforcing the importance of these areas.

The importance ratings of sporting/physical ability was found to decrease as the ages of the groups increased, with a significant difference existing between the teenage group and both of the older groups of athletes (emerging adulthood and adulthood), and the emerging adulthood group shown to rate the importance of this item significantly higher than the adulthood group. These results support the findings of previous studies which reported the importance of the athlete role to decrease over time (Greendorfer & Blinde, 1985; Lally & Kerr, 2005; Miller & Kerr, 2003).

Those athletes who expressed intentions to retire within the next four years were found to rate the importance of sporting/physical ability significantly less than those who had no retirement intentions. Furthermore, these same athletes were also found to have

significantly lower levels of athletic identity than those athletes with no plans to retire. If replicated by Study 2, these findings will add to the psychological career transition literature.

Moving back to the results found in relation to the importance subscale of the SDQ III and age, no significant differences were found between the emerging adulthood group compared with the other developmental groups in relation to the importance of the relationship aspects of self-identity. This hypothesis was proposed based on previous literature which highlighted emerging adulthood as a developmental stage where the closeness aspects of relationships become increasingly important (Arnett, 2000; Montgomery, 2005). Therefore, a relationship focus has not been found to be a significant difference for emerging adulthood athletes when compared with both older and younger athletes. Despite this, the teenage athletes were found to rate the importance of having good interactions with members of the opposite sex as being significantly more important than those athletes in the adulthood stage of development.

When exploring the impact of aspects of achievement upon the accuracy and importance ratings of the SDQ III self-descriptors, the level of athletic achievement reached by athletes within the sample was not found to be significant. Therefore, athletes in this sample who competed internationally were shown to view themselves comparably to athletes who compete at national or at regional/state level.

In contrast, the responses given to the SDQ III accuracy and importance scales did differ significantly as a result of the athletes' perceptions of their academic achievements. As there were no hypotheses related to this variable, the significant results will be briefly summarised and discussed in more detail in Study 2 if replicated. Firstly, those athletes who rated themselves as above average academically were shown to have significantly higher

means on the accuracy scale in relation to problem-solving abilities than those athletes who rated themselves as being average. Further to this, the average group rated themselves significantly higher than the below average group on this same item.

Secondly, all three academic achievement groups (above average, average, and below average) were found to differ significantly in their endorsement of the accuracy items related to academic and mathematical abilities. Athletes who rated themselves as above average had the highest ratings on the accuracy scale, while those in the below average group rated themselves significantly lower on these items. This was also the case in terms of the importance rating of the academic ability item, with those who had lower perceptions of their academic achievement placing less importance on this particular ability.

Finally, the athletes who perceived themselves to be above average in their academic achievements also felt that they were more honest and had better verbal skills than those athletes who rated themselves as having an average level of academic achievement. This group was also shown to rate the importance of both mathematical and academic abilities significantly higher than the athletes with lower perceptions of their academic achievements (below average and average groups).

In accordance with previous studies, it was hypothesised that athletic identity levels would decrease with age, from the teenage stage of development through to adulthood (Brewer, 1993; Brewer & Cornelius, 2001; Brewer et al., 1993; Van Raalte et al., 1992). This hypothesis was supported, with the teenage group found to have the highest athletic identity levels, following by the emerging adulthood group, and then the adulthood group. All of these differences between the three groups were found to be statistically significant, however, there were no significant gender differences found.

There were significant differences found in the athletic identity levels of athletes in relation to different aspects of achievement. Those athletes who perceived themselves to perform average academically were found to have significantly higher levels of athletic identity than those who saw themselves as being above average in this area. In addition, those athletes performing at a regional or state level were found to have significantly higher AIMS scores than those athletes who had competed at an international level. One reason for these results is that the regional/state athletes were younger than the international athletes. As previously stated, in line with previous research, the hypothesis that athletic identity levels would decrease with age was supported in this study. A further explanation is that regional/state athletes may possess a stronger drive to reach their athletic potential than their international-level counterparts, striving hard for recognition, in turn increasing their level of athletic identity. Those athletes who have already reached the peak of their sport, that is, gained national recognition for their talents, may feel that they have reached many of their long-term goals and start to consider their next life challenge.

In relation to indicators of psychological well-being, male Australian elite athletes were found to have significantly higher levels of self-esteem than their female counterparts. The self-esteem levels of this sample were found to significantly increase over time, with the adulthood group shown to have significantly higher levels than the teenage group. In addition, those who perceived themselves to be above average academically were found to have significantly higher levels of self-esteem than those athletes who felt that they were average in this area. There were no significant differences in self-esteem reported in relation to level of athletic achievement. Life satisfaction was also found to remain stable over time, with no significant changes occurring in relation to age or gender.

Although perceptions of academic achievement were found to impact upon levels of self-esteem, they were not found to have the same influence upon life satisfaction. Level of athletic achievement also did not have an impact. Despite this, LSS scores were significantly higher for those athletes who had no plans to retire compared to those who indicated that they had intentions to retire within the next four years. These changes may occur as a result of the athlete beginning to prepare themselves for transition.

A further aim of this study was to investigate whether the athletic identity levels of elite athletes were linked to the self-identity characteristics endorsed by this population. That is, whether an athlete's level of athletic identity influences his or her self-view and the importance placed upon particular aspects of self-identity. Results showed that, for this sample, knowing an individual's level of athletic identity tells us something about how that individual is likely to rate himself or herself on a number of other aspects of identity. As expected, elite athletes with higher levels of athletic identity were more likely to rate sporting/physical ability as being an important determinant of their feelings about themselves. However, group results also indicated that athletes with higher levels of athletic identity were more likely to rate themselves as having lower levels of academic, mathematical, and problem-solving abilities, and to rate having good verbal skills to be an important determinant as to how they feel about themselves. These results suggest that the student role may suffer as athletes become more involved and committed to their sport, a finding that has found support, particularly among the intercollegiate student-athlete population (Adler & Adler, 1985, 1991).

A final aim of this study was to investigate whether any relationships existed between levels of athletic identity, life satisfaction, and self-esteem of elite athletes. Life satisfaction

and self-esteem scores were found to share a strong positive relationship with each other, thereby supporting previous research (Boschen, 1996; King et al., 1998; Raphael et al., 1996). These results indicate that athletes who were shown to have high levels of life satisfaction were more likely to also have higher levels of self-esteem. Despite this, levels of athletic identity and life satisfaction were found to be unrelated, thereby supporting previous findings (Webb et al., 1998). These results highlight that how satisfied an elite athlete is with their life in general is not influenced by the degree to which she or he identifies with the athlete role.

Results of this study suggested that there is a slight tendency for athletes with high levels of athletic identity to report lower levels of general esteem. Although it was predicted that a significant relationship would exist between AIMS and GEQ scores, the fact that it was a negative correlation was surprising. It was expected that elite athletes who identified strongly with the athlete role would feel positively about themselves as they are, so to speak, *living their dream* of being a high-level athlete. However, these results suggest the opposite. It is important to note that the effect size was weak.

Many empirical outcomes of this study may be significant from both a counselling and coaching point of view. However, prior to offering any suggestions in relation to the practical application of the results of this study, it is important to investigate the extent to which they can be replicated. Study 2 aims to do this by conducting the same analyses on another sample of Australian elite athletes. As previously mentioned, further discussions related to any specific implications of the findings of this study will be delivered following this.

Chapter 4 – Study 2

4.1 Introduction

The main purpose of Study 2 was to further investigate aspects of the internal environment of Australian elite athletes through the administration of the same measures used in Study 1 with a different sample of the same population collected four years later. The data for this replication study were collected in 2007. Any participants who participated in both the 2003 and 2007 survey were removed from the 2007 data set in order to ensure that the data analysed were from a completely new sample of elite athletes. Therefore, if findings reported in Study 1 are found to be replicated in Study 2 some four years later, this would constitute powerful evidence of the reliability of these findings.

4.2 Overview of Study Aims and Hypotheses

The current study maintained the same four aims proposed by Study 1. These were:

1. To investigate the self-identity characteristics endorsed by this sample, and the impact that demographic characteristics (gender and age), aspects of achievement (perceived academic achievement and athletic achievement), and retirement status have upon these endorsements.
2. To investigate the impact of demographic characteristics, aspects of achievement, and retirement intentions upon levels of athletic identity, self-esteem, and life satisfaction.
3. To investigate the relationship between elite athletes' levels of athletic identity and the self-identity characteristics endorsed by these individuals to determine whether a distinctive athletic profile exists in relation to the identity characteristics expressed by this population.
4. To explore the relationship between the athletic identity levels, life satisfaction, and self-esteem of elite athletes.

The following hypotheses are based on the results of Study 1 and the literature reviewed in Chapter 2. The hypotheses of Study 2 are:

1. That elite athletes will strongly endorse the following self-identity characteristics as being accurate representations of who they are as people: having good interactions with their parents; having good sporting/physical ability; being honest/reliable/trustworthy.
2. That elite athletes will strongly endorse the following characteristics as being important in determining how they feel about themselves: being honest/reliable/trustworthy; having good interactions with their parents; being emotionally stable.
3. That elite athletes will be least likely to describe themselves as being physically attractive or spiritual/religious, and will consider these same characteristics to be the least important determinants to how they see themselves when compared with their ratings of other self-descriptors.
4. That male athletes will rate themselves as having more sporting/physical ability, as being more attractive, more emotionally stable, and better at mathematics and problem-solving than their female counterparts.
5. That both genders will share the same views in relation to what they deem important in determining how they feel about themselves.
6. That very few or no significant differences will be found between the self-identity characteristics that athletes in both the teenage and emerging adult stages of development use to describe themselves.
7. That the importance ratings of sporting/physical ability will decrease significantly with age.

8. That there would be no significant interaction between age and gender in relation to the rating of self-identity characteristics.
9. That athletic identity will decrease significantly with age.
10. That life satisfaction and self-esteem scores will remain stable over time.
11. That males athletes will have higher levels of self-esteem than their female counterparts.
12. That elite athletes with higher levels of athletic identity, regardless of gender or developmental stage, will be more likely to rate sporting/physical ability as being an important determinant of their feelings about themselves.
13. That life satisfaction will be strongly correlated with self-esteem scores.
14. That athletic identity will be unrelated to life satisfaction.

There were also a number of outcomes from Study 1 that were further explored by the current study. Based on these outcomes, the following hypotheses were established:

15. That the importance ratings of academic ability will decrease significantly with age.
16. That level of athletic achievement will not impact upon the self-identity characteristics that elite athletes endorse as being accurate and important to their feelings about themselves.
17. That elite athletes considering retirement from their sport will rate the importance of having good sporting/physical ability significantly lower than those athletes with no plans to retire.
18. That elite athletes with lower perceptions of their academic achievements will display significantly higher levels of athletic identity and significantly lower levels of self-esteem than those athletes with higher perceptions of their achievements in this area.

19. That elite athletes with a high level of perception of their academic achievements will have a significantly higher level of academic self-identity than those athletes with lower perceptions of their academic achievements.
20. That elite athletes with lower perceptions of their academic achievements will place significantly less importance on the academic aspects of their self-identity than those athletes with higher perceptions of their academic achievements.
21. That elite athletes with no plans to retire from their sport will have higher levels of athletic identity and life satisfaction than those athletes considering retirement within the next four years.
22. That elite athletes with higher levels of athletic identity will be more likely to rate themselves as having lower levels of academic, mathematical, and problem-solving abilities.
23. That elite athletes with higher levels of athletic identity will be more likely to have lower levels of self-esteem than athletes with lower levels of athletic identity.

4.3 Method

The data used for this study were from the final phase of data collection from the same five-year longitudinal study (2003–2007) investigating the impact of athletes' participation in the ACE program described in Chapter 1. The questionnaire used for this phase of the study can be viewed in Appendix D.

4.3.1 Participants

Participants in this study were from the fifth set of survey data collected during 2007. The initial sample consisted of 435 (251 females) athletes. Participants ranged in age from 10 to 59 years (M = 21.2, SD = 6.4). As for Study 1, the sample was broken into the same three age groups. These included the teenage group, composed of those athletes 12 to 17

years (*n* = 129), the emerging adulthood group, composed of those athletes aged 18 to 25 years (*n* = 132), and the adulthood group, which included those athletes aged 26 years and over (*n* = 49). This grouping excluded one school-age participant (6–11 years), 58 participants who did not specify their age, along with 66 athletes who were participants in the 2003 first wave data collection (Study 1). A total of 125 participants were therefore excluded from the sample, leaving 310 participants (172 females) with a mean age of 20.1 years (*SD* = 5.7). These athletes represented all states and territories and 36 different sports, with the largest numbers involved with basketball (50), hockey (40), soccer (31), netball (30), baseball (22), cricket (20), softball (18), rowing (17), gymnastics (9), cycling (7), swimming (6), and athletics (6). All participants had access to the National ACE program. A total of 207 participants (66.8% of the sample) indicated that they had used ACE services.

The participants were broken into groups related to their age and gender, as was the case in Study 1, and were also separated into the same groups related to the two aspects of achievement (perceived level of academic achievement and highest level of athletic achievement) and retirement status in accordance with their responses on the demographic and general information measure.

4.3.2 Measures

As this study aimed to replicate the results found in Study 1, the same demographic and general information was used, and the same four measures. These were the Athletic Identity Measurement Scale (AIMS; Brewer et al., 1993), the Self-Description Questionnaire III-summary items (SDQ III; Marsh & O'Neill, 1984), the General Esteem Questionnaire (GEQ; Marsh 1990), and the Satisfaction With Life Scale (SWLS; Diener et al., 1985). Further details related to these instruments can be found in the Method section of Chapter 3.

4.3.3 Procedure

ACE advisers at each of the institutes and academies of sport around Australia assisted researchers to distribute 1,250 surveys to current athletes between February and May of 2007. Confidentiality was assured by asking athletes to seal their completed forms in the envelopes provided and to return them to their ACE coordinator, or mail them (reply paid) to the researchers. Surveys were also sent directly to 93 athletes, all of whom had responded to the survey in previous years and were both current and retired athletes. Completed surveys were returned by 435 (251 females) athletes, giving a response rate of 34.8%.

4.4 Results

In addition to maintaining the four main aims of Study 1, where sample size permitted, the same methods of data analyses as those previously outlined in Chapter 3 were also used for this study.

4.4.1 SDQ III Accuracy and Importance Item Rankings

4.4.1.1 Total sample. The means and standard deviations for each of the 12 items of the accuracy and importance scales of the SDQ III were computed for the total sample and are shown below in Table 5.

A visual inspection of the data of the current study showed that, as hypothesised, the three items endorsed by participants as being the three most accurate representations of who they feel they are as people, included those related to interactions with parents (M = 7.91), sporting/physical ability (M = 7.87), and honesty/reliability/trustworthiness (M = 7.86). The characteristics that were least endorsed were physical attractiveness (6.12) and spirituality/religiosity (M = 3.76).

The second hypothesis was also supported, with the characteristics rated as the three most important determinants as to how they view themselves also replicating those of Study

Table 5

SDQ III A*ccuracy and Importance Item Means and Standard Deviations for the Total Sample (N = 310)*

	Accuracy		Importance	
Item	*M*	*SD*	*M*	*SD*
Sporting/physical ability	7.87	1.2	7.29	1.5
Physical attractiveness	6.12	1.6	5.44	2.1
Interactions opposite sex	7.15	1.4	6.70	1.8
Interactions same sex	7.40	1.3	6.98	1.7
Interactions with parents	7.91	1.3	8.26	1.1
Emotional stability	7.48	1.4	7.78	1.4
Spirituality/religiosity	3.76	2.5	3.82	2.6
Honest/reliable/trust	7.86	1.2	8.19	1.1
Verbal skills	7.16	1.4	7.59	1.3
Mathematical ability	6.64	1.7	6.76	1.8
Academic ability	6.99	1.4	7.34	1.4
Problem-solving ability	6.78	1.6	7.06	1.5

1 with honesty/reliability/trustworthiness (*M* = 8.19), good interactions with parents (*M* = 8.05), and emotional stability (*M* = 7.78) taking the top three positions. The sporting/physical ability (*M* = 7.29) item was ranked sixth behind academic ability (*M* = 7.34) and verbal skills (*M* = 7.59). Also as hypothesised, respondents continued to be least likely to describe themselves as physically attractive or spiritual/religious, and also to

consider these to be the least important determinants to how they see themselves when compared with their ratings of the other 10 self-descriptors.

The means of most items for both scales were, once again, found to be well above the mid-point (4.5) of the 9-point response scale, with spirituality/religiosity being the only item from both the accuracy and importance scale to be rated below the midpoint, with means of 3.76 and 3.82 respectively. This item was also found to have the largest standard deviation for both scales (2.5 and 2.6 respectively).

For both scales, all other items, except for physical attractiveness, were found to be negatively skewed, with a large proportion responding to items as being very accurate and very important. The physical attractiveness item, when rated for both accuracy and importance, was the only item found to be normally distributed. These distributions of responses were the same as those found for the 2003 sample for all items.

The means and standard deviations for each of the 12 items of the accuracy and importance scales of the SDQ III were computed in relation to each of the variables being investigated. These data for age, gender, perceived academic achievement, levels of athletic achievement, and retirement status may be viewed in Appendices J to N respectively. There were no significant changes between rankings for each of these factors when compared with those of Study 1. Therefore, it was deemed that discussing the rankings of the SDQ items associated with each factor was not relevant within the results.

4.4.2 Testing for Group Differences

4.4.2.1 Age and gender. One of the main aims of the current study was to investigate the impact of age and gender upon the self-identity characteristics endorsed by this sample. In terms of age, it was hypothesised that there would be very few or no

significant differences found between the self-identity characteristics that athletes in both the teenage and emerging adult stages of development used to describe themselves, but that the importance ratings of both sporting/physical ability and academic ability would decrease significantly with age. In relation to gender, it was hypothesised that male athletes would rate themselves as having more sporting/physical ability, as being more attractive, more emotionally stable, and better at mathematics and problem-solving than their female counterparts. However, it was hypothesised that both genders would share the same views in relation to what they deem important in determining how they feel about themselves. Finally, it was hypothesised that there would be no significant interaction between age and gender in relation to the rating of self-identity characteristics.

A 2 x 3 MANOVA was performed to investigate gender (female/male) and age differences (teenage/emerging adulthood/adulthood) in relation to the mean scores of the SDQ III accuracy ratings of self-descriptors, and as to whether a significant interaction between age and gender would be found. A significant difference was found for gender, $F(12, 266) = 3.47$, $p < .01$, and for age, $F(24, 532) = 2.15$, $p < .01$, however, there was no significant interaction found between gender and age, $F(24, 532) = 1.36$, $p > .05$, thereby supporting the hypothesis.

Univariate tests were then conducted on the SDQ III accuracy items to investigate the source of differences between genders at the item level. To account for multiple testing, the Bonferroni correction was used. The items related to physical attractiveness, $F(1, 277) = 8.06$, $p < .01$, emotional stability, $F(1, 277) = 8.65$, $p < .01$, mathematical ability, $F(1, 277) = 4.67$, $p < .05$, and problem-solving ability, $F(1, 277) = 7.18$, $p < .01$ were shown to reach significance, with male athletes found to rate each of these items significantly higher than

their female counterparts. Apart from males also rating sporting/physical ability higher than the female athletes in Study 1, these results support the hypothesis pertaining to gender differences in self-identity characteristics endorsed on the accuracy scale.

When the SDQ III accuracy items were considered separately for age, it was found that there was only one significant difference and this was in relation to sporting/physical ability, $F(2, 277) = 5.02$, $p < .01$. Post-hoc tests using the Bonferroni correction were used to identify which groups differed in relation to this item. It was found that the teenage group (12–17 year olds) rated their level of sporting/physical ability significantly higher than the adulthood group (26 years and over). The hypothesis that few or no significant differences would be found between the two younger groups was therefore supported.

A 2 x 3 MANOVA was then performed to investigate gender and age differences in relation to the mean scores of the SDQ III importance ratings of self-descriptors. A significant difference was found for age, $F(24, 518) = 3.52$, $p < .01$. There were no significant differences found for gender, $F(12, 259) = 1.54$, $p > .05$, or for the interaction between gender and age, $F(24, 518) = .75$, $p > .05$.

Four items were found to be significant in relation to age. These items were those related to sporting/physical ability, $F(2, 270) = 8.74$, $p < .01$, physical attractiveness, $F(2, 270) = 4.17$, $p < .05$, verbal skills, $F(2, 270) = 3.28$, $p < .05$, and academic ability, $F(2, 270) = 4.48$, $p < .05$. Post-hoc tests using the Bonferroni correction revealed significant differences between all three groups in relation to the ratings of importance of sporting/physical ability, with ratings shown to significantly decrease with age, thereby supporting the hypothesis. The teenage group was shown to rate the importance of academic ability as being significantly more important than both of the older groups (emerging

adulthood and adulthood), but no differences were found between the two older groups. Therefore, the hypothesis that the importance of this item would decrease significantly with age was supported. However, a significant difference was not found to occur across all three age groups. The teenage group was also found to rate the importance of physical attractiveness and verbal skills significantly higher than the emerging adulthood group.

4.4.2.2 Aspects of achievement. The current study also aimed to explore the impact that aspects of achievement (perceived academic achievement and athletic achievement) may have upon the self-identity characteristics endorsed by this sample. Based on the findings of Study 1, this study explored three hypotheses related to these factors. Firstly, it was hypothesised that elite athletes with a high level of perception of their academic achievements would show a higher level of academic self-identity than those with lower perceptions. Secondly, it was hypothesised that those elite athletes with lower perceptions of their academic achievements would place less importance on the academic aspects of their self-identity than those with higher perceptions. Finally, it was hypothesised that level of athletic achievement would not impact upon the self-identity characteristics that elite athletes endorse as being accurate and important to how they feel about themselves.

A 3 x 3 MANOVA was performed to investigate perceived academic achievement (below average/average/above average) and level of athletic achievement (state-regional/national/international) in relation to the mean scores of the SDQ III accuracy ratings of self-descriptors, and as to whether a significant interaction between these two aspects of achievement would be found. A significant difference was found for perceived academic achievement, $F(24, 522) = 3.30$, $p < .01$, and for level of athletic achievement, $F(24, 522) = 1.77$, $p < .05$. There was no significant interaction between perceived academic achievement

and level of athletic achievement, $F(36, 772) = 1.45$, $p > .05$. Univariate tests conducted on the SDQ III accuracy items to investigate the source of differences between the three levels of athletic achievement groups found two of the 12 accuracy items to be significant, those related to honesty/reliability/trustworthiness, $F(2, 272) = 3.80$, $p < .05$, and verbal skills, $F(2, 272) = 3.46$, $p < .05$. Despite this, post-hoc tests did not reveal any further significant differences between the responses of the state-regional, national, and international athletes to these items.

Univariate tests were then conducted on the SDQ III accuracy items to investigate the source of differences between the three academic achievement groups at the item level. To account for multiple testing, the Bonferroni correction was used. Nine of the 12 accuracy items were found to be significant at this level. The nine items shown to have significant differences were those related to physical/sporting ability, $F(2, 272) = 5.24$, $p < .01$, interactions with members of both the opposite, $F(2, 272) = 3.84$, $p < .05$, and the same sex, $F(2, 272) = 3.42$, $p < .05$, interactions with parents, $F(2, 272) = 4.66$, $p < .05$, emotional stability, $F(2, 272) = 11.07$, $p < .01$, honesty/reliability/trustworthiness, $F(2, 272) = 5.50$, $p < .01$, verbal skills, $F(2, 272) = 4.45$, $p < .05$, mathematical ability, $F(2, 272) = 5.59$, $p < .01$, and academic ability, $F(2, 272) = 29.30$, $p < .01$.

The below average group were found to rate the items related to physical/sporting ability, interactions with members of both the same and the opposite sex, interactions with parents, emotional stability, and honesty/reliability/trustworthiness, significantly lower than those athletes in both the average and above average groups. The above average group were found to rate themselves significantly higher in verbal skills than the below average group, and significantly higher than both the average and below average group in mathematical

ability. All three groups were shown to be significantly different in their responses to the item related to academic ability, with the mean accuracy ratings for this item increasing significantly with perceptions of academic achievement. This result therefore supports the hypothesis that elite athletes with a high level of perception of their academic achievements would show a higher level of academic self-concept than those with lower perceptions.

A 3 x 3 MANOVA was performed to investigate achievement differences in relation to the mean scores of the SDQ III importance ratings of self-descriptors. There were no significant main effects found for either perceived academic achievement, $F(24, 508) = 1.54$, $p > .05$, or for level of athletic achievement, $F(24, 508) = 1.32$, $p > .05$. There was also no significant interaction found between academic and athletic achievement, $F(36, 751) = 1.03$, $p > .05$. Therefore, in this study, the hypothesis that elite athletes with lower perceptions of their academic achievements would place less importance on the academic aspects of their self-identity than those with higher perceptions was not supported. However, the hypothesis that level of athletic achievement would not impact upon the self-identity characteristics that elite athletes endorse as being accurate and important to how they feelings about themselves was supported, with no significant differences noted in relation to this aspect of achievement.

4.4.2.3 Retirement status. A further aim of the current study was to investigate the impact that retirement status has upon the self-identity characteristics endorsed. It was hypothesised that elite athletes considering retirement from their sport would rate the importance of having good sporting/physical ability significantly lower than those athletes with no plans to retire.

A MANOVA was performed in order to investigate the impact of retirement intentions on the mean scores of the SDQ III accuracy ratings of self-descriptors for the

current study. No significant main effect for retirement status was found, $F(12, 284) = .60$, $p > .05$.

A MANOVA was then performed in order to investigate the impact of retirement status on the mean scores of the SDQ III importance ratings of self-descriptors. As was the case for the accuracy scale, no significant main effect was found, $F(12, 277) = 1.10$, $p > .05$. Therefore, the hypothesis was not supported.

4.4.3 Athletic Identity, Self-esteem, and Life Satisfaction

The current study also aimed to investigate the impact of age and gender, aspects of achievement, and retirement intentions upon levels of athletic identity, self-esteem, and life satisfaction. A number of hypotheses were formulated in relation to these three constructs, and will be listed prior to discussion of the results.

In relation to the two demographic characteristics, it was hypothesised that athletic identity levels would significantly decrease with age, but that levels of life satisfaction or self–esteem would remain stable over time. In terms of gender differences, it was hypothesised that male athletes would have higher levels of self-esteem than their female counterparts.

Based on the results of Study 1, it was hypothesised that those athletes with lower perceptions of their academic achievements would display significantly higher levels of athletic identity and significantly lower levels of self-esteem than those athletes with higher perceptions of their achievements in this area. When exploring retirement status, it was hypothesised that elite athletes with no plans to retire from their sport would have higher levels of athletic identity and life satisfaction than those athletes considering retirement within the next four years.

Prior to testing hypotheses related to these three constructs, reliability estimates, as measured by Cronbach's alpha (1951), were calculated for each of the three scales to assess internal consistency. It was established that all scales were reliable measures, with Cronbach's alpha of .81 for both the AIMS and GEQ, and .79 for the LSS.

4.4.3.1 Analysis of group differences. The means and standard deviations for each of the three measures in relation to the respective groups associated with gender, age, perceived academic achievement, level of athletic achievement, and retirement status are displayed in Table 6. In order to investigate whether any differences exist in relation to AIMS, GEQ, and LSS scores both within and between the groups for the three main areas of interest (age and gender, aspects of achievement, retirement status), a series of MANOVAs were conducted. The results are presented separately for each of the three areas below.

4.4.3.2 Age and gender. A two-way between groups (2 x 3) ANOVA was performed to investigate age and gender differences in relation to AIMS, GEQ, and LSS scores, and as to whether there was a significant interaction between age and gender. The number of participants in each group is displayed in Table 7.

A significant difference was found for age, $F(6, 576) = 5.04$, $p < .01$, and for gender, $F(3, 288) = 3.27$, $p < .05$. A significant interaction was also found between age and gender, $F(6, 576) = 2.27$, $p < .05$.

The interaction was related to life satisfaction, $F(2, 290) = 3.38$, $p < .05$. In order to explore this interaction, separate MANOVAs were performed on the LSS mean scores of the males and females in relation to the three developmental groups. A significant difference was found for the male athletes, $F(2, 134) = 5.81$, $p < .05$, but not for the female athletes,

Table 6

Means and Standard Deviations for the AIMS, GEQ, and LSS for all Groups Related to Age and Gender, Aspects of Achievement, and Retirement Status.

			AIMS		GEQ		LSS	
Variable	Groups	n	M	SD	M	SD	M	SD
Gender	Male	138	37.41	5.6	34.41	4.7	25.70	4.5
	Female	172	34.84	5.8	33.67	5.5	25.37	4.7
Age	Teenage	129	37.02	5.1	33.92	5.2	26.14	4.8
	Emerging Adult	132	36.03	6.0	33.88	5.2	25.20	4.2
	Adult	49	33.06	6.4	34.54	4.9	24.73	4.9
Academic	Below average	7	35.86	7.0	30.86	7.9	22.00	6.0
Achievement	Average	126	37.02	5.5	33.91	4.9	25.35	4.6
	Above average	176	35.27	6.0	34.17	5.2	25.79	4.5
Athletic	Regional/State	18	36.61	4.9	33.68	5.4	25.42	4.6
Achievement	National	116	36.56	5.6	33.68	5.4	25.42	4.6
	International	160	36.03	5.7	34.45	4.8	25.64	4.6
Retirement	Intending	14	28.62	6.7	34.00	6.1	26.50	4.6
Status	Current	296	36.30	5.6	34.00	5.1	25.47	4.6

$F(2, 164) = .30$, $p > .05$. Post-hoc tests using the Bonferroni correction found male teenage athletes to have significantly higher levels of life satisfaction than their older counterparts in the emerging adulthood group. There was no interaction hypothesised to occur for this measure, however, these results confirm the hypothesis that life satisfaction would remain stable over time was not supported.

Table 7

Number of Participants From Both Genders Within the Teenage, Emerging Adulthood, and Adulthood Groups

	Gender	
	Male	Female
Age	N	N
Teenage	68	61
Emerging Adulthood	70	62
Adulthood	34	15

As there were no significant changes reported for self-esteem, the hypothesis that this construct would not change as a result of age was supported. Apart from the interaction, there were also significant main effects shown to occur in relation to the AIMS for both gender, $F(1, 290) = 5.62$, $p < .05$, and age, $F(2, 290) = 7.71$, $p < .01$.

Male athletes were shown to have significantly higher mean AIMS scores than their female counterparts. In terms of age, post-hoc tests using the Bonferroni correction found the teenage and emerging adulthood groups to have significantly higher levels of athletic identity than athletes in the adulthood group. However, there were no significant differences between the AIMS scores of the two younger groups. Therefore, the hypothesis that athletic identity would decrease significantly with age was supported, however, unlike Study 1, this change did not occur across all three age groups in this study. The hypothesis that male athletes would have higher levels of self-esteem than their female counterparts was not supported.

4.4.3.3 Aspects of achievement. The differences in the AIMS, GEQ, and LSS scores of participants in relation to the two aspects of achievement (academic and athletic) were to be explored, however, due to the small number of participants in the below average academic achievement groups (see Table 8) across the three levels of athletic achievement, a replication of the results of Study 1 was not attempted. As a result, the hypothesis that those athletes with lower perceptions of their academic achievements would display significantly higher levels of athletic identity and significantly lower levels of self-esteem than those athletes with higher perceptions of their achievements in this area was left unaddressed.

4.4.3.4 Retirement status. A MANOVA was performed to explore the impact of retirement status upon AIMS, GEQ, and LSS scores. It was hypothesised that elite athletes with no plans to retire from their sport would have higher levels of athletic identity and life satisfaction than those athletes considering retirement within the next four years.

A significant difference was found for retirement status, $F(3, 292) = 8.12$, $p < .01$. Significant differences were shown to exist for AIMS scores only, $F(1, 294) = 23.41$, $p < .01$. As hypothesised, those athletes who had no plans to retire were found to have significantly higher levels of athletic identity than those athletes who indicated they had retirement intentions. However, the hypothesis related to the existence of differences in life satisfaction as a result retirement status was not supported.

4.4.4 Analysing Relationships

4.4.4.1 Athletic identity and self-identity characteristics. This study also aimed to explore relations between athletic identity, as measured by AIMS, and endorsed self-identity characteristics, as measured by the SDQ III. Two hypotheses were developed in relation to this aim. They were that elite athletes with higher levels of athletic identity, regardless of

Table 8

Number of Participants From Each of the Perceived Academic Achievement Groups Within the Athletic Achievement Groups

	Perceived Academic Achievement		
	Below Average	Average	Above Average
Athletic Achievement	N	N	N
Regional/state	8	10	18
National	3	46	67
International	4	66	89

gender or developmental stage, would be more likely to rate sporting/physical ability as being an important determinant of their feelings about themselves, as well as being more likely to rate themselves as having lower levels of academic, mathematical, and problem-solving abilities. The correlations for Study 2 are presented in Table 9. For the current study, the only item of the SDQ III found to share a significant relationship with AIMS scores was that related to sporting/physical ability. This was the case for both the accuracy component of the SDQ III (r =. 151, $p < .01$), as well as the importance scale (r = .329, $p <$ .01), thereby supporting the first hypothesis. With a correlation of less than .3, the accuracy scale relationship would be considered to be a weak effect, while the effect size for the relationship between AIMS scores and the sporting/physical ability item was moderate (correlation coefficients >.30; Cohen, 1988). The same results were found for both male and female athletes when correlations between AIMS and the SDQ III were computed (see Appendix O for correlations). As there were no significant relationships identified between

Table 9

Pearson Correlations Between AIMS and SDQ III for the Total Sample (N =307)

SDQ III Items	Accuracy	Importance
Sporting/physical ability	.151**	.329**
Physical attractiveness	.045	-.019
Interactions opposite sex	-.003	-.039
Interactions same sex	.022	-.029
Interactions with parents	.082	.093
Emotional stability	-.018	-.009
Spirituality/religiosity	.003	-.016
Honest/reliable/trust	.020	-.015
Verbal skills	-.044	-.059
Mathematical ability	.097	.035
Academic ability	.058	.037
Problem-solving ability	.030	.000

Note. * $p < .05$. ** $p < .01$.

the academic aspects of the SDQ III and AIMS scores, the second hypothesis was not supported.

4.4.4.2 Athletic identity, self-esteem, and life satisfaction. The relationships between life satisfaction and self-esteem, as measured by the LSS and GEQ respectively, as well as the relations between these two constructs and athletic identity, as measured by the AIMS, were then explored. It was hypothesised that life satisfaction would share a positive strong relationship with self-esteem, that athletic identity would be unrelated to life

satisfaction, and that elite athletes with higher levels of athletic identity would be more likely to have lower levels of self-esteem than athletes with lower levels of athletic identity.

For the total sample (N = 307), the LSS and GEQ scores were found to be positively correlated (r = .624, p < .01). As the correlation coefficient was >.50, the effect size was strong (Cohen, 1988). These results further indicate that athletes with high LSS scores are likely to also score highly on the GEQ, therefore supporting the hypothesis.

In terms of the relationships between both LSS and GEQ scores and the AIMS, results indicated that there was no significant relationship between life satisfaction and athletic identity scores (r = -.034, p > .05), or between self-esteem and athletic identity scores (r = -.010, p > .05). Demographic characteristics were examined in order to see if age or gender moderated any of the relationships. However, none of these variables were found to do so. The hypothesis that athletic identity would be unrelated to life satisfaction was therefore supported. However, as no significant results were found between self-esteem and athletic identity levels, the hypothesis related to this relationship was not supported.

4.5 Discussion

One of the main aims of this study was to investigate the self-identity characteristics endorsed by this sample, and the impact that demographic characteristics (gender and age), aspects of achievement (perceived academic achievement and athletic achievement), and retirement intentions may have had upon these endorsements. Australian elite athletes strongly endorsed the same self-identity characteristics as those athletes in the Study 1 sample for both the accuracy and importance scales of the SDQ III. Results indicated that both samples viewed themselves as having good interactions with their parents, having good sporting/physical ability, and being honest, reliable, and trustworthy individuals. In addition, both samples placed a high level of value on being honest, reliable, and trustworthy, having

good interactions with their parents, as well as being emotionally stable. Therefore, these results indicate that there is a clear self-identity profile which has emerged in relation to Australian elite athletes.

Spirituality/religiosity continued to be the lowest-rated attribute of the SDQ III in relation to both accuracy and importance. As was the case in Study 1, participants were shown to be least likely to describe themselves as being physically attractive or spiritual/religious, as well as unlikely to rate these characteristics as being important determinants to how they see themselves. Previous research has found Australian elite athletes to have significantly higher self-concepts in this area as compared with a normative sample of non-athletes (Marsh et al., 1995). In both studies, the responses to this item were found to have, not only the lowest mean scores (being the only item to be rated under 4.5 out of 9), but the largest amount of variability across both samples. These results support the suggestion made in Study 1 that this aspect of self-identity is by no means an unpopular choice. Rather, they indicate that this aspect of self-identity polarises Australian elite athletes on both scales. This trend demonstrates that while some athletes do not consider themselves to be spiritual or religious at all, considering this characteristic to be largely unimportant to their self-identity, there are others who identify themselves to be religiously inclined, and/or consider this spiritual/religious element of self to be an important part of their lives. However, it may also be attributed to the different ways that the athletes interpreted the term spiritual/religious.

Despite this, as was found in Study 1, the means of most items for both SDQ III scales for the current study were found to be well above the mid-point (4.5) of the 9-point response scale. Such a pattern of response indicates that Australian elite athletes are

reporting quite positive self-identity profiles overall. In addition, for both scales across both studies, responses to all items were distributed similarly. That is, most item responses were shown to be negatively skewed, with a large proportion responding to items as being very accurate and very important, except for the physical attractiveness item, which was the only item found to be normally distributed. Once again, these results indicate that Australian elite athletes are exhibiting a common identity profile.

As outlined in Chapter 2, according to identity theory, the roles that are considered to be more important, or to which the individual has a greater level of commitment, are said to be located at the top of their identity hierarchies, and are proposed to be symbolic of their identity (Stryker, 1968; Stryker & Burke, 2000). Furthermore, Harter (1999) reported that the priority order of selves is related to the perceived value of significance of that aspect of self, with those rated to be higher having a higher likelihood of influencing a person's behaviour. In both Study 1 and the current study, while the item of the SDQ III which corresponded most with the athlete role (i.e., having good sporting/physical abilities) was strongly endorsed by athletes as being accurate in relation to their self-view, sport was, by no means, found to be all-encompassing, with the athletes found to rate the importance of a number of non sports-related personal characteristics (i.e., being honest and being emotionally stable), and a characteristic related to a familial role (i.e., having good interactions with their parents), continually higher than that of having good sporting/physical ability.

Having good verbal skills, an aspect of the academic role, was also rated higher in importance than having good sporting/physical ability across both studies. Similarly, having good academic ability, a self-identity characteristic also associated with the academic role, was rated higher on the importance scale than the sport-related item in Study 2. Such results

challenge the findings of previous research which have reported the academic role to suffer as a result of athletes committing themselves to their athletic role (Adler & Adler, 1985, 1991; Greendorfer & Blinde, 1985; Miller & Kerr, 2003).

Overall, the self-identity characteristics pertaining to the academic or student role, as well as a range of other non sports-related aspects of self, appear to be highly valued by this population. These results support previous research conducted which demonstrated higher levels of athletic identity as not restricting athletes from valuing other life roles (Curry & Parr, 1988; Horton & Mack, 2000; Settles et al., 2002).

As for Study 1, when exploring the impact of gender upon endorsed self-identity characteristics, male athletes were once again shown to view themselves as having more sporting/physical ability, as being more attractive, more emotionally stable, and as being better at mathematics and problem-solving than their female counterparts. The only difference between the results reported in both studies was that Study 1 had male athletes also rating themselves as having better interactions with the opposite sex than female athletes. This was not found in Study 2 and, interestingly, this saw the results of the current study replicate all gender differences reported by Marsh (1989a) in his investigations into the self-concept of individuals from preadolescence to adulthood. These findings suggest that gender differences in self-concept found within the general population could generalise across to elite athlete populations.

Despite this, the gender differences found in both Study 1 and Study 2 did not align with traditional sex stereotypes, which are that males have higher maths self-concepts than females, while females have higher verbal and academic self-concepts than males, thereby not support previous findings in this area (Crain, 1996; Hattie, 1992; Marsh, 1989b; Marsh et

al., 1988; Meece et al., 1982). With previous studies showing both male and female athletes to endorse the masculine gender role more than non-athletes (Hinkle, 1994; Houseworth et al., 1989), it is unknown as to whether the gender role orientation of the Australian elite athletes within this study may have impacted upon results.

Male athletes rated themselves as more physically attractive than their female counterparts in Study 1. This finding is also consistent with previous research by Marsh (1998), which specifically explored the physical self-concepts of adolescent elite athletes and non-athletes. Marsh reported males to have significantly higher scores than females in relation to both their perceptions of their physical ability and appearance. Studies by Sonstroem (1998) and Hayes et al. (1999) also reported males as having higher levels of physical self-concept than females. The similarities in the findings of this research to the gender differences outlined in previous research suggest that both male and female elite athletes and non-athletes report the same differences in relation to specific dimensions of their self-identity.

Although there were consistent differences found between genders across the two studies in relation to the way they describe themselves, there were limited similarities when it came to comparing athletes developmentally. Developed on the premise of Marsh's (1989a) U-shaped effect, it was hypothesised that there would be very few or no significant differences found between the self-identity characteristics that athletes in both the teenage and emerging adult stages of development use to describe themselves. This hypothesis was set in order to determine whether adolescence or emerging adulthood was shown to a more critical period to the identity formation of elite athletes.

According to Marsh (1989a), much of the changes that arise in relation to an individual's self-concept occur during the early adolescent (12–14 years) period of development. As the age range of the participants in the teenage group was 12 to 17 years of age, any significant changes that may have occurred during this period would not have been detected.

In Study 1, teenage athletes were found to rate themselves higher than the emerging adulthood athletes in relation to emotional stability and academic ability. In the current study, teenage athletes were found to rate their sporting/physical ability significantly higher than the athletes in the adulthood stage of development, thereby not replicating the findings. These results thereby support the hypothesis, with very few significant differences shown to exist.

For emerging adulthood to be recognised as the developmental stage where much of an individual's identity formation occurs, the data would have had to reflect the existence of many significant differences in the self-identity characteristics endorsed by the teenage and emerging adulthood groups. For example, the teenage athletes would have been shown to rate a number of the SDQ III accuracy and importance scale items significantly higher or lower than the emerging adult athletes, thereby indicating that there were clear differences in the way the two age groups saw themselves. However, this was not the case. As a result, in accordance with Erikson's (1963) theory of psychosocial development, which theorised that much of identity construction takes place during adolescence (12–18 years of age), results suggest that there is no clear distinction between the aforementioned age groups, and that, therefore, adolescence may be the more critical time for such changes to occur.

Marsh (1989a) further proposes that an individual's self-concept starts to *steadily* increasing during late adolescence (18–21 years), a period of time which is equivalent to the commencement of the emerging adulthood developmental stage. Interestingly, when the data of both studies were analysed descriptively, the athletes in emerging adulthood were found to show some upward movement in their mean SDQ III scores, with higher ratings observed in regards to their physical attractiveness, their interactions with their parents, their honesty, and their verbal skills when compared to those of their teenage counterparts. Although these differences were not significantly different, the patterning across both studies suggests that their self-perceptions in these areas of self-identity are developing rather than declining. The replication of these trends offer further support to Marsh's (1989a) proposed U-shaped effect of self-concept being relevant to an elite athlete population.

According to Erikson (1963), the presence of a strong sense of self, and the assistance and support of peers or significant others make it less likely that an individual will experience internal conflict or identity confusion. Therefore, it is important that institutions place an emphasis on exposing athletes within the adolescent stage of development to specialised support services, such as those offered by the ACE program, in order to aid the development of positive self-identity during this critical period.

As found in Study 1, both genders were observed to rate the importance of the 12 aspects of self-identity similarly in the current study. Once again, it is important to note that sporting/physical ability was not rated in the top three self-identity characteristics of the importance scale by both genders in either study. In this study, sporting/physical ability was rated in equal fourth position by the female athletes and in fifth position by the males, in terms of importance. This outcome almost replicates the results of Study 1, where this item

was rated in fifth position by both genders behind being honest, having good interaction with parents, being emotionally stable, and having good verbal skills. These results provide further support to Horton and Mack's (2000) proposal that athletes with a strong athletic identity can still possess a multidimensional self-concept. That is, even though elite athletes report their sporting ability as being an important characteristic in determining how they feel about themselves, there are other specific non sport-related aspects of their lives, such as being honest and having a strong relationship with their parents, that they consider to be of equal, if not more, importance in this respect. These findings also point to the lack of influence that gender has in relation to what elite athletes consider to be important to their self-identity.

The two items related to sporting/physical ability and academic ability on the SDQ III importance scale were shown to decline with age in Study 2, thereby replicating the results observed in Study 1. The mean scores related to sporting/physical ability, once again, were found to decrease significantly across the three groups. These results support previous studies which reported the importance of the athlete role as decreasing over time (Greendorfer & Blinde, 1985; Miller & Kerr, 2003).

In terms of the ratings for academic ability, as was the case in Study 1, teenage athletes were found to be the age group which most valued the academic aspect of self-identity, rating the importance of this characteristic significantly higher than the two older groups. Such results may be associated with the fact that many teenagers would be still actively attending high school, or undertaking tertiary studies of some type, and therefore be more likely to have a circle of friends within these non-sporting contexts. In line with identity theory (Stryker & Serpe, 1982), the number and importance of social relationships

tied to any particular role impacts upon an individual's level of commitment to a particular identity role, thereby increasing its salience. If teenagers were still involved in study, whether that be on a part-time or full-time basis, this would result in a higher level of commitment being attached to the academic role, which subsequently would boost the location of this aspect of self-identity in their identity hierarchies in comparison with that of older athletes.

It must also be acknowledged that all participants had access to the ACE program, with 71.3% and 66.8% of the total samples from Study 1 and Study 2, respectively, indicating their use of the services offered by the program. Some of these services focus on assisting athletes with career guidance and educational support, thereby placing a higher level of importance upon increasing the sport-life balance of athletes and helping them to prepare for career transition. It is therefore possible that this program was a situational influence which may have impacted results.

A further explanation is that there is a strong societal expectation which exists in relation to the importance of gaining an education. This expectation is not only frequently expressed at a community level, but also by the state and national governments, with education and training being a common fixture on the Australian political agenda. This may have an influence on the importance of academic endeavours to teenagers, with previous research also finding that individuals will modify their behaviour to fall into line with how they perceive others would expect them to behave in certain situations (Stets & Burke, 2003; Stryker & Burke, 2000).

With these factors in mind, the significantly higher level of importance placed upon the academic aspect of self-concept by teenagers as compared to emerging adults and adults

in both studies becomes clear. It is important to acknowledge, maintain, and support this commitment shown to the academic role, especially within these early years, not only to help these athletes keep a healthy balance their athletic, academic and social lives, which has been shown to have positive repercussions for all of these areas, including athletic performance (Miller & Kerr, 2002), but to also provide them with more options in relation to future career opportunities following their retirement from elite-level sport.

The next factors to be discussed in relation to their impact on the self-identity characteristics endorsed by this sample were the two aspects of achievement, namely, perceived academic achievement and level of athletic achievement. There were a number of results found in the current study which differed from those reported in Study 1. However, these results need to be interpreted with caution as a number of groups had small sample sizes which may see the means be less representative of this population. For example, the below average academic achievement group included seven participants, and the regional/state level of athletic achievement group had a total of 18 participants.

Both studies found that the level at which athletes compete in their sport, whether it is at a state/regional, national or international level, to have no significance to their endorsement of particular self-identity characteristics. Despite this, as in Study 1, the current study showed all three perceived academic achievement groups (below average; average; above average) to differ significantly in their endorsement of the academic ability accuracy item of the SDQ III. Once again, those athletes who rated themselves as being above average rated this item the highest, while those who perceived themselves to be below average rated it significantly lower. This replication indicates that athletes with higher perceptions of their academic achievements have higher academic self-identity, supporting the findings from

previous studies conducted which suggest that students' perceptions of their competence are linked to their self-view (Fortunato & Marchant, 1999; Harter, 1982; Marsh, 1990a, 1992a; Shavelson & Bolus, 1999; Wigfield et al., 1997).

In accordance with identity theory (Stryker & Serpe, 1982), these results suggest that those athletes who perceive their academic performance to be poor would be less likely to put effort into the development of this aspect of self, which would ultimately see them detach from this life role. Previous research has documented this exact process whereby intercollegiate athletes were reported to begin their academic careers with optimistic expectations, however, were shown to progressively detach themselves from the student role over time, resulting in the athletes gradually resigning themselves to inferior academic performance (Adler & Adler, 1985, 1991).

Further investigations are required in order to fully explore the repercussions of perceptions of academic achievement in relation to Australian elite athletes. In Study 1, these perceptions were found to impact upon the value that athletes place upon themselves as a person, with athletes with higher levels of perceived academic achievement found to have higher levels of self-esteem. Unfortunately, due to small sample sizes, a replication of these results was not able to be attempted. Such results highlight the importance that athlete perceptions in this area may have upon the way they see themselves.

As mentioned in Chapter 2, athletes who have more of a sport-life balance, that is, those athletes who invest their time in both their academic goals and their athletic goals, as opposed to those who devote all of their time to their sport, have been shown to exhibit improved athletic performance, with many achieving personal bests (Miller & Kerr, 2002). Therefore, it is recommended that athletes be encouraged to pursue interests other than sport.

Athlete perceptions of their academic abilities should be regularly monitored so that additional support can be offered to assist athletes to develop their feelings of competence in the academic domain. While this area requires further investigation, these results serve to further highlight the importance of supporting elite athletes as they attempt to balance their sporting careers with their education goals.

One factor that was not found to have an influence on the self-identity characteristics endorsed by elite athletes was retirement status. The hypothesis that athletes who have expressed their intention to retire from their sport within the next four years would rate the importance of having good sporting/physical ability lower than those athletes with no intention to retire was not supported, with the results across the two studies differing from one another. In Study 1, athletes who expressed their intention to retire were found to rate the importance of sporting/physical ability and having good interactions with members of the same sex significantly less than those who had no retirement intentions. However, for the current study, retirement intentions were found to have no influence upon importance ratings, thereby suggesting that impending retirement does not change an athlete's opinion as to what aspects of self-identity are of value to him or her. The differences in results, however, may have been due to sample size (as the intending group contained a small number (n = 14) of participants). Therefore, further research is necessary.

This area would be more thoroughly explored using a longitudinal analysis, whereby the importance of the self-identity characteristics endorsed by athletes could be tracked over time in order to assess any changes. The incorporation of athletes from a number of different phases of retirement would also be useful, as the retirement process has more recently been documented to be a transition period rather than a one-off event (Greendorfer & Blinde,

1985). For these reasons, this area would benefit from investigating the impact of retirement from sport upon the self-identity characteristics endorsed by athletes in a more complex fashion. This will be explored further in Study 3.

A second main aim of this study was to investigate the impact of demographic characteristics, aspects of achievement, and retirement intentions of Australian elite athletes upon their levels of athletic identity, self-esteem, and life satisfaction. As hypothesised, athletic identity levels continued to decrease significantly with age, as was found in Study 1 and in previous studies (Brewer & Cornelius, 2001; Brewer et al., 1993). However, while Study 1 reported AIMS scores to decrease significantly across all three groups, the current study found only the teenage and emerging adult athletic identity levels to be significantly higher than the levels of the adult (26 years and over) athletes. Despite this, the means for each of the three developmental groups reported for the current study were almost identical to those observed in Study 1.

Both studies reported conflicting results when investigating gender differences in relation to AIMS scores. In Study 1, no significant gender differences were found. However, the current study found male athletes to have significantly higher levels of athletic identity to their female counterparts. These results suggest that gender does not play a clear role in determining athletic identity levels in the Australian elite athlete population. However, they are reflective of past research, where mixed findings have been reported in relation to whether gender plays a role in determining levels of athletic identity (Brewer et al., 1993; Brewer & Cornelius, 2001; Brewer et al., 1993; Good et al., 1993; Murphy et al., 1996; Van Raalte et al., 1992).

In relation to aspects of achievement, from the results of Study 1, it was hypothesised that athletes with lower perceptions of their academic achievements would display significantly higher levels of athletic identity and significantly lower levels of self-esteem than those athletes with higher perceptions of their achievements in this area. However, there were inconsistent findings in relation to the athletic identity levels of athletes in relation to both of the aspects of achievement explored across the two studies, with none of the Study 1 findings being replicated. Once again, this result may have been influenced by the sample sizes of some of the groups. However, the lack of significance of the results related to athletes' perceptions of academic achievement and their levels of athletic identity may be interpreted as a challenge to the commonly held notion that high-level athletes are not academically-minded. Further research could be done in this area in order to explore this relationship more fully.

Replicating the results of Study 1, athletes considering retirement from sport within the next four years continued to display significantly lower levels of athletic identity than those athletes with no plans to retire. This decrease in athletic identity may be the result of athletes with retirement intentions beginning to explore other aspects of their lives, such as their career choices, as they contemplate their future after sport. These findings also support those of Lally (2007), who reported that some athletes facing retirement from sport proactively decrease their level of athletic identity, sometimes a long time before they actually retire, in order to safeguard themselves from experiencing a major identity crisis. Further data would have needed to be collected from the intending group to ascertain whether they were proactively decreasing their athletic identity by using specific strategies in order to ease their adjustment to retirement, as was found to be the case with the student-athletes in

Lally's study. Despite the lack of information related to the athletes' levels of awareness of the identity changes they were shown to experience, these are interesting findings which add to the psychological career transition literature.

Many inconsistencies between the results of both of the studies were found when comparing the impact of demographic characteristics, aspects of achievement, and retirement intentions upon the levels of self-esteem and life satisfaction of elite athletes. The hypothesis that life satisfaction and self-esteem scores would remain stable over time was not supported. In Study 1, life satisfaction was found to remain stable over time, with no significant changes occurring in relation to age or gender. In the current study, a significant interaction between age and gender was reported in relation to LSS scores. Further investigations revealed no significant differences for female athletes, but found males athletes to experience a significant decline in life satisfaction between the teenage and emerging adulthood phases of development. These findings do not support previous research which has reported life satisfaction levels to increase gradually over time before declining during old age (Cummins, 1998; Mroczek & Spiro, 2005).

The opposite scenario occurred when comparing the self-esteem outcomes of the two studies. That is, in the current study, no significant differences were found for age or for gender. However, in Study 1, significant gender differences were observed, with the self-esteem levels of male athletes found to be significantly higher than that of female athletes. Therefore, from the results obtained, it appears that self-esteem does not follow a prescribed gender-related patterning when it comes to elite athletes, which also appears to be the case for the general population (Alpert-Gillis & Connell, 1989; Hayes et al., 1999; Martinez & Dukes, 1991; Wylie, 1979).

The influence of level of perceived academic achievement on levels of self-esteem was also investigated in both studies. Study 1 found those athletes who rated themselves as above average in the academic domain as having significantly higher levels of self-esteem than those athletes who rated themselves as being average in academic achievement. These results were not replicated in the current study, with athletes in both the average and above average groups shown to have significantly higher levels of self-esteem than those athletes in the below average group.

Despite both studies reporting slightly different results, self-esteem levels were shown to noticeably increase for those athletes with higher perceptions of their abilities in this area. While this area clearly requires further investigation, these results provide further support to the importance of supporting elite athletes to create a sport-life balance (Miller & Kerr, 2002) by helping them to not only build positive perceptions of themselves on the sporting field, but also in academic contexts. Conversely, both studies found aspects of achievement, including perceived academic achievement and level of athletic achievement, to have no impact upon athletes' levels of life satisfaction.

Inconsistent results were also found across the two studies in terms of the influence of retirement status on life satisfaction. Study 1 showed that athletes who had no plans to retire have significantly higher levels of life satisfaction than those athletes who indicated they planned to retire within the next four years. However, no significant differences were found in Study 2. These inconsistencies would be best addressed by exploring the life satisfaction of athletes longitudinally, tracking them throughout the course of their sporting careers, including their transition through to retirement, in order to identify whether any significant

changes occur. In both studies, however, it was found that an athlete's self-esteem was not impacted by their retirement status.

A further aim of this study was to investigate the relationship between elite athletes' levels of athletic identity and the self-identity characteristics endorsed by these individuals to determine whether a distinctive identity profile exists in relation to this population. It was hypothesised that elite athletes with higher levels of athletic identity, regardless of gender or developmental stage, would be more likely to rate sporting/physical ability as being an important determinant of their feelings about themselves. In Study 1, a number of the items of the SDQ III accuracy and importance scales, namely, those related to sporting/physical ability, verbal skills, and mathematical, academic and problem-solving abilities, were shown to have significant relationships with AIMS scores. Conversely, in the current study, the only item of the SDQ III found to share any significant relationship with AIMS scores was that related to sporting/physical ability on both scales. Therefore, results indicated that, as a group, elite athletes with higher levels of athletic identity were more likely to rate sporting/physical ability as being, not only an important determinant, but also an accurate aspect, of how they feel about themselves. However, with the sporting/physical ability item being the only self-descriptor of the SDQ III to share any significant relationship with AIMS scores, the hypothesis that athletes with higher levels of athletic identity would be more likely to rate themselves as having lower levels of academic, mathematical, and problem-solving abilities was not supported.

As the results of Study 1 were not replicated, it seems that an individual's level of athletic identity tells us very little about the self-identity characteristics that he or she is most or least likely to endorse as being both accurate and important to his or her self-view.

Therefore, while Australian elite athletes were found to have similar self-identities, the characteristics of self that they endorse do not appear to be reliant upon the level of athletic identity they possess.

The final aim of this study was to explore the relationship between the athletic identity levels, life satisfaction, and self-esteem of elite athletes. The hypothesis that LSS scores would be strongly correlated with GEQ scores was supported, replicating the results of Study 1 and supporting previous research conducted in the area (Boschen, 1996; King et al., 1998; Raphael et al., 1996). These results indicate that, as for the general population, athletes with higher levels of life satisfaction are more likely to have higher levels of self-esteem.

As was found in previous research (Webb et al., 1998) and in Study 1, levels of athletic identity were found to be unrelated to life satisfaction. The impact of athletic identity upon self-esteem still remains questionable due to the lack of consistency in correlational results. Study 1 results suggested that there was a slight tendency for athletes with higher levels of athletic identity to report lower levels of self-esteem. However, these results were not replicated by the current study, with no significant negative relationship found to exist between AIMS and GEQ scores. It may be that the lack of significance can be attributed to lower power in Study 2. However, it should be noted that the effect size in both studies was small. Further investigations are required before making any conclusions in regards to the relationship between these two constructs.

Self-esteem did not follow a prescribed pattern in relation to gender when it came to Australian elite athletes, thereby replicating the mixed results found within the general population (Hayes et al., 1999; Maccoby & Jacklin, 1974; Wylie, 1979). Although retirement status was shown to significantly impact upon levels of athletic identity, it was not

found to impact on athletes' levels of self-esteem, with the results indicating that the GEQ scores of the three groups remained stable over time. This is a positive outcome, as it once again points to the fact that the way Australian elite athletes feel about themselves is not being adversely impacted by the retirement experience.

In conclusion, a number of findings reported in Study 1 were replicated in the current study. This constitutes powerful evidence of the reliability of these findings. Results indicated that Australian elite athletes exhibit a common identity profile that is operating largely independently of the level to which they identify with the athlete role. It was also found that the passion they have for their sport is not restricting them from valuing non sports-related life roles or aspects of self, and therefore is not impacting upon the multidimensionality of their self-identity. A number of the results also suggest that Australian elite athletes may experience a relatively smooth transition into retirement. Such outcomes include athletic identity being shown to be unrelated to life satisfaction, and found to decline with age, along with the importance placed upon sporting/physical ability. In addition, athletes considering retirement from sport displayed significantly lower levels of athletic identity than those athletes with no plans to retire. The practical applications of these findings for those individuals working with athletes, the limitations of this study, and future directions for research in this area will be discussed in detail in the Overall Summary Discussion section in Chapter 6.

Chapter 5 – Study 3

5.1 Introduction

The previous two studies have provided insight into the impact of a range of personal and situational factors upon the self-identity, athletic identity, and psychological well-being of Australian elite athletes. However, there are still a lot of questions which remain unanswered in relation to the changes that occur to these constructs as athletes transition from being active participants in sport through to retirement, with few longitudinal studies documenting this process.

Retirement from elite-level sport marks a time of re-evaluation for athletes in many areas of life. It is a time which presents athletes with a number of significant changes in their life circumstances, whether it be socially, financially, psychologically, or occupationally (Taylor & Olgilvie, 1994). Retirement was previously considered to be a singular, abrupt event. However, more recently it has been seen more as a process or transition, whereby the individual engages in gradual alterations of behaviours and goals over time (Greendorfer & Blinde, 1985). A transition is defined as "an event or non-event which results in a change in assumptions about oneself and the world and requires a corresponding change in one's behaviour and relationships" (Schlossberg, 1981, p. 5). It has been suggested that if elite athletes view their retirement as a process which they can plan for and adapt to over a certain period of time, as opposed to being an event that occurs at one particular moment in time, their levels of uncertainty about the future become reduced, resulting in a smoother transition being experienced (Torregrosa, Boixados, Valiente, & Cruz, 2004).

Over the past two decades, the retirement experiences of many professional athletes have been chronicled (Hoffer, 1990; Johnson, 2003; Jourard, 1965; Putnam, 1991), with some athletes reporting retirement to be a traumatic time, while others have found the

experience to be a positive one. Previous research in this area has also acknowledged the existence of individual differences in relation to whether retirement from sport is met with positive or negative emotion (Alfermann, 2000; Coakley, 1983; McPherson, 1980; Stambulova, 2000; Wylleman & Lavallee, 2004). Studies tracking the career transition of elite athletes have noted subsequent declines in life satisfaction (Cecic Erpic, 1998; Werthner & Orlick, 1986) and self-esteem (Stephan et al., 2003a) following their retirement from sport, particularly over the first 12 months.

Interest in this area has grown rapidly over the past 20 years, with much research continuing to focus upon the psychosocial impact of retirement on the athlete (S. Murphy, 1995; Ogilvie & Howe, 1986; Ogilvie & Taylor, 1993; Shachar et al., 2004; Stryker & Burke, 2000). Identification of the self as an athlete has featured prominently in sport career transition research, with an athletes' level of athletic identity highlighted as having a profound influence upon their ability to adapt following retirement (Brewer, 1993; Brewer et al., 1993; Cecic Erpic et al., 2004; Kerr & Dacyshyn, 2000; Lally, 2007; Lavallee, Gordon, et al., 1997; Sparkes, 1998). As mentioned, athletic identity has been shown to be related to retirement difficulties (Webb et al., 1998), with results suggesting that the quality of an athlete's adjustment to post-sport life may be facilitated if his or her level of athletic identity decreases (Lavallee, Gordon, et al., 1997).

Past research has also shown athletic identity levels to decrease significantly over time (Brewer & Cornelius, 2001; Brewer et al., 1993), however, it is still unclear whether athletic identity levels remain stable or change during the lead-up time to retirement, and what impact this has upon aspects of the individual's psychological well-being. As discussed in Chapter 2, Lally's (2007) recent longitudinal, prospective study in the athletic retirement

literature showed evidence of athletes proactively decreasing the prominence of their athletic identities in preparation for their retirement in order to safeguard their identities. It was found that some of the athletes began to negotiate their new sense of self long before they actually retired, in order to avoid experiencing a major identity crisis (Lally, 2007). As a result, the athletes were reported to experience a relatively smooth transition into retirement. However, this research was purely qualitative in nature and conducted with student-athletes. Therefore, it is of interest to investigate whether these same results are achieved through measuring athletic identity quantitatively and using an elite athlete population.

There is also still much to explore in this area particularly in relation to the self-view of athletes; that is, the way in which athletes think about and view themselves, and how this changes as retirement approaches and beyond. A study conducted by Stephan et al. (2003a) compared the global self-esteem, perceptions of sports competence, and perceptions of physical attractiveness (among other constructs) of 16 French athletes in transition following the Sydney Olympic Games to that of 16 active elite athletes on four occasions over a one-year period. It was found that the retiring athletes faced a period of disorientation and loss of self-confidence during the first six months of transition out of elite sport. This saw their self-esteem, perceptions of sports competence, as well as of their physical attractiveness, to be significantly lower than that of the active group. This initial period, however, was followed by a period of adaptation, whereby athletes were shown to reassess their physical competencies and create new personal standards for themselves, resulting in the stabilisation of these constructs. Despite such studies, there is still much to learn about how retirement from sport influences other aspects of athletes' self-identity, including the way they perceive themselves in relation to a number of academic and non-academic aspects of self-identity,

and the values they place upon such aspects. In gaining more information related to this area, adjustment issues as a result of retirement may be able to be avoided through the early identification of warning signs or risk factors associated with changes in the athlete's identity-related behaviours.

There has also been considerable research which has looked at the impact of the circumstances surrounding the retirement of athletes as having a significant impact on psychological well-being. Within the sporting domain, there are some transition experiences which are expected and some which are more sudden and unexpected. These transitions are referred to as normative and non-normative respectively (Stambulova, 2000). Team deselection, age, and injury have been commonly identified as being non-normative, or involuntary, reasons for retirement. Retirement due to feeling satisfied that they have reached all their sporting goals, or due to reasons such as having lost the motivation to compete, is considered to be normative or voluntary (Stambulova, 2000; J. Taylor & Ogilvie, 1994).

A positive correlation has been found between normative or voluntary career termination and fewer adaptation difficulties (Alfermann, 2000; Alfermann & Gross, 1997; Cecic Erpic, 2000; Werthner & Orlick, 1986). Taylor and Ogilvie (1994) also highlighted the degree of voluntariness of sports career termination as playing a significant role in the level of adjustment difficulties athletes report in relation to their life after sport. Other studies have reported involuntary retirement to have significant negative effects on an athlete's feelings of anxiety and depression (Alfermann & Gross, 1997), self-respect (Crook & Robertson, 1991), and self-control (Werthner & Orlick, 1986). These results indicate that retirement from sport can have a marked impact upon an individual both socially and

psychologically. In a study of 48 former elite-amateur Australian athletes, Lavallee, Grove, and Gordon (1997) reported that those athletes who experienced an involuntary retirement, or non-normative transition, from their sporting careers were more likely to experience greater emotional and social adjustment difficulties than those who retired voluntarily. These results suggest that a smoother transition may be related to the predictability of the situation, allowing individuals to feel that they have a choice and have more control over their future.

Other studies have found that those athletes who have engaged in career planning prior to their retirement feel higher levels of perceived personal control, resulting in them having higher self-efficacy in relation to their ability to successfully adapt to life after sport (Alfermann, 2000; Alfermann et al., 2004; McPherson, 1980; Taylor & Ogilvie, 1994; Webb et al., 1998). According to Alfermann et al. (2004), athletes who have prepared themselves in this way prior to career termination are able to access their resources more readily upon retirement than those athletes who have failed to make such plans. However, many of these studies have involved Slovenian and American athletes. The current study sought to investigate this area using Australian elite athletes.

The current study aimed to address these questions by tracking the athletic identity levels and self-identity characteristics endorsed by Australian elite athletes over time, as well as in relation to differing phases of transition from active participation in sport through to retirement. Life satisfaction and self-esteem were also, once again, used as a measure of psychological well-being in order to assess any adjustment implications which may accompany this transition.

A methodological weakness of many of the studies in this area is that they rely upon retrospective accounts. The current study was unique as, not only did it take a longitudinal

approach, following the participants over a five-year period of time, but it also encompassed athletes from a number of different transition phases. Approximately one-quarter of the initial sample (N = 62) retired from elite sport during the five-year period between the two data collections. In addition, just over 20% of the sample indicated their intention to retire from elite-level sport within the next four years. A valuable comparison can be made between these two groups of athletes (athletes who are retired and those who are intending to retire) as well as with the remaining athletes, who continued to compete at the elite level in their sport with no plans to retire.

5.2 Overview of Study Aims and Hypotheses

The main aims of this study were:

1. To explore any changes in athletic identity, self-esteem, and life satisfaction over time, and to ascertain whether an athlete's retirement status has a role to play in any changes identified.
2. To track the changes in the self-identity characteristics endorsed by Australian elite athletes over time, as well as in relation to differing phases of transition from active participation in sport through to retirement.
3. The final aim of this study was to investigate the impact of the voluntariness of retirement on the self-identity characteristics endorsed by athletes who are both retired from elite level sport, and those who are intending to retire within the next four years, as well as the influence of this factor upon levels of athletic identity, self-esteem and life satisfaction.

There were five main hypotheses of the current study. These were as follows:

1. Within the retirement group, athletic identity levels will decrease significantly following retirement from sport.
2. That retired athletes will rate the importance of physical/sporting ability significantly lower than current athletes.
3. That those athletes who retired from sport voluntarily will have significantly lower levels of athletic identity than those athletes who are forced into retirement at the second time-point.
4. That those athletes who retired from sport involuntarily will report significantly lower levels of psychological well-being (self-esteem and life satisfaction) than those athletes who retired voluntarily at the second time-point.

5.3 Method

5.3.1 Participants

Participants were selected for this study if they responded to surveys from both the first and final phases of a five-year evaluation of the ACE program. The surveys for both of these phases may be viewed in Appendix C and Appendix D respectively.

The participants were 62 Australian elite athletes (45 females, 17 males) on scholarship at Australia's State or Territory Academies or Institutes of Sport. In Study 2, participants were excluded from the sample if they were previous participants in the 2003 first wave data collection. The participants in this study, however, were those athletes who were identified as completing both the 2003 and 2007 surveys.

In 2003, participants ranged in age from 14 to 36 years (M = 21.6; SD = 5.1). They represented 23 different sports, with the largest numbers involved with swimming (9), athletics (9), rowing (7), netball (5), hockey (4), cricket (3), softball (3), volleyball (3), and water polo (3). By 2007, 25.8% of participants had retired from sport, while 22.6% of

participants had indicated their intentions to retire within the next four years. This resulted in three groups being formed; the retired group (n = 16), the intending group (n = 14) and the current group (n = 32). The current group consisted of those participants who continued to actively participate in their sport on scholarship. The average number of years that the retired group athletes had been retired for by 2007 was 2.1 years, with a range of 1 to 3 years. All participants had access to the National ACE program. A total of 38 participants (61.3% of the sample) indicated that they had used ACE services in the 2007 survey.

It is important to note that the athletes were separated into their groups (current, intending, or retired) on the basis of their retirement status in 2007. Therefore, those athletes in the retired group in 2003 were not yet retired from elite sport at this time-point, nor did the athletes in the intending group indicate their intentions to retire in 2003. However, it is necessary to group them in this way in order to track the differing athletic identity, self-esteem, and life satisfaction levels between the athletes who ultimately retired by the final data collection, and those who simply indicated their intention to retire from their sport in 2007.

5.3.2 Measures

The same surveys were used for data collected in the current study as were used in Study 1 and Study 2. Therefore, the same demographic and general information was collected and the same four instruments were used to measure levels of athletic identity, self-identity characteristics, self-esteem, and life satisfaction. These instruments were the Athletic Identity Measurement Scale (AIMS; Brewer et al., 1993), the Self-Description Questionnaire III–summary items (SDQ III; Marsh & O'Neill, 1984), the General Esteem Questionnaire (GEQ; Marsh 1990), and The Satisfaction With Life Scale (SWLS; Diener et

al., 1985) respectively. Further details related to these instruments can be found in the Method section of Chapter 3.

5.3.2.1 2003 Survey: Retirement intentions. It is important for this study to highlight that part of the 2003 survey asked participants about their intention to retire from active participation in their sport (see Appendix C). They were asked the following initial question, "Do you plan to retire from elite level participation in your sport?" and given four different timeframes to consider. These timeframes were *within the next 12 months?, within the next 2 years?, within the next 3 years?,* and *within the next 4 years?* Participants were then asked to indicate either *yes* or *no* for each of these timeframes.

5.3.2.2 2007 Survey: Qualitative retirement questionnaire. In the 2007 survey (see Appendix D), participants were asked to respond to the same question. However, an additional response option of *already retired* was provided. If this was applicable to the participant, a box was available next to this response where participants could indicate the number of years that they had been retired. For those participants who indicated that they had retired, or were considering retiring from sport within the next four years, there was an additional section of the questionnaire to complete. This section consisted of seven open-ended questions asking respondents to comment on their sporting and retirement experiences. For example, participants were asked, "Why are you retiring or why have you retired from elite level sport?" and "Do you have career plans in place? If yes, what are these plans?"

5.3.3 Procedure

As outlined in the Procedure sections of both Study 1 and Study 2, survey forms were sent to ACE advisers throughout Australia's state or territory academies or institutes of sport who distributed them to as many athletes on scholarship in 2003 and 2007 that they could.

Confidentiality was assured by asking athletes to seal their completed forms in the envelopes provided and to return them to their ACE adviser, or to mail them (reply paid) directly to the researchers.

5.4 Results

5.4.1 Self-identity Characteristics

The first aim of this study was to track the changes in the self-identity characteristics endorsed by Australian elite athletes over time, as well as in relation to differing phases of transition from active participation in sport through to retirement. In order to do this, the SDQ III was used to measure the characteristics of self-identity that elite athletes report as being accurate representations of who they are as a person, and how important they rate specific dimensions of self to be.

This section firstly explored the athletes' mean ratings of the 12 items of the SDQ III, for both the accuracy and importance scales, in order to present some data related to those characteristics which were strongly endorsed by the sample and those that were not. Secondly, repeated-measures ANOVAs were performed to investigate whether there were any significant interactions between time (2003 and 2007) and retirement status (current/intending/retired) in relation to the mean scores of the SDQ III ratings of the self-descriptors for both scales. These interactions should indicate whether or not athletes from differing stages of transition rate the accuracy and importance of certain self-identity characteristics differently over time, or significantly differently from athletes in other transition phases.

The means and standard deviations for each of the 12 items of the accuracy scale of the SDQ III at both time-points were computed for the total sample and are presented in Table 10. From a visual inspection of the data, characteristics shown to be strongly endorsed

Table 10

SDQ III Accuracy Item Means and Standard Deviations for the Total Sample (N = 62) in 2003 and 2007

	Survey			
	2003		2007	
Item	*M*	*SD*	*M*	*SD*
Sporting/physical ability	7.94	1.4	7.44	1.5
Physical attractiveness	5.84	1.4	6.08	1.3
Interactions opposite sex	6.74	1.4	7.11	1.1
Interactions same sex	7.34	1.3	7.38	1.1
Interactions with parents	7.74	1.7	7.76	1.5
Emotional stability	6.73	1.8	6.71	1.6
Spirituality/religiosity	3.87	2.4	3.58	2.1
Honest/reliable/trustworthy	7.92	1.3	8.08	.89
Verbal skills	7.20	1.6	7.47	1.2
Mathematical ability	6.77	1.7	6.35	1.7
Academic ability	6.92	1.8	6.85	1.5
Problem-solving ability	6.82	1.6	6.98	1.4

as being accurate self-descriptions for the group in 2003 included sporting/physical ability (M = 7.94), honesty/reliability/trustworthiness (M = 7.92), and good interaction with parents (M = 7.74). These characteristics were the same three that have been observed as being the most highly rated of the accuracy scale items in both Study 1 and Study 2. The rank orders of attributes were shown to change slightly when athletes completed the 2007 survey, with

honesty/reliability/trustworthiness (M = 8.08), and good interaction with parents (M = 7.76) moving to the top two ranked positions. Sporting/physical ability (M = 7.44) was shown to drop from being rated as the most accurate of the self-descriptors in 2003, to the fourth most accurate in 2007. The item related to verbal skills (M = 7.47) was promoted from fifth position in 2003, to third position in the 2007 data collection. Academic ability (M = 6.92) was shown to drop from being rated as the sixth most accurate item in 2003, to the eighth (M = 6.85) most accurate in 2007. In line with the findings of the previous studies, physical attractiveness and spirituality/religiosity continued to be the two characteristics that were least endorsed by the Australian elite athletes over both surveys. A series of repeated-measures ANOVAs were conducted on each of the facets of self-identity from the SDQ III accuracy scale to assess whether any significant interactions existed between time and group, as well as whether any significant changes occurred across the five-year period for each of the groups individually. No statistically significant differences were found for nine of the 12 items of the accuracy scale. However, a statistically significant increase in means over time was found for the item related to having good interactions with members of the opposite sex, $F(1, 59) = 5.28$, $p < .05$. In addition, a significant decrease in means over time was shown to occur for the items related to both sporting/physical ability, $F(1, 59) = 5.41$, $p < .05$, and mathematical ability, $F(1, 59) = 5.38$, $p < .05$. None of the interactions were shown to reach significance.

The means and standard deviations for each of the 12 items of the importance scale of the SDQ III at both time-points were computed for the total sample and are presented in Table 11. In both the 2003 and 2007 surveys, the characteristics rated as the two most important determinants as to how the athletes viewed themselves were honesty/reliability/

Table 11

SDQ III Importance Item Means and Standard Deviations for the Total Sample (N = 62) in 2003 and 2007

	Survey			
	2003		2007	
Item	*M*	*SD*	*M*	*SD*
Sporting/physical ability	7.42	1.6	6.64	1.7
Physical attractiveness	5.43	2.0	5.64	1.6
Interactions opposite sex	6.69	1.6	7.03	1.5
Interactions same sex	6.84	1.4	7.20	1.5
Interactions with parents	8.11	1.5	8.25	1.1
Emotional stability	7.77	1.3	7.60	1.4
Spirituality/religiosity	3.81	2.5	3.84	2.2
Honest/reliable/trustworthy	8.39	1.2	8.39	.88
Verbal skills	7.77	1.4	7.87	1.0
Mathematical ability	6.76	1.6	6.69	1.6
Academic ability	7.39	1.5	7.26	1.5
Problem-solving ability	7.24	1.6	7.49	1.3

trustworthiness and having good interactions with parents. Once again, these results replicated those found in both Study 1 and Study 2.

Emotional stability and verbal skills, were rated as being equally important (*M* = 7.77), both rating in third position in the 2003 survey. In the 2007 survey, verbal skills (*M* = 7.87) were ranked third, while emotional stability was ranked in fourth position (*M* = 7.60).

The sporting/physical ability (M = 7.42) item was rated in fifth position in the 2003 survey, however, dropped to 10th position (M = 6.64) in the 2007 ratings, behind mathematical ability (M = 6.69) and having good interactions with members of the opposite sex (M = 7.03).

Emotional stability was consistently rated within the top three important characteristics in both Study 1 and Study 2. Academic ability was shown to remain stable as the sixth most important item in both 2003 (M = 7.39) and 2007 (M = 7.26). A series of repeated-measures ANOVAs was then conducted on each of the facets of self-identity from the SDQ III importance scale. There were no statistically significant differences found for 10 of the 12 items of the importance scale. However, although there was no significant interaction found, a statistically significant decrease in means over time was shown to occur for the item related to sporting/physical ability, $F(1, 58) = 7.15$, $p < .05$. In addition, a significant interaction was found for the item related to having good interactions with members of the same sex, $F(1, 56) = 3.29$, $p < .05$.

These results suggest that the means for this item changed significantly over time but in different ways for the three groups. The intending and retired groups were shown to have an increase in means over time, while the current group was found to remain stable.

Paired samples t-tests were then conducted for each of the three groups to assess whether these changes were significant. The intending group means were found to significantly increase over time, $t(12) = -2.59$, $p < .05$, however, there were no significant changes found in relation to the mean scores for the current or retired groups.

5.4.2 Athletic Identity, Self-Esteem, and Life Satisfaction

A second aim of the current study was to explore any changes in athletic identity, self-esteem, and life satisfaction over time, and to ascertain whether an athlete's retirement

status has a role to play in any changes identified. Repeated-measures ANOVAs were performed for each of the three measures (AIMS; LSS; GEQ) to investigate whether there were any significant interactions between time and group in relation to the mean scores for each of these constructs.

Prior to exploring results, Cronbach's alpha was calculated for each of the three scales at each time-point to assess internal consistency. Each scale was established as a reliable measure of their respective constructs, with all Cronbach's alphas exceeding the widely-used 0.70 level of adequacy (Netmeyer et al., 2003; Ryff, 1995). The results are presented in Table 12. The mean scores for each of the measures in relation to the three retirement status groups from both 2003 and 2007 are displayed in Table 13. Each of the three measures were subjected to a 3 x 2 (Group x Time) repeated measures ANOVA.

Firstly, when conducted in relation to the AIMS, a significant interaction was found to exist between AIMS scores and retirement status, $F(2, 59) = 5.40$, $p < .01$. These results

suggest that the AIMS scores of the three groups changed significantly over time but in different ways. In order to assist with further interpretation of this result, a visual representation of the AIMS means of each of the three groups at both time-points is shown clearly in Figure 7.

A series of paired-samples t-tests were then conducted to assess whether the mean AIMS scores changed significantly from 2003 to 2007 for each of the three groups. The results indicated that the mean AIMS scores of all three groups significantly decreased over time (current, $t(31) = 2.49$, $p < .05$; intending, $t(13) = 2.36$, $p < .05$; retired, $t(15) = 4.98$, $p < .01$).

A univariate ANOVA was conducted to investigate whether there were any

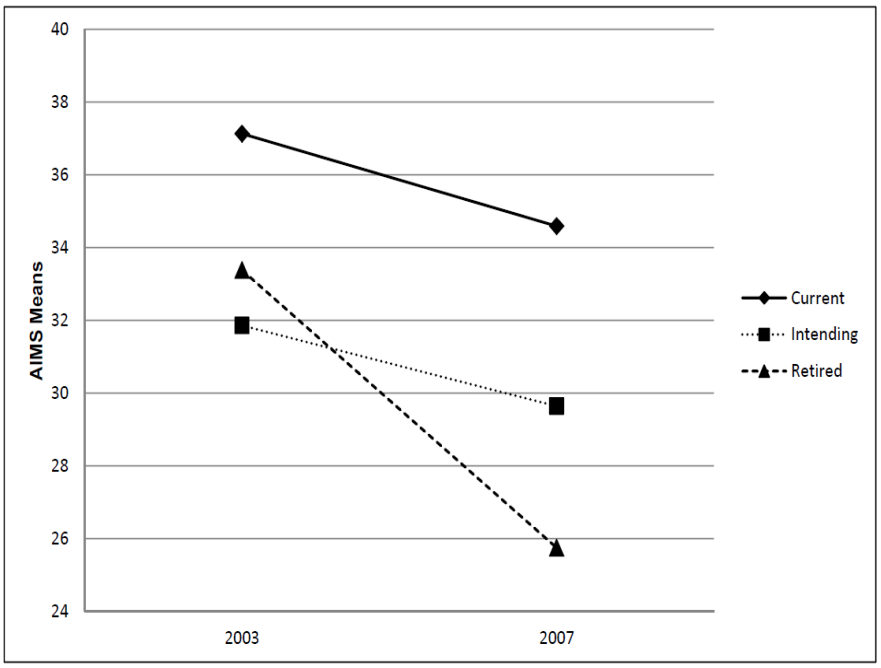

Figure 7. AIMS means across the three retirement status groups for Survey 1 (2003) and Survey 2 (2007).

significant differences between the mean AIMS scores of the three groups in 2003. A significant difference between AIMS scores was shown to exist, $F(2, 59) = 5.56$, $p < .01$. Post-hoc tests using the Bonferroni correction revealed the current group to have significantly higher levels of athletic identity than those athletes in the intending group in 2003.

The same analyses were performed to explore the differences between the mean AIMS scores of the three groups in 2007. Once again, a significant difference was found, $F(2, 59) = 16.16$, $p < .01$. Post-hoc tests using the Bonferroni correction revealed the current group to have significantly higher levels of athletic identity than both the intending and retired groups. However, there were no significant differences between the athletic identity levels of those athletes who had retired, and those athletes considering retirement from sport.

A 3 x 2 (Group x Time) repeated measures ANOVA was then when conducted in

Table 12

Cronbach's Alphas for the AIMS, GEQ, and LSS for the 2003 and 2007 Surveys

	Survey	
Scale	2003	2007
AIMS	.80	.81
GEQ	.74	.84
LSS	.78	.88

relation to the General Esteem Questionnaire (GEQ). No significant main effect, $F(1, 54) = 3.38$, $p > .05$, or interaction was found, $F(2, 54) = .96$, $p > .05$. These results suggest that self-esteem scores of the three groups did not change significantly over time.

The same analyses were then performed for the Life Satisfaction Scale (LSS) scores. A significant interaction was found to exist between LSS scores and retirement status, $F(2, 57) = 4.02$, $p < .05$. These results suggest that the life satisfaction scores of the three groups changed significantly over time but in different ways. In order to assist with further interpretation of this result, a visual representation of the LSS means of each of the three groups at both time-points is shown clearly in Figure 8.

A series of paired-samples t-tests were then conducted to assess whether the mean LSS scores changed significantly from 2003 to 2007 for each of the three groups. The results indicated that the mean LSS scores of the current, $t(30) = .63$, $p > .05$, and intending, $t(12) = 2.04$, $p > .05$, groups remained steady over time, with no significant differences shown to exist between the 2003 and 2007 LSS means for these groups. However, there was a significant change found for the retired, $t(15) = -2.46$, $p < .05$, group, with levels of life satisfaction shown to increase significantly from the 2003 survey to the 2007 survey.

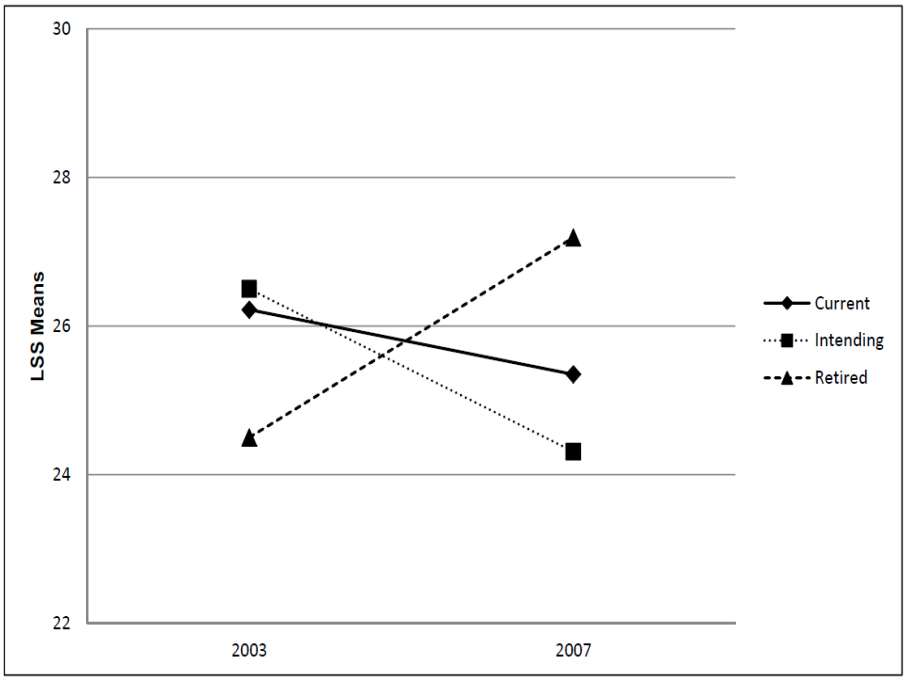

Figure 8. LSS means across the three retirement status groups for Survey 1 (2003) and Survey 2 (2007).

A univariate ANOVA was conducted to investigate whether there were any significant differences between the mean LSS scores of the three groups in 2003. No significant differences between LSS scores were shown to exist, $F(2, 59) = .84$, $p > .05$. The same analyses were performed to explore the differences between the mean LSS scores of the three groups in 2007. Once again, no significant differences were found, $F(2, 57) = 1.04$, $p > .05$.

Table 13

Means and Standard Deviations for the AIMS, GEQ, and LSS for the Retirement Status Groups From the 2003 and 2007 Surveys.

			AIMS		GEQ		LSS	
Group	Survey	n	M	SD	M	SD	M	SD
Current	2003	32	37.13	6.0	34.47	4.4	26.22	5.5
	2007	32	34.59	5.0	34.35	5.3	25.35	5.4
Intending	2003	14	31.86	4.8	33.64	4.9	26.50	4.2
	2007	14	29.64	5.6	33.00	5.7	24.31	5.9
Retired	2003	16	33.38	4.6	31.53	5.2	24.50	3.9
	2007	16	25.75	5.4	33.75	5.5	27.19	5.4

Note. Higher means indicates higher levels of athletic identity, self-esteem and life satisfaction.

5.4.3 Reasons for Retirement

The final aim of this study was to investigate the impact of the voluntariness of retirement on the self-identity characteristics endorsed by athletes who are both retired from elite level sport, and those who are intending to retire within the next four years, as well as the influence of this factor upon levels of athletic identity, self-esteem and life satisfaction. The qualitative responses that these athletes provided to the question, "Why are you retiring or why have you retired from elite level sport?", on the additional section of the 2007 survey were coded as being either *voluntary* or *involuntary* reasons for retiring or considering retirement. A series of independent samples t-tests were performed to compare the SDQ III accuracy and importance scale item mean scores. Non-parametric statistics (Mann-Whitney *U*-tests) were used to compare the AIMS, GEQ, and LSS mean scores, of the voluntary and

involuntary groups. Non-parametric statistics (Wilcoxon Signed Rank Tests) were also used to compare the athletic identity, self-esteem and life satisfaction scores of the athletes who had retired voluntarily from 2003 to 2007 in order to identify whether they had changed significantly or remained stable over time. The same analyses were then conducted for those athletes who had retired involuntarily.

The participants who indicated that they had retired, or were considering retiring from sport within the next four years, were asked to state their reasons for retiring from elite level sport. A panel of six expert judges, who were all experienced sport and exercise psychologists, were asked to rate each of the qualitative responses given by the athletes as being either voluntary or involuntary reasons for retirement.

Previous research in this area was used as a guide in the development of the criteria for the two categories. Team deselection, age, and injury have been commonly identified as being non-normative, or involuntary, reasons for retirement. Retirement due to feeling satisfied that they have reached all their sporting goals, or due to reasons such as having lost the motivation to compete, is considered to be normative or voluntary (Stambulova, 2000; Taylor & Ogilvie, 1994). These two broad criteria were given to the judges, however, it was left up to their own interpretation of each of the responses given by participants as to which category it was assigned to, and up to their discretion when responses reflected reasons from both of the categories. Following this, the judge's responses were tabulated and each response was coded according to the category chosen by the majority of the judges (see Tables 14 and 15).

Qualitative data were collected from 14 of the 16 athletes in the retired group, with nine athletes in this group being coded as involuntary, and five athletes coded as voluntary.

Table 14

Qualitative Data of Retired Group Participants and Coding Related to Voluntariness of the Transition

Response	Coding
Age, injuries – time to move on.	Involuntary
Age and injury.	Involuntary
Unable to commit time required for sport participation. Career outside of sport took over.	Voluntary
Satisfied with achievements. Physically – can't do it anymore. Emotionally – don't want to do it anymore. Other priorities in life now.	Voluntary
I played at an elite level for eight years and I had lost the enjoyment of competing at that level.	Voluntary
Age and time to move on.	Involuntary
Lack of motivation, lack of support by the [my institute], lack of career prospects in sport, no recognition or financial benefits.	Voluntary
Combination of chronic hip injury and inability to balance uni and swimming.	Involuntary
There were other aspects of my life that I was ready to pursue and I was happy with my sporting achievements.	Voluntary
Age. I was 37 when finished competing (after Athens).	Involuntary
Because I wasn't able to do it alone any longer and my body started to break down also.	Involuntary
Due to knee injury.	Involuntary
Injury.	Involuntary
I am involved in a relationship with my coach and was advised that his contract would not be renewed in the current circumstances, so I retired.	Involuntary

Table 15

Qualitative Data of Intending Group Participants and Coding Related to Voluntariness of the Transition

Response	Coding
After Athens Olympics I decided it was fine to move on. However I have kept myself fit and just recently (less than six months) have decided to have a go to see where my level is at the Beijing.	Voluntary
No longer selected in Australian squad. Do not have desire to continue training at this level. Would like to establish my working career and earn some money.	Involuntary
To pursue career opportunities/goals.	Voluntary
Age. Not as competitive at an international level.	Involuntary
Would like to start a family. Would like to work on my career more. Not enough money in sport to continue.	Voluntary
I was injured and now I'm having a big break.	Involuntary
I will retire because I want to pursue my non-sporting career and because of family commitments.	Voluntary
Looking forward to other challenges. Financial burden. Back health.	Involuntary
Age and being female in a few years I would be thinking of having children.	Involuntary

The inter-rater agreement between the six expert judges used to gauge whether the reasons given for retirement were considered to be voluntary or involuntary was based on Ebel's (1951) formula. Based on this, inter-rater reliability was strong (.91). The participant responses from the retired group, and the coding of these responses, are presented in Table 14.

This information was also gathered from nine of the 14 athletes in the intending group, with five athletes in this group being coded as involuntary, and four athletes coded as voluntary. Once again, inter-rater reliability of the judgement of the six experts was gauged using Ebel's (1951) formula and found to be strong (.81). The participant responses from intending groups, and the coding of these responses, are presented in Table 15.

In order to investigate the impact of the voluntariness of retirement on the self-identity characteristics endorsed by these athletes, a series of independent samples t-tests was performed to compare the SDQ III accuracy and importance scale item mean scores of the voluntary (n = 9) and involuntary (n = 14) groups, regardless of their retirement status. No significant differences were found between the two groups for any of the items from both the accuracy and importance scales in 2003. In 2007, once again, no significant differences were reported between the two groups for any of the items from the accuracy scale. However, on the importance scale, the involuntary group were shown to score the item related to sporting/physical ability to be significantly more important than the voluntary group in 2007, $t(20) = 2.47$, $p < .05$.

These results were replicated when the same analyses were performed for the athletes within the retired group only (that is, those athletes who were already retired by 2007) who were categorised as being voluntary (n = 5) and involuntary (n = 9), with those athletes who reported retiring involuntarily rating the importance of sporting/physical ability significantly higher than those athletes who retired voluntarily, $t(5.3) = 2.90$, $p < .05$.

The results differed for the intending group, with the voluntary group shown to score the item related to problem-solving ability to be significantly more accurate than the involuntary group in 2007, $t(7) = -2.77$, $p < .05$. However, no further significant differences

were found to exist between the voluntary and involuntary groups for any other items on both the 2003 and 2007 surveys.

A further aim of this study was to explore the influence of the voluntariness of retirement upon levels of athletic identity, self-esteem and life satisfaction. Due to small sample sizes, the AIMS, GEQ, and LSS mean scores of the voluntary (n = 9) and involuntary (n = 14) groups were compared using non-parametric tests, regardless of their retirement status. A Mann-Whitney U-test revealed no significant differences for both the 2003 and 2007 survey responses. However, when these same analyses were performed for the voluntary (n = 5) and involuntary (n = 9) groups within the retired group, two significant findings were revealed. From the 2007 sample, those athletes who reported retiring involuntarily were shown to have significantly lower levels of life satisfaction, than those athletes who retired voluntarily ($p < .05$). Once again, no significant differences were found when these same analyses were conducted for the intending group.

Following this, the athletic identity, self-esteem and life satisfaction scores of the athletes who had retired voluntarily were compared from 2003 to 2007 in order to identify whether they had changed significantly or remained stable over time. A Wilcoxon Signed Rank Test revealed that the athletic identity scores of this group of athletes decreased significantly from 2003 to 2007 ($p < .05$), while life-satisfaction scores were found to significantly increase over this period of time ($p < .05$). The self-esteem scores remained stable across the two surveys.

The same analyses were conducted for the athletes who were deemed to have retired involuntarily. The self-esteem and life satisfaction scores for this group were shown to remain stable from 2003 to 2007, however, as was found for the voluntary group, the athletic

identity scores of this group of athletes also were found to decrease significantly over the five-year period ($p < .05$).

5.5 Discussion

Previous research highlighted the circumstances surrounding retirement from sport to have a marked impact upon an individual both socially and psychologically (Murphy, 1995; Ogilvie & Howe, 1986; Ogilvie & Taylor, 1993; Shachar et al., 2004; Stryker & Burke, 2000). The current study provided a unique opportunity to explore internal changes that take place for elite athletes over time in accordance with their retirement status. Athlete self-identity profiles and levels of athletic identity were compared at two time-points (2003 and 2007) over a five-year period. Levels of self-esteem and life satisfaction were also investigated to evaluate whether retirement status was shown to impact upon these aspects of psychological adjustment over time. Further to this, the impact of the voluntariness of retirement on the self-identity, athletic identity, and psychological well-being of athletes was also assessed.

One of the main aims of this study was to track the athletic identity, self-esteem, and life satisfaction levels of Australian elite athletes over the course of their transition from active participation in sport to retirement. Athletic identity levels were, once again, shown to decrease significantly with age. These results replicated the findings of both Study 1 and Study 2, as well as those cited in previous studies (Brewer & Cornelius, 2001; Brewer et al., 1993).

As hypothesised, athletic identity levels of the retired group were found to decrease significantly following retirement from sport. In fact, the athletic identity levels of all three retirement status groups were shown to decrease significantly over time, which was not surprising given the already established relationship between athletic identity and age, and

the fact that, by 2007, all athletes were four years older than they were in 2003. However, one of the aims of this study, which made it distinct from previous studies, was to ascertain whether an athlete's retirement status, spanning three different transitional phases, has a role to play in any such changes identified.

When comparing the athletic identity scores of the three retirement status groups at both time points, in 2003, athletes who indicated that they were considering retiring from sport within the next four years (intending group) showed significantly lower levels of athletic identity than those athletes who indicated no intentions to do so (current group). The AIMS scores of the intending and retired groups were comparable at this time-point, with no significant differences reported.

These results may indicate that those athletes in the intending group were less tied to sport than those athletes in the current group, and therefore more likely to retire during the subsequent four year period. However, as the intending group were rated from their response to the 2007 retirement status questions, it is likely that these athletes had not yet expressed an intention to retire from elite sport at the first data collection. These results therefore may also indicate that the extent to which an individual identifies with the athlete role may significantly decrease many years before they actually begin to consider retirement. These results support the findings documented by Lally (2007), as discussed in Chapter 2, that athletes proactively decrease the salience of their athletic identities prior to their actual disengagement from sport. Lally viewed this decrease in the prominence of athletic identity as being a means of self-protection, with the athletes in her study found to have anticipated disruptions to their identities as their retirement approached. In an attempt to redefine themselves, seeking to avoid experiencing a major identity crisis, these athletes employed a

variety of coping strategies, such as involving themselves in other physical and academic pursuits. According to Lally, such strategies did not have a negative impact upon their athletic performances and saw the athletes experience a smooth transition to retirement.

By 2007, the athletes with no intention to retire displayed significantly higher athletic identity levels than those athletes who had both retired from elite sport, and those who had expressed their intention to do so within the next four years. These results also support Lally's (2007) findings, as well as those of Study 1 and Study 2, whereby athletes considering retirement from sport were found to display significantly lower levels of athletic identity than those athletes with no plans to retire.

Reflecting on the AIMS results of the current study for each of the three retirement status groups across the two data collection time-points, it appears that self-protection processes may be operating within this population of Australian elite athletes. Perhaps the lower levels of athletic identity of those athletes who are either retired, or who have intentions to retire, is because these individuals have started to explore, or at least think about, other aspects of their lives, such as their career choices, as they contemplate their future after sport. Whatever the reasoning, these findings contribute further evidence to the suggestion that Australian elite athletes may experience a relatively positive transition from active participation in their sport through to retirement. Previous research has found that the adjustment period following sport career termination can be prolonged if the athlete takes a long time to decrease the extent to which they identify with the athlete role (Cecic Erpic et al., 2004). In addition, significant decreases in the athletic identity of recently-retired Australian elite athletes has also previously been shown to be related to overall perceived success in coping with retirement (Lavallee, Gordon, et al., 1997).

Although retirement status was shown to significantly impact upon levels of athletic identity, it was not found to impact on athletes' levels of self-esteem, with the results indicating that the GEQ scores of the three groups remained stable over time. Interestingly, there were some significant findings related to the life satisfaction of athletes with differing retirement statuses.

Life satisfaction has been found to follow a predictable pattern over time, with previous research showing it to increase gradually over the life-span, before declining during old age (Cummins, 1998; Lang & Heckhausen, 2001; Mroczek & Spiro, 2005). In the current study, all three groups were found to have comparable life satisfaction scores at both time-points, with no significant differences shown to exist. However, when comparing the levels of life satisfaction of each of the three groups across the five-year period, life satisfaction was found to remain stable for two groups—those athletes who had no intention to retire from sport and those who reported an intention to do so within the next four years—but to show a significant increase for those athletes who had retired by 2007. These results are of particular interest, as they show that this aspect of psychological well-being had risen substantially for the retirees by 2007.

Similar findings to these have been reported previously in non-sport settings, whereby retirement was found to have a positive impact upon, not only life satisfaction, but also upon stress levels and the general health of retirees (Calasanti, 1996). Such findings provide further positive indications that these individuals are likely to be experiencing a healthy adjustment to this important life event. These results, however, do not support those of previous studies conducted within the sporting context which have reported subsequent declines in life satisfaction of athletes following retirement from sport (Cecic Erpic, 1998;

Werthner & Orlick, 1986). Both of the studies cited, however, were conducted with Slovenian and Canadian elite athletes respectively, and therefore these results may not be applicable to an Australian elite athlete population.

The second main aim of this study was to track the changes in the self-identity characteristics endorsed by Australian elite athletes over time, as well as in relation to differing phases of transition from active participation in sport through to retirement. In relation to the characteristics of self-identity that athletes reported as being accurate representations of who they are as people and how important they rated specific dimensions of self to be, the results of the current study at the first time-point (2003) supported the results of both Study 1 and Study 2. Once again, a strong pattern emerged of athletes identifying themselves as possessing a high level of sporting/physical ability, as being honest and reliable individuals, and as having good interactions with their parents. Honesty and the interactions the athletes shared with their parents were, once again, found to be rated as the most important characteristics. On the other end of the scale, physical attractiveness and spirituality/religiosity continued to be rated as being both the least accurate and the least important determinants of self-identity when compared with the other SDQ III items.

As time went by, as shown by the rankings at the second time-point (2007), both the group accuracy and importance ratings of the sporting/physical ability item were shown to drop, with accuracy rankings dropping from first position to fourth position, and importance rankings from fifth to 10th position. This drop in importance was also reflected in the mean scores for this item from 2003 to 2007, with a significant decrease shown to occur over time. This was the only significant change found for the importance scale means of the group (N = 62) over the five-year period. Once again, these results support previous studies which

reported the importance of the athlete role as decreasing over time (Greendorfer & Blinde, 1985; Miller & Kerr, 2003).

In relation to some of the other items, verbal skills and emotional stability were rated as being of high importance at both time-points, while the importance of academic ability was shown to remain stable across time, ranked sixth at both time-points. Verbal skills were observed to become more prevalent in relation to accuracy over time, with the ranking of this item increasing from fifth position in 2003 to third position in 2007. This suggests that the athletes started to view themselves to be more equipped in this aspect of self-identity over time. However, as this change was not found to be significant, it should be interpreted with caution.

Due to the longitudinal design of this study, the changes in accuracy ratings of the SDQ III for this sample were able to be seen over time. This was something that the previous two studies were unable to show due to their cross-sectional nature. Three significant changes were evident on the accuracy scale of the SDQ III from 2003 through to 2007. The athletes were shown to have a significant decline in their ratings of their sporting/physical and mathematical abilities over the five-year period, but reported that they felt more adept at interacting with members of the opposite sex. These results indicate that the self-identity characteristics endorsed as being accurate by the athletes in this sample remained quite stable. The decrease in the importance of sport/physical ability and in maths ability, and item related to the academic role, reflects similar results obtained from Study 1 and 2 whereby the value of such aspects of self were found to significantly decrease with age. The significant increase in perceptions related to them being better able to relate to members of the opposite sex, may relate more to their perceptions of their ability to engage in intimate relationships.

Interestingly, both the retired and intending groups were shown to significantly increase the value they placed upon this same item from 2003 to 2007. However, the ratings of the current group for this item remained stable. It is speculated that the reason that the value of this item of the SDQ III has significantly increased for those athletes who have either retired or expressed their intention to retire is that they are beginning to contemplate the content of their lives without sport, which may result in an increased emphasis being placed upon building, or placing more time into, such relationships.

This was the only significant result found in relation to changes in importance placed upon the 12 self-identity characteristics given by the three retirement status groups. Although the importance of the SDQ III item related to sporting/physical ability decreased over time for the group as a whole ($N = 62$), dropping from being ranked in fifth position to 10th position over the five-year period, retired athletes were not found to rate the importance of physical/sporting ability significantly lower than current athletes, thereby not supporting the hypothesis. These findings indicate that retirement status does not influence the value placed upon the athlete role. Despite this, the reasons that athletes gave for retiring, or intending to retire, from sport were found to have an impact upon these values. These results will now be discussed.

The final aim of this study was to investigate the impact of the voluntariness of retirement on the self-identity characteristics endorsed by athletes who are both retired from elite level sport, and those who are intending to retire within the next four years. As previously mentioned, a positive correlation has been found between voluntary career termination and fewer adaptation difficulties (Alfermann, 2000; Alfermann & Gross, 1997; Cecic Erpic, 2000; Werthner & Orlick, 1986), while an abrupt or involuntary retirement has

been shown to have significant negative impact upon an individual both socially and psychologically (Alfermann & Gross, 1997; Crook & Robertson, 1991; Werthner & Orlick, 1986).

The athletes in the retired and intending groups were separated according to whether they had retired (or perceived that they would retire) as a result of voluntary or involuntary reasons. Results indicated that those athletes in the involuntary group rated the importance of physical/sporting ability significantly higher than those athletes in the voluntary group. This was also found to be the case when the SDQ III responses of only the athletes in the retired group were explored in relation to voluntary and involuntary reasons for their retirement. These results suggest that the salience of those aspects of self-identity related to the athlete role may take longer to decline for those athletes who do not have control over their transition. According to Cecic Erpic et al. (2004) this would see these athletes as being prone to experiencing a more prolonged transition period.

These results obtained for the retirees were not replicated, however, when the intending group were separated into voluntary and involuntary reasons for retirement (to be referred to as the *voluntary intending* and *involuntary intending* groups). Despite this, in 2007, those athletes in the involuntary intending group were found to report significantly lower levels of problem-solving ability than those in the voluntary intending group. Further research is required in order to determine whether a change in perception in this area for those athletes who are intending to retire in the next four years due to involuntary reasons (e.g., age, deselection, etc.) is a sign of uncertainty which signifies the start of an athlete's emotional adjustment to the prospect of transitioning out of his or her sport in the future, or whether it is a totally unrelated issue. One explanation for the lack of significant differences

between the self-identity characteristics of those athletes who had retired voluntarily versus those who had retired involuntarily, is that, from closer inspection of the qualitative responses, many of these individuals had retired for both voluntary and involuntary reasons. Future research may also use such athletes as a separate group when looking at adjustment to retirement.

The impact of the voluntariness of retirement upon levels of athletic identity, self-esteem and life satisfaction was also explored. Due to past research suggesting that involuntary retirement leads to the most adjustment issues, and other studies suggesting levels of athletic identity to be associated with significant professional, social, and emotional difficulties being experienced post-sport (Alfermann et al., 2004; Brewer et al., 1993; Cecic Erpic et al., 2004; Grove et al., 1997), it was hypothesised that those athletes who retired from sport voluntarily would have significantly lower levels of athletic identity than those athletes who were forced into retirement. However, this was not found to be the case, with the athletic identity levels of these two groups of retired athletes found to comparable.

It was also predicted that involuntary retirees would exhibit lower levels of psychological well-being (self-esteem and life satisfaction) when compared to their voluntary counterparts. This hypothesis was only partly supported, with involuntary retirees shown to have significantly lower levels of life satisfaction than voluntary retirees, but comparable levels of self-esteem. These findings suggest that the retirement experience may have a different impact upon how satisfied individuals feel with their life as a whole, than it has upon the overall value they place upon themselves as a person.

As mentioned, life satisfaction has been documented as taking a fairly predictable path over time (Cummins, 1998; Trzesniewski et al., 2003). Longitudinal research studies

have found evidence that one factor which significantly decreases an individuals' life satisfaction is that of impending death; an understandable relationship (Gerstorf et al., 1999; Mroczek & Spiro, 2005). The results of this study, however, suggest that an involuntary retirement from elite sport may also see the individual experience similar declines in this element of subjective well-being. It appears that an individual's perceived lack of control over their situation contributes significantly to many of these issues.

In their study exploring the relationship between age, subjective well-being (SWB), and perceived control, Lang and Heckhausen (2001) showed young and middle-aged individuals with more positive perceptions of control to be somewhat protected against the detrimental effects of failure and loss. It appears that these results can also be applied to the athletic population, with career termination identified as a time that commonly results in such feelings. Given that the mean age of the retired athletes in the current study was 28.6 years of age (SD = 5.8), which is clearly within the age range outlined by Lang and Heckhausen, it is therefore of no surprise that those athletes who lack control over the circumstances causing their career termination have been found to experience lower levels of life satisfaction when compared to those athletes who make the choice to retire from their sport. These results further reinforce the importance of including strategies which encourage athletes to be autonomous, such as those which encourage athletes to set their own career goals and develop their own social networks outside of sport, in athlete support programs, such as the ACE program, in order to increase perceptions of personal control during this complex period.

In conclusion, the self-identity characteristics endorsed by Australian elite athletes were found to remain quite stable over time, with the same identity profile that was

documented in Study 1 and Study 2 also found to emerge in the current study. Having good interactions with members of the opposite sex became more important to athletes as they began to think about life after sport, and as they made the transition through to retirement.

As for the previous two studies, athletic identity and the importance placed upon the athlete role were shown to significantly decrease over time. Results indicated that athletic identity levels of Australian elite athletes may significantly decrease many years before they actually begin to consider retirement, suggesting that self-protection mechanisms may be operating within this population.

Life satisfaction was shown to be the psychological indicator most affected by the retirement experience. Athletes who retired over the five-year period reported a significant increase in life satisfaction, while retirement status was found to have no impact on athletes' levels of self-esteem. Despite this, it appears that those athletes who face an involuntary retirement continue to be at the greatest risk of adjustment issues. In light of past research in this area, however, the results of this study may be interpreted as being an indication that Australian elite athletes may experience a positive transition to post-sport life.

Chapter 6 – Overall Summary Discussion

The primary purpose of this dissertation was to investigate whether demographic characteristics, aspects of achievement, and retirement status impact upon the self-identity, athletic identity, and psychological well-being of Australian elite athletes. It aimed to investigate the self-identity characteristics endorsed by Australian elite athletes, and the impact that a range of personal and situational factors may have upon these endorsements. A further aim was to explore the impact of these variables upon their levels of athletic identity, self-esteem, and life satisfaction. Further, there was an intention to determine whether a distinctive athletic profile exists in relation to the self -identity characteristics expressed by this population. The relationship between Australian elite athletes levels of athletic identity and their perceptions of their self-identity characteristics was also explored. Finally, this dissertation aimed to investigate the relationship between the athletic identity levels, life satisfaction, and self-esteem of elite athletes.

6.1 Overview of Main Findings

Results indicated that Australian elite athletes exhibit a common identity profile that is operating largely independently of the level to which they identify with the athlete role. The passion Australian elite athletes have for their sport was not shown to be restricting the development of a multidimensional self. While the sport-related item of the SDQ III was always strongly endorsed by athletes as being accurate in relation to their self-view, sport was, by no means, found to be all-encompassing. The self-identity characteristics pertaining to the academic or student role, as well as a range of other non sports-related aspects of self, appear to be highly valued by this population.

When considering these results in relation to identity theory, because the roles located at the top of individuals' identity hierarchies are considered to be those that the individual has

a greater level of commitment to, it appears that the importance placed upon familial (i.e., being a daughter/son) and academic roles (i.e. being a student) of Australian elite athletes, among others, are not suffering as a result of their focus on their sport (Stryker, 1968; Stryker & Burke, 2000). These results, along with the fact that athletic identity was not correlated with any non-sports related aspects of self endorsed on the SDQ III accuracy scale, may also serve as an indication that Australian elite athletes may have a high, as opposed to a low, level of self-complexity (Linville, 1985, 1987). In accordance with self-complexity theory, this would make them less prone to experiencing greater difficulty with coping with the stress of retiring from sport (Linville, 1987). As was shown in Study 3, Australian elite athletes certainly appear to be showing all the signs of making a smooth transition to life after sport. Further research would be required in order to show certain evidence of the general level of self-complexity of this population.

In support of previous research (Brewer & Cornelius, 2001; Brewer et al., 1993; Miller & Kerr, 2003), the results of this research also indicated that both the importance of the athlete role, as well as athletic identity levels, decrease significantly over time. Further to this, those athletes who indicated an intention to retire were found to have significantly lower levels of athletic identity than those athletes with no intentions to retire. These results were found to remain consistent across all three studies. These findings indicate that Australian elite athletes appear to be following a healthy pattern in relation to their level of identification with the athlete role, with previous studies suggesting athletes to be more susceptible to psychosocial and emotional adjustment issues should these aspects of self be maintained at high levels during their transition from sport and the post-retirement (Alfermann et al., 2004; Brewer et al., 1993; Cecic Erpic et al., 2004; Grove et al., 1997).

With respect to the psychological well-being of Australian elite athletes, athletic identity was found to be unrelated to life satisfaction; however, further investigation is required into the relationship between athletic identity and self-esteem. In light of past research in the area of career transition, results indicate that Australian elite athletes are likely to experience a positive transition to post-sport life, with those who retired over the five-year period in Study 3 found to report a significant increase in life satisfaction. Despite this, those athletes who retire from sport due to reasons which are outside of their control were shown to continue to be at the greatest risk of adjustment issues, showing significantly lower levels of life satisfaction than voluntary retirees.

There were a number of other main findings of this study, all of which have been presented and discussed in the relevant discussion sections throughout this document. A summary of these findings is presented in Table 16. Following this, sections outlining the applications of the main findings, limitations of the study, and future research directions will be provided. The dissertation will then end with a conclusions section.

Table 16

Summary of Main Findings Linked to Relevant Study

Main Findings	Relevant Study
Self-identity	
A clear self-identity profile was found to emerge across all three studies.	1, 2, 3
The identity profile of Australian elite athletes was found to operate largely independently of the level to which they identify with the athlete role.	1, 2
The self-identity characteristics pertaining to the academic or student role were shown to be highly valued by this population. Teenage athletes were found to be the age group which most valued this aspect of self.	1, 2, 3
Gender differences in the self-identities of Australian elite athletes replicate those found in the general population, but do not fully align with traditional sex stereotypes.	1, 2
Adolescence, as opposed to emerging adulthood, appears to continue to be a critical time in relation to identity formation.	1, 2
The self-identity characteristics endorsed by Australian elite athletes remain quite stable over time, with limited changes shown to occur.	3
The importance placed upon the academic role remained stable over time, whereas the importance of sport decreased over time.	3
Those athletes who indicated that they would retire within the next four years due to involuntary reasons were found to report significantly lower levels of problem-solving ability than those who reported voluntary reasons.	3
Retired and current athletes were found to be comparable in their ratings of the importance of physical/sporting ability to their self-view.	3

Main Findings	Relevant Study
Self-identity cont.	
The extent to which an individual identifies with the athlete role may significantly decrease before they actually begin to consider retirement.	3
The importance ratings of having good interactions with members of the opposite sex were shown to increase from 2003 to 2007 for those athletes who had both retired and indicated their intention to retire from elite sport in 2007.	3
The involuntary retirees rated the importance of physical/sporting ability significantly higher than those athletes who retired voluntarily.	3
Athletic identity	
Athletic identity was found to decline with age, along with the importance placed upon sporting/physical ability.	1, 2, 3
Gender does not play a clear role in determining athletic identity levels in the Australian elite athlete population.	1, 2
Athletes with no intention to retire from sport displayed significantly higher athletic identity levels than those athletes who had retired from elite sport.	3
The athletic identity levels of those athletes who retired from sport voluntarily and involuntarily were comparable.	3
Athletes with no intention to retire from sport displayed significantly higher athletic identity levels than those athletes who had expressed their intention to do so within the next four years.	1, 2, 3
Psychological well-being	
As for the general population, athletes with higher levels of life satisfaction are more likely to have higher levels of self-esteem.	1, 2, 3

Main Findings	Relevant Study
Psychological well-being cont.	
Athletes with higher perceptions of their academic ability were shown to identify more with the academic role. These perceptions were found to impact upon the value that athletes place upon themselves as a person, with those with higher levels of perceived academic achievement found to have higher levels of self-esteem.	1, 2
In relation to psychological well-being, athletic identity was shown to be unrelated to life satisfaction. The relationship between athletic identity and self-esteem remains unclear.	1, 2, 3
Life satisfaction was shown to be the psychological indicator most affected by the retirement experience. Athletes who retired over the five-year period reported a significant increase in life satisfaction, while retirement status was found to have no impact on athletes' levels of self-esteem.	3
Athletes who face an involuntary retirement continue to be at the greatest risk of adjustment issues. Involuntary retirees were shown to have significantly lower levels of life satisfaction than voluntary retirees, but comparable levels of self-esteem.	3

6.2 Applications of Main Findings

There are a number of noteworthy considerations emerging from the findings of this dissertation that can be used to guide individuals who are working with athletes. Due to the multidimensional nature of self-identity, and the difficulties that have been found to be associated with an over-commitment to the athlete role, athletes should be encouraged to broaden their sense of self. Sport and exercise psychologists, career counsellors, coaches, and parents can assist in this process by helping the athlete to better understand their identity while still competing. This may be done through education, working with them to identify

their strengths, interests, or talents outside of the sporting environment, and supporting them in the exploration and development of these other aspects of self. Such actions will result in an increase in self-complexity, which has been shown to act as a buffer, making the individual less susceptible to stress, depression, and illness (Linville, 1987). As a result, athletes will also be more equipped to face significant life events, such as injury or career transition, with access to alternate coping resources. Such coping resources may include the development of a post-sport career plan, or the development of a variety of stress management strategies.

Athletes could be encouraged to participate in personal development courses which aim to educate them on topics such as how to balance sport and study, effective communication, ethical and moral behaviour, making appropriate lifestyle choices, and stress management in order to enable a smooth transition into post-sport life. Such programs would equip athletes with a diverse range of relevant competencies, especially those related to the development of appropriate communication skills. These skills are particularly important in today's society due to the dominant role that technology plays within everyday life, limiting the need for face-to-face communication. It is suggested that athlete attendance at many of these programs be made compulsory, in addition to education provided to coaches and parents as to the importance of these programs to an athlete’s identity formation. This would ensure that a clear message as to the benefits of such information is sent to athletes from all of their significant others. Alternatively, retired athletes could be approached to act as mentors to current elite athletes and trained in relevant areas to be able to both help these athletes to broaden their life skills, as well as relate the struggles they have faced both during

and after their sporting careers, and the strategies they have used, or continue to use, to overcome these challenges.

The ACE program is one support mechanism that has already operationalised a number of these strategies with the aim of supporting the holistic health of Australian elite athletes. Despite this, more awareness of the importance of assisting athletes to understand themselves better can be further reinforced by their immediate support network (e.g., coach, parents, etc.). Within the self-complexity literature, positive social support has been shown to benefit the psychological well-being of individuals with low self-complexity (McConnell et al., 2009). Therefore, access to such resources will only be of assistance to athletes, even if they do possess a strong, exclusive athletic identity. It is therefore recommended that the ASC and the Australian and state and territory governments continue to fund the development of programs, such as ACE, to ensure the continued positive psychosocial development of Australian elite athletes.

As has been found previously, the results of this dissertation continued to indicate the period of adolescence to be a critical time in relation to identity formation. Other factors explored, such as gender and level of athletic achievement, were not shown to be of relevance to the development of this particular domain. In accordance with these findings, it is suggested that differentiating the support services provided to athletes according to their age, such as those offered by the ACE program, may be warranted. It is hoped that by providing athletes in the adolescent stage of development with sufficient access and exposure to relevant sources to aid in their professional development, education and support, these individuals will have every opportunity to avoid experiencing internal conflict or identity confusion, and instead develop a strong sense of self and positive self-identity.

This dissertation also highlighted the importance of acknowledging and supporting the commitment shown to the academic role, especially by teenage athletes, in order to promote a healthy balance between sport and education, and to also provide them with more options in relation to future career opportunities. This support may help to combat the occurrence of identity foreclosure, and can be provided in a number of ways. Firstly, it is important for sport and exercise psychologists, career counsellors, coaches or parents to talk with, or guide athletes towards, making decisions and plans related to post-sport careers, in addition to educating them about the physical and psychological benefits of doing so. Secondly, it is also important to foster the commitment of these young athletes to the student role by encouraging them to interact socially with individuals within the academic contexts they become involved with by suggesting that they join a study group, or participate in organised activities at their school or university.

Athlete perceptions of their academic achievement should also be regularly monitored so that additional support can be offered to assist them to develop their feelings of competence in this domain if required. Finally, at a higher level, both the local community and government can assist to reinforce the value of education to these young athletes by continuing to support Elite Athlete Friendly Universities (EAFU), a network of universities around Australia that support the integration of Australian elite athletes' sporting and academic aspirations by providing them with special consideration when their studies are impeded by their training or competition commitments, as well as the flexible model of delivery of educational services within secondary schools (e.g., the opportunity to complete Year 12 studies over two years part-time), which assist athletes to better balance their education with their sport commitments.

Overall, the athletes in this dissertation appeared to be quite balanced in their approach to their sport, with the athletic role not found to dominate the identity hierarchies of participants in each of the three studies. In addition, athletic identity levels were shown to decrease significantly with age, as well as they made the transition from active sport participation into retirement. These results suggest that the Australian institutes and academies of sport are providing healthy environments for elite athletes to train and, in many circumstances, to live. It is acknowledged that many factors would contribute to these positive results, including the quality of coaching and support staff employed by the ASC, the care that is taken with the athletes to ensure they train, eat and recover effectively, and the specialised athlete support services offered by the ACE program. Due to the significant impact that an identity crisis may have upon the long-term psychological health of individuals, programs should be offered to assist athletes to identify their values, life roles, and goals in both sport and life, and to educate them as to the positive and negative impact that these aspects of self may have upon behaviour and performance.

Finally, it is important to continue to support athletes in these same ways post-retirement, as they face life after sport. This support is particularly necessary when an athlete experiences an involuntary retirement, which may occur as a result of injury, team deselection, or age, among other reasons. As has been demonstrated by this and other studies, it is under these circumstances that an athlete may have a marked impact upon an individual both socially and psychologically.

6.3 Limitations

A number of limitations of this dissertation must be addressed. First, the athletes who completed the surveys were only a subset of the Australian elite athlete population. Even

though all athletes on scholarship with the Australian institutes and academies of sport were asked to participate, many chose not to. It would be of interest to get some data related to those athletes who chose not to participate, as these may have resulted in different findings. This is, however, a common obstacle that is faced when dealing with questionnaire data.

It is also important to highlight that all athletes who participated in this study had access to the ACE program. This is not to say that all participants accessed the services. In fact, survey results indicated that 71.3% (n = 651) of Study 1 participants, 66.8% (n = 207) of Study 2 participants, and 61.3% (n = 38) of Study 3 participants reported having used an ACE service. Despite this, it still needs to be acknowledged that exposure to this program could be seen as being an alternative situational influence which may have impacted upon results. For example, the level of importance placed upon non sport-related aspects of self-identity, as opposed to sports-related aspects, demonstrated by participants may be an indicator of the effectiveness of this program.

Second, the relative sample sizes in this study were of some concern as the numbers in each of the groups associated with investigating the aspects of achievement variable were not comparative from Study 1 to Study 2. As such, the differences demonstrated related to level of athletic achievement and perceived academic achievement should be interpreted with caution.

Third, the five-year gap between data collections from Study 1 to Study 2 opens the possibility of cohort effects. It is possible that over this time athletes could be exposed to a variety of other factors which may influence their self-view or psychological well-being, such as increased financial rewards for participating or doing well in their sport, engagement in athlete development workshops, or gaining alternate support from professionals, such as

that provided by the ACE program. In addition, as sport in Australia enjoys a large amount of media attention (not all of which is related to sport itself), the continual exposure that athletes have to both good and bad publicity over this period of time, even if the reports are totally unrelated to them, as well as the observed reactions of the Australian public to these stories, can contribute to changing the way athletes behave and think about themselves. It is important that these external factors and possibilities are acknowledged and kept in mind as conclusions are drawn from the results of the two studies.

Fourth, the inclusion of a nonathletic control group would have proved useful, particular for Study 1 and Study 2. This would not only have enabled results between athletes and nonathletes to be compared, but allowed a baseline level and norm scores for all measures used with Australian samples to be established.

Finally, in order to reduce the response burden upon participants, this dissertation relied upon survey data. While it is acknowledged that self-report methods are necessary in order to investigate someone's self-image, it is thought a combined approach, which included more qualitative methods, would have allowed further insight to be gained and subsequently enhanced the study. Such data would have been particularly useful in clarifying the nature of the salience athletes placed upon different life roles.

6.4 Future Research Directions

Future research could further explore the findings of this dissertation by following procedures developed by Hoelter (2004a), mentioned in Chapter 2, whereby participants are provided with an opportunity to rank order a range of specific life roles, such as parent, spouse, homemaker, and club member, in relation to those roles they feel best reflect how they tend to think about themselves, as well as those they consider to be most and least

important to them. This list could be tailored to the target population, by including roles such as high school student and athlete. With time permitting, it would also be of interest to conduct structured interviews with participants to further explore their salient life roles, as well as their opinions and beliefs associated with the choices they have made, and continue to make, in relation to attempting to balance their sport commitments with other aspects of their lives. The use of such methods may help to further support and clarify the findings of this dissertation in relation to importance placed upon the athletic role in comparison to other life roles.

Future research could also further investigate the relationship between gender differences in self-concept and the gender role orientation of Australian elite athletes. The gender differences reported in this dissertation did not reflect the gender role stereotypes which have been found to consistently by previous research (Crain, 1996; Hattie, 1992; Marsh, 1989b; Marsh et al., 1988; Meece et al., 1982). Continuing on with this line of thought, future studies could also seek to explore the reasons why the athletic identities of female Australian elite athletes were shown to decline significantly over the five-year period of this project. This research would preferably be longitudinal in design, and consist of both qualitative and quantitative methods of data analysis, in order to develop a thorough understanding of the situational and personal factors which influence the levels to which Australian elite female identify with the athlete role.

This dissertation also provided some interesting results relating to the changes which occur as a result of athletes developing an intention to retire from their sport, with the extent to which these individuals identify with the athlete role shown to significantly decrease many years before they actually begin to consider retirement, perhaps as means of self-protection.

With earlier studies having showed athletic identity to be susceptible to change in response to aspects such as team deselection and dissatisfaction as a result of poor seasonal sport performance (Brewer et al., 1999; Grove et al., 2004), further research could be conducted to explore whether particular situational influences such as these are at play to result in the emergence of an athlete's intention to retire from his or her sport, and how long these intentions are generally in place before acted upon.

6.5 Conclusion

This investigation of the self-identity characteristics of Australian elite athletes, notwithstanding possible shortcomings, has provided some insight into the internal environment of this unique population. Overall, this dissertation has shown that, while sport plays a large role in the lives of Australian elite athletes, it certainly is not all-encompassing when it comes to who they feel they are as individuals, as well as what they value. Athletic identity was actually found to tell us very little about any of the other self-identity characteristics possessed by this population. The passion they have for their sport was not found to be restricting them from acknowledging their capabilities in non sports-related aspects of self, or from valuing alternate life roles, such as that of being a student or being a son or a daughter.

It is believed that this dissertation also made some significant contributions to the Australian athletic identity research literature. Some interesting results emerged in relation to the changes that occur to the athletic identity levels of Australian elite athletes as they transition from active participation in their sport through to retirement, and the impact that this has upon aspects of their psychological well-being. As previously mentioned, results indicated that Australian elite athletes were likely to experience a relatively smooth

transition, with current athletes shown to have significantly higher athletic identity levels when compared with both the retired athletes and those athletes with intentions to retire. Further to this, athletic identity levels were not shown to be implicated in the adjustment difficulties faced by athletes when they retired involuntarily, with levels found to be comparable to those athletes who reported retiring voluntarily. Apart from these findings, the athletic identity of Australian elite athletes was also found to decrease significantly with age, thereby replicating the results from previous studies. Gender was also shown to be a largely irrelevant personal factor when discussing athletic identity in Australian elite athlete populations, with no consistent differences reported.

In relation to the psychological well-being of Australian elite athletes, there were a number of results which serve to indicate that these athletes are likely to experience a positive transition to post-sport life. These include the significant decrease in athletic identity levels as athletes started to contemplate retirement from sport, as well as post-retirement, and the fact that retirement status was not found to impact upon athletes' levels of self-esteem. Although retirement has been shown to result in significant increases in life satisfaction for some retired athletes, it is important to acknowledge that those athletes who face an involuntary retirement continue to be at the greatest risk of adjustment issues.

Finally, it should be highlighted that the aforementioned conclusions were based on results obtained from high-quality data collected from two unique samples of Australian elite athletes five years apart. Furthermore, the research designs used for this dissertation constitute powerful evidence for the reliability of the findings which have been presented. The size and diversity of the samples used for Study 1 and Study 2 allowed multiple comparisons to be made for factors that are rarely investigated, such as aspects of

achievement, and the longitudinal data from Study 3 shed new light upon the changes which occur over the transition period from active participation in sport through to retirement.

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Appendix A

Ethics Approval Letter

AUSTRALIA

AUSTRALIAN SPORTS COMMISSION

Professor Gerard Fogarty
Faculty of Sciences
University of Southern Queensland
TOOWOOMBA QLD 4350

Dear Professor Fogarty

I am pleased to inform you that at the last meeting of the AIS Ethics Committee held on 22nd October 2002, the Committee agreed that there were no ethical reasons why your project ***Psychological and performance outcomes of the Athlete Career and Education (ACE) program*** should not proceed.

The approval number for this project is 20021001

It is a requirement of the AIS Ethics Committee that all researchers involved in the study be advised of Ethics Committee approval and conditions, and that the Ethics Committee be advised immediately (via the Secretary) of:

any proposed changes to the research design,
any adverse events that may occur,

Failure to comply with the above may render ethics approval null and void.

It is also a requirement of the AIS Ethics Committee that all researchers provide an annual status report, and on completion of the study, a brief report on the outcomes of the study and the manner in which the outcomes have been presented (eg, journal articles, reports, conferences, seminars etc)

If you have any questions regarding this matter, please don't hesitate to contact me on (02) 6214 1816.

Sincerely

John Williams
Secretary, AIS-EC

24th October 2002

CC: Ms Judy Flanagan

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ACTIVE AUSTRALIA

Appendix B

Cover Letter for 2003 Survey

Athlete Career and Education Program – Longitudinal Study

Dear athlete,

Thank you again for taking the time to participate in this survey. You have been selected to participate in the five-year study that is being undertaken by researchers at the University of Southern Queensland to assess the Athlete Career and Education (ACE) program. This important study is being funded by the Australian Sports Commission with the cooperation of the National ACE program.

Involvement is easy! All that is required is for you to:

1. complete this survey
2. seal it in the envelope provided, and
3. **mail it Reply Paid** to the researchers at USQ.

Your participation is keenly encouraged, as your responses are vital to the successful evaluation of the ACE services being provided to you.

All responses will remain **confidential**, and will not be seen by coaches, administrators or Institute or Academy personnel, and as such your answers will have no impact on any selection or training decisions. Survey results will be reported as group data only, and it is guaranteed that your individual responses will not be seen in any form by anyone other than yourself and the researchers at USQ without your consent.

Individual feedback of your results will be provided to you in the form of a confidential written report sheet. This information will be useful to you in your ongoing planning for your career, athletic, and personal development, and you may choose to discuss it with your ACE advisor, if you so desire.

If you require any further clarification of the details of the project or you have questions about the survey, please feel free to contact Dr Majella Albion, phone 07 4631 1672 or email albionm@usq.edu.au.

Thank you again for your cooperation in this project.

Dr Majella Albion
Prof Gerard Fogarty

Appendix C

2003 Survey Form

Evaluation

of the

Athlete Career and Education Program

Phase 1 - February 2003

USQ

AUSTRALIA

University of Southern Queensland

9999 ACE Survey - 2003 3471128130

GENERAL INFORMATION

Please provide answers to the following questions or place a **cross (X)** in ***dark blue or black ink*** in ONE box for each question. All markings must be made **inside** the boxes.

1. **First Name**
2. **Last Name**
3. **Gender** ☐ Female ☐ Male
4. **Age (in years)** ☐☐ years
5. **Which Institute or Academy you are attending?**

   ☐ AIS ☐ NSWIS ☐ QAS ☐ TIS ☐ WAIS
   ☐ ACTAS ☐ NTIS ☐ SASI ☐ VIS

6. **What is the highest level of education you have achieved?**

   ☐ Still in high school/college ☐ Certificate or diploma
   ☐ Didn't complete high school/college ☐ Degree
   ☐ Completed high school/college ☐ Post Grad Degree

7. **Please indicate your current level of academic achievement.**

   ☐ Well below average ☐ Average ☐ Well above average
   ☐ Below average ☐ Above average

8. **What is your selected sport?**
9. **At what age (in years) did you commence your involvement in that sport?** ☐☐ years
10. **What is the highest level at which you have participated in this sport?**

    ☐ Regional competition ☐ National competition
    ☐ State or Territory competition ☐ International competition

11. **How long have you participated at this level?**

    ☐ Less than 1 yr ☐ 1-2 yrs ☐ 3-5 yrs ☐ 6-10 yrs ☐ More than 10 yrs

12. **Rate your sporting performance over the past 4 weeks by placing a cross in one of the boxes.**

    1. In competition

    Ineffective ☐☐☐☐☐☐☐☐☐☐☐ Effective
    0 50 100

    2. In training

    Ineffective ☐☐☐☐☐☐☐☐☐☐☐ Effective
    0 50 100

13. Do you plan to retire from elite level participation in your sport

within the next 12 months? ☐ Yes ☐ No within the next 3 years? ☐ Yes ☐ No

within the next 2 years? ☐ Yes ☐ No within the next 4 years? ☐ Yes ☐ No

14. How long have you been on scholarship with AIS and/or with your state/territory Institute or Academy?

☐ Less than 1 yr ☐ 1-2 yrs ☐ 3-5 yrs ☐ More than 5 yrs

15. How long have you been involved with the Athlete and Career Education (ACE) program?

☐ Not at all ☐ Less than 1 yr ☐ 1-2 yrs ☐ 3-5 yrs ☐ More than 5 yrs

ATHLETE CAREER & EDUCATION PROGRAM

1. ACE provides the following general services. Which were you aware of before this survey?

Personal development training programs ☐ Aware ☐ Unaware

Educational guidance and support ☐ Aware ☐ Unaware

Career counselling ☐ Aware ☐ Unaware

Business contacts and job skills ☐ Aware ☐ Unaware

Transition planning and support ☐ Aware ☐ Unaware

2. Please respond to the following statements about the ACE program and your involvement in sport by indicating the strength to which you agree with each of the following statements.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
ACE offers services which are relevant to me now.	☐	☐	☐	☐	☐
ACE services are easily accessible to me.	☐	☐	☐	☐	☐
ACE services are available when I need them.	☐	☐	☐	☐	☐
ACE advisers are helpful and cooperative.	☐	☐	☐	☐	☐
ACE has helped me feel more in control of my future.	☐	☐	☐	☐	☐
My educational plans are clearer because of my involvement with ACE.	☐	☐	☐	☐	☐
My sporting and non-sporting career goals are clearer because of my involvement with ACE.	☐	☐	☐	☐	☐
My coach is supportive of my involvement with ACE.	☐	☐	☐	☐	☐
My parents/guardians are supportive of my involvement with ACE.	☐	☐	☐	☐	☐
I am satisfied with the ACE services available to me.	☐	☐	☐	☐	☐
I consider myself an athlete.	☐	☐	☐	☐	☐
I have many goals related to sport.	☐	☐	☐	☐	☐
Most of my friends are athletes.	☐	☐	☐	☐	☐
Sport is the most important part of my life.	☐	☐	☐	☐	☐
I spend more time thinking about sport than anything else.	☐	☐	☐	☐	☐
I need to participate in sport to feel good about myself.	☐	☐	☐	☐	☐
Other people see me mainly as an athlete.	☐	☐	☐	☐	☐
I feel bad about myself when I do poorly in sport.	☐	☐	☐	☐	☐
Sport is the only important thing in my life.	☐	☐	☐	☐	☐
I would be very depressed if I were injured and could not compete in sport.	☐	☐	☐	☐	☐

CAREER DECISION MAKING

The following questions focus on possible difficulties and problems people face when making career related decisions. (Please answer the following questions or mark the box which describes you best)

a) Would you describe yourself as undecided about your choice of long term career?

1 2 3 4 5 6 7 8 9

Not at all undecided ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Very undecided

b) How satisfied are you with your current level of career decision?

1 2 3 4 5 6 7 8 9

Not at all satisfied ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Very satisfied

c) Have you considered in what field you would like to study or train, or in what occupation you want to work? ☐ Yes ☐ No

d) If so, to what extent are you confident of your choice?

1 2 3 4 5 6 7 8 9

Not at all confident ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Very confident

e) What career/s are you currently considering? (If more than one, please list preferences in order)

	Does not describe me								Describes me well
	1	2	3	4	5	6	7	8	9
1. I know that I have to choose a career but I don't have the motivation to make the decision now.	☐	☐	☐	☐	☐	☐	☐	☐	☐
2. Work is not the most important thing in my life and therefore the question of choosing a career doesn't worry me much	☐	☐	☐	☐	☐	☐	☐	☐	☐
3. I believe that I do not have to choose a career now because time will lead me to the "right" career choice.	☐	☐	☐	☐	☐	☐	☐	☐	☐
4. It is usually difficult for me to make decisions.	☐	☐	☐	☐	☐	☐	☐	☐	☐
5. I usually feel that I need confirmation and support for my decisions from a professional person or from somebody else I trust.	☐	☐	☐	☐	☐	☐	☐	☐	☐
6. I usually try to avoid commitment.	☐	☐	☐	☐	☐	☐	☐	☐	☐
7. I am usually afraid of failure.	☐	☐	☐	☐	☐	☐	☐	☐	☐
8. I believe that successful athletes always find good jobs when their competition days are over.	☐	☐	☐	☐	☐	☐	☐	☐	☐
9. I believe that if I am successful at sport, I won't need to do anything when I retire from competition.	☐	☐	☐	☐	☐	☐	☐	☐	☐
10. I believe that thinking about post-sporting career options will distract from my current athletic commitment and performance.	☐	☐	☐	☐	☐	☐	☐	☐	☐

CAREER DECISION MAKING cont.

	Does not describe me 1	2	3	4	5	6	7	8	Describes me well 9
11. I find it difficult to make a career decision because I do not know what steps I have to take.	☐	☐	☐	☐	☐	☐	☐	☐	☐
12. I find it difficult to make a career decision because I do not know what factors to take into consideration.	☐	☐	☐	☐	☐	☐	☐	☐	☐
13. I find it difficult to make a career decision because I do not know how to combine the information I have about myself and about the different careers.	☐	☐	☐	☐	☐	☐	☐	☐	☐
14. I find it difficult to make a career decision because I still do not know which careers I am interested in.	☐	☐	☐	☐	☐	☐	☐	☐	☐
15. I find it difficult to make a career decision because I am not sure yet about my career preferences (for example, whether it will be sports-related or in a completely different field).	☐	☐	☐	☐	☐	☐	☐	☐	☐
16. I find it difficult to make a career decision because I do not have enough information about my abilities (for example, numerical ability, verbal skills).	☐	☐	☐	☐	☐	☐	☐	☐	☐
17. I find it difficult to make a career decision because I do not have enough information about my personality features (for example, persistence, initiative, patience).	☐	☐	☐	☐	☐	☐	☐	☐	☐
18. I find it difficult to make a career decision because I do not know which careers will interest me in the future.	☐	☐	☐	☐	☐	☐	☐	☐	☐
19. I find it difficult to make a career decision because it is hard for me to know today what my career preferences will be in the future.	☐	☐	☐	☐	☐	☐	☐	☐	☐
20. I find it difficult to make a career decision because I do not know today what my abilities will be in the future.	☐	☐	☐	☐	☐	☐	☐	☐	☐
21. I find it difficult to make a career decision because I do not know today what my personality features will be in the future.	☐	☐	☐	☐	☐	☐	☐	☐	☐
22. I find it difficult to make a career decision because I do not have enough information about the variety of careers or training programs there are.	☐	☐	☐	☐	☐	☐	☐	☐	☐
23. I find it difficult to make a career decision because I do not have enough infomation about the characteristics of the careers which interest me (for example, the market demand, salary, possibilities of advancement, nature of work, etc).	☐	☐	☐	☐	☐	☐	☐	☐	☐
24. I find it difficult to make a career decision because I do not know what careers and training programs will exist in the future.	☐	☐	☐	☐	☐	☐	☐	☐	☐
25. I find it difficult to make a career decision because I do not know today what the characteristics of the careers or training programs will be in the future.	☐	☐	☐	☐	☐	☐	☐	☐	☐
26. I find it difficult to make a career decision because I do not have enough information about how to obtain additional information about myself (for example, about my abilities or my personality).	☐	☐	☐	☐	☐	☐	☐	☐	☐

CAREER DECISION MAKING cont.

	Does not describe me								Describes me well
	1	2	3	4	5	6	7	8	9
27. I find it difficult to make a career decision because I do not have enough information about how to obtain precise and updated information about the existing careers and training programs, or about their characteristics.	☐	☐	☐	☐	☐	☐	☐	☐	☐
28. I find it difficult to make a career decision because I constantly change my mind about the careers that interest me.	☐	☐	☐	☐	☐	☐	☐	☐	☐
29. I find it difficult to make a career decision because I constantly change my career preferences (for example, sometimes I want to be self employed and sometimes I want to be an employee).	☐	☐	☐	☐	☐	☐	☐	☐	☐
30 I find it difficult to make a career decision because I have contradictory information about my abilities (for example, I believe that my maths abilities are high but my high school marks in mathematics were relatively low).	☐	☐	☐	☐	☐	☐	☐	☐	☐
31 I find it difficult to make a career decision because I have contradictory information about my personality features (for example, I believe I am patient with other people but others say I am impatient).	☐	☐	☐	☐	☐	☐	☐	☐	☐
32 I find it difficult to make a career decision because I have contradictory information about whether a certain training program exists.	☐	☐	☐	☐	☐	☐	☐	☐	☐
33 I find it difficult to make a career decision because I have contradictory information about the characteristics of a particular career or training program that interests me.	☐	☐	☐	☐	☐	☐	☐	☐	☐
34 I find it difficult to make a career decision because I am not willing to compromise and give up on my ambition to find an ideal career.	☐	☐	☐	☐	☐	☐	☐	☐	☐
35 I find it difficult to make a career decision because a number of careers attract me equally and it is difficult for me to choose among them.	☐	☐	☐	☐	☐	☐	☐	☐	☐
36 I find it difficult to make a career decision because I do not like any of the careers or training programs to which I can be admitted.	☐	☐	☐	☐	☐	☐	☐	☐	☐
37 I find it difficult to make a career decision because the career I am interested in includes a certain component that bothers me (for example, I am interested in medicine, but do not want to study for so many years).	☐	☐	☐	☐	☐	☐	☐	☐	☐
38 I find it difficult to make a career decision because my career preferences cannot be combined in one career, and I do not want to give any of them up.	☐	☐	☐	☐	☐	☐	☐	☐	☐
39. I find it difficult to make a career decision because my training and competition commitments take up most of my time.	☐	☐	☐	☐	☐	☐	☐	☐	☐
40. I find it difficult to make a career decision because my skills and abilities are lower than those required in the career I am interested in.	☐	☐	☐	☐	☐	☐	☐	☐	☐
41. I find it difficult to make a career decision because it disturbs me that my abilities and skills are higher than those required in the career I am interested in.	☐	☐	☐	☐	☐	☐	☐	☐	☐

CAREER DECISION MAKING cont.

	Does not describe me 1	2	3	4	5	6	7	8	Describes me well 9
42. I find it difficult to make a career decision because people who are important to me (such as parents, coaches, or friends) do not agree with the career options I am considering.	☐	☐	☐	☐	☐	☐	☐	☐	☐
43. I find it difficult to make a career decision because people who are important to me do not agree with the basis of my career preferences, that is, the occupational characteristics I desire (such as the demand for the occupation, salary, length of training, prestige).	☐	☐	☐	☐	☐	☐	☐	☐	☐
44. I find it difficult to make a career decision because there are contradictions between the recommendations of certain people who are important to me about the career that suits me.	☐	☐	☐	☐	☐	☐	☐	☐	☐
45. I find it difficult to make a career decision because there are contradictions between the recommendations of different people who are important to me about the career preferences (such as the demand for the occupation, salary, length of training, prestige) they recommend take into consideration.	☐	☐	☐	☐	☐	☐	☐	☐	☐

46. Finally, how do you rate the severity of your difficulties in making a long-term career decision?

	1	2	3	4	5	6	7	8	9	
Not severe at all	☐	☐	☐	☐	☐	☐	☐	☐	☐	**Very severe**

SELF-DESCRIPTION

Please indicate the strength to which you agree with each of the following statements.

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7
Overall, I have a good self-concept	☐	☐	☐	☐	☐	☐	☐
In most ways my life is close to my ideal	☐	☐	☐	☐	☐	☐	☐
Overall, I don't have much respect for myself	☐	☐	☐	☐	☐	☐	☐
The conditions of my life are excellent	☐	☐	☐	☐	☐	☐	☐
Overall, I lack self-confidence	☐	☐	☐	☐	☐	☐	☐
I am satisfied with my life	☐	☐	☐	☐	☐	☐	☐
Overall, I am pretty accepting of myself	☐	☐	☐	☐	☐	☐	☐
So far I have gotten the important things I want in my life	☐	☐	☐	☐	☐	☐	☐
Nothing that I do is very important	☐	☐	☐	☐	☐	☐	☐
If I was able to live my life over again, I would change almost nothing	☐	☐	☐	☐	☐	☐	☐
Overall, I have a pretty positive feeling about myself	☐	☐	☐	☐	☐	☐	☐

SELF-DESCRIPTION cont.

Different characteristics, both positive and negative, vary in their importance in determining how you feel about yourself. For example, the statement "I am musically talented" may be a very accurate description of you, but it may also be very unimportant to how you feel about yourself. Below are statements about different characteristics. For each statement please judge: 1) how ACCURATE the statement is as a description of you: and 2) how IMPORTANT the characteristic is in determing how you feel (either positive or negative) about yourself. Please use the following response scale:

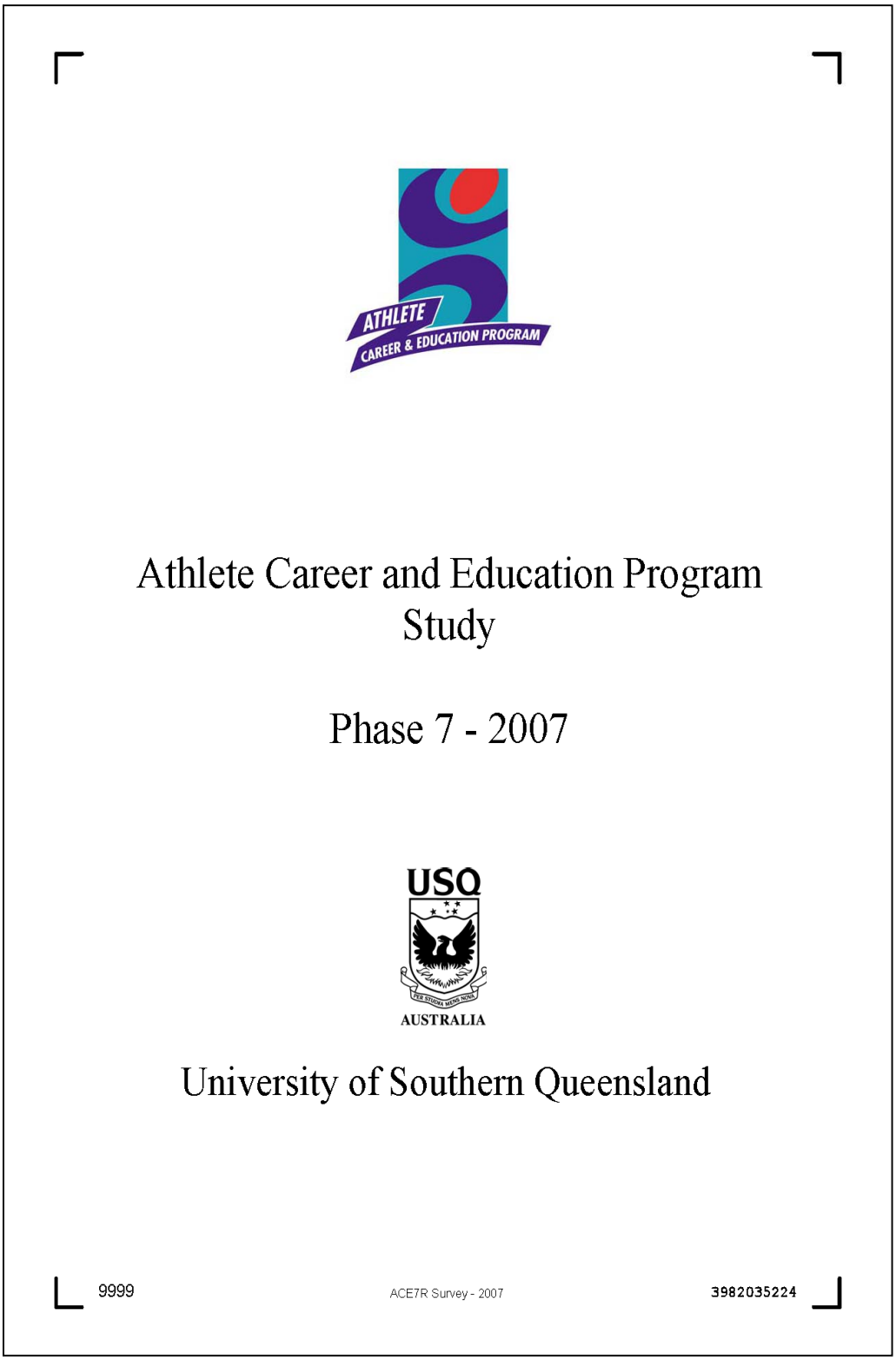
1	2	3	4	5	6	7	8	9
Very Inaccurate Very Unimportant		Inaccurate Unimportant		Moderate or Average		Accurate Important		Very Accurate Very Important

		1	2	3	4	5	6	7	8	9
I am good at sports and physical activities	Accurate	☐	☐	☐	☐	☐	☐	☐	☐	☐
	Important	☐	☐	☐	☐	☐	☐	☐	☐	☐
I am physically attractive/good looking	Accurate	☐	☐	☐	☐	☐	☐	☐	☐	☐
	Important	☐	☐	☐	☐	☐	☐	☐	☐	☐
I have good interactions/relationships with members of the opposite sex	Accurate	☐	☐	☐	☐	☐	☐	☐	☐	☐
	Important	☐	☐	☐	☐	☐	☐	☐	☐	☐
I have good interactions/relationships with members of the same sex	Accurate	☐	☐	☐	☐	☐	☐	☐	☐	☐
	Important	☐	☐	☐	☐	☐	☐	☐	☐	☐
I have good interactions with my parents	Accurate	☐	☐	☐	☐	☐	☐	☐	☐	☐
	Important	☐	☐	☐	☐	☐	☐	☐	☐	☐
I am an emotionally stable person	Accurate	☐	☐	☐	☐	☐	☐	☐	☐	☐
	Important	☐	☐	☐	☐	☐	☐	☐	☐	☐
I am a spiritual/religious person	Accurate	☐	☐	☐	☐	☐	☐	☐	☐	☐
	Important	☐	☐	☐	☐	☐	☐	☐	☐	☐
I am an honest/reliable/trustworthy person	Accurate	☐	☐	☐	☐	☐	☐	☐	☐	☐
	Important	☐	☐	☐	☐	☐	☐	☐	☐	☐
I have good verbal skills/reasoning ability	Accurate	☐	☐	☐	☐	☐	☐	☐	☐	☐
	Important	☐	☐	☐	☐	☐	☐	☐	☐	☐
I have good mathematical skills/reasoning ability	Accurate	☐	☐	☐	☐	☐	☐	☐	☐	☐
	Important	☐	☐	☐	☐	☐	☐	☐	☐	☐
I am a good student in most academic subjects	Accurate	☐	☐	☐	☐	☐	☐	☐	☐	☐
	Important	☐	☐	☐	☐	☐	☐	☐	☐	☐
I am good at problem solving/creative thinking	Accurate	☐	☐	☐	☐	☐	☐	☐	☐	☐
	Important	☐	☐	☐	☐	☐	☐	☐	☐	☐

Thank you for your cooperation!

Appendix D

2007 Survey Form



GENERAL INFORMATION

Please provide answers to the following questions or place a cross (X) in dark blue or black ink in ONE box for each question. All markings must be made inside the boxes.

1. **First Name**

2. **Last Name**

3. **Address**

State Postcode

4. **Which Institute or Academy are you attending or have you most recently attended?**

☐ AIS ☐ NSWIS ☐ QAS ☐ TIS ☐ WAIS
☐ ACTAS ☐ NTIS ☐ SASI ☐ VIS

5. **What is the highest level of education you have achieved?**

☐ Still in high school/college ☐ Certificate or diploma
☐ Didn't complete high school/college ☐ Degree
☐ Completed high school/college ☐ Post Grad Degree

6. **Please indicate your current level of academic achievement.**

☐ Well below average ☐ Average ☐ Well above average
☐ Below average ☐ Above average

7. **What is your selected sport?**

9. **If you are still competing, rate your sporting performance over the past 4 weeks by placing a cross in one of the boxes for each section.**

1. In competition Ineffective Effective
0 50 100

2. In training Ineffective Effective
0 50 100

10. **Do you plan to retire from elite level participation in your sport?**

within the next 12 months? ☐ Yes ☐ No
within the next 2 years? ☐ Yes ☐ No
within the next 3 years? ☐ Yes ☐ No
within the next 4 years? ☐ Yes ☐ No
already retired ☐ years ago

FOR THOSE WHO ARE RETIRING

Please answer the following questions in the spaces provided.

In what ways has ACE helped you develop your long-term non-sporting goals?

What assistance did ACE give you to help plan your retirement from sport?

What additional help would you have liked to have available?

Why are you retiring or why have you retired from elite level sport?

FOR THOSE WHO ARE RETIRING cont.

What sporting goals, if any, are likely to remain unsatisfied?

If you will have unmet sporting goals, what could have been done to help you better achieve these goals?

Do you have career plans in place? If yes, what are these plans?

Please indicate your level of agreement with each of the following statements.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I am very satisfied with my achievements in sport.	☐	☐	☐	☐	☐
I achieved all that I could in my sporting career.	☐	☐	☐	☐	☐
I don't expect to get all I want out of life.	☐	☐	☐	☐	☐
There is little I can do to change many important things in my life.	☐	☐	☐	☐	☐
I often feel helpless in dealing with my problems.	☐	☐	☐	☐	☐
Sometimes I feel that I am being being pushed around in my life.	☐	☐	☐	☐	☐
The future seems vague and uncertain to me	☐	☐	☐	☐	☐
It is going to be/has been difficult for me to retire from elite sport.	☐	☐	☐	☐	☐
I don't know what I will do when/now that I am no longer involved in elite-level sport.	☐	☐	☐	☐	☐

ATHLETE CAREER & EDUCATION PROGRAM

1. ACE provides the following general services. Which were you aware of before this survey?

Personal development training programs	☐ Used	☐ Aware but have not used	☐ Unaware
Educational guidance and support	☐ Used	☐ Aware but have not used	☐ Unaware
Career counselling	☐ Used	☐ Aware but have not used	☐ Unaware
Business contacts and job skills	☐ Used	☐ Aware but have not used	☐ Unaware
Transition planning and support	☐ Used	☐ Aware but have not used	☐ Unaware

2. Are you still eligible for ACE services? ☐ Yes *If yes, answer sections 3, 4 & 5.*

☐ No *If no, answer sections 4 & 5.*

3. Please respond to the following statements about the ACE program by indicating the strength to which you agree with each of the following statements.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
ACE offers services which are relevant to me now.	☐	☐	☐	☐	☐
ACE services are easily accessible to me.	☐	☐	☐	☐	☐
ACE services are available when I need them.	☐	☐	☐	☐	☐
ACE advisers are helpful and cooperative.	☐	☐	☐	☐	☐
ACE has helped me feel more in control of my future.	☐	☐	☐	☐	☐
My educational plans are clearer because of my involvement with ACE.	☐	☐	☐	☐	☐
My sporting and non-sporting career goals are clearer because of my involvement with ACE.	☐	☐	☐	☐	☐
My coach is supportive of my involvement with ACE.	☐	☐	☐	☐	☐
My parents/guardians are supportive of my involvement with ACE.	☐	☐	☐	☐	☐
I am satisfied with the ACE services available to me.	☐	☐	☐	☐	☐

4. Please answer the following questions by marking the box which you feel is the most accurate in terms of the assistance you have received from ACE in the following areas.

a. ACE has assisted me with my time management skills.

☐ Not Applicable ☐ No ☐ Yes

If yes, to what degree do you feel that this has contributed to the improvement of your athletic performance?

☐ Don't know ☐ Not at all ☐ A little ☐ A lot

b. ACE has assisted me with long-term career planning.

☐ Not Applicable ☐ No ☐ Yes

If yes, to what degree do you feel that this has contributed to the improvement of your athletic performance?

☐ Don't know ☐ Not at all ☐ A little ☐ A lot

c. ACE has assisted me with issues related to my education.

☐ Not Applicable ☐ No ☐ Yes

If yes, to what degree do you feel that this has contributed to the improvement of your athletic performance?

☐ Don't know ☐ Not at all ☐ A little ☐ A lot

d. ACE has assisted me with issues related to employment.

☐ Not Applicable ☐ No ☐ Yes

If yes, to what degree do you feel that this has contributed to the improvement of your athletic performance?

☐ Don't know ☐ Not at all ☐ A little ☐ A lot

e. ACE has assisted me with issues related to my financial situation.

☐ Not Applicable ☐ No ☐ Yes

If yes, to what degree do you feel that this has contributed to the improvement of your athletic performance?

☐ Don't know ☐ Not at all ☐ A little ☐ A lot

5. Please respond to the following statements about your involvement in sport by indicating the strength to which you agree with each of the following statements.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I consider myself an athlete.	☐	☐	☐	☐	☐
I have many goals related to sport.	☐	☐	☐	☐	☐
Most of my friends are athletes.	☐	☐	☐	☐	☐
Sport is the most important part of my life.	☐	☐	☐	☐	☐
I spend more time thinking about sport than anything else.	☐	☐	☐	☐	☐
I need to participate in sport to feel good about myself.	☐	☐	☐	☐	☐
Other people see me mainly as an athlete.	☐	☐	☐	☐	☐
I feel bad about myself when I do poorly in sport.	☐	☐	☐	☐	☐
Sport is the only important thing in my life.	☐	☐	☐	☐	☐
I would be very depressed if I were injured and could not compete in sport.	☐	☐	☐	☐	☐

CAREER DECISION MAKING

The following questions focus on possible difficulties and problems people face when making career related decisions. (Please answer the following questions or mark the box which describes you best)

a) Would you describe yourself as UNDECIDED about your choice of long term career?

1 2 3 4 5 6 7 8 9

Not at all undecided ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Very undecided

b) How satisfied are you with your current level of career decision?

1 2 3 4 5 6 7 8 9

Not at all satisfied ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Very satisfied

c) Have you considered in what field you would like to study or train, or in what occupation you want to work? ☐ Yes ☐ No

d) If so, to what extent are you confident of your choice?

1 2 3 4 5 6 7 8 9

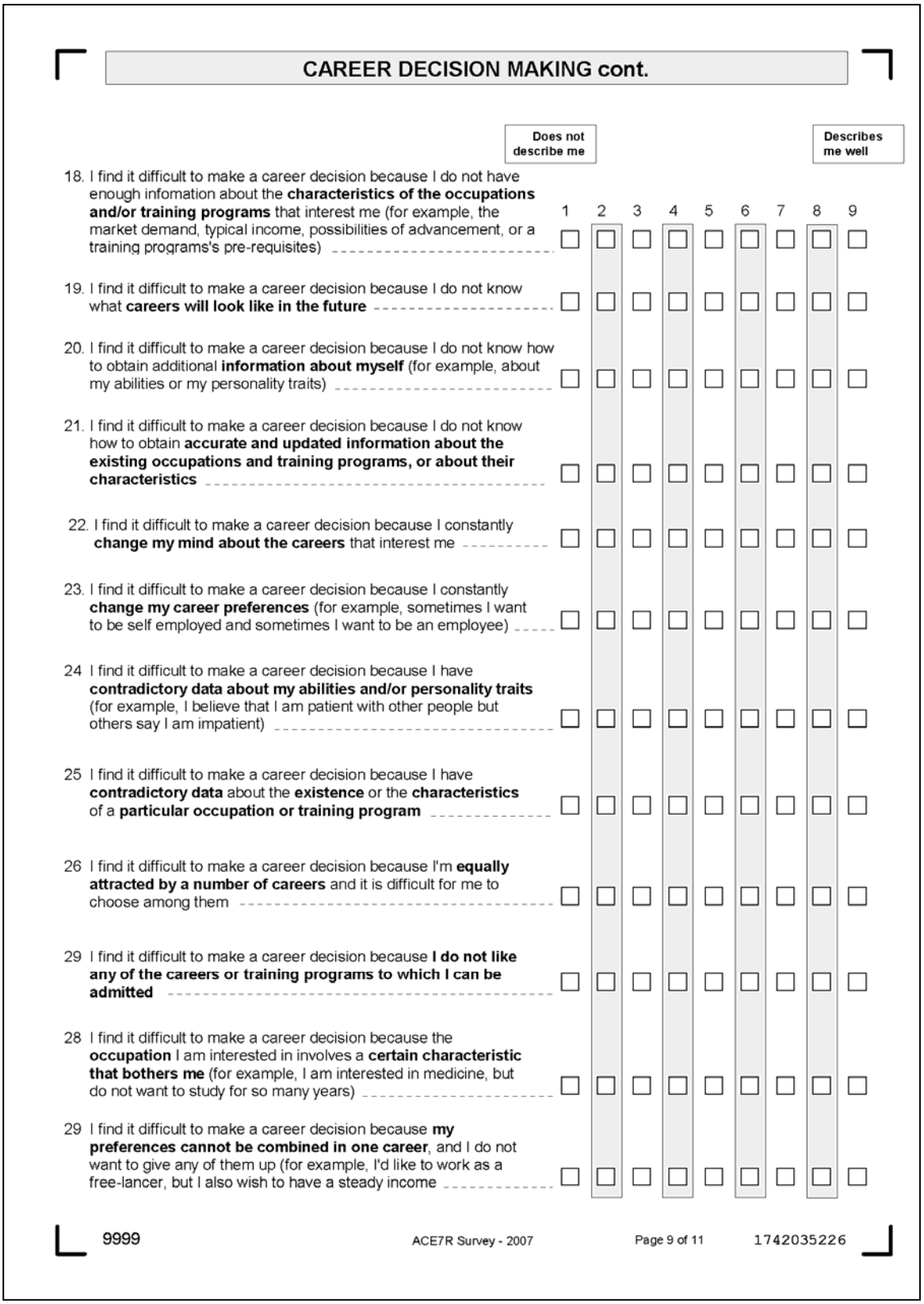
Not at all confident ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Very confident

e) What career/s are you currently involved in or considering? (If more than one, please list preferences in order)

	Does not describe me							Describes me well
	1	2	3	4	5	6	7	8	9
1. I know that I have to choose a career but **I don't have the motivation** to make the decision now	☐	☐	☐	☐	☐	☐	☐	☐	☐
2. Work is not the most important thing in my life and therefore **the question of choosing a career doesn't worry me much**	☐	☐	☐	☐	☐	☐	☐	☐	☐
3. I believe that I do not have to choose a career now because **time will lead me to the "right" career choice**	☐	☐	☐	☐	☐	☐	☐	☐	☐
4. It is usually **difficult for me to make decisions**	☐	☐	☐	☐	☐	☐	☐	☐	☐

CAREER DECISION MAKING cont.

	Does not describe me							Describes me well
	1	2	3	4	5	6	7	8	9
5. I usually feel that **I need confirmation and support for my decisions** from a professional person or from somebody else I trust	☐	☐	☐	☐	☐	☐	☐	☐	☐
6. I am usually afraid of **failure**	☐	☐	☐	☐	☐	☐	☐	☐	☐
7. I believe that successful athletes always find good jobs when their competition days are over	☐	☐	☐	☐	☐	☐	☐	☐	☐
8. I believe that if I am successful at sport, I won't need to do anything when I retire from competition	☐	☐	☐	☐	☐	☐	☐	☐	☐
9. I believe that thinking about post-sporting career options will distract from my current athletic commitment and performance	☐	☐	☐	☐	☐	☐	☐	☐	☐
10. I find it difficult to make a career decision because I do not know **what steps I have to take**	☐	☐	☐	☐	☐	☐	☐	☐	☐
11. I find it difficult to make a career decision because I do not know **what factors to take into consideration**	☐	☐	☐	☐	☐	☐	☐	☐	☐
12. I find it difficult to make a career decision because I do not know **how to combine the information I have about myself and about the different careers**	☐	☐	☐	☐	☐	☐	☐	☐	☐
13. I find it difficult to make a career decision because I still do not know **which occupations interest me**	☐	☐	☐	☐	☐	☐	☐	☐	☐
14. I find it difficult to make a career decision because I am not sure yet about my **career preferences** (for example, what kind of relationship I want with people, which working environment I prefer	☐	☐	☐	☐	☐	☐	☐	☐	☐
15. I find it difficult to make a career decision because **I do not have enough information about my** competencies (for example, numerical ability, verbal skills) and/or about my personality traits (for example, persistence, initiative, patience)	☐	☐	☐	☐	☐	☐	☐	☐	☐
16. I find it difficult to make a career decision because **I do not know what my abilities and/or personality traits** will be like in the **future**	☐	☐	☐	☐	☐	☐	☐	☐	☐
17. I find it difficult to make a career decision because I do not have enough information about the **variety of occupations or training programs that exist**	☐	☐	☐	☐	☐	☐	☐	☐	☐



CAREER DECISION MAKING cont.

	Does not describe me							Describes me well
	1	2	3	4	5	6	7	8	9
18. I find it difficult to make a career decision because I do not have enough infomation about the **characteristics of the occupations and/or training programs** that interest me (for example, the market demand, typical income, possibilities of advancement, or a training programs's pre-requisites)	☐	☐	☐	☐	☐	☐	☐	☐	☐
19. I find it difficult to make a career decision because I do not know what **careers will look like in the future**	☐	☐	☐	☐	☐	☐	☐	☐	☐
20. I find it difficult to make a career decision because I do not know how to obtain additional **information about myself** (for example, about my abilities or my personality traits)	☐	☐	☐	☐	☐	☐	☐	☐	☐
21. I find it difficult to make a career decision because I do not know how to obtain **accurate and updated information about the existing occupations and training programs, or about their characteristics**	☐	☐	☐	☐	☐	☐	☐	☐	☐
22. I find it difficult to make a career decision because I constantly **change my mind about the careers** that interest me	☐	☐	☐	☐	☐	☐	☐	☐	☐
23. I find it difficult to make a career decision because I constantly **change my career preferences** (for example, sometimes I want to be self employed and sometimes I want to be an employee)	☐	☐	☐	☐	☐	☐	☐	☐	☐
24 I find it difficult to make a career decision because I have **contradictory data about my abilities and/or personality traits** (for example, I believe that I am patient with other people but others say I am impatient)	☐	☐	☐	☐	☐	☐	☐	☐	☐
25 I find it difficult to make a career decision because I have **contradictory data** about the **existence** or the **characteristics** of a **particular occupation or training program**	☐	☐	☐	☐	☐	☐	☐	☐	☐
26 I find it difficult to make a career decision because I'm **equally attracted by a number of careers** and it is difficult for me to choose among them	☐	☐	☐	☐	☐	☐	☐	☐	☐
29 I find it difficult to make a career decision because **I do not like any of the careers or training programs to which I can be admitted**	☐	☐	☐	☐	☐	☐	☐	☐	☐
28 I find it difficult to make a career decision because the **occupation** I am interested in involves a **certain characteristic that bothers me** (for example, I am interested in medicine, but do not want to study for so many years)	☐	☐	☐	☐	☐	☐	☐	☐	☐
29 I find it difficult to make a career decision because **my preferences cannot be combined in one career**, and I do not want to give any of them up (for example, I'd like to work as a free-lancer, but I also wish to have a steady income	☐	☐	☐	☐	☐	☐	☐	☐	☐

CAREER DECISION MAKING cont.

	Does not describe me								Describes me well
	1	2	3	4	5	6	7	8	9
30 I find it difficult to make a career decision because my **skills and abilities do not match those required by the occupation I am interested in**	☐	☐	☐	☐	☐	☐	☐	☐	☐
31 I find it difficult to make a career decision because **people who are important to me** (such as parents or friends) **do not agree with the career options I am considering** and/or the career characteristics I desire	☐	☐	☐	☐	☐	☐	☐	☐	☐
32 I find it difficult to make a career decision because there are **contradictions between the recommendations made by different people who are important to me** about the career they recommend that I choose, or about what career characteristics should guide my decision	☐	☐	☐	☐	☐	☐	☐	☐	☐

33 Finally, how do you rate the severity of your difficulties in making a long-term career decision?

	1	2	3	4	5	6	7	8	9	
Not severe at all	☐	☐	☐	☐	☐	☐	☐	☐	☐	**Very severe**

SELF-DESCRIPTION

Please indicate the strength to which you agree with each of the following statements.

	Strongly disagree						**Strongly agree**
	1	2	3	4	5	6	7
Overall, I have a good self-concept	☐	☐	☐	☐	☐	☐	☐
In most ways my life is close to my ideal	☐	☐	☐	☐	☐	☐	☐
Overall, I don't have much respect for myself	☐	☐	☐	☐	☐	☐	☐
The conditions of my life are excellent	☐	☐	☐	☐	☐	☐	☐
Overall, I lack self-confidence	☐	☐	☐	☐	☐	☐	☐
I am satisfied with my life	☐	☐	☐	☐	☐	☐	☐
Overall, I am pretty accepting of myself	☐	☐	☐	☐	☐	☐	☐
So far I have gotten the important things I want in my life	☐	☐	☐	☐	☐	☐	☐
Nothing that I do is very important	☐	☐	☐	☐	☐	☐	☐
If I was able to live my life over again, I would change almost nothing	☐	☐	☐	☐	☐	☐	☐
Overall, I have a pretty positive feeling about myself	☐	☐	☐	☐	☐	☐	☐

Appendix E

Study 1 SDQ III Accuracy and Importance Scale Descriptive Statistics for Gender

Table E1

SDQ III Accuracy Item Means and Standard Deviations for Males and Females

	Gender			
	Males (N = 437)		Females (N = 476)	
Item	*M*	*SD*	*M*	*SD*
Sporting/physical ability	7.94	1.4	7.72	1.3
Physical attractiveness	6.27	1.7	5.50	1.5
Interactions opposite sex	7.17	1.6	6.83	1.6
Interactions same sex	7.30	1.6	7.31	1.5
Interactions with parents	7.49	1.7	7.64	1.7
Emotional stability	7.40	1.7	6.80	1.6
Spirituality/religiosity	4.14	2.6	3.92	2.4
Honest/reliable/trust	7.65	1.5	7.79	1.4
Verbal skills	7.07	1.5	7.12	1.5
Mathematical ability	6.66	1.8	6.38	1.7
Academic ability	6.66	1.7	6.85	1.6
Problem-solving ability	6.84	1.6	6.37	1.7

Table E2

SDQ III Importance Item Means and Standard Deviations for Males and Females

	Gender			
	Males (N = 437)		Females (N = 476)	
Item	*M*	*SD*	*M*	*SD*
Sporting/physical ability	7.40	1.7	7.34	1.5
Physical attractiveness	5.71	2.1	5.42	2.0
Interactions opposite sex	7.12	1.7	6.75	1.8
Interactions same sex	7.08	1.7	7.19	1.7
Interactions with parents	7.98	1.6	8.10	1.5
Emotional stability	7.61	1.7	7.58	1.5
Spirituality/religiosity	4.15	2.7	3.99	2.5
Honest/reliable/trust	8.13	1.5	8.25	1.4
Verbal skills	7.44	1.6	7.62	1.4
Mathematical ability	6.74	1.9	6.60	1.7
Academic ability	7.12	1.9	7.23	1.6
Problem-solving ability	6.94	1.9	6.80	1.6

Appendix F

Study 1 SDQ III Accuracy and Importance Scale Descriptive Statistics for Age

Table F1

SDQ III Accuracy Item Means and Standard Deviations for the Teenage, Emerging Adulthood, and Adulthood Groups

	Age Group					
	Teenage (n = 405)		Emerging Adulthood (n = 423)		Adulthood (n = 85)	
Item	*M*	*SD*	*M*	*SD*	*M*	*SD*
Sporting/physical ability	7.94	1.4	7.76	1.4	7.66	1.4
Physical attractiveness	5.86	1.8	5.88	1.6	5.86	1.5
Interactions opposite sex	7.16	1.7	6.90	1.6	6.74	1.7
Interactions same sex	7.37	1.7	7.31	1.4	6.98	1.6
Interactions with parents	7.50	1.7	7.63	1.7	7.67	1.7
Emotional stability	7.26	1.7	6.92	1.7	7.12	1.5
Spirituality/religiosity	4.10	2.6	3.89	2.4	4.33	2.4
Honest/reliable/trust	7.65	1.5	7.76	1.4	7.92	1.4
Verbal skills	7.04	1.6	7.10	1.5	7.35	1.4
Mathematical ability	6.56	1.7	6.44	1.8	6.68	1.7
Academic ability	6.93	1.6	6.62	1.7	6.63	1.7
Problem-solving ability	6.61	1.7	6.53	1.7	6.81	1.7

Table F2

SDQ III Importance Item Means and Standard Deviations for the Teenage, Emerging Adulthood, and Adulthood Groups

	Age Group					
	Teenage (n = 405)		Emerging Adulthood (n = 423)		Adulthood (n = 85)	
Item	*M*	*SD*	*M*	*SD*	*M*	*SD*
Sporting/physical ability	7.57	1.6	7.29	1.6	6.82	1.7
Physical attractiveness	5.59	2.2	5.51	2.0	5.66	1.7
Interactions opposite sex	7.00	1.9	6.93	1.6	6.60	1.6
Interactions same sex	7.23	1.9	7.13	1.6	6.69	1.7
Interactions with parents	8.01	1.6	8.10	1.5	7.99	1.4
Emotional stability	7.66	1.6	7.53	1.6	7.64	1.3
Spirituality/religiosity	4.13	2.7	3.95	2.5	4.33	2.6
Honest/reliable/trust	8.18	1.4	8.20	1.4	8.22	1.3
Verbal skills	7.47	1.6	7.60	1.5	7.60	1.4
Mathematical ability	6.89	1.8	6.48	1.8	6.49	1.6
Academic ability	7.49	1.7	6.95	1.7	6.79	1.6
Problem-solving ability	6.92	1.9	6.79	1.7	6.99	1.5

Appendix G

Study 1 SDQ III Accuracy and Importance Scale Descriptive Statistics for Perceived Academic Achievement

Table G1

SDQ III Accuracy Item Means and Standard Deviations for the Perceived Academic Achievement Groups

	Perceived Academic Achievement					
	Below average (n = 18)		Average (n = 366)		Above average (n = 500)	
Item	*M*	*SD*	*M*	*SD*	*M*	*SD*
Sporting/physical ability	7.89	1.9	7.67	1.5	7.93	1.2
Physical attractiveness	6.22	2.0	5.79	1.8	5.94	1.5
Interactions opposite sex	7.33	2.1	6.94	1.7	7.06	1.6
Interactions same sex	6.89	2.1	7.20	1.7	7.41	1.4
Interactions with parents	7.39	2.1	7.48	1.8	7.61	1.6
Emotional stability	6.94	2.2	7.02	1.7	7.14	1.6
Spirituality/religiosity	4.17	2.8	4.09	2.5	3.94	2.5
Honest/reliable/trust	7.17	2.1	7.58	1.6	7.84	1.2
Verbal skills	6.72	2.3	6.87	1.6	7.26	1.5
Mathematical ability	4.83	2.3	5.93	1.7	7.01	1.5
Academic ability	3.67	2.6	5.98	1.6	7.45	1.3
Problem-solving ability	5.50	2.3	6.13	1.8	6.97	1.5

Table G2

SDQ III Importance Item Means and Standard Deviations for the Perceived Academic Achievement Groups

	Perceived Academic Achievement					
	Below average (n = 18)		Average (n = 366)		Above average (n = 500)	
Item	*M*	*SD*	*M*	*SD*	*M*	*SD*
Sporting/physical ability	7.22	2.2	7.31	1.7	7.44	1.5
Physical attractiveness	5.94	2.0	5.38	2.3	5.71	1.9
Interactions opposite sex	6.83	2.3	6.75	1.9	7.08	1.6
Interactions same sex	6.61	1.9	7.00	1.8	7.27	1.6
Interactions with parents	7.56	2.1	7.94	1.7	8.12	1.5
Emotional stability	7.29	1.9	7.46	1.7	7.69	1.5
Spirituality/religiosity	3.89	3.1	4.20	2.6	3.95	2.6
Honest/reliable/trust	7.83	2.1	8.10	1.6	8.27	1.2
Verbal skills	7.17	2.1	7.47	1.6	7.60	1.4
Mathematical ability	5.56	2.1	6.45	1.8	6.90	1.7
Academic ability	5.33	3.0	6.79	1.9	7.55	1.4
Problem-solving ability	5.67	2.2	6.61	1.8	7.10	1.6

Appendix H

Study 1 SDQ III Accuracy and Importance Scale Descriptive Statistics for Levels of Athletic Achievement

Table H1

SDQ III Accuracy Item Means and Standard Deviations for the Levels of Athletic Achievement Groups

	Level of Athletic Achievement					
	Regional/State (n = 92)		National (n = 369)		International (n = 446)	
Item	*M*	*SD*	*M*	*SD*	*M*	*SD*
Sporting/physical ability	7.67	1.4	7.84	1.4	7.86	1.4
Physical attractiveness	5.64	1.7	5.83	1.7	5.95	1.6
Interactions opposite sex	7.12	1.8	7.06	1.6	6.92	1.7
Interactions same sex	7.25	1.8	7.34	1.6	7.29	1.5
Interactions with parents	7.23	1.8	7.54	1.7	7.67	1.7
Emotional stability	6.86	1.8	7.15	1.7	7.09	1.6
Spirituality/religiosity	3.91	2.6	3.94	2.4	4.11	2.5
Honest/reliable/trust	7.46	1.7	7.68	1.4	7.81	1.4
Verbal skills	6.77	1.6	7.11	1.5	7.15	1.5
Mathematical ability	6.51	1.8	6.59	1.7	6.45	1.8
Academic ability	6.88	1.6	6.85	1.7	6.65	1.7
Problem-solving ability	6.53	1.8	6.62	1.6	6.58	1.7

Table H2

SDQ III Importance Item Means and Standard Deviations for the Levels of Athletic Achievement Groups

	Level of Athletic Achievement					
	Regional/State (n = 92)		National (n = 369)		International (n = 446)	
Item	*M*	*SD*	*M*	*SD*	*M*	*SD*
Sporting/physical ability	7.48	1.6	7.52	1.5	7.22	1.7
Physical attractiveness	5.52	2.2	5.55	2.0	5.57	2.1
Interactions opposite sex	6.76	2.0	7.05	1.6	6.87	1.7
Interactions same sex	6.96	1.9	7.19	1.7	7.12	1.7
Interactions with parents	7.78	1.7	8.09	1.4	8.07	1.6
Emotional stability	7.44	1.7	7.60	1.6	7.62	1.5
Spirituality/religiosity	3.95	2.7	3.95	2.5	4.16	2.6
Honest/reliable/trust	8.04	1.5	8.18	1.4	8.24	1.4
Verbal skills	7.27	1.8	7.54	1.5	7.59	1.5
Mathematical ability	6.89	2.1	6.79	1.7	6.51	1.8
Academic ability	7.44	2.0	7.35	1.6	6.96	1.7
Problem-solving ability	6.87	2.0	6.89	1.8	6.84	1.7

Appendix I

Study 1 SDQ III Accuracy and Importance Scale Descriptive Statistics for Retirement Status

Table I1

SDQ III Accuracy Item Means and Standard Deviations for Retirement Status Groups

	Retirement Status			
	Intending (N = 180)		Current (N = 721)	
Item	*M*	*SD*	*M*	*SD*
Sporting/physical ability	7.77	1.4	7.85	1.3
Physical attractiveness	5.99	1.6	5.84	1.7
Interactions opposite sex	6.77	1.8	7.05	1.6
Interactions same sex	7.12	1.6	7.36	1.5
Interactions with parents	7.60	1.8	7.56	1.7
Emotional stability	6.85	1.7	7.15	1.7
Spirituality/religiosity	4.20	2.5	3.97	2.5
Honest/reliable/trust	7.76	1.6	7.72	1.4
Verbal skills	7.12	1.6	7.08	1.5
Mathematical ability	6.58	1.7	6.51	1.7
Academic ability	6.73	1.7	6.77	1.6
Problem-solving ability	6.63	1.8	6.58	1.6

Table I2

SDQ III Importance Item Means and Standard Deviations for Retirement Status Groups

	Retirement Status			
	Intending (N = 180)		Current (N = 721)	
Item	*M*	*SD*	*M*	*SD*
Sporting/physical ability	6.95	1.8	7.49	1.5
Physical attractiveness	5.73	2.1	5.51	2.1
Interactions opposite sex	6.80	1.8	6.96	1.7
Interactions same sex	6.89	1.8	7.20	1.7
Interactions with parents	7.89	1.8	8.08	1.5
Emotional stability	7.53	1.6	7.61	1.6
Spirituality/religiosity	4.30	2.6	4.00	2.6
Honest/reliable/trust	8.15	1.6	8.20	1.4
Verbal skills	7.57	1.7	7.52	1.5
Mathematical ability	6.82	1.7	6.63	1.8
Academic ability	7.07	1.7	7.20	1.7
Problem-solving ability	7.01	1.7	6.82	1.8

Appendix J

Study 2 SDQ III Accuracy and Importance Scale Descriptive Statistics for Gender

Table J1

SDQ III Accuracy Item Means and Standard Deviations for Males and Females

	Gender			
	Males (N = 138)		Females (N = 172)	
Item	*M*	*SD*	*M*	*SD*
Sporting/physical ability	8.01	1.2	7.77	1.2
Physical attractiveness	6.53	1.6	5.79	1.5
Interactions opposite sex	7.26	1.5	7.05	1.3
Interactions same sex	7.60	1.3	7.23	1.4
Interactions with parents	8.08	1.2	7.78	1.3
Emotional stability	7.76	1.4	7.26	1.4
Spirituality/religiosity	3.47	2.7	3.99	2.4
Honest/reliable/trust	7.93	1.2	7.81	1.2
Verbal skills	7.12	1.4	7.19	1.5
Mathematical ability	6.82	1.8	6.48	1.6
Academic ability	6.98	1.5	6.99	1.3
Problem-solving ability	6.99	1.5	6.60	1.6

Table J2

SDQ III Importance Item Means and Standard Deviations for Males and Females

	Gender			
	Males (N = 138)		Females (N = 172)	
Item	*M*	*SD*	*M*	*SD*
Sporting/physical ability	7.44	1.4	7.16	1.5
Physical attractiveness	5.72	2.3	5.22	1.9
Interactions opposite sex	6.87	1.9	6.56	1.7
Interactions same sex	7.17	1.7	6.82	1.7
Interactions with parents	8.43	1.0	8.11	1.2
Emotional stability	7.82	1.5	7.75	1.2
Spirituality/religiosity	3.64	2.7	3.96	2.4
Honest/reliable/trust	8.14	1.2	8.23	1.0
Verbal skills	7.44	1.4	7.71	1.2
Mathematical ability	6.82	1.8	6.71	1.8
Academic ability	7.32	1.6	7.36	1.3
Problem-solving ability	7.12	1.5	7.02	1.4

Appendix K

Study 2 SDQ III Accuracy and Importance Scale Descriptive Statistics for Age

Table K1

SDQ III Accuracy Item Means and Standard Deviations for the Teenage, Emerging Adulthood, and Adulthood Groups

	Age Group					
	Teenage (n = 129)		Emerging Adulthood (n = 132)		Adulthood (n = 49)	
Item	*M*	*SD*	*M*	*SD*	*M*	*SD*
Sporting/physical ability	8.02	1.2	7.82	1.0	7.63	1.5
Physical attractiveness	6.06	1.6	6.26	1.6	5.94	1.4
Interactions opposite sex	7.25	1.3	7.10	1.5	7.00	1.4
Interactions same sex	7.52	1.4	7.44	1.3	6.94	1.2
Interactions with parents	7.86	1.3	8.05	1.2	7.67	1.3
Emotional stability	7.64	1.4	7.34	1.4	7.44	1.4
Spirituality/religiosity	4.00	2.6	3.48	2.5	3.85	2.3
Honest/reliable/ trustworthy	7.80	1.2	7.83	1.2	8.13	1.1
Verbal skills	6.97	1.5	7.31	1.3	7.25	1.6
Mathematical ability	6.48	1.9	6.79	1.6	6.62	1.5
Academic ability	7.16	1.3	6.93	1.4	6.67	1.4
Problem-solving ability	6.67	1.5	6.83	1.6	6.92	1.7

Table K2

SDQ III Importance Item Means and Standard Deviations for the Teenage, Emerging Adulthood, and Adulthood Groups

	Age Group					
	Teenage (n = 129)		Emerging Adulthood (n = 132)		Adulthood (n = 49)	
Item	*M*	*SD*	*M*	*SD*	*M*	*SD*
Sporting/physical ability	7.64	1.4	7.21	1.5	6.60	1.3
Physical attractiveness	5.03	2.2	5.85	2.1	5.44	1.8
Interactions opposite sex	6.77	1.8	6.78	1.9	6.31	1.6
Interactions same sex	7.02	1.7	7.11	1.8	6.52	1.4
Interactions with parents	8.18	1.2	8.38	1.0	8.10	1.1
Emotional stability	7.81	1.5	7.73	1.4	7.88	1.0
Spirituality/religiosity	4.04	2.6	3.60	2.6	3.83	2.5
Honest/reliable/trust	8.04	1.2	8.25	1.1	8.42	0.8
Verbal skills	7.33	1.6	7.78	1.1	7.75	1.0
Mathematical ability	6.79	1.9	6.81	1.6	6.54	1.9
Academic ability	7.61	1.4	7.20	1.4	7.00	1.4
Problem-solving ability	7.03	1.6	7.05	1.3	7.17	1.4

Appendix L

Study 2 SDQ III Accuracy and Importance Scale Descriptive Statistics for Perceived Academic Achievement

Table L1

SDQ III Accuracy Item Means and Standard Deviations for the Perceived Academic Achievement Groups

	Perceived Academic Achievement					
	Below average (n = 7)		Average (n = 126)		Above average (n = 176)	
Item	*M*	*SD*	*M*	*SD*	*M*	*SD*
Sporting/physical ability	6.57	2.2	7.89	1.2	7.91	1.1
Physical attractiveness	6.00	1.9	6.27	1.8	6.03	1.4
Interactions opposite sex	5.57	2.4	7.26	1.4	7.12	1.4
Interactions same sex	6.00	2.3	7.30	1.5	7.51	1.1
Interactions with parents	6.57	2.0	7.94	1.2	7.94	1.3
Emotional stability	5.14	2.9	7.58	1.3	7.51	1.3
Spirituality/religiosity	2.43	2.7	3.77	2.4	3.82	2.6
Honest/reliable/trust	6.57	2.1	7.82	1.1	7.94	1.1
Verbal skills	5.86	2.0	6.98	1.5	7.34	1.3
Mathematical ability	5.29	2.4	6.16	1.8	7.02	1.5
Academic ability	4.29	2.1	6.34	1.3	7.55	1.0
Problem-solving ability	5.57	2.8	6.57	1.6	6.97	1.5

Table L2

SDQ III Importance Item Means and Standard Deviations for the Perceived Academic Achievement Groups

	Perceived Academic Achievement					
	Below average (n = 7)		Average (n = 126)		Above average (n = 176)	
Item	*M*	*SD*	*M*	*SD*	*M*	*SD*
Sporting/physical ability	6.86	2.1	7.40	1.5	7.25	1.4
Physical attractiveness	6.14	2.2	5.46	2.3	5.41	2.0
Interactions opposite sex	5.43	2.4	6.81	1.9	6.67	1.7
Interactions same sex	5.71	2.4	6.83	1.7	7.12	1.6
Interactions with parents	7.57	1.6	8.25	1.1	8.28	1.1
Emotional stability	6.14	2.7	7.74	1.4	7.88	1.3
Spirituality/religiosity	2.43	2.5	3.72	2.4	3.95	2.7
Honest/reliable/trust	7.14	1.9	8.07	1.2	8.31	0.9
Verbal skills	6.57	1.7	7.53	1.3	7.66	1.3
Mathematical ability	5.29	1.8	6.51	2.0	6.99	1.6
Academic ability	6.71	2.1	7.11	1.6	7.53	1.3
Problem-solving ability	6.57	1.4	6.93	1.6	7.19	1.4

Appendix M

Study 2 SDQ III Accuracy and Importance Scale Descriptive Statistics for Levels of Athletic Achievement

Table M1

SDQ III Accuracy Item Means and Standard Deviations for the Levels of Athletic Achievement Groups

	Level of Athletic Achievement					
	Regional/State (n = 18)		National (n = 116)		International (n = 160)	
Item	*M*	*SD*	*M*	*SD*	*M*	*SD*
Sporting/physical ability	7.39	1.4	7.88	1.2	7.89	1.2
Physical attractiveness	6.00	1.5	6.10	1.8	6.15	1.5
Interactions opposite sex	6.83	1.2	7.17	1.4	7.15	1.5
Interactions same sex	7.50	1.0	7.48	1.4	7.34	1.3
Interactions with parents	8.06	1.2	7.90	1.2	7.92	1.3
Emotional stability	7.78	1.2	7.47	1.4	7.48	1.4
Spirituality/religiosity	4.78	2.5	3.68	2.6	3.69	2.5
Honest/reliable/trust	7.83	1.1	7.72	1.3	7.96	1.0
Verbal skills	6.94	1.3	7.07	1.6	7.25	1.4
Mathematical ability	6.83	1.7	6.77	1.8	6.52	1.7
Academic ability	7.11	1.2	7.25	1.4	6.80	1.4
Problem-solving ability	6.83	1.2	6.80	1.6	6.72	1.6

Table M2

SDQ III Importance Item Means and Standard Deviations for the Levels of Athletic Achievement Groups

	Level of Athletic Achievement					
	Regional/State (n = 18)		National (n = 116)		International (n = 160)	
Item	*M*	*SD*	*M*	*SD*	*M*	*SD*
Sporting/physical ability	7.53	1.5	7.43	1.4	7.17	1.5
Physical attractiveness	5.41	2.2	5.28	2.3	5.53	2.0
Interactions opposite sex	6.24	2.1	6.78	1.9	6.70	1.8
Interactions same sex	6.82	2.2	7.05	1.6	6.94	1.7
Interactions with parents	8.29	1.2	8.25	1.0	8.31	1.1
Emotional stability	7.82	1.4	7.68	1.5	7.87	1.3
Spirituality/religiosity	4.59	2.3	3.69	2.6	3.85	2.6
Honest/reliable/trust	7.82	1.4	8.06	1.2	8.31	0.9
Verbal skills	7.19	1.3	7.56	1.4	7.62	1.3
Mathematical ability	7.12	1.8	6.98	1.9	6.51	1.7
Academic ability	7.47	1.3	7.62	1.3	7.13	1.5
Problem-solving ability	7.12	1.4	6.19	1.5	6.94	1.5

Appendix N

Study 2 SDQ III Accuracy and Importance Scale Descriptive Statistics for Retirement Status

Table N1

SDQ III Accuracy Item Means and Standard Deviations for Retirement Status Groups

	Retirement Status			
	Intention to retire (N = 14)		No intention to retire (N = 296)	
Item	*M*	*SD*	*M*	*SD*
Sporting/physical ability	8.21	0.8	7.86	1.2
Physical attractiveness	6.21	1.3	6.12	1.6
Interactions opposite sex	7.43	1.0	7.13	1.4
Interactions same sex	7.29	0.7	7.40	1.4
Interactions with parents	7.86	1.2	7.91	1.3
Emotional stability	7.43	1.5	7.48	1.4
Spirituality/religiosity	3.93	2.3	3.75	2.5
Honest/reliable/trust	8.21	1.3	7.85	1.2
Verbal skills	7.36	1.3	7.15	1.4
Mathematical ability	6.64	1.3	6.63	1.7
Academic ability	6.86	1.1	6.99	1.4
Problem-solving ability	7.29	1.7	6.75	1.6

Table N2

SDQ III Importance Item Means and Standard Deviations for Retirement Status Groups

	Retirement Status			
	Intention to retire (N = 14)		No intention to retire (N = 296)	
Item	*M*	*SD*	*M*	*SD*
Sporting/physical ability	7.14	1.6	7.30	1.5
Physical attractiveness	6.21	1.4	5.41	2.2
Interactions opposite sex	6.79	1.7	6.70	1.8
Interactions same sex	7.07	1.5	6.97	1.7
Interactions with parents	7.86	1.2	8.28	1.1
Emotional stability	7.93	1.0	7.78	1.4
Spirituality/religiosity	3.57	2.0	3.83	2.6
Honest/reliable/trust	8.57	0.6	8.17	1.1
Verbal skills	8.14	0.9	7.56	1.3
Mathematical ability	7.43	1.9	6.73	1.8
Academic ability	7.50	0.9	7.33	1.4
Problem-solving ability	7.57	1.0	7.04	1.5

Appendix O

Pearson correlations for Study 2

Table O1

Pearson Correlations Between AIMS and SDQ III for Female (N =171) and Male (N =136) Athletes

	Females		Males	
SDQ III Items	Accuracy	Importance	Accuracy	Importance
Sporting/physical ability	.092	.325**	.186*	.313**
Physical attractiveness	-.100	-.075	.102	-.016
Interactions opposite sex	-.104	-.102	.079	-.008
Interactions same sex	-.072	-.055	.080	-.055
Interactions with parents	.000	.045	.146	.096
Emotional stability	-.114	-.041	.017	.015
Spirituality/religiosity	.032	.026	.006	-.033
Honest/reliable/trust	.036	.062	-.024	-.076
Verbal skills	-.075	-.040	.012	-.030
Mathematical ability	.155*	.051	-.023	.006
Academic ability	.108	.122	.010	-.038
Problem-solving ability	-.041	.017	.061	-.037

Note: * $p < .05$. ** $p < .01$.