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# Australian Elite Athlete Development: An Organisational Perspective

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### ABSTRACT

The purpose of this paper is to examine and map the process of Australian elite athlete development from an organisational perspective, that of 35 national sporting organisations (NSOs). Research on elite development has focused on the significance of economic and cultural factors (macro-level studies) and the role of sport science and athletes' close environment (micro-level studies) in fostering success. In an effort to depict elite athlete development processes in a more inclusive way, this paper offers an evaluation of the ways elite athletes are nurtured from an Australian NSOs perspective adopting a meso-level approach (e.g., programs). The study is based on a document analysis examining 74 annual reports from 35 NSOs over a period of four years, before and after the Sydney Olympic Games and offers a generic framework of the Australian elite athlete development process. The resulting framework shows that various interested groups are involved with nurturing elite athletes through either initiating or implementing specially designed programs or other strategies that cultivate success, and helps broaden the definition of elite development. The implications of successful elite athlete development include increased finances and public profile for sports as well as the creation of pathways to increase interest in sport.

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The field of elite athlete development has been the subject of significant research. Studies have predominantly examined the critical success factors (CSF) of elite performances from a sport science perspective (e.g., Joyner, 1993; Sparling, O'Donnell, & Snow, 1998), or comparisons of countries and their approach to elite development (e.g., Green & Houlihan, 2005). Despite this extensive focus on elite development systems and CSFs there is a dearth of organisational studies examining how national sporting organisations (NSOs), the organisations responsible for delivering success at the elite level, intend to and/or deliver that success. As a result, developing elite athletes is predominately based on fulfilling athletes' needs with a rather scant appreciation of how NSOs play a part in that process. Consequently, this study is guided by the following questions. How do NSOs perceive elite athlete development and what do they think is involved in that process? These questions combined with the exploratory nature of the study guided the open and theoretical coding of data.

This study adds to the extant literature on elite development through an examination of Australian elite development processes from an organisational perspective, that of 35 NSOs. The framework presented in the results section of this study helps deepen our understanding of the process of elite development which may assist policy makers and sport development stakeholders to base their decisions on elite funding on factors other than merely the number of medals won at Olympic Games.

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Considering the increased involvement of government in many countries through NSOs (Stewart, Nicholson, Smith, & Westerbeek, 2004; Whitson, 1998) and the critical role these organisations play in delivering government policies and programs at the elite level, this study is of particular significance. The term 'elite' in this paper is inclusive of those athletes who compete at Olympic Games and World Championships as well as those athletes who play professional sports such as cricket, football and rugby. Elite development is perceived to encompass "the use of sports science, sports medicine, talent identification, and coaching" (Martin, Arin, Palakshappa, & Chetty, 2005, p. 2) targeted to those athletes that compete at international level for their countries. This study shows that elite development is more encompassing than previously described. We will argue that this study extends our knowledge of elite sport systems in the following ways. Elite development requires the contribution of (a) interested groups (e.g., spectators and management staff) that previous studies do not consider, (b) an array of specifically designed strategies and other ways (e.g., competitions) to facilitate athlete development and success, and this success has the potential to create and stimulate involvement from (c) sponsors, participants, sport spectators and supporters.

Initially, this paper examines the extant literature on elite development and how this body of research informs the present study. In doing so, we add to the definition of elite development and the various ways it may be measured. In addition, we present international perspectives on macro, meso and micro level studies on factors that contribute to or inhibit elite development and an overview of the interested groups and resources devoted to elite development in Australia. Then, the paper presents the qualitative methods utilised to collect and analyse documentary information about the Australian sport system and the NSOs' approaches to developing elite athletes.

The information about the elite sport development system stems from the analysis of the reports in the period leading to and just after the 2000 Olympic Games in Sydney. The results illustrate some new dimensions that influence elite development and have not been previously considered, such as the importance of management/administration to elite development, and the impact that elite success may have on reproducing interest among new or existing sport participants at all levels, in particular juniors, sport supporters, and sponsors. Finally, in the discussion and conclusion section we reinforce the importance of meso level studies on elite development and argue for a more inclusive definition of elite development, one that encompasses factors other than sports science, medals won or money invested towards elite success.

## 1. Elite Development and Success

In Australia, the Australian Sports Commission (ASC), the statutory authority responsible for government sports policy, works with NSOs through the Australian Institute of Sport (AIS) and the Sport Performance and Development Group to promote the sports philosophy of the Australian government. Australia's sports philosophy is reflected through the ASC's two-fold aim to (a) increase membership/participation through programs for various groups of people including junior, women, and people with disability, indigenous people, and the elderly, and (b) achieve international elite athlete success through sports excellence and high performance programs. This study is concerned with the second part of the ASC's aim and the ways in which the ASC, through the NSOs, achieves elite development and success.

Success in sport in Australia at the elite level is epitomised by a sports system that helps those who are talented and motivated to reach their potential excellence in sports performance. This success is measured by the medals and/or world championships won on the international stage by elite athletes (Australian Sports Commission, 2006).

In a comprehensive study on sport systems and their approaches to success, Green and Oakley (2001) point out that, amongst a number of select countries, Australia has demonstrated the most notable sustained improvement in efficiency regarding output of Olympic medals. However, there is some inconsistency on how success in sport is or should be measured. For many countries and their citizens, the simple fact that their athletes participate at events such as Olympic Games offers a sense of success in itself. However, for others, "success is not achieved unless their athletes reach the medal podium" (Stotlar & Wonders, 2006, p. 121). Medal counting "has been used by politicians and the media to compare international success despite the International Olympic Committee's protestation that the Olympic medal table is not an order of merit" (De Bosscher, De Knop, Van Bottenburg, & Shibli, 2006, p. 185). However, it is undesirable that the measurement of success be confined to medal achievement or a crude assessment of money spent versus medals achieved (Cashman & Hughes, 1998). Medal-related targets have limitations as measures of performance because they are "more an aspiration than a practical performance management tool" (National Audit Office, 2005, p. ii).

## 2. Macro, Meso and Micro Level Studies

Numerous studies have previously examined factors that contribute to or inhibit elite development. These studies are grouped under three levels of analysis; macro, meso and micro level (De Bosscher et al., 2006). Macro-level studies examine the social and cultural context in which people live (e.g., factors such as population, political, economic, and cultural system, geographic and climatic variation). Meso-level studies contain factors that can be influenced by sports policies and strategies. This is the level where well considered sports policies and well designed allocation of resources, programs and strategies may influence long-term performance. Micro-level studies that may lead to successful elite development include factors such as the individual athlete (e.g., genetic qualities) and their close environment (e.g., coaches, friends, parents).

An overview of the literature on macro-level studies and the contributing or prohibiting factors considered (Balmer, Nevill, & Williams, 2001; Bernard & Busse, 2000; De Bosscher, De Knop, & Heyndels, 2003a, 2003b; Hoffmann, Ging, & Ramasamy, 2002a, 2002b; Johnson & Ali, 2002; Kuper & Sterken, 2003; Tcha & Perchin, 2003) reveals that most of these

studies examine determinants of elite development that are beyond the immediate control of politicians, governments and the organisations that represent them (De Bosscher et al., 2006). For example, Baker and Logan (2007) studied the role of birthplace and its effects on athlete success, a factor that sport strategies or sport agencies cannot directly control but can certainly utilise.

Looking at micro-level studies help us understand the factors that influence individual athlete success (Conzelmann & Nagel, 2003; De Bosscher & De Knop, 2003; De Bosscher & De Knop, 2004; Gibbons, McConnel, Forster, Riewald, & Peterson, 2003; Greenlead, Gould, & Diefen, 2001; Nys, De Knop, & De Bosscher, 2002) such as personal and internal factors, financial factors, role models, coaching, training and competition, facilities, and specialist advice. Success factors identified at this level can sometimes be controlled (e.g., training) or not (e.g., genetics). Mallett and Hanrahan (2004), for example, found that the coach is central to facilitating adaptive forms of motivation to enhance the quality of performance. These results have practical implications, as they would encourage sport psychologists to work directly with coaches to enhance the quality of sport performance.

Elite success factors at the meso-level are fully or partially determined by sports policies and politics (De Bosscher et al., 2006). Sport policies and strategies, developed from governments and NSOs, can directly influence elite development. These studies underpin the present study yet meso-level studies appear to be the least popular compared to macro and micro level studies. An overview of literature at a meso-level revealed two groups of studies.

The first involves descriptions or comparisons of the organisational context of nations and the search for similarities and differences among elite national sport systems (e.g., Broom, 1991; Douyin, 1988; Green & Houlihan, 2004; Green & Oakley, 2001; Houlihan, 1997; Oakley & Green, 2001; Riordan, 1991; Semotiuk, 1990). For instance, Green and Oakley (2001) explored elite athlete development systems and the 'flow' of elements of such systems to other countries. They discuss the levels of uniformity that elite sport development systems experience as well as the extent of diversity in different countries. Dimaggio and Powell's (1991) concept of mimetic isomorphism concerns the way sporting organisations imitate what seems to be the most successful organisation in elite development. Moreover, Augestad, Bergsgard and Hansen (2006) argued that countries try to imitate successful sport systems at an organisational level hence a trend toward uniformity on the development of elite sport systems.

The second involves studies that examine prerequisites for international success (e.g., Clumpner, 1994; Larose & Haggerty, 1996; Oakley & Green, 2001) such as financial assistance for training centres and personnel, an ongoing integrated sport system, and athletic talent (Clumpner, 1994). Oakley and Green (2001) identified ten items including well structured competitive programs, targeting a small number of sports, appropriate funding, and specific facilities. Only a limited number of meso-level studies have focused on factors that contribute or inhibit the nurturing of elite athletes and their success from an organisational point of view. For instance, De Bosscher et al. (2006) provide an overview of the important determinants that can lead to nations enjoying elite athlete development and international sporting success. They reviewed the existing literature and developed a framework that makes comparisons of elite sports policies and includes nine pillars that act as the factors that are important for elite athlete development and success. These pillars are grouped under three dimensions. First, the *input* represents the financial and human resources necessary for elite development. Second, the *throughput* is the strategies/policies that facilitate elite development and includes training facilities, coaching provision, competition, and scientific research. Third, *output* is the outcome of elite development measured in medals won during the Olympic Games or other events, the top six or eight places achieved, and/or the number of athletes qualified to take part in an event.

### 3. Interest Groups and Resources

Oakley and Green (2001) point out that "the world of international sport is changing, not only in terms of commercialism, but also in the increasing importance and hence funding that governments are placing on international success" (p. 84). Over the past 40 years, governments have shown a considerable willingness to devote significant sums of public or government controlled money (e.g., national lotteries) to the maintenance or improvement of elite sporting success (Green, 2007), and countries like Australia and Canada "invest substantial sums in trying to win medals in international sport" (Whitson, 1998, p. 2).

Since 1989, the Australian federal government has allocated money in discrete packages to the development of elite sport every four years. The Next Step initiative from 1989 to 1992 poured \$217 million into sport (Cooke, 1996) and the Maintain the Momentum program from 1992 to 1996 injected another \$293 million and handed more power to NSOs (Australian Sports Commission, 2006; Confederation of Australian Sport, 1999). In response to Australia being named host of the 2000 Olympic Games, the federal government, through the ASC, decided to continue with the Maintain the Momentum funding cycle and, in 1994, announced the Olympic Athlete Program, and provided an additional \$135 million, (on top of previously announced quadrennial funding), over six-years to help sports and their athletes prepare for the 2000 Olympic Games.

On 24 April 2001, the Australian government announced the 10-year Backing Australia's Sporting Ability – A More Active Australia plan. This plan included funding of \$408 million for the Sport Excellence Program, which was introduced to build upon the achievements of the elite athletes at the international and national levels (Department of Industry Science & Resources, 2001). Government funding for sport continues at unprecedented levels – in its 2006–07 budget, \$204 million was allocated to the ASC so it could tackle the challenge from other countries seeking to emulate Australia's Olympic success and also invest in initiatives to increase participation in sports activities by all Australians (Green & Oakley, 2001).

The development of elite performances has been the primary sport policy objective of the Australian federal government for the past quarter century (Green, 2005). Elite development is the driving force of the government's 2001–2005 policy

reaffirming Australia's commitment to develop elite success (Stewart et al., 2004). Considering the increasing role that interest groups, such as the ASC and the NSOs play in providing resources for elite athlete development, the lack of meso-level studies from an organisational perspective is surprising.

In recent years, governments have become more willing to intervene directly in the elite sport development process requiring substantial changes on the part of NSOs, such as high quality coaching as a condition of grant aid. NSOs spend large sums of money in the quest for superior sport performance (Australian Sports Commission, 2006) and have carriage of their own high performance programs, with the assistance of partners such as the AIS, the state and territory institutes and academy of sport network, and their own member associations. National bodies "are effectively responsible for the identification, development and preparation of their elite athletes and coaches, as well as the management of their high performance programs" (Australian Sports Commission, 2006, pp. 86-87).

Success in Olympics and other major international competitions is "closely related, in the long term, to the amount of resources that countries invest in the promotion of excellence in sport and to the efficiency with which those resources are utilised" (Gratton, 1990, p. 50). Heinila (1982) depicts the processes and measures of success with the aid of which available resources are most commonly utilised in the leading sporting countries. These include size of population (and selection of talent), education (and training camps, special schools), sports science and coach education, technology (sport facilities and equipment), administration (e.g., athletes association), and finance (state support, and advertising income). According to De Bosscher et al. (2006) "the success of an athlete or team depends increasingly on the performance capacity of the national system and its effectiveness in using all relevant resources for the benefit of elite sport" (p. 186). Australia has been particularly efficient in relation to the production of Olympic medals due to the funding devoted to elite athletes and to the length of time this funding has been active in the area (Green & Oakley, 2001). Hogan and Norton (2000) identified a linear relationship between money spent on developing elite athletes and total medals won, with an approximate estimate of \$37 million per gold medal.

Because the Australian investment in athletes is substantial, "it is useful to consider how we can provide the optimum environment" of development (Cashman, 1999, p. 21) in which athletes can flourish. This study is an effort towards better understanding the optimum environment.

## 4. Method

### 4.1. Theoretical Sampling and Data Collection

The study used 74 NSO annual reports as its primary source of data generation and the coding process of a grounded theory approach (Glaser & Strauss, 1967). The annual reports constitute the formal written source of information that reflect NSOs' operations with regard to sport development, and interactions with the federal government and other interest groups. Additionally, these reports present the annual contributions of all state sporting organisations (SSOs), staff, and members of the board of directors collectively in a reliable publicly available form. Data of interest within the reports were SSO reports, evaluation reports of various programs from sport development officers, financial statements, CEOs' reports, and sport development objectives and goals.

Certain limitations derive from the particular choice of data. Annual reports provided interesting data that were used as an indication of NSOs stated intentions regarding elite development. It would be unwise to assume that these reports provide an accurate reflection of all of the systems and programs in place. Hence, data from annual reports could not be treated as definitive of all actual practices. Consequently, to strengthen some of the conclusions drawn from these reports and to supplement validation (Creswell, 1998), existing theoretical knowledge is used to inform this study. The inclusion of extant literature to substantiate the results is consistent with the tenets of grounded theory method (Glaser, 1978).

Annual reports covered the years from 1999-2002 (inclusive) and are linked to a federal government funding cycle. The cases pertinent to this study were the Australian NSOs, which represent sports at a national level and liaise directly with the federal government's statutory authority, the ASC, regarding elite athlete development issues. According to the 2001 official directory of sporting organisations published by the ASC, approximately 100 sports were represented by NSOs, of which the federal government funded 60 (Australian Sports Commission, 2001). This research excluded sports not funded by the ASC during 2001, the financial year of reference, and therefore the population under investigation was limited to those 60 NSOs. According to information derived from ASC annual reports (Australian Sports Commission, 1999-2002), even though federal government grant allocations to NSOs varied throughout the time, the number and type of NSOs receiving ASC grants were largely consistent through those years. Seventy-four annual reports collected from 35 participating NSOs constituted documents used for data analysis, covering both Olympic and non-Olympic sports including high and low profile sports. Of the participating NSOs, the number of annual reports available was influenced by timing (i.e., whether calendar or financial year), some NSOs did not produce annual reports each year and some annual reports were simply not available to the researchers.

Incoming annual reports were photocopied, clustered according to NSO and stored. Once the 74 annual reports were collected, the first set of data (i.e., the annual reports from 1999 to 2002 for one sport) was selected at random and was analysed. The results from this set of data were followed by the examination of another set of annual reports from a different sport. The remaining stored data (or cases) were selected as they facilitated understanding and made individual contributions towards the emerging theory and findings from each set of data were analysed to direct the further selection of

data. For example, after analysing the annual reports from a sport with a good track record in winning medals at international events, another set of annual reports was chosen from a sport with less elite athlete success. The aim was to refine ideas (Charmaz, 2000) and to reach theoretical saturation, that is, the point at which new categories or variations on existing categories cease to emerge from new data (Soulliere, Britt, & Maines, 2001) and no new information is discovered (Smith & Stewart, 2001).

In this study, after analysing 50 per cent of the annual reports, 90 per cent of the concepts and categories had been identified. However, saturation was not reached until 94.6 per cent of the annual reports had been analysed. The remaining 5.4 per cent represents four annual reports that yielded no new information concerning any category and offered no additional information to this study.

#### 4.2. Data Analysis

Data analysis involved substantive (open) coding, theoretical coding, and *writing and theory advancement*. During open coding, the researchers analysed data line-by-line and assigned codes (*concepts*). Then data were broken into *incidents* (i.e., groups of data/concepts examined and compared for similarities and differences) (Pandit, 1996). Similar incidents were grouped together and were given the same conceptual label (*theme*). Subsequently, data were re-examined and concepts organised by recurring themes, re-evaluated for their interrelationships, and they were gradually subsumed into and grouped under more abstract, higher order *categories*, and a *core* category. Hence, open coding unravelled substantive codes (categories), their properties (characteristics) and the core category. The codes (categories) were labelled as closely to the data as possible to ensure that they remain and reflect the meaning of the category (Hutchinson, 1986; Morse, 2000). The categories (codes) and their characteristics (sub codes) are represented in Figure 1 at the results section using boxes. The links between codes and sub codes are represented using connector lines

In comparing incident to incident within annual reports 219 codes were given to incidents of conceptual similarity. After repeated refinement, the codes were clustered according to conceptual similarity into these three overarching categories, each containing numerous subcategories: (a) Sport Development Interest Groups, (b) Sport Development Practices/Policies/Strategies, and (c) Sport Development Outcomes. Each overarching subcategory had numerous subcategories. The subcategories of ‘Sport Development Interest Groups’, for instance, included: (a) Governments (e.g., Federal, state and local governments and their agencies), (b) Sporting Organisations (e.g., NSOs, SSOs, clubs and affiliations) and (c) Significant others (e.g., volunteers, paid staff, coaches, umpires and sponsors). As the above examples suggest, each category had its own subcategories. ‘Significant others’, for example, was the term used to describe all the sport development interest groups that were involved with sport development in an operational and sport policy implementation role. These included volunteers, paid staff, sport members, coaches, umpires and sponsors. Categories and subcategories are italicised in the results section to assist their identification.

Following open coding, theoretical coding processes were used to link substantive codes and their properties. Consequently, a story connecting the categories emerged. To facilitate the coding processes, the study used a constant comparison approach as suggested by Glaser (1978). This meant that throughout the coding, comparisons of incident-to-incident and concept-to-concept resulted in thematic similarities and differences that indicated patterns as part of developing a framework. As further data was incorporated into the analysis, they too were coded and categorised.

During the stage of writing and theory advancement, the authors went beyond the descriptive story by elaborating an analytical story. In order to elaborate the analytical story, a second review of relevant literature was incorporated into the

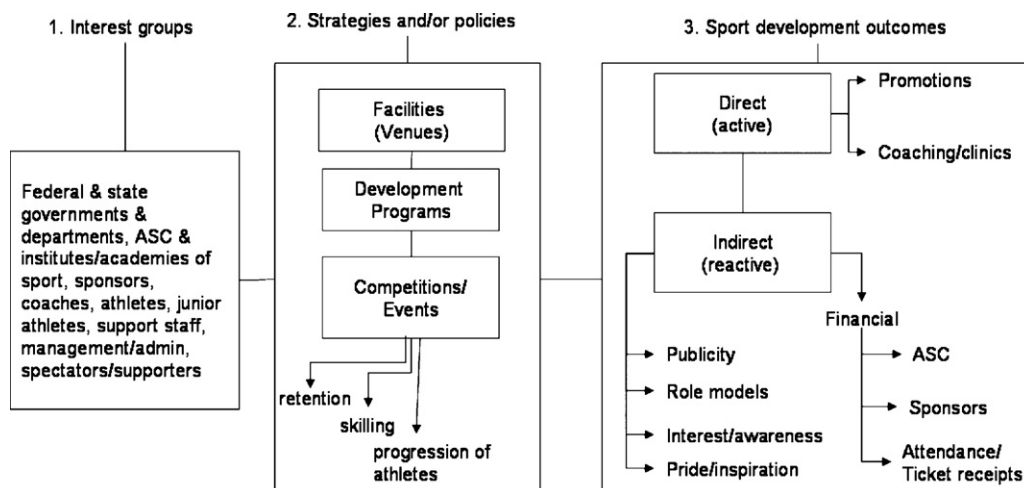


Figure 1. The Australian elite athlete development process.

story line for similar and dissimilar theories to be integrated. The aim of this step was initially “to elaborate the core category around which the other developed categories can be grouped and by which they are integrated” (Flick, 1998, pp. 184–185) and then go beyond this descriptive level through an analytical story (Creswell, 1998; Fielding & Lee, 1998). This study offers a substantive theory (Strauss & Corbin, 1994) on elite development processes. Substantive theories are readily available for further research to test their applicability and to develop a formal theory with wider scope.

## 5. Results and Discussion: The Elite Athlete Development Process

This section examines and maps the elite athlete development process (see Figure 1) and presents the financial and human resources needed to be in place from various sport development interest groups involved, the elite development policies and strategies required, and the outcomes of elite athlete development. The italicised words represent codes that emerged during data analysis.

### 5.1. Sport Development Interest Groups

This study revealed there are various interest groups that offer financial and human input. These include the governments and organisations at various levels (e.g., federal and state governments and departments, the ASC and Institutes/Academies of Sport, and sponsors) as well as coaches, athletes and talented juniors, support staff, management/administration, and spectators/supporters.

All the NSOs agreed that the AIS unit of the ASC forms the *backbone* of elite athlete development and success. NSOs used words such as *cornerstone* and *pinnacle* to illustrate the importance of the ASC and the AIS to their sport. They acknowledged the AIS as a major contributor to elite development programs and in the provision of substantial assistance across all areas “from sports science and sports medicine to athlete welfare and support” (Australian Water Polo, 1999, p. 7). NSOs maintained that the AIS plays a vital role in the preparation of teams for major competitions and provides financial help, as well as access to first-class facilities and services. Such services may vary from intensive training centres, high performance programs and centres, coaching and officiating, and state institutes and academies of sport to anti-doping and drug testing services. All NSOs saw the services provided by the AIS as contributing to the successful preparation and performances of elite athletes at national and international events.

At a state level, *state departments*, *state governments*, and *state institutes of sport* were praised by the NSOs for their multiple contributions. The state institutes of sport, in particular, appear to *look after* elite development. NSOs noted the value and the quality of the elite development that they receive from state institutes. Indicatively, *Women’s Hockey Australia (2000)* identified the NSW Institute of Sport and its programs (NSWIS programs) as “the best and the most professional” (p. 20). In addition, provisions from state governments and sport departments range from help in organising elite athletes and teams to travel to events and sporting competitions and covering travelling costs, to the participation in the national competition. As an example, Hockey Tasmania claimed it continues “to receive valuable assistance from the State Government through its Department of State Development and the Office of Sport and Recreation, which has enabled us to continue our participation in national league competition” (*Women’s Hockey Australia, 2000*, p. 19). Other interested groups identified as major contributors to elite athlete development included the *Australian Olympic Committee*, the *Australian Commonwealth Games Association*, *private academies* and *associations*, and *sponsors*. Research (e.g., Cooke, 1996; Pringle, 2001; Semotiuk, 1981; Shilbury, Deane, & Kellett, 2006; Sotiriadou, Quick, & Shilbury, 2006) has previously demonstrated the significant role of government in providing human and financial resources for elite sport development.

The *coaches’* role, in particular, appears to be central amongst all NSOs because of its direct effects on elite development and successful elite performances. Gould, Guinan, Greenleaf, Medbery and Peterson (1999), in their examination of strategies affecting athlete performance, conclude that coaches are one of the most critical success factors. *Softball Australia (2001)* claimed, “elite coaches often make the difference between teams winning and losing at the highest level” (p. 20). Coaches prepare athletes to perform and they are partially credited with the success of their athletes. *Basketball Australia (2000)* argued their head coach “has taken the Opals to unprecedented heights, culminating with the silver medal at the Sydney Olympics” (p. 9). It was the same coach that guided the Opals to bronze medals at the 1998 World Championships and the 1996 Olympics, and to the semi finals of OZ94, the World Championships in Sydney. Terry Mackenroth MP, Deputy Premier, Treasurer and Minister for Sport, stated “coaches are the heart and soul of Australian sport. Whenever our swimmers break a world record or win Olympic gold, you can bet the coaches they’ve had over the years have played a major role in their success” (*Australian Swimming, 2001*, p. 42). There was a fundamental belief that elite success should be credited not only to coaches but also to the *athletes* themselves, their ability, dedication, and commitment to training. *Softball Australia (2001)* noted “the desire, determination, discipline and dedication shown” (p. 27) by its athletes as important ingredients for their success in gaining the 2000 Olympic gold medal.

Another input to elite athlete development is the *talented juniors* who are filtered to elite programs through talent identification processes. All NSOs considered tapping into talent as highly important to secure a future for their sport, replace retiring elites, form winning national teams, and ensure continuing achievements and improved performances. *Gymnastics Australia (2000)* summarised this as follows:

The quality of our junior gymnasts has improved significantly in recent years. It is very encouraging for our future national team to see such a good group of young gymnasts coming through. We must continue to support further developments of our State High Performance Centre programs to ensure that the depth of gymnasts available to draw on for national team consideration continues to grow in both number and quality. (p. 6)

Most NSOs argued that the wellbeing of the game at a junior level is a *precondition* for elite player professional growth and development. In order for NSOs to reinforce and secure a dominant position within the sport industry, they felt the need to build a strong youth development program. Only in this way can they ensure a good flow of well grounded athletes “likely to perform at the highest international level” (Australian Yachting Federation, 2000, p. 5). Previous studies on the value of talent identification programs (e.g., Balyi, 2002; Schumacher, Mroz, Mueller, Schmid, & Ruecker, 2006; Ziemainz & Gulbin, 2001) reinforce the results of this study and provide evidence that junior elite athletes are significantly more successful as elite athletes when identified at a younger age.

Even though coaches are seen as the *catalyst* in elite performances, NSOs argued that the *support staff* (e.g., sport scientists and judges) and professional *management/administration staff* who work behind the scenes help athletes maintain their performances. For example, Diving Australia (2000) argued “many psychologists . . . have helped our divers” (p. 31), whereas the Australian Rugby Union (ARU) (2000) suggested that its success “can only be maximised with the professional management that currently exists at the ARU” (p. 67). Additionally, the numerous sport enthusiasts, including *spectators/supporters* and the community at large, with its encouragement and uplifting spirit, appear to have the capacity to inspire successful performances. As an example, the Australian Football League (AFL) (1999) suggested that the capacity to succeed “depends upon securing the support of the community at large” (p. 16). Almost half of the NSOs argued that besides the systematic preparation, elite athlete success is due to the *Australian spirit*, which pushes the players to fight until the very end of each game. Research on the role sport science (e.g., Bloomfield, 2002; Pyke, 2007) and sport spectators play on elite development is extensive (e.g., Nicholson & Hoye, 2005). However, the majority of studies on sport spectators focus on motivational factors and on how elite success influences spectators’ decisions to attend an event rather than the effects that their attendance may have on elite success (Kahle, Kambara, & Rose, 1996; Madrigal & Howard, 1995; Sloan, 1989; Wann, 1995).

## 5.2. Sport Development Policies and Strategies

All NSOs subscribed to the notion that high quality training facilities and competition venues can greatly benefit elite athletes and help their preparation for successful performances at high-level competitions such as World Championships and the Olympic Games. NSOs maintained that when competitors are provided with a smoothly conducted competition at a favourable venue they could perform at their peak. Gymnastics Australia (2001), for instance, reported on the importance of venues to its athletes and its competitions by stating, “this new facility, specifically built for travelling sporting teams was outstanding and provided all the services, support and a fantastic environment for General Gymnastic members and the International GymFest” (p. 18).

NSOs explicitly argued that *elite development programs*, offered usually through the AIS and other institutes and academies of sport, account for superb results at the national and international stage. Skiing Australia (2000), for example, was confident that the continuation of the elite program offers an ongoing framework for its athletes “to achieve to the best of their abilities” (p. 11). Another NSO stated that its high performance program “has been most effective, culminating in Australia assuming first place in the world” (Bowls Australia, 2001, p. 9). In addition, three-quarters of NSOs argued that elite development programs provide the essential skills and training opportunities for athletes to further their careers. As an illustration, the Australian Rugby Union (2001) argued that the Brumbies Academy “continued to provide players with the appropriate skills and training to further their rugby careers” (p. 42).

One belief common to every NSO was that *competitions/events* are the foundation stone of Australia’s international success and assist with the *retention, skilling* and *progression* of athletes. To illustrate the capacity of competitions to keep athletes’ interest levels high and give them the incentives to remain in the game, Soccer Australia (2000) explained “lack of exposure to quality competition will dull the most talented group of athletes” (p. 21). The Australian Rugby League (ARL) (2000) introduced extra competitions to give players and regions not participating in the Bundy Gold Cup “the opportunity to play additional representative football and as an incentive to stay involved in the game” (p. 7).

NSOs also suggested that top elite competitions help improve the general standard of play of their international players. The Australian Rugby Union (2001), as an example, maintained that the Australian Sevens play an important role in its development program as this competition provides “the opportunity for another stream of players to further their skills and gain international playing and travel experience” (p. 26). Finally, there was a shared understanding amongst NSOs that competitions provide athletes and coaches a picture of their progress in terms of *where they stand* and *where they want to go*. Synchro Australia (2000) claimed, “the swimmers need it [competition] to use it as a constant measure to their progress” (p. 15). NSOs emphasised the power of competitions in providing invaluable experience and ultimately preparing athletes for more prestigious and challenging competitions. Softball Australia reinforced this point by arguing that its test series are played “in order to provide international experience and development opportunities” (Softball Australia, 2001, p. 8) to its up and coming athletes.

These results add to the extensive literature that shows that recreational and training facilities assist the delivery of player development programs and, in particular, the preparation of the elite athletes to perform successfully (e.g., Gould, Jackson, & Finch, 1993a, 1993b; Gould, Guinan, Greenleaf, Medbery, & Peterson, 1999; Williams & Krane, 1998). In addition,

previous studies (e.g., Baker, Horton, Robertson-Wilson, & Wall, 2003; Williams & Krane, 1998) document that competitions and events are the foundation stone of international success.

### 5.3. Sport Development Outcomes

Following extensive data analysis, the results show that the outcomes of the elite development process may be direct (e.g., active athlete involvement with clinics) or indirect (e.g., the pride and inspiration generated from elite success).

Directly, it appears that the contribution of elite athletes to sport goes beyond their achievement and medal winning performances to influence an entire nation, particularly the youth through *promotions*, *coaching* and *clinics* (active outcomes). The following example from a squash elite athlete demonstrates the various direct outcomes of elite athlete development.

Michelle Martin's retirement will have great impact on squash in NSW. Michelle's achievements as a player are well documented with her many successes gaining much needed media coverage for the sport. However, in her role as a person she has no peer. Her frequent nights mingling with local pennant players, attending coaching clinics, visiting country squash centres for promotion, local schools visits and generally making herself available as required within a hectic international playing schedule, separates Michelle from all others. (Squash Australia, 1999, p. 24)

Athletics Australia holds clinics at primary schools, led by Australian representative athletes, and provides a link for students between the elite heroes of the sport and the level of participation at which the children can be comfortably involved. Filtering down their expertise, athletes (whether paid or as volunteers) become actively involved with the juniors. NSOs argue that these initiatives are successful with juniors. The Northern Territory Rugby League, for example, expressed thanks to NRL players and former players for giving up their valuable time to "help promote and develop our game throughout our regions. These visits by high profile players are always a big success with our children" (ARL, 2000, p. 9).

In 1999, Women's Hockey Australia provided a grant for an elite player to travel to the Northern Territory to coach juniors, while Athletics Australia's (2001) high profile athletes were involved in program-clinics (held at primary schools) to provide opportunities to connect young followers with clubs. They form "a link for students between the elite heroes of the sport and a level of participation at which the children can be comfortably involved" (p. 15).

Indirectly, elite athletes with their superb performances may act as *role models* for their peers and younger people (reactive outcomes). Australian Water Polo (2001) suggested that the most experienced water polo player, Nathan Thomas (the captain of the Water Polo team), "was an outstanding captain, leading by example and giving the much-needed support to the younger athletes" (p. 8). Squash Australia (1999) believed that its elite athlete Michelle Martin "has been a real role model for the AIS players" (p. 9). However, the effects of role modelling are particularly relevant to junior and talented youth. As an example, Athletics Australia (2001) sponsors are proud to assist the Australian athletes who are "amazing role models for young Australians as they continually demonstrate the discipline, performance and competitive spirit required to reach this elite level of sporting achievement" (p. 8). Soccer Australia (2000) noted that the growth of participants at junior level continues to exceed other competing sports as Australian youth strive to emulate the number of Australian superstars gracing the best football leagues of the world. The ARL (2000) maintained that the presence of the rugby league team Storm has created "cult heroes" "which is an important ingredient for junior growth" (p. 8) and Australian Swimming (2000) agreed that the performances of its swimmers at the Sydney Olympic Games "inspire a new generation of athletes and champions" (p. 39). Another NSO, Softball Australia (2001), suggested that "the exceptional young talent that we have in all states coming through the ranks . . . will no doubt be inspired by what this team has achieved" (p. 27).

Studies exploring the impact of elite success on junior development (e.g., Biskup & Pfister, 1999; Vescio et al., 2003) conclude that the popularity of elite athletes goes hand in hand with young people's longing for someone with which to identify. According to Biskup and Pfister's (1999) study, a high percentage of boys had elite athletes as idols and saw them as role models for their strength, aggression, and ability to get things done. In contrast, female sport stars do not appear to have a role-modelling function with girls. Vescio et al. (2003) investigated the heroes of teenage girls and the degree to which teenage girls have role models in sport and physical activity. Their results challenge the idea that elite athletes are effective role models for teenage girls with the majority of them describing their role models as older, low-profile women such as family members and peers who shared a similar domain of interest rather than sports heroes. Additionally, Hidson, Gidlow and Peebles's (1994) study on the impact of the successful New Zealand performances at the Olympic Games in Barcelona 1992 suggested that the perceived performance gap between elite performances and grassroots sport might hinder rather than inspire individuals to participate or even increase dropout rates among less competitive people.

Another indirect outcome of elite athlete success is the potential to increase media coverage and exposure of sports and athletes and generate *publicity*. All NSOs believed that elite success attracts the interest of media and fosters sport coverage and exposure. This intensified interest produces much desired publicity across the nation. Biskup and Pfister (1999) argued that the popularity of sporting heroes goes hand in hand with mass media and marketing strategies, and the commercialisation of sport and sportspeople. Squash Australia (1999) maintained that Michelle Martin's achievements as a player "are well documented with her many successes gaining much needed media coverage for the sport" (p. 24). In addition, Tennis Australia (2000/01) agreed that the Australian players' on-court achievements throughout the year "equated to a consistent level of media coverage across the nation" (p. 24). Women's Hockey Australia (1999) noted that Telstra Hockeyroos enjoy a significant profile across the country for the duration of tournaments. A win of such major



importance is also “a great advantage to the team and the sport of hockey, as many national television and radio programs, as well as printed media, created stories and exposure for the sport around the victory” (p. 4).

An additional indirect outcome of elite athlete development is the notion that elite success generates *pride* and *inspires* the nation. *Gymnastics Australia (1999)* is one of more than two-thirds of NSOs to suggest athletes’ achievements “inspire each and every one of us to achieve the ‘personal best’ that become so meaningful to an individual” (p. 33). *Athletics Australia (2000)* also illustrates this point by arguing that its aim is “to build a world class organisation that will inspire and develop personal and national pride through achieving international success” (p. 4). On a similar note, *Synchro Australia (2001)* stated that its teams could not have performed better and “certainly any Australian watching them could only be proud of their effort” (p. 21). In addition, the *Australian Weightlifting Federation (2001)* argued that the success of Australian athletes at the Sydney Olympics and Paralympics, along with the triumphs of Australian sporting teams in world competition, has been an inspiration to the nation. These results accord with results from previous studies that report the potential of major sporting events, such as the Olympic Games, to generate community pride (Burton, 2003; Coleman, 2003; Hiller, 1998; Murphy & Bauman, 2007; Ritchie, 2000), and inspire a nation (Ehn, 1989; Levine, 1980; Smith, 1999; Swierczewski, 1978).

Three-quarters of NSOs agreed that indirectly, elite athletes with their superb performances may generate public *interest* and *awareness*. For instance, *Gymnastics Australia (1999)* claimed that seeing elite athletes of high quality competing proves “an outstanding success without local Clubs and spectators” (p. 35) in terms of generating the interest and awareness of participants and spectators of all ages. Similarly, with the success of the Women’s Hockey team in Atlanta 1996 “came increased awareness”, but that was dwarfed by “renewed interest” (*Women’s Hockey Australia, 1999, p. 2*) as Sydney prepared to host the 2000 Olympic Games. These achievements, combined with other events such as the 2000 Festival of Hockey, provide “a wonderful opportunity to showcase our sport to the Australian public” (*Women’s Hockey Australia, 1999, p. 2*).

Another outcome of elite development, mentioned by all NSOs, is the potential it provides for an improved *financial* position. For example, the performance and style of rugby union teams such as the Waratahs versus the Reds in 2001 “drove a substantial increase in *attendance* at the Sydney Football Stadium and this has been critical to the improved financial position” (*Australian Rugby Union, 2001, p. 43*). In addition, hockey was “one of the top four most sought after *tickets*” (*Women’s Hockey Australia, 1999, p. 3*) for the 2000 Olympic Games. According to *Women’s Hockey Australia (1999)*, such demand is great for the sport on an international basis and attributes to the success of the Australian hockey teams.

For the NSOs that experience excellent performances at the elite level and as a reflection of this success, there is an ever-increasing interest from *sponsors*. For example, according to the ARU’s (2000) estimate, its sponsorship increased by 38 percent in 2000. Indications suggested that a similar growth was expected in 2001, which was “a great result reflecting the success of the Wallabies and also the professional manner in which sponsorship is managed and serviced at the ARU” (ARU, 2000, p. 66). Women’s Hockey argued that a successful year on the pitch has culminated with publicity and a higher profile for the team, “resulting in growing interest from prospective sponsors” (p. 1). Finally, there was a fundamental belief amongst all NSOs that elite success is essential for further ASC help. *Softball Australia (2001)*, for instance, expressed this view by stating, “The overall success of Sydney 2000 resulted in the Federal Government increasing Sport funding” (p. 9). The *Australian Yachting Federation (2000)* demonstrated that its previous good results generated additional funding for its elite athlete programs, such as the Olympic Athlete Program. These results directly led to sailing becoming an AIS program sport for the first time from 2001. It concludes “there can be little doubt that the results of our sailors at the Sydney 2000 Olympic Games will help to ensure that we get our share of the additional funding already committed by the federal government” (p. 5). These results support previous studies, such as Gratton’s (1990), that identify elite success being closely related to the amount of resources countries and governments invest in the promotion of excellence.

## 6. Conclusion

The aim of this study was to examine and map elite athlete development in Australia as described by NSOs. In doing so, the results show the interest groups involved with the process, the ways they are involved and the outcomes of their involvement.

The results reinforce the previously well reported pivotal role of the ASC, and the institutes of sport in developing athletes in Australia (Hogan & Norton, 2000; Green & Collins, 2008; Stewart et al., 2004). At the same time the results recognise the role of the athletes themselves in their achievements as well as the role of spectators and sports supporters in terms of their financial and human resource input on elite athlete development. However, research on the impact that spectators and sports supporters may have on elite development and success is noticeably scarce. Sport managers operate in an environment of strong competition amongst sports to gain or maintain their spectatorship (Shilbury et al., 2006). Perhaps finding ways to communicate to spectators and sports supporters that their role in athlete development is valued could encourage commitment and further support.

The results show that NSOs think that talent identification and programs are an essential requirement for elite athlete development. In fact, Martin et al. (2005) argued that elite athlete development in Australia is based on a systematic talent identification system which selects and develops the individual. The Australian Institute of Sport has been called a medal factory and its formula for producing winning athletes is based its facilities, training and sports science programs and talent identification (Hooton, 2008). Nevertheless, Sotiriadou (2009) calls for further investment in advancements and innovative talent identification programs for Australia to match groundbreaking talent identification initiatives internationally to maintain elite success. Consequently, the need to plan for talent identification may need to become more prominent.

The results of this study reinforce De Bosscher et al.'s (2006) claim that sufficient facilities of high quality with appropriate accessibility, qualified coaches and a good national competition structure with opportunities for athletes to participate internationally will allow elite athletes to develop and excel. In addition, the results show the central role that competitions play on elite development. The importance of competitions is threefold as they assist with the retention, skilling and progression of athletes to higher levels of performance. These results stress the significance of planning for and offering opportunities for competitions and events (e.g., Baker et al., 2003; Williams & Krane, 1998).

Perhaps the most interesting result of this study, in our view, is the wide-ranging outcomes of elite development from pride and inspiration that are not necessarily measurable to direct athlete involvement with sport development through clinics and promotions. Most of the athlete development outcomes that emerged in this study have been previously reported yet in isolation from each other. Sotiriadou, Shilbury and Quick (2008) for instance report that elite athlete success attracts further ASC support, and generates sponsors' interest (Shilbury, Quick, & Westerbeeck, 2003). Also, previous research on the role modelling functions of elite athletes (e.g., Giuliano, Turner, Lundquist, & Knight, 2007) reports and speculates the indirect influence of elite athlete success to peoples lives. The novelty in the results of this study lay with the emergence of factors that show that elite athletes can have a direct involvement and influence in people's lives by actively engaging in activities such as coaching, clinics and promotions that engage people in sport.

Contrary to research demonstrating that elite development can be clearly measured by (a) medals won, (b) achieving the top six or eight places at international competitions, and/or (c) the number of athletes qualified to take part in international events (e.g., De Bosscher et al., 2006), our findings show that the output of elite athlete development is multifaceted and not always clearly measured. Cashman and Hughes (1998) argued for a broader definition of elite development, one that encompasses wider and more lasting indicators and factors such as facilities construction and their legacy to sport. Collectively, the results of this study allow for a more inclusive definition of elite development, a definition that recognises the multifaceted and not always measured aspect of elite development. This study helps broaden the definition of elite development to recognise the role of direct (active), indirect (passive) and financial outcomes of elite development. Our findings, taken together with those of Martin et al. (2005) suggest that *elite development (a) encompasses the use of sport science, sport medicine, talent identification, and coaching, (b) requires the contribution of various interested groups in an array of specifically designed strategies and programs targeted to those athletes that compete at international level (c) with the potential to create and regenerate involvement from governments, sponsors, participants, spectators, sports supporters and athletes themselves.*

As a consequence of a more detailed definition of elite development, planning for elite development may allow sport managers, sport development officers and policy makers to capitalise on elite athletes' success in new ways, and perhaps base elite development funding on factors other than just medals won at Olympic Games. These factors include the direct (e.g., athletes' involvement with coaching/clinics) and indirect (e.g., public interest/awareness) outcomes of elite development. It is suggested that the new dimensions added in the definition of elite development illustrate the importance of meso level studies in sport management and perhaps urge further research that explores sport development issues using a meso level analysis.

The lack of representation from some of the interested groups involved with elite development in the study presents a limitation to the results. Because this study examined NSOs' views about elite development, there may be an emphasis on the role of governments and institutes of sport on elite success. Hence, the critical role of a large and ever increasing number of coaches, family and sport scientists that work for and with elite athletes in a variety of ways and contribute to their success may be largely omitted. Nevertheless, this study may add to contemporary sport managers' and policy makers' understanding and ways of measuring success.

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