1 A Grounded Theory of Psychological Resilience in Olympic Champions

Abstract

Objective: Although it is well-established that the ability to manage stress is a prerequisite of sporting excellence, the construct of psychological resilience has yet to be systematically examined in athletic performers. The study reported here sought to explore and explain the relationship between psychological resilience and optimal sport performance.

Design and Method: Twelve Olympic champions (8 men and 4 women) from a range of sports were interviewed regarding their experiences of withstanding pressure during their sporting careers. A grounded theory approach was employed throughout the data collection and analysis, and interview transcripts were analyzed using open, axial and selective coding. Methodological rigor was established by incorporating various verification strategies into the research process, and the resultant grounded theory was also judged using the quality criteria of fit, work, relevance, and modifiability.

Results and Conclusions: Results indicate that numerous psychological factors (relating to a positive personality, motivation, confidence, focus, and perceived social support) protect the world's best athletes from the potential negative effect of stressors by influencing their challenge appraisal and meta-cognitions. These processes promote facilitative responses that precede optimal sport performance. The emergent theory provides sport psychologists, coaches and national sport organizations with an understanding of the role of resilience in athletes' lives and the attainment of optimal sport performance.

Keywords: challenge appraisal, elite sport, excellence, meta-cognition, optimal performance, stress process.

A Grounded Theory of Psychological Resilience in Olympic Champions

Winning an Olympic gold medal is universally recognized as the pinnacle of sporting achievement and arguably the most demanding challenge an athlete can pursue. This is, in part, due to the unique scale of the Olympic Games which occurs only once every four years. It is the magnitude and infrequency of the event, combined with globalization of the sport industry, which ensures worldwide fascination and interest in the athletes' performances. However, this intense scrutiny brings with it enormous pressure and only those who can manage the stress that accompanies sport at this level will be successful. In view of these observations, sport psychology researchers have investigated and identified the numerous demands – or stressors – encountered by Olympic athletes (see, e.g., Fletcher & Hanton, 2003; Gould, Jackson, & Finch, 1993; Scanlan, Stein, & Ravizza, 1991), including those associated with competitive performance (e.g., preparation, expectations, and opponents), the sport organization within which the athletes operate (e.g., finances, selection, and officials), and personal "nonsporting" life events (e.g., family responsibilities, moving house, and serious illness). Why is it that some sport performers are able to withstand – or even thrive on – such pressure in the Olympic environment and attain peak performances, whereas others succumb to these demands and under-perform? It is the study of psychological resilience that aims to address this question.

Over the past quarter of a century, numerous definitions of resilience have been proposed in the psychology research literature based on alternative conceptualizations of resilience as a process or a trait (Jacelon, 1997). To illustrate, psychological resilience has been defined as a "dynamic process encompassing positive adaptation within the context of significant adversity" (Luthar, Cicchetti, & Becker, 2000, p. 543) and "the positive role of individual differences in people's response to stress and adversity" (Rutter, 1987, p. 316). The process conceptualization of resilience recognizes that it is a capacity that develops over time in the context of person-environment interactions (Egeland, Carlson, & Stroufe, 1993). When resilience is conceived as a trait, it has been suggested that it represents a constellation of characteristics that enable individuals to adapt to the circumstances they encounter (Connor &

Davidson, 2003). In relation to the trait conceptualization, these characteristics or individual differences, which are more commonly referred to as protective factors in the resilience literature, have been examined extensively by scholars seeking to identify the qualities of resilient individuals (see, for a review, Luthar, 2006; Masten & Reed, 2002; Rutter, 2000). In terms of the extant research in this area, studies have been conducted with high-risk children (see, for a review, Condly, 2006) and, more recently, with adults, families and communities that have been exposed to potentially stressful circumstances, such as the death of a close family member (Mancini & Bonanno, 2009), terrorism (Bonanno, Galea, Bucciarelli, & Vlahov 2007), serious illness (Denz-Penhey & Murdoch, 2008), and natural disaster (Goodman & West-Olatunji, 2008). Thus, resilience research has predominantly focused on individuals who are required – largely through no choice of their own – to react to potentially traumatic events in their lives. Accordingly, theories of resilience have typically been based on clinical populations (e.g., Denz-Penhey & Murdoch, 2008; Mancini & Bonanno, 2009). However, due to the contextual specificity of resilience (Luthar et al., 2000), the findings of this work are not easily applicable to high achievers who *actively seek* to engage with challenging situations that present opportunities for them to raise their performance level, as opposed to clinical populations who have essentially been "forced" to exhibit resilience qualities in order to maintain functioning.

A burgeoning body of evidence points to the importance of managing stress in attaining the highest levels of sport performance (Gould & Maynard, 2009; Hardy, Jones, & Gould, 1996; Krane & Williams, 2006). For example, in a study examining the psychological characteristics of Olympic gold medalists, Gould, Dieffenbach, and Moffett (2002) identified two overall categories linked to resilience: the overall handling of pressure and adversity (i.e., the capacity to deal with routine stressors of training and competition), and the psychological characteristics to overcome (i.e., the capacity to deal with potentially more extreme stressors, such as long-term illness). More specifically, they found that champions possessed certain psychological qualities, such as confidence, the ability to focus, a hard-work ethic, and

optimism, which enabled them to manage a variety of different stressors, ranging from ongoing daily demands to major life events.

Although it is well-established that the ability to manage stress is a prerequisite of sporting excellence, it is only in recent years that there has been an attempt to specifically investigate the construct of psychological resilience in athletic performers (see Galli & Vealey, 2008; Gucciardi, Jackson, Coulter, & Mallett, 2011; Martin-Kruum, Sarazzin, Peterson, & Framose, 2003; Mummery, Schofield, & Perry, 2004; Schinke, Peterson, & Couture, 2004). In one of the few sport-related resilience studies, Galli and Vealey (2008) interviewed college and professional athletes' about their perceptions and experiences of resilience, using Richardson (2002) and colleagues' (1990) resiliency model as a guiding theoretical framework. The model postulates that when individuals have insufficient resilient qualities to buffer them against stressors and adversities, they 'reintegrate' in one of four ways: dysfunctionally, maladaptively, homeostatically, or resiliently. Galli and Vealey found that adversity (e.g., injury, performance slump, and the transition to college), sociocultural influences (e.g., social support and cultural factors), and personal resources (e.g., determination, competitiveness, and a love of sport) were factors at the center of the resilience process ('agitation'), which consequently led to positive outcomes (e.g., learning, perspective, and gained motivation to help others). Although there has been some support for Richardson's model in relation to health promotion (e.g., Walker, 1996), it is not without its limitations including the linear stage framework evident within its structure, the absence of meta-cognitive and -emotive processes, and its bias toward coping-orientated processes (cf. Fletcher & Sarkar, in press). These drawbacks are of particular concern since "the resiliency model (Richardson et al., 1990) served to drive and direct . . . [our] study" (Galli & Vealey, 2008, p. 321).

In recognizing the limitations of such approaches to conducting qualitative research, researchers within sport psychology have recently begun to use grounded theory to investigate the factors associated with sporting success (see Holt & Dunn, 2004a) and athletic expertise (see Weissensteiner, Abernethy, & Farrow, 2009). In both studies, resilience emerged as an

important theme for the development of high levels of achievement in soccer and cricket respectively. Interestingly, in their discussion of the psychosocial competencies associated with soccer success, Holt and Dunn (2004a) observed that resilience has yet to be extensively investigated in an athletic context, despite the construct being related to high levels of sporting achievement. The need to explore the precursors of athletic excellence in greater detail was highlighted by Gould and Maynard (2009) who recently urged that "more studies . . . should examine . . . the factors shown to be associated with successful Olympic performance in more depth" (p. 1396). The purpose of this study was, therefore, to explore and explain the relationship between psychological resilience and optimal sport performance. In order to meet this objective, a grounded theory approach was employed, whereby the research question was used to point to the area of inquiry, and the emergent data was used to develop an explanatory theory (Corbin & Strauss, 2008; Strauss & Corbin, 1998). This approach allows for elucidation of the construct of resilience free from the constraints of a preconceived model.

Method

Methodological Congruence

Based on the work of Morse (1999), Holt and Tamminen (2010b) recently suggested that qualitative studies should display "methodological congruence" (p. 419); that is, consistency should be evident throughout a scholar's research question, philosophical orientation, and theoretical perspective (cf. Mayan, 2009). When a research question ventures into an area where a satisfactory, pre-existing theory has not been developed to explain certain phenomena within specific contextual conditions, a particularly insightful approach is grounded theory (Strauss & Corbin, 1998). This approach is well-suited to this study since the relationship between psychological resilience and optimal sport performance has yet to be systematically examined. It has been suggested that the specific type of grounded theory utilized by scholars should match with their philosophical perspective to ensure that the core basis of their research is methodologically coherent (Holt & Tamminen, 2010b). With this in mind, Strauss and Corbin's variant of grounded theory was employed in this study since its

associated principles and procedures are consistent with the researchers' predominately post-positivist beliefs (cf. Weed, 2009).

Participants

Participants were initially recruited for this study using purposive sampling; that is, the experiences of the most appropriate persons for the research question being addressed were sought. A sample of Olympic gold medalists was selected since they have been shown to possess certain psychological characteristics that enable them to withstand stressors and that set them apart from less successful athletes (Gould et al., 2002; Gould & Maynard, 2009; Hardy et al., 1996; Krane & Williams, 2006). As the theory began to emerge, participants were selected using theoretical sampling to ensure that the data was driven by the evolving theoretical concepts and to provide an opportunity for identifying general patterns and variations in the data (Corbin & Strauss, 2008; Strauss & Corbin, 1998). To illustrate, in the initial stages of data collection and analysis, older male champions predominantly competing in individual sports tended to be recruited. However, as data collection and analysis progressed, female Olympic gold medalists and younger champions from team sports were increasingly recruited, thus allowing the researchers to elucidate similarities and differences in the emerging categories.

The final sample consisted of 12 Olympic champions (8 men and 4 women) who won their medals spanning four different decades: one in the 1960s, one in the 1970s, five in the 1980s and five in the 2000s. The participants ranged in age from 33 to 70 years old (M = 47.50, SD = 10.44), had collectively won 13 Olympic gold medals, and had an average of 7 years of senior international experience. An equal number of gold medalists were theoretically selected from individual and team sports with the sample representing a wide range of sports: figure skating, pentathlon, hockey, athletics, rowing, cycling, modern pentathlon, curling, and sailing. In addition, the participants represented four nations and cultures: seven were from England, two were from Scotland, two were from Ireland, and one was from New Zealand. Athletes with different characteristics relating to their gender, age, experience, sport, and

culture were sampled to capture and represent a range of resilience-related experiences.

Data Collection and Analysis

Following institutional ethics approval, potential participants were contacted by email. This correspondence informed them of the purpose of the study, what it entailed for participants, and invited them to participate in an interview. Those who expressed an interest in sharing their sport journeys were emailed to arrange a mutually convenient time and location to meet. All of the participants provided informed consent prior to the start of data collection. Life story interviews (Atkinson, 1998, 2002) were conducted to explore the participants' experiences of withstanding pressure during their lives. This type of interview is defined as "the essence of what has happened to a person [and] it can cover the time from birth to the present or before and beyond" (Atkinson, 1998, p. 8). In the present study, the life stories specifically focused on the participants' sporting career.

In order to fully understand the participants' stories and facilitate the interview process, an interview guide was developed. This guide did not represent a rigid document, but rather a flexible evolutionary set of questions (cf. Corbin & Strauss; 2008; Strauss & Corbin, 1998). All of the interviews involved asking a series of open-ended questions and adopted a conversational tone. The interview included questions such as "could you describe me to an event that was important on your journey to becoming an Olympic champion?", "looking back, what did you think at the time?", and "what personal characteristics do you think helped you to withstand the demands associated with that event"? Questions were developed from the emerging data and the ongoing analysis influenced the subsequent questions that were asked, with the direction of later interviews becoming driven by the emerging theory (Corbin & Strauss; 2008; Strauss & Corbin, 1998). Specifically, later questions delved into participants' perception of timing and luck, the proactive aspects of their personality, and the precise nature of social support, as these concepts influenced what was to emerge as the core category of challenge appraisal and meta-cognitions. For example, participants were asked "in what way was 'being in the right place at the right time' important to you?", "how did you seek out

opportunities in the environment?" and "who provided you with support during demanding periods in your sporting career?" In order to allow potential theoretical links and relationships to develop, specific questions were constructed such as "how did your thoughts affect the way you responded to the situation?" and "how do you think your responses affected your performance?" The interviews, which ranged in duration from 66 to 98 minutes, were digitally recorded in their entirety and were transcribed verbatim, yielding 264 pages of single spaced text.

Strauss and Corbin (1998) described the process of data collection and analysis in grounded theory as intertwined and recursive. Thus, the analysis of the data from one interview often informed the direction of the next. While it was impossible to transcribe and code each interview before commencing the next interview, the interaction of data collection and analysis was planned for, especially during busy interviewing periods, by listening to the audio-files of participants and by making notes about important concepts that emerged (Holt & Tamminen, 2010b). In later quieter periods, the 'formal analysis' took place. Specifically, each transcript was read one or more times to develop a sense of the overall context of the data. The focus then shifted to *open coding*, which involved identifying concepts within the text and developing categories that represented the meaning of these segments in terms of their properties and dimensions (Corbin & Strauss; 2008; Strauss & Corbin, 1998). The categories created in open coding were refined to form more precise explanations of the resilience-performance relationship in the process of *axial coding* (Corbin & Strauss; 2008; Strauss & Corbin, 1998). Throughout these processes, incidents and anecdotes were compared for similarities, variations and differences within and across interviews. Moreover, incidents were compared to incidents, incidents to developing concepts, concepts to concepts, and once the analysis developed beyond these stages, relationships were compared to relationships. This approach is known as the *constant comparative method* and is one of the core elements of grounded theory (Holt & Tamminen, 2010a; Weed, 2009). Throughout data collection and analysis, memos were written summarizing theoretical understandings, interpretations and connections as they became

evident throughout the research process (Corbin & Strauss; 2008; Strauss & Corbin, 1998). Thus, the memos served as both an analytical tool and as a record of ideas, insights and questions as the theory evolved. These notes guided *selective coding*, whereby categories were integrated and arranged to form a larger theoretical framework that helped to explain the relationships between the categories (Corbin & Strauss; 2008; Strauss & Corbin, 1998). In accordance with the grounded theory criterion of theoretical saturation (Corbin & Strauss, 2008; Holt & Tamminen, 2010a; Strauss & Corbin, 1998; Weed, 2009), data collection and analysis were discontinued when the categories upon which the theory was built were no longer producing new insights (cf. Morse, 1995). To evaluate the credibility of the coding we reviewed and discussed all the codes, categories and the resultant model. Although there were some disagreements about particular categorizations, agreement was reached through a process of critical and constructive debate.

In order to establish methodological rigor, we sought to maintain objectivity and recognize bias throughout the research process. This was realized by periodically checking assumptions with incoming data and by following the core research procedures (e.g., making comparisons) associated with grounded theory (Weed, 2009). Furthermore, a possible version of the grounded theory was outlined during the planning stages to help the researchers' think theoretically, rather than descriptively, from the start of the study (Holt & Tamminen, 2010b). In addition to incorporating these verification strategies into the research process (cf. Morse, Barrett, Mayan, Olson, & Spiers, 2002), the resultant grounded theory was judged through a post hoc evaluation of research outcome using "the quality criteria . . . intended for grounded theory, namely fit, work, relevance and modifiability" (Weed, 2009, p. 509). In accordance with the Straussian realist ontology, the concepts and theory generated were perceived to closely "fit" the multifaceted phenomenon of psychological resilience, to "work" since they offer an analytical explanation of the relationship between resilience and optimal sport performance, to be "relevant" to aspiring athletes aiming to compete at Olympic level, and to be amenable to "modification" to accommodate new insights gleaned through future research.

Results and Discussion

The results derived from the data collection and analysis represent the collated interview responses from all 12 Olympic champions pertaining to the relationship between psychological resilience and optimal sport performance. The findings indicate that numerous psychological factors (relating to a positive personality, motivation, confidence, focus, and perceived social support) protect the world's best athletes from the potential negative effect of stressors by influencing their challenge appraisal and meta-cognitions. These processes promote facilitative responses that precede optimal sport performance. Figure 1 depicts a schematic representation of these emergent concepts and illustrates their interrelationships in the form of a grounded theory model.

Psychological Resilience

All of the participants described prolonged periods of time in their sporting careers during which they were required to withstand the pressures they encountered. This supports the conception of resilience as a "dynamic process encompassing positive adaptation within the context of significant adversity" (Luthar et al., 2000, p. 543). In the grounded theory model, psychological resilience is therefore represented as an overarching concept that encapsulates stressors, cognitive appraisal and meta-cognitions, psychological factors (positive personality, motivation, confidence, focus, perceived social support), and facilitative responses. Drawing directly from the experiences of the participants, these concepts are described and discussed forthwith to enable the reader to gain a deeper insight into the complexity of the resilience-performance relationship.

Stressors. Olympic champions encountered a wide range of stressors in their sporting career which varied considerably in their frequency, intensity and duration, and were classified under three main categories: competitive (e.g., loss of form), organizational (e.g., sport politics), and personal (e.g., family). Interestingly, and importantly in the context of resilience in Olympic sport, the nature of the organizational demands experienced by the world's best athletes appear to be influenced by the specific era in which they were competing. To illustrate,

the political environment seemed to be a more pertinent stressor for those athletes who won their gold medal prior to 1990, whereas concerns about publically-sourced funding appear to have a greater relevance for champions since this time. Thus, these findings support the assertion that psychological resilience should be conceived in relation to the specific context in which the construct manifests (cf. Luthar et al., 2000); that is, it is important to identify and understand the distinct stressors that performers encounter and the particular period of time when they are competing. Furthermore, the findings also demonstrate that resilience is required in response to a wide variety of different stressors, ranging from ongoing daily demands (e.g., balancing work and training) to major life events (e.g., the death of a close family member).

Although the Olympic champions encountered various demands, a number of them mentioned how stressors seemed to appear "in the right place at the right time", as the following quote illustrates:

> I don't know if there is going to be a theme where timing and luck have been in the right place, but I'm a great believer in it . . . I wasn't selected for the original trip . . . and on the Thursday night before they [the team] were leaving, I was called up because an individual's wife had gone into labor . . . [and I was told] 'be at [the airport] the next day: we're playing [country] on the Saturday'.

It is important to emphasize that exposure to stressors was an essential feature of the stress-resilience-performance relationship in Olympic champions. Indeed, most of the participants argued that if they had not experienced certain types of stressors at specific times, including highly demanding adversities such as parental divorce, serious illness, and career-threatening injuries, they would not have won their gold medals.

Challenge appraisal and meta-cognitions. The core component of this grounded theory was based on the positive evaluation and meta-cognition of stressors. Regarding challenge appraisal, the world's best athletes tended to perceive stressors as opportunities for growth, development and mastery, particularly at the peak of their sporting careers. The following quote demonstrates how one performer appraised training during unsociable hours in

a challenging manner and how this consequently resulted in a positive behavioral response:

> I remember one of my coaches saying to me what was I doing over Christmas and I said 'Oh, I'll be training twice on Christmas Day . . . I know [opponent's name] won't be training on Christmas Day twice and that will give me the edge' . . . It was more the mental side of things because I knew that I'd be doing something that he wasn't doing.

Challenge appraisal occurs when an event or situation is considered to be relevant to one's goals and when an individual evaluates the demands he or she is confronted with as within his or her available resources (Lazarus & Folkman, 1984). In this study, Olympic champions believed that stressors provided them with opportunities to develop a "psychological and competitive edge" over their peers and opposition. To illustrate, not being selected for a major international competition was frequently cited as ultimately a source of increased effort, and competition losses were viewed as learning opportunities for subsequent performances. These findings highlight the importance of elite athletes' appraisals (see, e.g., Dugdale, Eklund, & Gordon, 2002; Holt & Dunn, 2004b) and suggest that the process of challenge appraisal is a pivotal factor in explaining the relationship between psychological resilience and optimal sport performance.

In addition to appraising stressors as challenging, Olympic gold medalists withstood the demands they encountered by evaluating their own thoughts (as opposed to the environment) – a process that is referred to in the literature as meta-cognition. For example, one champion reflected on his thoughts before his Olympic final:

> I've never ever been more nervous than before the . . . final. And one of the things I used [was] visualization . . . I saw . . . one of the . . . co-favorites take a start and he appeared to fly round the first bend. And so my heart hit my throat. Then I thought, 'oh my God, I've got to run faster than that?' And I recognized how unhelpful that negative thought was so . . . I just thought 'get a grip' and I thought 'when have you felt really powerful and flowing?'

The term meta-cognition was originally coined by Flavell (1979) who described it as an

individual's knowledge of, and control over, his or her cognitions. In the present study, this concept is conceived in three slightly different ways depending on the stage of the gold medalists' sporting journeys: firstly, Olympic champions were self-aware of their goals when they were confronted with specific situations (i.e., meta-cognitive knowledge) especially in the initial phase of their lives. Secondly, as the previous quote illustrated, the world's best athletes used specific psychological strategies (i.e., goal-setting, imagery, self-talk, relaxation and activation) to control their cognitions and images (i.e., meta-cognitive skills) during the pinnacle of their careers. Thirdly, towards the latter stages of their sporting journeys, they accepted that their experience had the potential to have a facilitative or debilitative influence on their sport performance (i.e., meta-cognitive experience).

Psychological factors. According to the Olympic champions, an integral aspect of the stress-resilience-performance relationship was their ability to utilize and optimize a constellation of characteristics to withstand the stressors they encountered. This supports the trait conception of resilience and Rutter's (1987) view that psychological resilience is the "positive role of individual differences in people's response to stress and adversity" (p. 316). In the grounded theory model, five main families of psychological factors (i.e., positive personality, motivation, confidence, focus, perceived social support) are represented together with their influence on challenge appraisal and meta-cognitions.

***Positive Personality*.** Olympic gold medalists possessed numerous positive personality characteristics, such as openness to new experiences, conscientiousness, innovative, extraverted, emotionally stable, optimistic, and proactive, which influence the mechanisms of challenge appraisal and meta-cognition. The following quote illustrates how one champion evaluated missing out on selection for a major international competition in a positive manner, due to his optimistic and proactive nature:

> There were four of us challenging for these final two places . . . and I got told I was on the reserve list. And at the time it was devastating but it's one of those things; if you don't take a ticket in the raffle, you're never going to win a prize. So you have to take

> the ticket . . . . that's part of life and it just makes you think "well, what can I do differently to make sure I do get success"?

Personality traits have been defined as "the relatively enduring patterns of thoughts, feelings, and behaviors that reflect the tendency to respond in certain ways under certain circumstances" (Roberts, 2009, p. 140). In the present study, gold medalists appeared to be proactive in their sporting careers; that is, they had the ability to identify opportunities in the environment and act on them to bring about meaningful change (Bateman & Crant, 1993). To the best of our knowledge, there is only one study (viz. Baker, Côté, & Deakin, 2005) in the sport psychology literature to have recognized this personality characteristic in athletes. This work found that expert triathletes were more proactive in their approach with a greater emphasis on thoughts related to their performance, whereas non-experts reported more passive thoughts unrelated to performance.

***Motivation*.** Olympic champions had multiple motives for competing at the highest level. In the initial stages of their sporting lives, reasons included passion for the sport, achieving incremental approach goals, and social recognition. As their careers progressed, motives included "being the best that you can be", demonstrating competence, and proving their worth to others. Particularly important in the context of psychological resilience, the world's best athletes recognized that they *actively chose* to engage with challenging situations, such as balancing work and sport, as the following quote highlights:

> We all worked. But in terms of the build up to the Olympics, we didn't bat an eyelid in doing it . . . it was our choice to do it. I don't like the word sacrifice . . . . Sacrifice to me is about last resort and there's no alternative – that's rubbish. We made a choice to do that and I think that choice in what we did we highly valued and I think that inspired us, motivated us to perform on the pitch and as a group.

High levels of motivation are consistently reported as a required psychological attribute for elite sport performance (Treasure, Lemyre, Kuczka, & Standage, 2007). In the present study, the motives of Olympic champions were both self-determining and non-self

determining. However, in support of previous research investigating the motivation of elite performers (Mallett & Hanrahan, 2004), resilient athletes appear to be able to internalize and integrate more self-determined forms of extrinsic motivation. As the previous quote illustrated, Olympic gold medalists consciously valued and judged external demands as important and therefore chose to perform in challenging sport environments (i.e., identified regulation). This process of internalization and integration of regulations and values is central to self-determination theory (Ryan & Deci, 2000) and appears to be an important psychological asset that influences challenge appraisal and meta-cognitions.

Confidence. Confidence was deemed to be a particularly important factor underpinning the stress-resilience-performance relationship in Olympic champions. Various sources of confidence were salient to the world's best athletes, including multifaceted preparation, experience, self-awareness, visualization, coaching and teammates (see also Hays, Maynard, Thomas, & Bawden, 2007). The following quote illustrates how confidence originating from the team positively affected a gold medalist's appraisal and meta-cognition of stressors:

> We were playing against [country] in our last game . . . and I looked at my opposite number and I thought 'I'm going to give you a hard time today kid' . . . Now if I had that internal thought 18 months ago, I would have thought I was being schizophrenic or something, because if you're going to lose to anybody it's [country], but I just felt that I had such belief and such confidence in . . . my team's ability.

In an athletic context, confidence is described as the degree of certainty one possesses about their ability to be successful in sport (Vealey, 1986). The majority of champions had extremely high levels of self-confidence especially at the peak of their careers, with one Olympic gold medalist asserting "if you don't believe that you will win, you'll never win. You've got to have that single-minded belief in your ability". Self-confidence has been identified repeatedly as a positive influence on athletic performance (see Woodman & Hardy, 2003). Importantly, however, some of the participants in this study suggested that they possessed reduced levels of self-confidence, particularly toward the end of their sporting lives,

but were still able to attain optimal sport performance. Thus, these findings call into question the widely accepted positive linear relationship between self-confidence and performance (cf. Woodman, Akehurst, Hardy, and Beattie, 2010). This study suggests that champions with lower levels of *self*-confidence may have had higher levels of confidence originating from *external* sources, such as teammates. Or, put another way, perceived esteem support (i.e., others bolstering a person's sense of competence) from teammates may have buffered the potential detrimental effect of lower levels of self-confidence and subsequently benefited their sport performance.

***Focus*.** The ability to focus was an important aspect of resilience for the world's best athletes. Specifically, they were able to focus on themselves, not be distracted by others, focus on the process rather than the outcomes of events, and were able to switch their sport focus on and off to suit the demands they faced. One Olympic champion recalled how his single-minded focus on himself and the team resulted in him being almost unaware of the stressors around him:

> It's funny, in a way I was kind of oblivious to pressures because I think in some ways you just go so into yourself . . . well, it's a hugely selfish thing isn't it? You're concentrating on yourself and this group of five people and you're living in each other's pockets.

The present study found that the majority of gold medalists who won their gold medal prior to publically-sourced funding had worked part-time while competing which, interestingly, helped them learn how to switch their sport focus on and off. This appeared to subsequently minimize the risk of injury, a major stressor perceived to negatively influence sport performance in Olympic athletes (Greenleaf, Gould & Dieffenbach, 2001). Indeed, one gold medalist suggested that "athletes nowadays, because they're full-time, very often get injured because they're [training and competing] too much" and thus, she advised aspiring Olympic athletes to "either do some voluntary work or some part-time work, so that they have a distraction from their sport". The ability to switch one's focus appears to be an important

factor for withstanding the pressure associated with sport at the highest levels.

Perceived Social Support. Olympic champions perceived that high quality social support was available to them, including support from family, coaches, teammates and support staff. Athletes competing in individual sports who won their gold medal prior to 1990 predominantly identified support from family and coaches, whereas champions participating in team sports since this time seemed to recognize the support from all four types of social agents. According to one gold medalist, his parents helped to protect him from the pressures of elite sport by giving him the opportunity to air his grievances:

> I've got injured, I've not got selected, all those sort of things where it's not gone right . . . But . . . they [one's parents] talk it through with you. My mum especially would talk it through and say 'What are you going to do about it?' They didn't judge me and say, 'You're doing this wrong' or 'you're doing that right', they just provided me with the support that you need and a sounding board to express myself.

This study found that the perception of available support from a variety of social agents was a factor that underpinned the stress-resilience-performance relationship. This finding, taken together with those of previous investigations (e.g., Freeman & Rees, 2009, 2010), demonstrate the stress-buffering effects of perceived social support and suggest that it is an important aspect of resilience in elite sport. In the present study, trust and respect formed the basis of perceived support for the various social agents particularly during the latter stages of athletes' careers when such relationships had been established.

Facilitative responses. The processes of challenge appraisal and meta-cognitions promoted facilitative responses in Olympic gold medalists. The following quote illustrates how a hockey player's cognitive reactions led to positive behavioral responses:

> There was a [cup] I just missed out on . . . and that was the first time I thought to myself 'I don't want to do this again . . . I don't want to miss out on these events' and started training harder and working harder.

Taking action, following the evaluation of an event, was an important feature of

facilitative responses for the majority of Olympic champions, as this quote from a cyclist suggests:

> Initially, training was just something to get out of the way. And then gradually I'd do training and I'd think, "Am I getting the most out of this? Am I exploiting the session?" And, you know, if I did take a bad lift in the gym I'd think, "I could have done that better. That's a missed opportunity. What have I got to do to be better?" So I had an obsession on getting everything right rather than just waiting for the day of the final and then hoping. It was about getting everything right before the final so I had all the tools ready for when I was racing.

The salutary value of participants' constructive cognitive reactions appears to be firmly embedded in taking personal responsibility for one's thoughts, feelings and actions. Indeed, one champion remarked that "I firmly believe that greater responsibility can only lead to enhanced performance". Responses included facilitative interpretations of emotions, effective decision making, reflection, and increased task engagement. It has been suggested that facilitative responses, such as increased effort and commitment to decisions, aid performance in world class athletes, particularly when confidence is high (Hays, Thomas, Maynard, & Bawden, 2009). The findings of this study indicate that several psychological-related phenomena (relating to a positive personality, motivation, confidence, focus, and perceived social support) are *all* relevant for promoting facilitative responses in athletes which underpin optimal sport performance.

Optimal Sport Performance

The participants in this study described optimal sport performance as fulfilling their athletic potential rather than becoming an Olympic champion. Interestingly, some of these athletes pointed out that their gold medal performance was *not* their best in their career and that they exhibited facilitative responses to achieve their full potential in subsequent competitions. Hence, whilst becoming more resilient appears to lead to better performance, it would be an oversimplification to suggest that in winning an Olympic gold an athlete had reached a point of

being ‘resilient’. One champion described how positive behavioral responses led to the realization of his potential after a poor start to the season:

> I remember . . . that early ’99 season being difficult and thinking of stopping [sport], just because I hadn’t won anything. I was winning something big every year, ’94, ’95, ’96, ’97 and then [in] ’98 [I] didn’t win anything . . . . But . . . it’s just a question of training and time and putting the effort in. And . . . [being] confident . . . that I had the talent and that I hadn’t yet reached my full potential. So if I wasn’t winning it was because I hadn’t reached my full potential.

The following quote illustrates an athlete’s viewpoint on her gold medal performance in the 2000 Olympic Games and her subsequent accomplishment at the World Championships:

> This may come as a bit of a shock but I didn’t have a great competition in Sydney. I was consistent in terms of my performance but it wasn’t a great performance. Following on from Sydney, I carried on competing and I won the World Championships the following summer in 2001. So I ended up retiring as reigning World and Olympic Champion. But as I said, my performance in Sydney wasn’t that good. I look back on my World Championship performance in 2001 and it is actually the performance that I am proudest of in terms of it being a better all-round performance. In Sydney, I started the run in eighth place. I was 49 seconds behind the leader and I ran my way through to win. At the World Championships in 2001, I started the run in second place and it was a breeze. I didn’t even have to run that hard. So I won the gold medal in Sydney but the performance that I am actually proudest of was the World Championships in 2001.

General Discussion

This study developed a grounded theory of psychological resilience in Olympic champions to explore and explain the relationship between this construct and optimal sport performance. When comparing the current findings to existing theories of psychological resilience, it is possible to identify a number of common features. To illustrate, the grounded

theory presented here supports elements of both process and trait conceptualizations of resilience (cf. Fletcher & Sarkar, in press). More specifically, it appears that a complete understanding of psychological resilience in Olympic champions will only be obtained if it is studied within the context of the stress process. Furthermore, the emergent theory recognizes that, within the process itself, the interaction of a range of psychological factors determines whether an individual demonstrates resilience in response to the stressors he or she encounters. Interestingly, in terms of specific explanatory potential, the emphasis placed on different factors often varies across theories. For example, the conceptual model of medical student well-being (Dunn, Iglewicz & Moutier, 2008) highlights personality and temperament factors as being fundamental to resilience, whereas the conceptual model for community and youth resiliency (Brennan, 2008) places upmost importance on social support. Rather than focusing on or giving precedence to any single psychological attribute, the grounded theory presented in this study suggests that numerous psychological factors (relating to a positive personality, motivation, confidence, focus, and perceived social support) interact to influence the stress-resilience-performance relationship. Hence, resilience is conceptualized as the interactive influence of psychological characteristics within the context of the stress process (cf. Fletcher & Sarkar, in press). Building on this perspective, psychological resilience is defined as the role of mental processes and behavior in promoting personal assets and protecting an individual from the potential negative effect of stressors.

In contrast to the majority of existing theories, including the conceptual model of sport resilience (Galli & Vealey, 2008), the present findings emphasize that the influence of psychological factors should be conceived in relation to the specific stressors encountered and context in which they arise. Since high achievers actively seek to engage with challenging situations that present opportunities for them to raise their performance level, we believe that research and practice in this area should pay careful attention to the matching of psychological factors with the environmental demands. Another important consideration of the grounded theory presented here is that sport psychology researchers need to distinguish between different

levels of cognitive processing in performers' response to stress. More specifically, whilst challenge appraisals appear to be a central feature of the stress-resilience-performance relationship, it is important to note that Olympic champions also appear to engage with higher level, meta-cognitive processes that involve reflecting on one's initial reaction to stressors. This appears to be particularly salient in highly demanding performance environments, where an athlete may initially appraise a stressor in a negative manner, but further evaluates the resultant emotion as having the potential to facilitate performance (cf. Fletcher & Fletcher, 2005; Fletcher, Hanton, & Mellalieu, 2006; Fletcher & Scott, 2010), and thereby maintain resilience in stressful situations.

When interpreting the findings of a grounded theory study, it is important to recognize some of the methodological strengths and limitations of the approach. A major strength of this study was the supra-elite nature of the participants who displayed a wide range of characteristics relating to their gender, age, experience, sport, and culture. Indeed, Simonton (1999) remarked that the study of "notable athletes" (p. 426) greatly enriches psychological science because of their significance and distinctiveness. In the sport psychology literature only one study (published in a two-part series) has sampled more Olympic champions (viz. Jackson, Dover, & Mayocchi, 1998; Jackson, Mayocchi, & Dover, 1998). Further, to the best of our knowledge, no research has presented a theoretical model, grounded in original data, that attempts to *explain* (rather than describe) psychological-related phenomena in Olympic champions. In terms of resilience itself, this is the first study to illustrate and discuss the specific role of psychological factors in the stress-resilience-performance relationship. Notwithstanding these strengths, it is worth noting that the retrospective nature of the study may have compromised the accuracy of the data. Specifically, it is possible that the participants may have experienced 'faded' perceptions of their resilience during stressful periods in their Olympic experience. To help improve the accuracy of the recalled information, various techniques were employed (see Thomsen & Brinkman, 2009). These included allowing time for the recall and reassuring the participant that such delays and silences were normal, using

typical content categories of specific memories to derive concrete cues (i.e., ongoing activity, location, persons), and employing relevant extended timeline and landmark events as contextual cues to aid the recall of older memories. Furthermore, although memory decay is an issue with all retrospective research designs, it is worth noting that these fading effects are lessoned regarding "momentous events" (Pillemer, 2001, p. 123), such as winning an Olympic gold medal. In terms of the design of the model, a potential limitation concerns the validity of the linear stage framework evident within its structure. Sport psychologists' investigating the stress-resilience-performance relationship should familiarize themselves with developments in cognitive neuroscience (Curtis & Cicchetti, 2003; Feder, Nestler, & Charney, 2009; Masten & Obradović, 2006), which indicate that parallel, multiple processes may offer a more ecologically valid conceptualization of psychological resilience in comparison to sequential, unitary approaches.

The findings reported here suggest that psychological resilience in elite sport is likely to be a fruitful avenue for researchers to explore. It will, however, be difficult to advance our understanding of this area without a valid and reliable assessment instrument. There exists an urgent need to develop a sport-specific measure of resilience, since current measures, such as the Connor and Davidson Resilience Scale (Campbell-Sills & Stein, 2007; Connor & Davidson, 2003), only consider generic resilient qualities and not how these attributes come to the fore in specific contexts (cf. Gucciardi et al., 2011). The grounded theory developed in this study provides a framework for better understanding Olympic champions' developmental journeys, their significant life events and adversities, and how they acquired the skills to manage the stressors in their lives. Retrospective interview techniques, such as life stories (Atkinson, 1998, 2002), are likely to be an appropriate methodological approach for addressing this research question. Life-span based research, investigating relationships between resilience, stress and performance from a longitudinal and holistic perspective, is also warranted and would enable comparisons between young talented athletes and adult elite athletes (cf. Wylleman & Reints, 2010). Future research with Olympic gold medalists should also consider

the perceptions of significant others surrounding these athletes, such as coaches, parents, partners, and members of the organizing committee (cf. Holt & Tamminen, 2010b). For example, scholars should further explore the influence of affective ties (e.g., trust and respect) between key social agents on athletes' resilience. Although the theory presented in this study represents a substantive explanation of data that was collected in a specific group of participants (cf. Strauss & Corbin, 1998), the theory is open to extension and can be tested and modified to accommodate new insights. For instance, sport psychology researchers should further investigate the three major components of meta-cognition (viz. meta-cognitive knowledge, skills and experience) since they appear to be crucial, yet largely untapped, factors in resilience in sport.

In terms of the praxis of this study, there are a number of practical implications of the findings and model presented. The grounded theory provides sport psychologists, coaches, and national sport organizations with a model to understand the impact of resilience on the stress process in sport, and its relationship with optimal sport performance. Individuals operating in elite sport should identify and monitor the psychological factors (i.e., positive personality, motivation, confidence, focus, perceived social support) that an athlete needs to develop to exhibit resilience, and should intervene to attain the optimum levels of, and balance between, these factors. In addition, it is crucial that athletes' immediate environment is carefully managed to optimize the demands they encounter in order to stimulate and foster the development of psychological factors that will protect them from negative consequences. Furthermore, educational programs in challenge appraisal and meta-reflective strategies, such as evaluating personal assumptions, minimizing catastrophic thinking, challenging counterproductive beliefs, and cognitive restructuring, should form a central part of resilience training (cf. Reivich, Seligman, & McBride, 2011; Schinke et al., 2004). To help support these initiatives, athletes should be exposed to various formal and informal psychosocial training and developmental experiences. Examples include personal mentoring from previous gold medalists, expert coaching provision, performance enhancement training, and access to

counseling during particularly demanding periods. Importantly, these opportunities need to be considered from a developmental and holistic perspective whereby building resilience is approached in a 'beginning to end' fashion, which spans the athletic and post-athletic career, and takes into account intra- as well as inter-personal factors (cf. Wylleman, Alfermann, & Lavallee, 2004). Finally, from a research perspective, although resilience intervention studies are required in sport, it is important that such work is grounded in systematic resilience research programs rather than piecemeal and incomplete strategies based on, for example, the mental toughness, hardiness or coping literatures. Such research programs, which should be underpinned by the conceptual and theoretical advances already made in this area in general psychology (cf. Fletcher & Sarkar, in press), will provide the most rigorous and robust platform from which to develop resilience training in sport.

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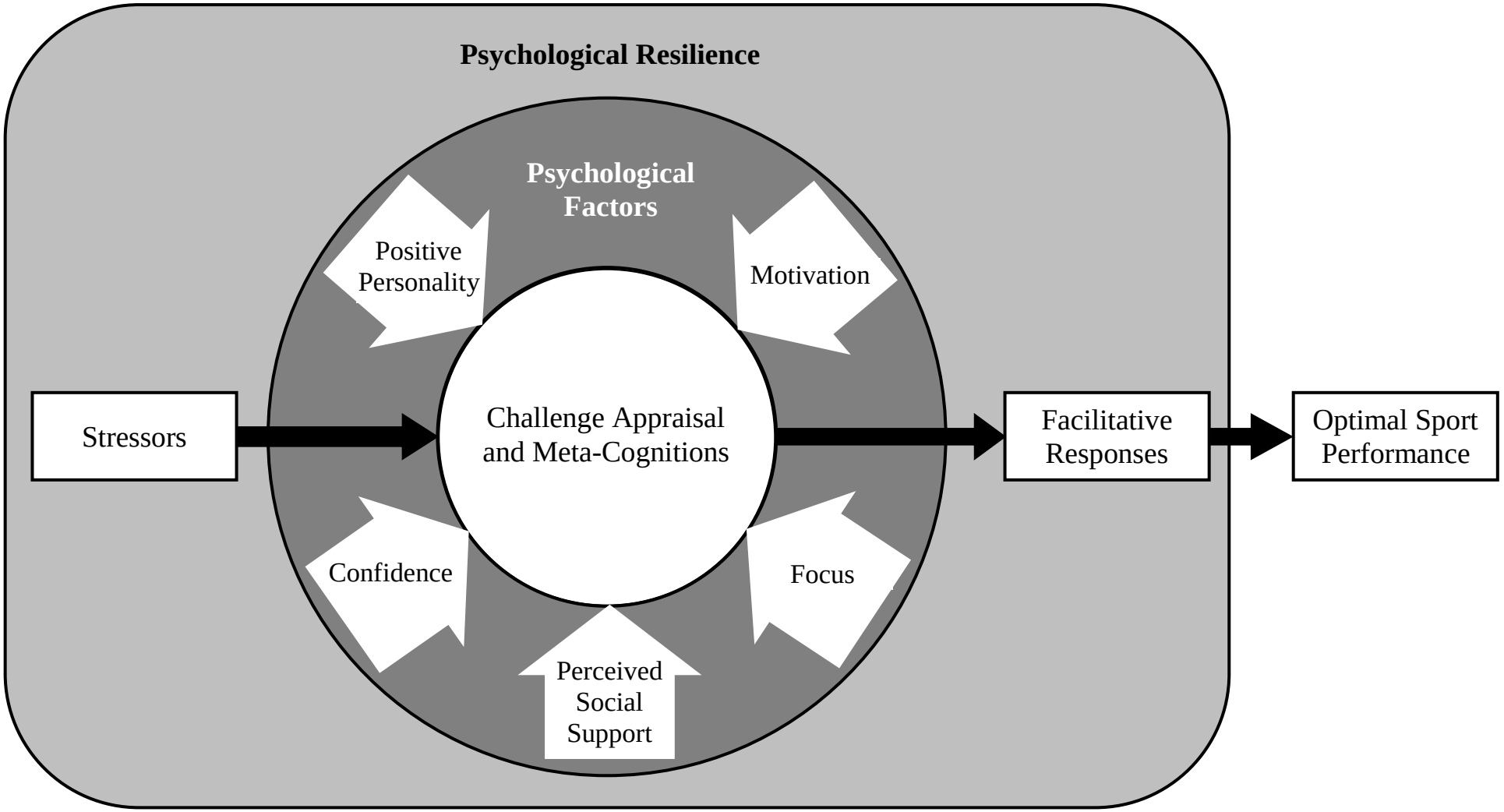

Figure 1. A grounded theory of psychological resilience and optimal sport performance.