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Psychology of Sport and Exercise 5 (2004) 183–200

Psychology
OF SPORT AND EXERCISE

www.elsevier.com/locate/psychsport

Elite athletes: why does the ‘fire’ burn so brightly?

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Received 12 November 2001; received in revised form 17 June 2002; accepted 13 September 2002

Abstract

Background and Purpose: What drives some athletes to achieve at the highest level whilst other athletes fail to achieve their physical potential? Why does the ‘fire’ burn so brightly for some elite athletes and not for others? A good understanding of an athlete’s motivation is critical to a coach designing an appropriate motivational climate to realize an athlete’s physical talent. This paper examines the motivational processes of elite athletes within the framework of three major social-cognitive theories of motivation.

Method: Participants were five male and five female elite track and field athletes from Australia who had finished in the top ten at either the Olympic Games and/or the World Championships in the last six years. Qualitative data were collected using semi-structured interviews.

Results and Discussion: Inductive analyses revealed several major themes associated with the motivational processes of elite athletes: (a) they were highly driven by personal goals and achievement, (b) they had strong self-belief, and (c) track and field was central to their lives. The findings are discussed in light of recent social-cognitive theories of motivation, namely, self-determination theory, the hierarchical model of motivation, and achievement goal theory. Self-determined forms of motivation characterised the elite athletes in this study and, consistent with social-cognitive theories of motivation, it is suggested that goal accomplishment enhances perceptions of competence and consequently promotes self-determined forms of motivation.

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Keywords: Elite athlete; Self-determination theory; Hierarchical model of motivation; Achievement goal theory

Introduction

We often hear coaches say that superior performers at the elite level are really ‘driven’, that they are ‘hungrier’ or obsessed with achieving success, but why are some athletes more driven

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than others? What are the perceived forces that motivate a person to pursue excellence in the sporting arena? What makes the “fire” burn so brightly for these highly motivated athletes?

Ryan and Deci (2000) underscored the importance of motivation and how it influences the way in which people think, feel and act. They argued that it is “of preeminent concern to those in roles such as manager, teacher, religious leader, coach, health care provider, and parent that involve mobilizing others to act” (p. 69). The purpose of this research was to examine the motivational processes of elite performers in sport.

Recently, there has been considerable research investigating the application of self-determination theory (SDT; Ryan & Deci, 2000), the hierarchical model of motivation (HMM; Vallerand, 1997), and achievement goal theory (AGT; Duda, 1992, 2001), to sport and exercise settings. These three social-cognitive theories of motivation have provided a sound theoretical framework to examine motivational processes of participants in sport.

Deci and Ryan (1985) proposed SDT as a framework to understand the social-contextual conditions (i.e., motivational climate) that facilitate or undermine intrinsic and extrinsic motivation. The underlying assumption of SDT is that people are inherently and proactively motivated to master their social environment. SDT proposes that humans have three major psychological needs to satisfy: self-determination, competence, and relatedness.

In conceptualising intrinsic motivation, several researchers have focused on the innate needs of self-determination or autonomy (e.g., DeCharms, 1968; Deci, 1975). Self-determined behaviours reflect the process of autonomy or choice in human functioning. For example, an athlete may freely choose to participate in a particular sport. In this case the perception of choice emanates from the self and is associated with an internal locus of causality. Intrinsic motivation is associated with the natural tendency to seek unique challenges, to explore and to learn. According to SDT, intrinsically motivated behaviours are associated with an internal locus of causality (e.g., the enjoyment derived from playing sport).

SDT generally considers extrinsic motivation to be associated with behaviours that are prompted by a perceived external locus of causality and this is associated with a perceived lack of choice. People who comply with the demands of others and their actions have a perceived external locus of causality (DeCharms, 1968). For example, parents might have to coerce their child to play a particular sport.

SDT proposes that extrinsic motivation can be classified as either self-determining or non self-determining. Non self-determined extrinsically motivated behaviours are associated with a perceived external locus of causality. These behaviours are associated with rewards and punishments (i.e., externally regulated behaviours) or more intrapersonally regulated behaviours, such as attending training because you feel guilty if you do not (i.e. introjected regulated behaviours). Introjected regulated behaviours are more internalised, but they are not self-determined. People often exhibit a behaviour but do not accept it as their own.

Self-determined extrinsically motivated behaviours are characterised by choice. Deci and Ryan (1985) proposed identified regulation and integrated regulation as two types of self-determined extrinsic motivation. “Identification reflects a conscious valuing of a behavioural goal or regulation, such that the action is accepted or owned as personally important” (Ryan & Deci, 2000, p. 72). Through identification people accept the regulation as their own. An example of identified regulation may be athletes who value training as a means of realising their talent and willingly practice to improve their performance.

Integrated regulated behaviour is determined by choices made flexibly on the basis of consequences and values. It “occurs when identified regulations are fully assimilated to the self, which means they have been evaluated and brought into congruence with one’s other values and needs” (Ryan and Deci, 2000, p. 73). Integrated regulated behaviours are the most self-determined type of extrinsic motivation (Deci & Ryan, 1985). Behaviours classified as integrated regulation are similar to intrinsically motivated behaviours. What differentiates the two types of behaviours is that the integrated regulated behaviour is performed to attain some separable outcome and this is deemed an extrinsically motivated behaviour. An intrinsically motivated behaviour is deemed so because of the inherent enjoyment associated with performance or participation.

An example of an integrated regulated behaviour may be athletes who consistently attend training because they not only value the training as a means to an end but also realise that full commitment and hard work are consistent with achieving success in all aspects of life. This internal perceived locus of causality allows the athlete to experience greater self-determination.

The need to demonstrate competence is the second tenet of SDT and “leads people to seek and conquer challenges that are optimal for their capacities” (Deci, 1975, p. 28). In effectively interacting with their environment, people experience a sense of achievement and continue to undertake new challenges to satisfy this need to demonstrate competence. Learning experiences that are perceived as unchallenging or too easy can lead to boredom, and those activities that are too challenging or difficult can lead to frustration and possibly a perception of incompetence.

In an attempt to identify factors that explain the variability in motivation, Deci and Ryan (1985) proposed their cognitive evaluation theory (CET). CET is a mini-theory of SDT that evaluates the social and environmental factors that facilitate or undermine intrinsic motivation.

CET predicts that rewards given to an individual in an achievement context can either promote or undermine intrinsic motivation. How the individual perceives the reward determines its influence on intrinsic motivation. If the reward is perceived as providing information about competence, the reward is predicted to enhance intrinsic motivation. If the reward is perceived as controlling an individual’s behaviour (i.e., an external locus of causality) the reward is predicted to decrease the individual’s perception of self-determination and consequently, undermine his/her intrinsic motivation.

CET predicts that elite sport environments, which are characterised by a focus on winning and large financial incentives, are conducive to promoting lower levels of self-determination and consequently, lower levels of intrinsic motivation (Vallerand, Deci, & Ryan, 1987). Laboratory research (e.g., Vallerand, Gauvin, & Halliwell, 1986) and field research (e.g., Fortier, Vallerand, Brière, & Provencher, 1995) support the prediction of CET that competition has a negative influence on intrinsic motivation. Competitive environments are likely to promote a focus on winning (norm-referencing), promoting ego involvement and subsequently a decrease in intrinsic motivation through its adverse effect on self-determination (Vallerand, Deci & Ryan, 1987).

The perception of being connected to significant others (i.e., relatedness) is the third fundamental need of humans proposed in SDT. The need to be accepted by others and belong to groups (e.g., sporting teams, family) is critical to a healthy perception of self (Deci & Ryan, 1985; Vallerand, 1997).

Vallerand (1997) proposed his hierarchical model of motivation as an extension of SDT. It is an attempt to integrate much of the research conducted on motivation into a useful framework for studying relationships between the determinants and consequences of intrinsic motivation,

extrinsic motivation, and amotivation at the global, contextual, and situational levels. HMM focuses on the social factors (e.g., competition, coach behaviours) that influence the various forms of motivation, through their influence on autonomy (self-determination), perceptions of competence, and relatedness.

HMM supports the view proposed by White (1959) and Deci and Ryan (1985) that motivation might be multidimensional. Within each psychological construct of intrinsic motivation, extrinsic motivation, and amotivation there are several dimensions or forms of each type of motivation. Vallerand (1997) argued that these varying types of motivation could explain much of human behaviour and therefore must be included in a comprehensive analysis of motivation.

The HMM proposes three forms of intrinsic motivation: intrinsic motivation towards accomplishment, intrinsic motivation to experience stimulation, and intrinsic motivation to know (Vallerand, 1997). Intrinsic motivation towards accomplishment is associated with the enjoyment experienced from the process of mastering or creating something (e.g., producing the perfect technique in javelin). Intrinsic motivation to experience stimulation is associated with the sensory pleasure from engaging in an activity (e.g., sprinting as fast as possible). The third type of intrinsic motivation posited by HMM, intrinsic motivation to know, can be defined as the enjoyment associated with exploring and/or learning something new (e.g., a new hurdles technique).

Vallerand (1997) also posited the multidimensionality of extrinsic motivation and supported the four types of extrinsic motivation proposed by Deci and Ryan (1985). The four types of extrinsic motivation (external, introjected, identified, and integrated regulation) are characterised by varying degrees of self-determination.

Amotivation is the third major type of motivation and is characterised by the lowest levels of self-determination. Vallerand (1997) supported the notion that amotivation is a multidimensional construct and proposed four major types of amotivation: capacity/ability beliefs, strategy-beliefs, capacity-effort beliefs, and helplessness.

The third social-cognitive theory of motivation that has considerable support in education and sport/exercise literatures is achievement goal theory (AGT; Duda, 1992, 2001; Nicholls, 1984, 1989). Earlier work by Maehr and Nicholls (1980) proposed that achievement motivation should focus on the individual's primary goals for participation and also the individual's understanding of success and failure. They proposed that goals are central determinants of achievement behaviour (i.e., humans are driven to achieve goals). AGT "assumes that the individual is an intentional, goal-directed organism that operates in a rational manner and that achievement goals govern achievement beliefs and guide subsequent decision making and behaviour in achievement contexts", (Roberts, 2001, p. 10). Of particular interest is how personal goals influence how a person thinks, feels and behaves in achievement situations.

According to Nicholls (1989), people try to demonstrate high ability and avoid demonstrating low ability in achievement contexts. Nicholls (1984) proposed that two major goals operate in achievement contexts. Perceptions of success and failure (i.e., perceptions of competence or ability) are determined by whether these personal goals are achieved.

Task goals relate to mastering new skills or improving performance standards. Task-oriented performers are driven primarily by personal improvement and learning. Self-determined reasons for participation are associated with a task orientation (Nicholls, 1989). They are considered self-referent and consequently perceptions of success and failure are determined by whether or not personal performance standards were improved (e.g., personal best 100 m time). Personal

improvement is associated with a sense of achievement and consequently an enhanced perception of competence (Nicholls, 1989). Duda and Whitehead (1998) reported that intrinsic and cooperative reasons for participation in sport are correlated with a task orientation. This is consistent with the predictions of SDT and HMM.

Ego-oriented performers pursue the goal of proving their ability. Their sense of self-worth is linked to normative referencing of ability (Dweck & Leggett, 1988). Their perception of ability (i.e., success) is contingent on beating an opponent and preferably with less effort. Consistent with the predictions of SDT, HMM, and AGT, research (e.g., Duda, Chi, Newton, Walling, & Catley, 1995) has shown that a high task disposition was correlated with higher levels of intrinsic motivation and a high ego disposition was more likely to be associated with decreased intrinsic motivation. Ego-orientation has been found to correlate with more extrinsic motives for participation in sport (Duda & Whitehead, 1998).

Proponents of AGT (e.g., Dweck, 1986; Nicholls, 1984) have argued that the ability to demonstrate competence is central to participation in achievement contexts. This is consistent with SDT and HMM. The participant's conception of ability is a critical factor in his/her interpretation of the competitive situation. If the participant has a task conception of ability, the competitive situation is likely to be perceived as providing information to improve personal mastery. Consequently, AGT predicts that a task conception of ability is associated with self-determined motivation. Alternatively, if the participant has an ego conception of ability, the informational function of the competitive situation is likely to be associated with the participant's sense of self-worth. Consequently, AGT predicts that an ego conception of ability will be correlated with non-self-determined motivation.

Duda and Whitehead (1998) proposed that participants in sport vary in their dispositional goal orientations. "Variations in goal perspectives, or ways in which individuals judge their competence and define successful accomplishment, are critical antecedents to variations in motivational processes" (Duda, 2001, p. 129). Participation in competitive sport per se is inherently neutral, however dispositional and situational factors have the potential to promote either an ego- or task-orientation or a combination of both. AGT predicts that elite sport is characterised by ego-involvement because of the inherent emphasis on winning (Duda, Chi, Newton, Walling & Catley, 1995).

Nicholls (1989) argued the orthogonality of achievement goals. He has always argued that task and ego goal orientations are independent (Roberts, 2001). Duda and Whitehead (1998) have shown support for Nicholls' contention. Roberts (2001), in summarising the research on goal orientations, concluded that although some researchers have argued that ego involvement may be necessary for success in elite sport, "being task involved is beneficial, even for elite athletes high in ego orientation" (p. 41).

Although SDT, HMM, and AGT have conceptual differences, all three social-cognitive theories of motivation have several tenets in common. First, dispositional and situational factors are major influences on the type of experience participants derive from their participation in sport (Deci & Ryan, 1985; Duda, 1987; Vallerand, 1997). Situational and dispositional factors influence motivation through the psychological mediators of self-determination/autonomy, perception of competence, and relatedness. Vallerand (1997) suggested that goal orientations influence motivation through their influence on a person's perceptions of autonomy, competence, and relatedness. Duda, Chi, Newton, Walling and Catley (1995) proposed that differences in goal orientations may influence intrinsic motivation through their mediating effect on either perception of competence or

perceived locus of causality (i.e., self-determination). Second, all three theories argue that motivation is multidimensional. As previously stated, a complete analysis of motivation should consider the multidimensionality of motivation. Third, cognitions, affect, and behaviours in achievement contexts are influenced by variations in motivation.

A primary goal in elite sport is to win. CET, HMM, and AGT contend that the extrinsic or outcome focus (e.g., winning) often associated with elite sport can undermine intrinsic motivation and promote extrinsic motivation. Is participation in elite sport always extrinsically motivated? Social-cognitive theories of motivation predict that the structure of competitive sport will promote a decrease in intrinsic motivation and self-determined forms of extrinsic motivation. Research to date has not fully supported this prediction. For example, Fortier, Vallerand, Brière and Provencher (1995) examined the relationship between sport structures and various forms of motivation. Participants in their study completed the Sport Motivation Scale (SMS; Pelletier et al., 1995), a scale based on the tenets of SDT and HMM. The authors found that competitive athletes, compared to recreational athletes, were characterised by higher levels of amotivation and lower levels of intrinsic motivation. The potential undermining effects of competition on intrinsic motivation were confirmed by Fortier et al. (1995). However, the authors found that the competitive athletes compared with recreational athletes were characterised by a higher level of self-determined extrinsic motivation. They suggested that competitive athletes, although less intrinsically motivated compared with recreational athletes, were more likely to choose to commit to the demands of competitive sport. One of the limitations identified by the authors was that they did not examine motivational processes at significantly different levels of competition in sport. Participants in the study by Fortier et al. (1995) were intercollegiate athletes from junior colleges who competed in recreational intramural competitions. If competition undermines intrinsic motivation and promotes higher levels of extrinsic motivation, the logical extension is that elite athletes, compared with athletes who participate at a lower level of competition, will be characterised by high levels of extrinsic motivation and low levels of intrinsic motivation. Recent research has not supported this assumption (e.g., Chantal, Guay, Dobreva-Martinova, & Vallerand, 1996; Forzoni & Karageorghis, 2001).

Chantal, Guay, Dobreva-Martinova and Vallerand (1996) examined the relationship between motivation and elite performance. Their research, based on the tenets of SDT, examined the motivational profiles of 98 elite Bulgarian athletes. Participants completed the Bulgarian version of the SMS. More successful athletes compared with less successful athletes were found to possess higher levels of amotivation and higher levels of non self-determined extrinsic motivation. Chantal et al. (1996) reported that “title and medal holders seemed more inclined to report external rewards and feelings of obligation and pressure as their primary sources of motivation than less successful athletes” (p. 179). The authors suggested that the findings may have been influenced by the social context (i.e., the centralised sporting structure in Bulgaria at the time). The increase in non self-determined extrinsic motivation and amotivation was expected to correspond to a decrease in self-determined extrinsic motivation and intrinsic motivation. Unexpectedly, their research did not find a difference in self-determined forms of motivation as proposed by SDT and HMM. The authors suggested that one possible reason may have been the lack of discrepancy between the performance levels of the two groups evaluated (i.e., medal winners versus non-medal winners).

Forzoni and Karageorghis (2001) employed the SMS to examine the participation motives of elite soccer players across four age groups. They predicted that as the players progressed in age

through to the professional ranks, a significant increase in rewards (e.g., money) and pressure to perform would undermine intrinsic motivation and foster extrinsic motivation. Forzoni and Karageorghis found no significant differences between the age groups. The external rewards were not found to be controlling. Interestingly, intrinsic motivation scores were relatively high for all groups.

In summary, there has been little research on motivation conducted with elite athletes and the research to date has yielded equivocal findings. Specifically, there has been little research on motivation simultaneously based on SDT, HMM, and AGT. Duda et al. (1995) argued for integrating social-cognitive theories, specifically CET and AGT, to examine the links between goal orientations and mediating variables, self-determination and perception of competence.

Much of the motivational research has been conducted in academic settings and to a lesser extent in sport and exercise. Within the sport and exercise environments, motivational research has focused on recreational and sub-elite athletes (e.g., university level athletes). Few studies have been conducted examining the motivational processes of elite athletes and even fewer studies employing qualitative methods have been found. A qualitative methodology was employed in the present study for several reasons. First, it was felt that the semi-structured interview process would provide an in-depth understanding of the motivation of this special group of athletes by capturing rich representations of their experiences, thoughts and feelings without the constraints of single theory driven questionnaires. Second, unknown factors that may be characteristic of this special cohort of athletes may not be identified in the general dimensions of questionnaires. Duda (1997), in considering critical features of a comprehensive model of motivation, proposed that “emphasis [be] placed on people’s perceptions and interpretations of reality in sport settings” (p. 248). Third, this exploratory research is part of a larger scale research project involving multi-theory testing. Duda (1997) stated that “conceptual convergence across other models of motivation” (p. 248) should be considered in a comprehensive investigation of motivation. The findings from this study will assist in the decision-making process regarding the use of the most appropriate questionnaire/s examining motivational processes in elite athletes.

What makes highly motivated elite athletes so driven? The purpose of this study was to investigate the motivational forces behind elite performance in sport based on SDT, HMM, and AGT, employing a qualitative research approach.

Method

Participants

Participants finished in the top ten at a major championship in track and field in the last six years (i.e., 1996 & 2000 Olympic Games, 1995, 1997, 1999 World Championships). This was the criterion used to define an ‘elite’ athlete. The researcher selected 11 athletes who fulfilled the criterion of ‘elite’ track and field athlete in recent years and who were still competing at the international level. Ten of the 11 athletes contacted voluntarily participated in this research. The eleventh had problems with the interview times due to work commitments. All participants were contacted initially through the national track and field association and their personal coach and followed up with a telephone call from the researcher to confirm their participation.

Five women and five men, aged between 22 years and four months and 34 years (mean age=27 years 3 months) participated. They had been competing in the international arena for an average of 7.7 years (range=4–15 years) and all had competed for Australia. They included five sprinters (including one hurdler), three horizontal jumpers, a middle distance runner, and a thrower. Four participants had collectively won eight medals in the Olympic Games and the World Championships. Nine of the participants had won 16 medals in the Commonwealth Games (1994 & 1998).

Data collection

The first author conducted one 45–60 minute semi-structured interview with each participant. A list of open-ended questions guided the interview (see Table 1). The first author, who developed the interview questions, was an experienced international track and field coach as well as an active researcher in the area of motivation. The introductory questions were ‘ice breakers’. Questions reflecting the basic tenets of SDT, HMM, and AGT formed the basis of the remaining questions. Semi structured questions were designed to provide a consistent framework in which to operate across the participants, but also to allow opportunities to explore participant responses when appropriate. Prior to data collection, the second author, a senior researcher in the area of

Table 1
Interview schedule for elite athletes

How did you get involved in track and field?
When did you start competing in track and field?
Describe your level of interest in track and field when you first commenced competing in track and field?
How much did you enjoy this involvement?
What in particular did you like? What didn't you like?
Has your level of motivation changed since then? If so, what has changed?
How would you explain the reasons for your participation in track and field in the last few years? Has this changed during this time? What specifically has changed? What do you think has caused these changes?
What do you like about competing at the elite level in track and field?
What don't you like about competing at the elite level in track and field?
When things were going bad did you ever question why you compete at the elite level? Why did you persist?
How do you define success in track and field? Do you think you have been successful?
How important is succeeding in track and field to you? Why?
What has given you the confidence to be successful in track and field? Where did you get the pieces of information to tell you were good?
Have you ever questioned your ability? Were you able to convince your self otherwise? How did you do this?
What is more important to you re: your participation in elite track and field, the money, fame/glory, pleasing others (e.g., coach, parents, others), enjoyment?
How much do you enjoy training for track and field? What do you like the most? Why? What do you like the least? Why?
When you compete well, what commonly goes through your mind immediately after the event or during the event.
When you compete poorly, what commonly goes through your mind?
What is your primary focus, beating your opponents or producing a personal best performance?
What involvement do you think you will have in track and field in the next ten10 years? Why do you say this?
What if anything do you think you have learned from participating in track and field? Why do you say that?
Has your involvement in track and field influenced other aspects of your life or vice versa?

motivation, reviewed the interview questions and made slight modifications to ensure that they did not lead athletes to particular responses.

With the permission of the participants the interviews were audiotaped. The tapes were transcribed by an employed transcriber. The transcriptions were checked by the first author. Difficulty with the transcriptions of some colloquial terms used in track and field and also specific names of events and competition locations necessitated some minor corrections.

The transcriptions were not returned to the participants for checking the accuracy of the transcriptions. There was difficulty in accessing the participants again, because most had left the country to compete overseas.

Data analysis procedures

The first author and two additional trained researchers independently reviewed the raw data (i.e., quotes) taken from verbatim transcriptions. 95 pages of single-spaced text were transcribed from the ten tape-recorded interviews. Hierarchical content analysis as adopted by Scanlan, Ravizza, and Stein, (1989) and Gould, Tuffey, Udry, and Loehr (1996) was employed in this study. Each researcher independently identified raw-data themes. These reflected a particular abstraction or concept that emerged. After the independent content-analysis, the three researchers discussed the identified themes. Triangular consensus was employed to ensure which raw-data themes would be used in the analysis. Disagreements were resolved by further reviews of the transcripts. An inductive analysis was conducted to identify more general themes, which were identified as second order and third order themes. The highest level (i.e., third order) represented the most general themes. Three major themes were identified as third order themes and each was considered to be distinct. Triangular consensus was reached on all the identified higher order themes. The identified raw-data, second order, and third order themes are presented in Fig. 1.

Results and discussion

The results of the qualitative analyses revealed some interesting insights into the thoughts, feelings, and behaviours of elite athletes. However, to ensure anonymity specific details regarding the data presented in this section have been omitted. The key themes that emerged were examined in light of recent social-cognitive theories of motivation and previous research conducted in this area. The participants were characterised by the following: (a) they were highly driven by personal goals and accomplishment, (b) they had strong self-belief, and (c) their life revolved around track and field.

Personal goals and achievement

One of the dominant themes identified from the study was the intense commitment by the elite athletes to achieve personal goals. The achievement of goals provided them with a sense of accomplishment which, in turn, positively influenced self-determined forms of motivation.

- A: So my enjoyment for it now is more in the fact that I'm running well and I'm setting myself

Raw-Data Themes	1st Order Themes	2nd Order Themes	General Dimensions
Improving technique (N = 10) Improving personal best (N = 10) Perfect performance (N = 6) Personal achievement (N = 7)	Task orientation	Task orientation/Self-determined motivation	PERSONAL GOALS AND ACHIEVEMENT
Enjoy training (N = 3) Excitement Enjoyment (N = 5)	Intrinsic motivation		
Importance of hard work (N = 9) Perception of control	Self-determined motivation		
Beating opponent (N = 5) Love competing (N = 4)	Ego orientation	Ego orientation/Non self-determined motivation	
Money (N = 2)	Extrinsic rewards		
Special (N = 5) Recognition (N = 3) Popular Respect Known as someone Forte (N = 2)	Social recognition		
Inherent self belief (N = 10) Temporary self doubt (N = 2)	Strong self belief	Strong self belief	
Social relationships important (N = 6) Meeting people (N = 4) Enjoy lifestyle (N = 2) Travel (N = 4)	Social	Centrality of track and field to their lives	CENTRALITY OF TRACK AND FIELD TO THEIR LIVES
Track is my life Athletics is a job Live and breathe athletics Life moulded around athletics	Play is work		
Developed as a person (N = 4)	Character development		

Fig. 1. Motivational processes of elite track and field athletes' inductive analysis results.

goals and every time I accomplish my goals it's a real achievement and that's where the enjoyment comes from.

- Q: What is your definition of success?
- A: Achieving the goals that you set for yourself ... my goal is becoming the best in the world (Participant B).

Consistent with Nicholls' AGT (1989), the participants in this study were highly driven by personal goals of achievement. The athletes were motivated by both task and ego goals. That is, they were focused on producing the 'perfect performance' (i.e., task goal) and also beating their opponents (i.e., ego goal).

- Q: So what's your primary focus going into a competition, beating your opponents or doing a PB?

- A: Both!
- Q: How do you define success in track and field?
- A: Doing a PB.
- Q: Do you think you have been successful?
- A: Yeah, because every major event I've done a PB (Participant H).

Although all athletes in the study were driven by both mastery and ego goals, some athletes were more focussed on proving their ability (i.e., ego goals). “I liked what I was doing and I wanted to be the best at it. I wanted to beat everybody” (Participant J).

Other athletes in the study were more task-oriented. That is, they were more focused on improving their ability, and being the best they could be.

- Q: What do you like about competing at the elite level in track and field?
- A: The excitement. I love it. Just it's a big part of me. I really thrive on competition and I really do enjoy pushing myself to see what I can do.
- Q: How do you define success in track and field?
- A: ... success is never giving up and just that ruthless attitude where it's never say die kind of attitude. And just making the most of who you are I think is the most important thing ... there are so many things you can achieve if you put your mind to it and because I enjoyed it that is one thing that has kept me going ... I've always been motivated to be the best I could be... (Participant A).

Duda (2001) stated that she has often proposed the view that individuals high in ego- and task-orientation whose normative competence has been challenged, have always had the ability to default to their strong sense of self-referencing. This contention seems plausible in light of our data. As previously stated, the athletes in this study were motivated by both task and ego goals. Defaulting to self-referencing enables the athlete to maintain or enhance perceptions of competence. For example, “my goal is becoming the best in the world ... If I don't achieve it but I know I did everything I've got .. I'll have to be satisfied ... I can't determine how fast another girl runs” (Participant B).

The participants in this study believed they had physical talent and clearly made the decision that this was their forte. For these athletes the journey to success was equally as important as achieving a gold medal, and the road to achieving the “holy grail” also provided valuable information to the athletes that they were improving. This reinforced their sense of competence. The elite athletes consciously valued the journey and in doing so displayed high levels of self-determined motivation.

- Q: How would you define success in track and field to you?
- A: I think sitting down and working out your goals, what you want to achieve.
- Q: ... What's your primary focus? ... beating your opponents or producing your best performance?
- A: Performance, ... If I run the perfect race, ... that'll produce the performance.
- Q: So why is it important for you to compete internationally?
- A: ... It's the reward. Do the hard work (Participant F).

Social-cognitive theories generally consider extrinsic motivation to be associated with behaviours that are prompted by a perceived external locus of causality (e.g., a gold medal at the Olympic Games). Even though the athletes were pursuing victory at major international championships, their motivation was not solely characterised by a perceived external locus of causality. On the contrary, the motivations of these athletes were more characterised by a perceived internal locus of causality (i.e., self-determined motivation). “It is nice to get results if you have worked hard ... I knew that I could get a medal [Commonwealth Games] but it was like you don’t deserve it because you haven’t worked hard enough” (Participant E). This example of identified regulation demonstrates that some elite athletes value training as a means of realising their talent and willingly practice to improve their performance.

The participants recognised their natural physical talents from an early age, however they also recognised the need to train hard to fulfil their dreams. From this striving for personal achievement the participants not only recognised and valued the importance of hard training but they also valued the pursuit or challenge of the ‘holy grail’.

- A: I just wanted to see if I trained really hard ... I want to jump huge. I want to see how fast I can run and see how far I can jump.
- Q: So what’s more important, for you to jump a long way or get the right technique?
- A: Right technique because if you nail the right technique with all those factors, you know (Participant H).

Integrated regulation (i.e., self-determined extrinsic motivation) was also demonstrated. For example, “I love training. I always have ... I love it. I wake up in the morning and look forward to training ... I would do it to stay healthy” (Participant J). In this case the athlete chooses freely to behave in a certain way, which is consistent with his/her values and attitudes.

A high level of intrinsic motivation was also articulated.

- Q: “How do you define success in track and field for you?”
- A: Again justifying the time out on the track, being able to find improvement knowing that you have worked for it. That is success” (Participant I).

In this qualitative study the achievement of personal goals was found to positively impact on perceptions of competence, and in turn intrinsic motivation. “I’m setting goals and every time I accomplish my goals it’s a real achievement and that’s where the enjoyment comes from” (Participant B). This finding is consistent with SDT, HMM, and AGT. Forzoni and Karageorghis (2001) also found that elite soccer players, including those players competing in a high division, reported high levels of intrinsic motivation. Reeve and Deci (1996) found that winning increased intrinsic motivation through increased perceptions of competence. People are intrinsically motivated when they feel successful at something. The intrinsic satisfaction of accomplishment was paramount to the healthy perception of competence demonstrated by the elite athletes in this study. Personal goals impact on perceptions of competence which, in turn, impact on self-determining forms of motivation (including intrinsic motivation).

People often engage in an activity for the pleasure and satisfaction of mastering a skill, improving one’s previous best performance, or creating something new. The primary focus is on the

accomplishment. Intrinsic motivation to experience stimulation and intrinsic motivation to know, as suggested by HMM, were not characteristic of this group of elite athletes.

This study has shown that elite athletes have multiple motivations. The motivations of these elite athletes were both self-determining and non self-determining. Social-cognitive theories of motivation predict that competitive environments would be conducive to reducing intrinsic motivation and increasing non self-determined extrinsic motivation. Our findings do not support this prediction. The elite athletes were not characterised by low levels of self-determined motivation. A possible explanation is that the reward (e.g., winning, money) is not perceived as controlling behaviour, but as influencing motivation through its impact on perceptions of competence.

For the elite athletes, personal achievement in sport is the opportunity to be someone (i.e., social recognition was important). This is the arena in which to show the world how good they are. “The track is my place, my stage, my expression. It’s where I can show the rest of the world my art. ... I think in essence, we are performance artists. What we do is produce something special and it’s entertaining” (Participant F). The participants in this study wanted the recognition associated with success in elite sport. “I get recognised and that motivates me” (Participant G). This need to be special was reflected in their desire to be recognised as being good at something.

The sense of achievement (e.g., success in elite sport) associated with the capacity to master the social environment is reflected in the demonstration of competence (Harter, 1978). A high perception of competence is correlated with a perception of worthiness. “If I can win a gold medal then people are going to think that I am alright and maybe get more recognition” (Participant E). People from all walks of life, including elite athletes, are motivated to demonstrate competence. “You stand out from the crowd and you stand out for achieving ... you finished fifth. That makes you a special sort of person” (Participant C). Winning medals may be one of the goals elite athletes strive to achieve, however it is not the ‘medal’ per se that is important, but what the medal represents. The medal is evidence that a person has achieved. It is a tangible sign that a person is competent.

“I just don’t want to be a competitor, ... I don’t want to just be in the Australian team, I want to be special” (Participant D).

- A: If I knew I couldn’t be successful I wouldn’t do it. That’s definitely true.
- Q: So how important is being successful to you?
- A: Very. I guess I’m desperate to be successful. ... I just want to be successful at something....I get recognised and that motivates me. ...I wanted to definitely be known as someone ...”
- Q: So what drives you more?
- A: Knowing that I am a nobody and that I haven’t done anything and I haven’t really won anything (Participant G).

The strong theme of social recognition is consistent with Adler’s (1924) belief that the basic motivation behind human behaviour is the “striving for superiority”. The concept of effectance motivation, proposed by White (1959) and developed by Harter (1978), highlights the importance of demonstrating competence in mastering the environment. People are inherently and proactively motivated to master their social environment (e.g., DeCharms, 1968; Deci, 1975). In effectively interacting with their environment, people experience satisfaction from a sense of achievement and continue to undertake new challenges to satisfy this need to demonstrate mastery of their

environment. This motivation to strive for competence, self-enhancement, and mastery has considerable support in education (e.g., DeCharms, 1968; Deci, 1975; Deci & Ryan, 1985; Nicholls, 1989), sport psychology (e.g., Frederick & Ryan, 1995; Vallerand, 1997) and exercise psychology (e.g., Markland, 1999). Often people are motivated to become more skilful. A higher level of perceived skill provides a sense of achievement, which makes people feel good about themselves.

The elite athletes in the present study were driven to demonstrate a high level of competence. In particular, they reported the need to demonstrate a high level of competence to prove their self-worth to their peers and others.

- Q: How important is money to you?
- A: It is important, but it is not the most important thing. ... I think that it is the recognition” (Participant E).

The perception of being connected to significant others (i.e., relatedness) is one of the fundamental needs of humans proposed in SDT. The elite athletes perceived themselves as special because of their achievements in elite sport. They perceived themselves as members of an exclusive group and wanted the recognition associated with that membership. The need to be accepted by others and belong to groups (e.g., sporting teams, family, work) is critical to a healthy perception of self (Deci & Ryan, 1985; Vallerand, 1997).

Strong self belief

Not surprisingly, participants had strong beliefs in their capacity to achieve their goals in track and field. “I’ve always had the audacity to think that I could be better than anyone else and that’s the gist of it. ... I’ve always had the audacity to think I could do it” (Participant A). The success they had achieved was found to positively influence their perception of competence. This may be akin to learned optimism and antithetical to learned helplessness. Participants did report some episodes of self-doubt, however these were both infrequent and temporary.

The perception of self is regulated by attempts to master one’s environment. This is the underlying assumption of SDT (Deci & Ryan, 1985) and the HMM (Vallerand, 1997). The notion of mastering one’s environment is also consistent with the basic tenet of Nicholls’ (1989) AGT. A healthy perception of the self is critical in mastering one’s environment. Success in sport at the highest levels is the barometer by which these athletes gauged their ability to master their environment.

Perception of competence was found to be a major psychological need of this group of elite athletes. This finding was consistent with SDT and the hierarchical model of motivation. From an early age, the participants recognised their natural physical talent. This strong self belief was reinforced by the fact that they achieved early success with limited training and in most cases poor or inexperienced coaching. As stated previously, they also realised the importance of hard training to compliment their natural physical qualities if they were to fulfil their potential.

“That’s one thing that keeps me going out there is that I know I’m better than all those guys. That’s just an inner belief ... You have to believe in yourself” (Participant F).

“... everyone has a gift ... and I think if you don’t use that talent it is a waste ... a waste of your life and why you are here” (Participant I).

Life revolves around track and field

The elite athletes were totally immersed in track and field and were characterised by high levels of self-determined motivation. The role of track and field was central to the lives of the elite athletes in this study.

- Q: How much would you say you enjoy athletics and has this changed over time?
- A: ... it’s got more serious ... it’s become more of a job I’d say. When I started running it was more of a hobby. It’s definitely more of a way of life now for me. ... it’s been a huge part of my development in life as well.... I eat, live, and breathe athletics. ... you’re always thinking athletics, you can’t help it (Participant B).

Decision-making in their daily routine was based on their involvement in track and field. The participants were totally immersed in their sport. Track and field was their life and they valued the role that track and field played in their personal development.

- A: I love training ... a good part of training is the interaction....The javelin is like part of me...I think my life is moulded around track and field. I think who I am, is track and field. ... It’s been the only thing in my life that has been completely consistent for such a long period of time is track and field (Participant D).
- “track and field is my life, has always been my life...” (Participant F).
- Q: “you enjoy the lifestyle?”
- A: Yes, I do.
- Q: What in particular about the lifestyle do you like?
- A: Being healthy ... feeling fit and healthy” (Participant I).

Conclusions and implications

Social-cognitive theories of motivation provided a useful framework for examining the motivational processes of elite athletes. Consistent with SDT, the HMM, and AGT, the perception of competence was found to play an important role as a critical psychological mediator for the elite athletes who participated in this study. The findings support the contention that the accomplishment of goals enhances perception of competence which, in turn, positively influences self-determined motivation.

Social-cognitive theories of motivation predict that elite competitive sporting environments, which are characterised by a focus on winning and financial incentives for winning, would undermine self-determined forms of motivation for ego-oriented athletes. The assumption here is that the locus of causality has shifted from internal to external. However, self-determined forms of motivation and intrinsic motivation will be enhanced if achievement of personal goals in elite sport reinforces perceptions of competence and self-determination. In this case, the locus of caus-

ality remains internal. The elite athletes we interviewed were characterised by both task and ego dispositional goal orientations. The fact that they were task oriented and focused on improving performance promoted internally regulated behaviours and subsequently self-determined motivation.

The elite athletes were characterised by multiple motivations and, in particular, self-determined motivation. This is consistent with Forzoni and Karageorghis (2001). Participation in elite sport does not always undermine self-determined motivation. Elite athletes are not always primarily motivated by external rewards such as money. External rewards can provide information about competence and also have a controlling influence on behaviour. We suggest that the perception of competence is a strong mediating variable influencing self-determined motivation. It is suggested that elite athletes perceive external rewards as positively influencing their perception of competence, which subsequently enhances self-determined motivation. This explanation is consistent with the findings of Reeve and Deci (1996).

Another explanation may be that after a period of time, financial rewards for elite athletes lose their controlling influence, and the pursuit of being someone special is a more powerful motivator. The perceived locus of causality becomes more internal.

Pelletier et al. (1995) suggested that maturation may be factor in explaining why the most self-determining form of extrinsic motivation, namely integrated regulation, did not emerge as a factor in the development of the Sport Motivation Scale (SMS) and its precursor, the l'Échelle de motivation dans les sports (EMS; Brière, Vallerand, Blais, & Pelletier, 1995). The participants used in the development of the EMS were 16–19 year-old recreational athletes, while the development of the English version of the EMS, the SMS, involved the participation of university athletes (mean age=19.2 years). The elite athletes who participated in the present study were older (mean age=27 years 3 months). Child athletes may initially be characterised by an internal perceived locus of causality. The possible negative influence of the competitive environment during adolescence may shift the perceived locus of causality from internal to external during structured sporting experiences. Adolescents yearn for peer recognition and approval, which may be critical to their positive perception of self.

The perceived locus of causality may then shift from external to internal as athletes mature and contemplate why they persist in continuing to compete in their sport, thereby enduring intense training and a compromised social life. It is suggested that after a period of time, money and winning are not the powerful motivating forces. Rather, it is the perception of being competent and accepted by others that is most influential. Motivations change over time and sensitivity to these changes requires strong consideration by the architect of an athlete's training and competition environment.

Elite athletes in this study were highly driven by multiple personal goals. More importantly, the sense of achievement in accomplishing personal goals was shown to be a powerful motivating force in this group. These accomplishments reflect positively on their perception of competence.

Two implications for elite athletes, and those people who work with elite athletes, arise from this study. First, coaches should be sensitive to different types of motivation and those factors that influence motivation. It is suggested that for some elite athletes financial rewards provide them with information about their competence more so than controlling their behaviour. Second, as elite athletes were driven by personal goals, it is recommended that athletes set personal goals with their coaches that are challenging and target both improvement and the pursuit of beating

their opponents. In particular, coaches are strongly recommended to facilitate perceptions of competence through goal achievement.

This exploratory research employed an alternative approach to examining the motivations of elite athletes. As proposed by SDT, integrated extrinsic motivation was found to exist. Although proposed by SDT, Pelletier et al. (1995) did not find support for the inclusion of integrated extrinsic motivation in the development of the EMS/SMS. The use of qualitative methodology has identified that this form of motivation may exist in elite athletes. It is suggested that future research employ qualitative and quantitative approaches to ensure a complete examination of motivational processes. The findings in this study provide support for multi-theory testing of motivational processes. Consistent with the recommendation by Duda (1997), it is suggested that future research on motivation employ methodology that considers multiple theories of motivation. Future quantitative research on the motivational processes of elite athletes may benefit from employing questionnaires that examine both goal orientations and the various forms of motivation. Although the scope of this paper prevented a broader theoretical examination of the data, it is proposed that future research might consider other relevant social psychological theories (e.g., theories of self and identity, developmental psychology) in conjunction with motivational theories to provide a more extensive analysis.

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