

1 A Grounded Theory of Psychological Resilience in Olympic Champions

Abstract

1
2 *Objective:* Although it is well-established that the ability to manage stress is a prerequisite of
3 sporting excellence, the construct of psychological resilience has yet to be systematically
4 examined in athletic performers. The study reported here sought to explore and explain the
5 relationship between psychological resilience and optimal sport performance.

6 *Design and Method:* Twelve Olympic champions (8 men and 4 women) from a range of sports
7 were interviewed regarding their experiences of withstanding pressure during their sporting
8 careers. A grounded theory approach was employed throughout the data collection and
9 analysis, and interview transcripts were analyzed using open, axial and selective coding.

10 Methodological rigor was established by incorporating various verification strategies into the
11 research process, and the resultant grounded theory was also judged using the quality criteria of
12 fit, work, relevance, and modifiability.

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

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

22

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 &

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

19 A burgeoning body of evidence points to the importance of managing stress in attaining
20 the highest levels of sport performance (Gould & Maynard, 2009; Hardy, Jones, & Gould,
21 1996; Krane & Williams, 2006). For example, in a study examining the psychological
22 characteristics of Olympic gold medalists, Gould, Dieffenbach, and Moffett (2002) identified
23 two overall categories linked to resilience: the overall handling of pressure and adversity (i.e.,
24 the capacity to deal with routine stressors of training and competition), and the psychological
25 characteristics to overcome (i.e., the capacity to deal with potentially more extreme stressors,
26 such as long-term illness). More specifically, they found that champions possessed certain
27 psychological qualities, such as confidence, the ability to focus, a hard-work ethic, and

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

3 Although it is well-established that the ability to manage stress is a prerequisite of
4 sporting excellence, it is only in recent years that there has been an attempt to specifically
5 investigate the construct of psychological resilience in athletic performers (see Galli & Vealey,
6 2008; Gucciardi, Jackson, Coulter, & Mallett, 2011; Martin-Kruum, Sarazzin, Peterson, &
7 Framose, 2003; Mummery, Schofield, & Perry, 2004; Schinke, Peterson, & Couture, 2004). In
8 one of the few sport-related resilience studies, Galli and Vealey (2008) interviewed college and
9 professional athletes' about their perceptions and experiences of resilience, using Richardson
10 (2002) and colleagues' (1990) resiliency model as a guiding theoretical framework. The model
11 postulates that when individuals have insufficient resilient qualities to buffer them against
12 stressors and adversities, they 'reintegrate' in one of four ways: dysfunctionally, maladaptively,
13 homeostatically, or resiliently. Galli and Vealey found that adversity (e.g., injury, performance
14 slump, and the transition to college), sociocultural influences (e.g., social support and cultural
15 factors), and personal resources (e.g., determination, competitiveness, and a love of sport) were
16 factors at the center of the resilience process ('agitation'), which consequently led to positive
17 outcomes (e.g., learning, perspective, and gained motivation to help others). Although there
18 has been some support for Richardson's model in relation to health promotion (e.g., Walker,
19 1996), it is not without its limitations including the linear stage framework evident within its
20 structure, the absence of meta-cognitive and -emotive processes, and its bias toward coping-
21 orientated processes (cf. Fletcher & Sarkar, in press). These drawbacks are of particular
22 concern since "the resiliency model (Richardson et al., 1990) served to drive and direct . . .
23 [our] study" (Galli & Vealey, 2008, p. 321).

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

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

14 **Method**

15 **Methodological Congruence**

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

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

3 **Participants**

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

18 The final sample consisted of 12 Olympic champions (8 men and 4 women) who won
19 their medals spanning four different decades: one in the 1960s, one in the 1970s, five in the
20 1980s and five in the 2000s. The participants ranged in age from 33 to 70 years old ($M =$
21 47.50 , $SD = 10.44$), had collectively won 13 Olympic gold medals, and had an average of 7
22 years of senior international experience. An equal number of gold medalists were theoretically
23 selected from individual and team sports with the sample representing a wide range of sports:
24 figure skating, pentathlon, hockey, athletics, rowing, cycling, modern pentathlon, curling, and
25 sailing. In addition, the participants represented four nations and cultures: seven were from
26 England, two were from Scotland, two were from Ireland, and one was from New Zealand.
27 Athletes with different characteristics relating to their gender, age, experience, sport, and

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

2 **Data Collection and Analysis**

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

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

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

8 Strauss and Corbin (1998) described the process of data collection and analysis in
9 grounded theory as intertwined and recursive. Thus, the analysis of the data from one interview
10 often informed the direction of the next. While it was impossible to transcribe and code each
11 interview before commencing the next interview, the interaction of data collection and analysis
12 was planned for, especially during busy interviewing periods, by listening to the audio-files of
13 participants and by making notes about important concepts that emerged (Holt & Tamminen,
14 2010b). In later quieter periods, the ‘formal analysis’ took place. Specifically, each transcript
15 was read one or more times to develop a sense of the overall context of the data. The focus then
16 shifted to *open coding*, which involved identifying concepts within the text and developing
17 categories that represented the meaning of these segments in terms of their properties and
18 dimensions (Corbin & Strauss; 2008; Strauss & Corbin, 1998). The categories created in open
19 coding were refined to form more precise explanations of the resilience-performance
20 relationship in the process of *axial coding* (Corbin & Strauss; 2008; Strauss & Corbin, 1998).
21 Throughout these processes, incidents and anecdotes were compared for similarities, variations
22 and differences within and across interviews. Moreover, incidents were compared to incidents,
23 incidents to developing concepts, concepts to concepts, and once the analysis developed
24 beyond these stages, relationships were compared to relationships. This approach is known as
25 the *constant comparative method* and is one of the core elements of grounded theory (Holt &
26 Tamminen, 2010a; Weed, 2009). Throughout data collection and analysis, memos were written
27 summarizing theoretical understandings, interpretations and connections as they became

1 evident throughout the research process (Corbin & Strauss; 2008; Strauss & Corbin, 1998).
2 Thus, the memos served as both an analytical tool and as a record of ideas, insights and
3 questions as the theory evolved. These notes guided *selective coding*, whereby categories were
4 integrated and arranged to form a larger theoretical framework that helped to explain the
5 relationships between the categories (Corbin & Strauss; 2008; Strauss & Corbin, 1998). In
6 accordance with the grounded theory criterion of theoretical saturation (Corbin & Strauss,
7 2008; Holt & Tamminen, 2010a; Strauss & Corbin, 1998; Weed, 2009), data collection and
8 analysis were discontinued when the categories upon which the theory was built were no
9 longer producing new insights (cf. Morse, 1995). To evaluate the credibility of the coding we
10 reviewed and discussed all the codes, categories and the resultant model. Although there were
11 some disagreements about particular categorizations, agreement was reached through a process
12 of critical and constructive debate.

13 In order to establish methodological rigor, we sought to maintain objectivity and
14 recognize bias throughout the research process. This was realized by periodically checking
15 assumptions with incoming data and by following the core research procedures (e.g., making
16 comparisons) associated with grounded theory (Weed, 2009). Furthermore, a possible version
17 of the grounded theory was outlined during the planning stages to help the researchers' think
18 theoretically, rather than descriptively, from the start of the study (Holt & Tamminen, 2010b).
19 In addition to incorporating these verification strategies into the research process (cf. Morse,
20 Barrett, Mayan, Olson, & Spiers, 2002), the resultant grounded theory was judged through a
21 post hoc evaluation of research outcome using "the quality criteria . . . intended for grounded
22 theory, namely fit, work, relevance and modifiability" (Weed, 2009, p. 509). In accordance
23 with the Straussian realist ontology, the concepts and theory generated were perceived to
24 closely "fit" the multifaceted phenomenon of psychological resilience, to "work" since they
25 offer an analytical explanation of the relationship between resilience and optimal sport
26 performance, to be "relevant" to aspiring athletes aiming to compete at Olympic level, and to
27 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,

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

20 In an athletic context, confidence is described as the degree of certainty one possesses
21 about their ability to be successful in sport (Vealey, 1986). The majority of champions had
22 extremely high levels of self-confidence especially at the peak of their careers, with one
23 Olympic gold medalist asserting "if you don't believe that you will win, you'll never win.
24 You've got to have that single-minded belief in your ability". Self-confidence has been
25 identified repeatedly as a positive influence on athletic performance (see Woodman & Hardy,
26 2003). Importantly, however, some of the participants in this study suggested that they
27 possessed reduced levels of self-confidence, particularly toward the end of their sporting lives,

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

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

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

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

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

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

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

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

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

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

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

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

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

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

21 **Optimal Sport Performance**

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

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

3 I remember . . . that early '99 season being difficult and thinking of stopping [sport],
4 just because I hadn't won anything. I was winning something big every year, '94, '95,
5 '96, '97 and then [in] '98 [I] didn't win anything But . . . it's just a question of
6 training and time and putting the effort in. And . . . [being] confident . . . that I had the
7 talent and that I hadn't yet reached my full potential. So if I wasn't winning it was
8 because I hadn't reached my full potential.

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

11 This may come as a bit of a shock but I didn't have a great competition in Sydney. I
12 was consistent in terms of my performance but it wasn't a great performance.

13 Following on from Sydney, I carried on competing and I won the World
14 Championships the following summer in 2001. So I ended up retiring as reigning
15 World and Olympic Champion. But as I said, my performance in Sydney wasn't that
16 good. I look back on my World Championship performance in 2001 and it is actually
17 the performance that I am proudest of in terms of it being a better all-round
18 performance. In Sydney, I started the run in eighth place. I was 49 seconds behind the
19 leader and I ran my way through to win. At the World Championships in 2001, I
20 started the run in second place and it was a breeze. I didn't even have to run that hard.
21 So I won the gold medal in Sydney but the performance that I am actually proudest of
22 was the World Championships in 2001.

23 **General Discussion**

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

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

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

1 levels of cognitive processing in performers' response to stress. More specifically, whilst
2 challenge appraisals appear to be a central feature of the stress-resilience-performance
3 relationship, it is important to note that Olympic champions also appear to engage with higher
4 level, meta-cognitive processes that involve reflecting on one's initial reaction to stressors.
5 This appears to be particularly salient in highly demanding performance environments, where
6 an athlete may initially appraise a stressor in a negative manner, but further evaluates the
7 resultant emotion as having the potential to facilitate performance (cf. Fletcher & Fletcher,
8 2005; Fletcher, Hanton, & Mellalieu, 2006; Fletcher & Scott, 2010), and thereby maintain
9 resilience in stressful situations.

10 When interpreting the findings of a grounded theory study, it is important to recognize
11 some of the methodological strengths and limitations of the approach. A major strength of this
12 study was the supra-elite nature of the participants who displayed a wide range of
13 characteristics relating to their gender, age, experience, sport, and culture. Indeed, Simonton
14 (1999) remarked that the study of "notable athletes" (p. 426) greatly enriches psychological
15 science because of their significance and distinctiveness. In the sport psychology literature only
16 one study (published in a two-part series) has sampled more Olympic champions (viz. Jackson,
17 Dover, & Mayocchi, 1998; Jackson, Mayocchi, & Dover, 1998). Further, to the best of our
18 knowledge, no research has presented a theoretical model, grounded in original data, that
19 attempts to *explain* (rather than describe) psychological-related phenomena in Olympic
20 champions. In terms of resilience itself, this is the first study to illustrate and discuss the
21 specific role of psychological factors in the stress-resilience-performance relationship.
22 Notwithstanding these strengths, it is worth noting that the retrospective nature of the study
23 may have compromised the accuracy of the data. Specifically, it is possible that the participants
24 may have experienced 'faded' perceptions of their resilience during stressful periods in their
25 Olympic experience. To help improve the accuracy of the recalled information, various
26 techniques were employed (see Thomsen & Brinkman, 2009). These included allowing time
27 for the recall and reassuring the participant that such delays and silences were normal, using

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

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

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

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

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

References

- 1
2 Atkinson, R. (2002). The life story interview. In J. F. Gubrium, & J. A. Holstein (Eds.),
3 *Handbook of interview research: Context & Method* (pp. 121-141). Thousand Oaks,
4 CA: Sage. doi: 10.1016/j.psychsport.2004.04.005
- 5 Atkinson, R. (1998). *The life story interview*. Thousand Oaks, CA: Sage.
- 6 Baker, J., Côté, J., & Deakin, J. (2005). Cognitive characteristics of expert, middle of the pack,
7 and back of the pack ultra-endurance triathletes. *Psychology of Sport and Exercise*, 6,
8 551-558. doi: 10.1016/j.psychsport.2004.04.005
- 9 Bateman, T. S., & Crant, M. J. (1993). The proactive component of organizational behavior: A
10 measure and correlates. *Journal of Organizational Behavior*, 14, 103-118.
11 doi: 10.1002/job.4030140202
- 12 Bonanno, G. A., Galea, S., Bucciarelli, A., & Vlahov, D. (2007). What predicts psychological
13 resilience after disaster? The role of demographics, resources and life stress. *Journal of*
14 *Consulting and Clinical Psychology*, 75, 671-682. doi: 10.1037/0022-006X.75.5.671
- 15 Brennan, M. A. (2008). Conceptualizing resiliency: An interactional perspective for
16 community and youth development. *Child Care in Practice*, 14, 55-64. doi:
17 10.1080/13575270701733732
- 18 Campbell-Sills, L., & Stein, M. B. (2007). Psychometric analysis and refinement of the
19 Connor-Davidson Resilience Scale (CD-RISC): Validation of a 10-item measure of
20 resilience. *Journal of Traumatic Stress*, 20, 1019-1028. doi: 10.1002/jts.20271
- 21 Condly, S. J. (2006). Resilience in children: A review of literature with implications for
22 education. *Urban Education*, 41, 211-236. doi: 10.1177/0042085906287902
- 23 Connor, K. M., & Davidson, J. R. T. (2003). Development of a new resilience scale: The
24 Connor-Davidson resilience scale (CD-RISC). *Depression and Anxiety*, 18, 76-82. doi:
25 10.1002/da.10113
- 26 Corbin, J., & Strauss, A. (2008). *Basics of qualitative research: Grounded theory procedures*
27 *and techniques* (3rd ed.). London: Sage.

- 1 Curtis, W. J., & Cicchetti, D. (2003). Moving research on resilience into the 21st century:
2 Theoretical and methodological considerations in examining the biological contributors
3 to resilience. *Development and Psychopathology*, *15*, 773-810. doi: 10.1017/S0954579
4 403000373
- 5 Denz-Penhey, H., & Murdoch, J. C. (2008). Personal resiliency: Serious diagnosis and
6 prognosis with unexpected quality outcomes. *Qualitative Health Research*, *18*, 391-
7 404. doi: 10.1177/1049732307313431
- 8 Dugdale, J. R., Eklund, R. C., & Gordon, S. (2002). Expected and unexpected stressors in
9 major international competition: Appraisal, coping, and performance. *The Sport*
10 *Psychologist*, *16*, 20-33. Retrieved from <http://journals.humankinetics.com/tsp>
- 11 Dunn, L. B., Iglewicz, A., & Moutier, C. (2008). A conceptual model of medical student well-
12 being: Promoting resilience and preventing burnout. *Academic Psychiatry*, *32*, 44-53.
13 Retrieved from <http://ap.psychiatryonline.org>
- 14 Egeland, B., Carlson, E., & Sroufe, L. A. (1993). Resilience as process. *Development and*
15 *Psychopathology*, *5*, 517-528. doi: 10.1017/S0954579400006131
- 16 Feder, A., Nestler, E. J., & Charney, D. S. (2009). Psychobiology and molecular genetics of
17 resilience. *Nature Reviews. Neuroscience*, *10*, 446-457. doi: 10.1038/nrn2649
- 18 Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new area of cognitive
19 developmental inquiry. *American Psychologist*, *34*, 906-911. doi: 10.1037/0003-
20 066X.34.10.906
- 21 Fletcher, D., & Fletcher, J. (2005). A meta-model of stress, emotions and performance:
22 Conceptual foundations, theoretical framework, and research directions [Abstract].
23 *Journal of Sports Sciences*, *23*, 157-158. doi: 10.1080/02640410512331334413
- 24 Fletcher, D., & Hanton, S. (2003). Sources of organizational stress in elite sport performers.
25 *The Sport Psychologist*, *17*, 175-195. Retrieved from <http://journals.humankinetics.com>
26 /tsp
- 27 Fletcher, D., Hanton, S., & Mellalieu, S. D. (2006). An organizational stress review:

- 1 Conceptual and theoretical issues in competitive sport. In S. Hanton, & S. D. Mellalieu
2 (Eds.), *Literature reviews in sport psychology* (pp. 321-374). Hauppauge, NY: Nova
3 Science.
- 4 Fletcher, D., & Sarkar, M. (in press). Psychological resilience: A review and critique of
5 definitions, concepts and theory. *European Psychologist*.
- 6 Fletcher, D., & Scott, M. (2010). Psychological stress in sports coaches: A review of concepts,
7 theory and research. *Journal of Sports Sciences*, 28, 127-137. doi:
8 10.1080/02640410903406208
- 9 Freeman, P., & Rees, T. (2009). How does perceived support lead to better performance? An
10 examination of potential mechanisms. *Journal of Applied Sport Psychology*, 21, 429-
11 441. doi: 10.1080/10413200903222913
- 12 Freeman, P., & Rees, T. (2010). Perceived social support from teammates: Direct and stress-
13 buffering effects on self-confidence. *European Journal of Sport Science*, 10, 59-67.
14 doi: 10.1080/17461390903049998
- 15 Galli, N., & Vealey, R. S. (2008). "Bouncing back" from adversity: Athletes' experiences of
16 resilience. *The Sport Psychologist*, 22, 316-335. Retrieved from <http://journals.human>
17 kinetics.com/tsp
- 18 Goodman, R. D., & West-Olatunji, C. A. (2008). Transgenerational trauma and resilience:
19 Improving mental health counselling for survivors of Hurricane Katrina. *Journal of*
20 *Mental Health Counseling*, 30, 121-136. Retrieved from <http://amhca.metapress.com>
21 /app/home/main.asp
- 22 Gould, D., Dieffenbach, K., & Moffett, A. (2002). Psychological characteristics and their
23 development in Olympic champions. *Journal of Applied Sport Psychology*, 14, 172-
24 204. doi: 10.1080/10413200290103482
- 25 Gould, D., Jackson, S. A., & Finch, L. M. (1993). Sources of stress in national champion figure
26 skaters. *Journal of Sport and Exercise Psychology*, 15, 134-159. Retrieved from <http://>

- 1 journals.humankinetics.com/jsep
- 2 Gould, D., & Maynard, I. (2009). Psychological preparation for the Olympic Games. *Journal*
3 *of Sports Sciences*, 27, 1393-1408. doi: 10.1080/02640410903081845
- 4 Greenleaf, C., Gould, D., & Dieffenbach, K. (2001). Factors influencing Olympic performance:
5 Interviews with Atlanta and Nagano US Olympians. *Journal of Applied Sport*
6 *Psychology*, 13, 154-184. doi: 10.1080/104132001753149874
- 7 Gucciardi, D. F., Jackson, B. F., Coulter, T. J., & Mallett, C. J. (2011). The Connor-Davidson
8 Resilience Scale (CD-RISC): Dimensionality and age-related measurement invariance
9 with Australian cricketers. *Psychology of Sport and Exercise*, 12, 423-433.
10 doi:10.1016/j.psychsport.2011.02.005
- 11 Hardy, L., Jones, G., & Gould, D. (1996). *Understanding psychological preparation for sport:*
12 *Theory and practice of elite performers*. Chichester, UK: Wiley.
- 13 Hays, K., Maynard, I., Thomas, O., & Bawden, M. (2007). Sources and types of confidence
14 identified by world class sport performers. *Journal of Applied Sport Psychology*, 19,
15 434-456. doi: 10.1080/10413200701599173
- 16 Hays, K., Thomas, O., Maynard, I., & Bawden, M. (2009). The role of confidence in world-
17 class sport performance. *Journal of Sports Sciences*, 27, 1185-1199. doi:
18 10.1080/02640410903089798
- 19 Holt, N. L., & Dunn, J. G. H. (2004a). Toward a grounded theory of the psychosocial
20 competencies and environmental conditions associated with soccer success. *Journal of*
21 *Applied Sport Psychology*, 16, 199-219. doi: 10.1080/10413200490437949
- 22 Holt, N. L., & Dunn, J. G. H. (2004b). Longitudinal analysis of appraisal and coping responses
23 in sport. *Psychology of Sport and Exercise*, 5, 213-222. doi: 10.1080/10413200490437
24 949
- 25 Holt, N. L., & Tamminen, K. A. (2010a). Improving grounded theory research in sport and
26 exercise psychology: Further reflections as a response to Mike Weed. *Psychology of*
27 *Sport and Exercise*, 11, 405-413. doi: 10.1016/j.psychsport.2009.12.002

- 1 Holt, N. L., & Tamminen, K. A. (2010b). Moving forward with grounded theory in sport and
2 exercise psychology. *Psychology of Sport and Exercise, 11*, 419-422. doi:
3 10.1016/j.psychsport.2010.07.009
- 4 Jacelon, C. (1997). The trait and process of resilience. *Journal of Advanced Nursing, 25*, 123-
5 129. doi: 10.1046/j.1365-2648.1997.1997025123.x
- 6 Jackson, S. A., Dover, J., & Mayocchi, L. (1998). Life after winning gold: I. Experiences of
7 Australian Olympic gold medallists. *The Sport Psychologist, 12*, 119-136. Retrieved
8 from [http:// journals.humankinetics.com/jsep](http://journals.humankinetics.com/jsep)
- 9 Jackson, S. A., Mayocchi, L. & Dover, J. (1998). Life after winning gold: II. Coping with
10 change as an Olympic gold medallist. *The Sport Psychologist, 12*, 137-155. Retrieved
11 from [http:// journals.humankinetics.com/jsep](http://journals.humankinetics.com/jsep)
- 12 Krane, V., & Williams, J. M. (2006). Psychological characteristics of peak performance. In J.
13 M. Williams (Ed.), *Applied sport psychology: Personal growth to peak performance*
14 (pp.207-227). Boston: McGraw-Hill.
- 15 Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal and coping*. New York: Springer.
- 16 Luthar, S. S. (2006). Resilience in development: A synthesis of research across five decades. In
17 D. Cicchetti, & D. Cohen (Eds.), *Developmental psychopathology: Risk, disorder, and*
18 *adaptation* (pp. 739-795). New York: Wiley.
- 19 Luthar, S. S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical
20 evaluation and guidelines for future work. *Child Development, 71*, 543-562. doi:
21 10.1111/1467-8624.00164
- 22 Mallett, C. J., & Hanrahan, S. J. (2004). Elite athletes: Why does the ‘fire’ burn so brightly?
23 *Psychology of Sport and Exercise, 5*, 183-200. doi: 10.1016/S1469-0292(02)00043-2
- 24 Mancini, A. D., & Bonanno, G. A. (2009). Predictors and parameters of resilience to loss:
25 Toward an individual differences model. *Journal of Personality, 77*, 1805-1832. :
26 10.1111/j.1467-6494.2009.00601.x
- 27 Martin-Kruum, C. P., Sarrazin, P. G., Peterson, C., & Famose, J-P (2003). Explanatory style

- 1 and resilience after sports failure. *Personality and Individual Differences*, 35, 1685-
2 1695. doi: 10.1016/S0191-8869(02)00390-2
- 3 Masten, A. S., & Obradović, J. (2006). Competence and resilience in development. *Annals of*
4 *the New York Academy of Sciences*, 1094, 13-27. doi: 10.1196/annals.1376.003
- 5 Masten, A. S., & Reed, M. J. (2002). Resilience in development. In C. R. Snyder, & S. J.
6 Lopez (Eds.), *Handbook of Positive Psychology* (pp. 74-78). New York: Oxford
7 University Press.
- 8 Mayan, M. J. (2009). *Essentials of qualitative inquiry*. Walnut Creek, CA: Left Coast Press.
- 9 Morse, J. M. (1995). The significance of saturation. *Qualitative Health Research*, 5, 147-149.
10 doi: 10.1177/104973239500500201
- 11 Morse, J. M. (1999). The armchair walkthrough. *Qualitative Health Research*, 9, 435-436. doi:
12 10.1177/104973299129121956
- 13 Morse, J. M., Barrett, M., Mayan, M., Olson, K., & Spiers, J. (2002). Verification strategies for
14 establishing reliability and validity in qualitative research. *International Journal of*
15 *Qualitative Methods*, 1, 1-19. Retrieved from [http://ejournals.library.ualberta.ca/index.](http://ejournals.library.ualberta.ca/index.php/IJQM/index)
16 [php/IJQM/index](http://ejournals.library.ualberta.ca/index.php/IJQM/index)
- 17 Mummery, W. K., Schofield, G., & Perry, C. (2004). Bouncing back: The role of coping style,
18 social support and self-concept in resilience of sport performance. *Athletic Insight*, 6, 1-
19 18. Retrieved from <http://www.athleticinsight.com>
- 20 Pillemer, D. B. (2001). Momentous events and life story. *Review of General Psychology*, 5,
21 123-134.
- 22 Reivich, K. J., Seligman, M. E. P., & McBride, S. (2011). Master resilience training in the U.S.
23 Army. *American Psychologist*, 66, 25-34. doi: 10.1037/a0021897
- 24 Richardson, G. E. (2002). The metatheory of resilience and resiliency. *Journal of Clinical*
25 *Psychology*, 58, 307-321. doi: 10.1002/jclp.10020
- 26 Richardson, G. E., Neiger, B. L., Jensen, S., & Kumpfer, K. L. (1990). The resiliency model.
27 *Health Education*, 21, 33-39.

- 1 Roberts, B. W. (2009). Back to the future: *Personality and Assessment* and personality
2 development. *Journal of Research in Personality*, *43*, 137-145. doi: 10.1016/j.jrp.
3 2008.12.015
- 4 Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of*
5 *Orthopsychiatry*, *57*, 316-331. doi: 10.1111/j.1939-0025.1987.tb03541.x
- 6 Rutter, M. (2000). Resilience reconsidered: Conceptual considerations, empirical findings, and
7 policy implications. In J. P. Shonkoff, & S. J. Meisels (Eds.), *Handbook of early*
8 *childhood intervention* (pp. 651-882). New York: Cambridge University Press.
- 9 Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic
10 motivation, social development, and well-being. *American Psychologist*, *55*, 68-78. doi:
11 10.1037/0003-066X.55.1.68
- 12 Scanlan, T. K., Stein, G. L., & Ravizza, K. (1991). An in-depth study of former elite figure
13 skaters: III. Sources of stress. *Journal of Sport and Exercise Psychology*, *1*, 102-120.
14 Retrieved from <http://journals.humankinetics.com/jsep>
- 15 Schinke, R. J., Peterson, C., & Couture, R. (2004). A protocol for teaching resilience to high
16 performance athletes. *Journal of Excellence*, *9*, 9-18. Retrieved from [http://www.](http://www.zoneofexcellence.ca/Journal.html)
17 [zoneofexcellence.ca /Journal.html](http://www.zoneofexcellence.ca/Journal.html)
- 18 Simonton, D. K. (1999). Significant samples: The psychological study of eminent individuals.
19 *Psychological Methods*, *4*, 425-451. doi: 10.1037/1082-989X.4.4.425
- 20 Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Grounded theory procedures*
21 *and techniques* (2nd ed.). London: Sage.
- 22 Thomsen, D. K., & Brinkmann, S. (2009). An interviewer's guide to autobiographical memory:
23 Ways to elicit concrete experiences and to avoid pitfalls in interpreting them.
24 *Qualitative Research in Psychology*, *6*, 294-312. doi: 10.1080/14780880802396806
- 25 Treasure, D. C., Lemyre, P-N., Kuczka, K. K., & Standage, M. (2007). Motivation in elite-
26 level sport. In M. S. Hagger & N. L. D. Chatzisarantis (Eds.), *Intrinsic motivation and*
27 *self-determination in exercise and sport* (pp. 153-165). Champaign, IL: Human

- 1 Kinetics.
- 2 Vealey, R. S. (1986). Conceptualization of sport-confidence and competitive orientation:
3 Preliminary investigation and instrument development. *Journal of Sport and Exercise*
4 *Psychology*, 8, 221-246. Retrieved from [http:// journals.humankinetics.com/jsep](http://journals.humankinetics.com/jsep)
- 5 Walker, R. J. (1996). *Resilient reintegration of adult children of perceived alcoholic parents*.
6 Unpublished doctoral dissertation, University of Utah.
- 7 Weed, M. (2009). Research quality considerations for grounded theory research in sport &
8 exercise psychology. *Psychology of Sport and Exercise*, 10, 502-510. doi:
9 10.1016/j.psychsport.2009.02.007
- 10 Weissensteiner, J., Abernethy, B., & Farrow, D. (2009). Towards the development of a
11 conceptual model of expertise in cricket batting: A grounded theory approach. *Journal*
12 *of Applied Sport Psychology*, 21, 276-292. doi: 10.1080/10413200903018675
- 13 Woodman, T., Akehurst, S., Hardy, L., & Beattie, S. (2010). Self-confidence and performance:
14 A little self-doubt helps. *Psychology of Sport and Exercise*, 11, 467-470. doi: 10.1016/
15 j.psychsport.2010.05.009
- 16 Woodman, T., & Hardy, L. (2003). The relative impact of cognitive anxiety and self-
17 confidence upon sport performance: A meta-analysis. *Journal of Sports Sciences*, 21,
18 443-457. doi: 10.1080/0264041031000101809
- 19 Wylleman, P., Alfermann, D., & Lavallee, D. (2004). Career transitions in sport: European
20 perspectives. *Psychology of Sport and Exercise*, 5, 7-20. doi:10.1016/S1469-
21 0292(02)00049-3
- 22 Wylleman, P., & Reints, A. (2010). A lifespan perspective on the career of talented and elite
23 athletes: Perspectives on high-intensity sports. *Scandinavian Journal of Medicine &*
24 *Science in Sports*, 20, 88-94. doi: 10.1111/j.1600-0838.2010.01194.x

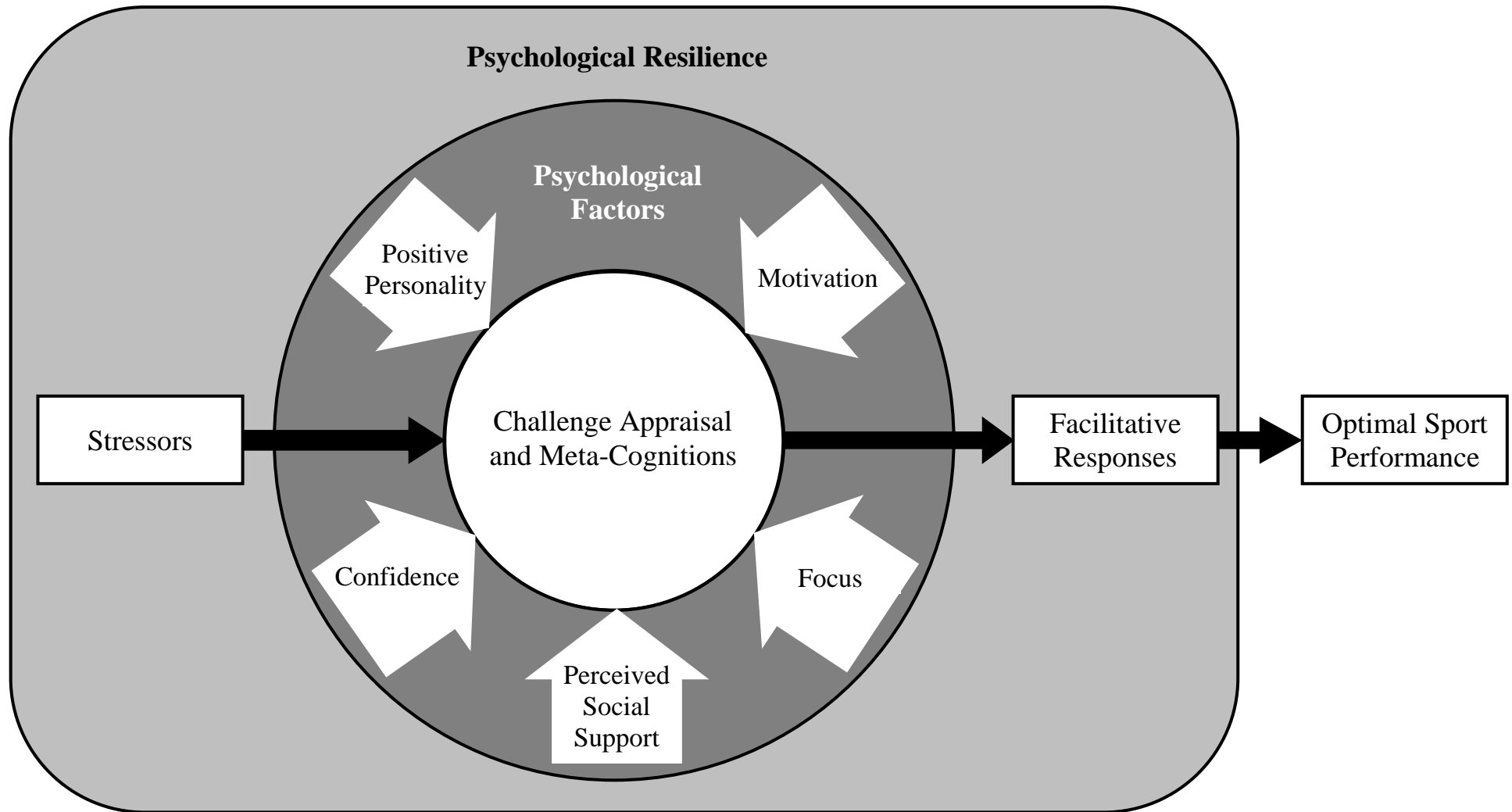


Figure 1. A grounded theory of psychological resilience and optimal sport performance.