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Psychological Resilience in Sport Performers:
A Review of Stressors and Protective Factors
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Abstract

Psychological resilience is important in sport because athletes must utilize and optimize a range of mental qualities to withstand the pressures that they experience. In this paper, we discuss psychological resilience in sport performers via a review of the stressors athletes encounter and the protective factors that help them withstand these demands. It is hoped that synthesizing what is known in these areas will help researchers gain a deeper profundity of resilience in sport, and also provide a rigorous and robust foundation for the development of a sport-specific measure of resilience. With these points in mind, we divided the narrative into two main sections. In the first section, we review the different types of stressors encountered by sport performers under three main categories: competitive, organizational, and personal. Based on our recent research examining psychological resilience in Olympics champions (Fletcher & Sarkar, 2012), in the second section we discuss the five main families of psychological factors (viz. positive personality, motivation, confidence, focus, perceived social support) that protect the best athletes from the potential negative effect of stressors. It is anticipated that this review will help sport psychology researchers examine the interplay between stressors and protective factors which will, in turn, focus the analytical lens on the processes underlying psychological resilience in athletes.

Keywords: athletes, demands, pressures, psychological characteristics, resilient qualities, sport performance.

1 Psychological Resilience in Sport Performers:

2 A Review of Stressors and Protective Factors

3 The sporting arena represents a ‘natural laboratory’ to study how individuals operate and
4 perform in highly demanding circumstances. Top-level sport is characterized by the ability of
5 athletes to utilize and optimize a range of psychological qualities to withstand the pressures that
6 they experience (Fletcher & Sarkar, 2012; Gould, Dieffenbach, & Moffett, 2002). Over the past
7 few decades, researchers have identified numerous stressors that sport performers encounter (see,
8 e.g., McKay, Niven, Lavalley, & White, 2008; Scanlan, Stein, & Ravizza, 1991) and explored the
9 role of psychological characteristics in helping elite performers adapt to setbacks and transitions
10 encountered along the pathway to excellence (MacNamara, Button, & Collins, 2010a; 2010b).
11 The influence of psychological factors within the context of the stress process is typically
12 conceptualized as psychological resilience (cf. Fletcher & Sarkar, 2013).

13 The study of psychological resilience seeks to understand why some individuals are able
14 to withstand – or even thrive on – the pressure they experience in their lives. We recently defined
15 psychological resilience as “the role of mental processes and behavior in promoting personal
16 assets and protecting an individual from the potential negative effect of stressors” (Fletcher &
17 Sarkar, 2012, p. 675; 2013, p. 16). This definition extends previous conceptual work in this area
18 in a number of ways. First, the focus on *psychological* resilience delimits the scope of the
19 description, by definition, to “mental processes and behavior” and excludes other types of
20 resilience such as physical, molecular, and structural resilience. Second, this definition
21 encapsulates aspects of both trait and process conceptualizations of resilience (cf. Fletcher &
22 Sarkar, 2012, 2013). Regarding the trait conceptualization, the “mental processes and behavior”
23 enable individuals to adapt to the circumstances they encounter (cf. Connor & Davidson, 2003).
24 The process conceptualization of resilience recognizes that it is a capacity that develops over time
25 in the context of person-environment interactions (Egeland, Carlson, & Stroufe, 1993). Central to
26 the definition is the focusing of the conceptual lens on the *role* that psychological-related
27 phenomena play – rather than the mental processes and behavior per se – in avoiding negative
28 consequences. Third, the emphasis is placed on the more neutral term “stressor” rather than the

1 negative value-laden term “adversity” (cf. Fletcher & Sarkar, 2013). Fourth, the focus is on
2 “promoting personal assets and protecting an individual from the potential negative effect of
3 stressors” rather than positive adaptation per se, because resilience generally refers to the ability
4 of individuals to maintain normal levels of functioning rather than the restoration or enhancement
5 of functioning (cf. Bonanno, 2004). Although not directly related to the presented definition, a
6 relevant conceptual debate in this area is the comparison between psychological resilience and
7 other potentially related constructs. The interested reader is directed to relevant papers that
8 discuss the similarities and differences between resilience and other psychological phenomena
9 such as mental toughness (see Gucciardi & Gordon, 2009; Gucciardi, Gordon, & Dimmock,
10 2008, 2009), hardiness (see Howe, Smajdor, & Stockl, 2012; Windle, 2011), recovery (see
11 Bonanno, 2004; deRoon-Cassini, Mancini, Rusch, & Bonanno, 2010; Deshields, Tibbs, Fan, &
12 Taylor, 2006; Lam et al., 2010), and coping (see Campbell-Sills, Cohan, & Stein, 2006; Major,
13 Richards, Cozzarelli, Cooper, & Zubek, 1998; Van Vliet, 2008).

14 In terms of the extant resilience research, studies have sampled children, adults and
15 families who have overcome significant adversities in their lives, including the death of a parent
16 (Greeff & Human, 2004), childhood sexual abuse (Bogar & Hulse-Killacky, 2006), and terrorism
17 (Bonanno, Galea, Bucciarelli, & Vlahov 2007). When considering the adversity experienced by
18 study participants, resilience researchers have tended to employ a threshold-dependent conception
19 by defining adversity in terms of statistical probabilities; that is, the focus is on negative life
20 events that are statistically associated with maladjustment, an approach that is closely aligned to
21 the notion of risk (Fletcher & Sarkar, 2013). Due to the contextual specificity of resilience (cf.
22 Luthar et al., 2000), the findings of many studies in this area are not easily applicable to elite
23 athletes who actively choose to participate in competitive sport and engage with its inherent
24 demands largely of their own volition (cf. Fletcher & Sarkar, 2012).

25 Over the past few years, researchers have begun to specifically investigate psychological
26 resilience in sport performers (e.g., Fletcher & Sarkar, 2012; Galli & Vealey, 2008). In one of the
27 initial sport resilience studies, Galli and Vealey (2008) interviewed college and professional
28 athletes’ about their perceptions and experiences of resilience. Four different adversities were

1 identified: injury, performance slump, illness, and career transition. The findings revealed various
2 personal resources and socio-cultural factors that influenced the athletes' efforts to manage the
3 unpleasant emotions and mental struggles associated with the adversities. Resilient qualities
4 included positivity, determination, competitiveness, commitment, maturity, persistence, passion
5 for the sport, and strong networks of social support. During the interviews, the "athletes were
6 asked to describe the most difficult adversity that they ever had to overcome as an athlete . . .
7 [and] . . . all subsequent questions were in reference to the adversity identified by the athlete" (p.
8 321). As noted by Galli and Reel (2012), this was perhaps an oversimplification of the
9 participants' sport experiences given that athletes typically encounter multiple challenges
10 simultaneously rather than in isolation. Another point worth highlighting is that Galli and Vealey
11 (2008) recognized that further knowledge of the resilient qualities that enable sport performers to
12 positively adapt to stressors is necessary to enhance understanding of resilience in sport.

13 In the most recent sport resilience study, we interviewed twelve Olympic champions to
14 explore and explain the relationship between psychological resilience and optimal sport
15 performance (Fletcher & Sarkar, 2012). We found that Olympic gold medalists encountered a
16 wide variety of different stressors, ranging from ongoing daily demands (e.g., balancing work and
17 training) to major life events (e.g., the death of a close family member). The emergent grounded
18 theory (see Figure 1) indicated that the world's best athletes protect themselves from the potential
19 negative effect of stressors by influencing their challenge appraisal and meta-cognitions. These
20 constructive cognitive reactions promoted facilitative responses that appeared to be firmly
21 embedded in taking personal responsibility for one's thoughts, feelings, and actions. In turn,
22 positive responses led to the realization of optimal sport performance. Importantly in the context
23 of the present discussion, Olympic champions possess several psychological-related phenomena
24 (relating to a positive personality, motivation, confidence, focus and perceived social support)
25 that underpin the resilience-stress-performance relationship.

26 In the majority of sport resilience studies, it is worth noting that the authors have
27 identified a need for a measure of psychological resilience in athletic performers to advance sport
28 psychologists' understanding of this area. To further enhance researchers' knowledge of

1 measuring resilience in athletes, and in line with a recommendation by Gucciardi, Jackson,
2 Coulter, and Mallett (2011), we recently reviewed psychometric issues in resilience research and
3 considered the implications for sport psychology (Sarkar & Fletcher, 2013). Importantly in the
4 context of the present discussion, we contended that examining the interplay between stressors
5 and protective factors is essential since it focuses the analytical lens on the processes underlying
6 adaptation or vulnerability (see also Luthar & Zelazo, 2003; Naglieri & LeBuffe, 2005; Rutter,
7 2006; Windle, 2011). The importance of the context was recently emphasized by Gucciardi et al.
8 who argued that “important protective (e.g., teammate support) and vulnerability (e.g., rigorous
9 training schedules) factors are likely not to be adequately captured when using [current resilience]
10 measures . . . that were developed with other [than sport] populations in mind” (p. 431). Hence,
11 before developing a sport-specific measure of resilience, we recommended that researchers utilize
12 the empirical knowledge base in the pivotal resilience-related areas of stressors and protective
13 factors (Sarkar & Fletcher, 2013).

14 In this paper we discuss psychological resilience in sport performers via a review of the
15 stressors athletes encounter and the protective factors that help them withstand these demands. To
16 the best of our knowledge, this is the first review of resilience in sport. It is hoped that
17 synthesizing what is known in these areas will help researchers gain a deeper profundity of
18 resilience in sport, and also provide a rigorous and robust foundation for the development of a
19 sport-specific measure of resilience. Indeed, Rutter (2006) observed that “resilience is an
20 interactive concept that can only be studied if there is a thorough measurement of risk and
21 protective factors” (p. 3). We undertook a narrative review to allow for extensive coverage of
22 psychological resilience in sport performers. A systematic review was not considered appropriate
23 due to the broad nature of the research topic (cf. Davydov, Stewart, Ritchie, & Chaudieu, 2010).
24 Indeed, this is reflected in the general psychology literature which currently does not have any
25 published systematic reviews of resilience, but numerous narrative reviews (see, e.g., Davydov et
26 al., 2010; Fletcher & Sarkar, 2013; Luthar & Zelazo, 2003; Windle, 2011). Furthermore, in an
27 editorial entitled, ‘Balancing the strengths of systematic and narrative reviews’, Collins and
28 Fauser (2005) remarked:

1 The primary problem is that the narrow focus and prescribed methods of the systematic
2 review do not allow for comprehensive coverage. [Certain] topics . . . require the wider
3 scope of a traditional narrative review, in which less explicit methods are the trade-off for
4 broader coverage (pp. 103-104).

5 We divided the narrative into two main sections. In the first section we review the
6 different types of stressors encountered by sport performers under three main categories:
7 competitive, organizational, and personal. Based on our grounded theory of psychological
8 resilience in Olympics champions (Fletcher & Sarkar, 2012), in the second section we discuss the
9 five main families of psychological factors (viz. positive personality, motivation, confidence,
10 focus, perceived social support) that protect the best athletes from the potential negative effect of
11 stressors. The review is organised around our model because it is the only sport-specific theory of
12 resilience, grounded in original data, which is free from the constraints of a preconceived model.
13 In line with the narrative review approach adopted in this paper, studies were selected based on
14 situational choices about the inclusion of evidence (cf. Collins & Fauser, 2005; Dijkers, 2009). In
15 this review, we selected studies that significantly advanced researchers' knowledge of the
16 stressors encountered by competitive athletes and enhanced researchers' understanding of
17 withstanding stress and pressure in competitive sport.

18 **Stressors**

19 We recently observed that when researchers investigate how individuals' positively adapt
20 to difficult life events, adversities or risks are predominantly considered (Fletcher & Sarkar,
21 2013); that is, resilience researchers focus on negative life circumstances that are known to be
22 statistically associated with adjustment difficulties (cf. Luthar et al., 2000). We went on to argue
23 that this threshold-dependent approach is somewhat limited since it typically precludes the
24 inclusion of many highly taxing, yet still common, events. This is pertinent for the sport context
25 since athletes often experience regular everyday hassles that are embedded in their sporting lives,
26 such as relationship problems, inadequate preparation, and logistical issues (see, e.g., Thelwell,
27 Weston, & Greenlees, 2007). Moreover, although the term "adversity" associates negative
28 circumstances with negative consequences, ostensibly positive life experiences – that are *not*

1 typically associated with a higher probability of undesirable outcomes – are also relevant in
2 resilience research (Fletcher & Sarkar, 2013). To illustrate, in a sport context, winning an
3 important competition is unlikely to be labeled as an adversity but will nonetheless require
4 individuals to positively adapt to the inevitable heightened expectations related to success (cf.
5 Kreiner-Phillips & Orlick, 1993). On the basis of these arguments, we proposed that when
6 assessing resilience in sport performers “it is imperative that researchers consider the inclusion of
7 both significant life events and ongoing daily challenges” (Sarkar & Fletcher, 2013, p. 266).
8 Thus, to allow different types of situations, circumstances, and experiences to be included under
9 the rubric of resilience, the more neutral term “stressor” is employed here and defined as “the
10 environmental demands (i.e., stimuli) encountered by an individual” (Fletcher, Hanton, &
11 Melallieu, 2006, p. 359).

12 Over the past couple of decades or so, sport psychology researchers have unearthed a
13 wide range of stressors encountered by sport performers (see, e.g., Gould, Jackson, & Finch,
14 1993; McKay et al., 2008; Mellalieu, Neil, Hanton, & Fletcher, 2009; Noblet & Gifford, 2002;
15 Scanlan et al., 1991; Thelwell et al., 2007; Weston, Thelwell, Bond, & Hutchings, 2009;
16 Woodman & Hardy, 2001). Collectively, the stressors identified in these studies have been
17 associated with competitive performance, the sport organization within which athletes operate,
18 and personal “nonsporting” life events (Fletcher et al., 2006). Based on this classification, the
19 following subsections will review and synthesize the stressors experienced by athletes in each of
20 these respective categories.

21 **Competitive Stressors**

22 Competitive stressors are defined as “the environmental demands associated primarily
23 and directly with competitive performance” (Mellalieu, Hanton, & Fletcher, 2006, p. 3). Sport
24 psychology researchers identified performance-related stressors in a number of early exploratory
25 studies (e.g., Gould et al., 1993; Holt & Hogg, 2002; James & Collins, 1997). More recently,
26 scholars have investigated competitive stressors in a more systematic fashion (see, Hanton et al.,
27 2005; Mellalieu et al., 2009; Neil, Hanton, Mellalieu, & Fletcher, 2011). Based on the collective
28 findings of these studies, stressors experienced in relation to competitive performance include

1 preparation, injuries, pressure, underperforming, expectations, self-presentation, and rivalry.

2 Demands related to preparation for competition have been frequently cited by the
3 majority of athletes in studies exploring the different types of environmental demands (see, e.g.,
4 Weston et al., 2009). Specifically, sport performers have identified how various aspects of their
5 preparation (physical, mental, technical, and tactical) were at times inadequate, inappropriate, or
6 arduous prior to competition. Another common stressor, experienced by a variety of athletic
7 populations, has been sport-related injuries (see, e.g., Gould, Udry, Bridges, & Beck, 1997).
8 Injury-related pressures include the risk of sustaining an injury, the risk of being deliberately
9 injured due to an opponent's actions, the act of getting injured, determining the cause of injury,
10 the inability to train, missing important competitions, loss of fitness, attaining pre-injury levels of
11 performance, and competing whilst injured (see Evans, Wadey, Hanton, & Mitchell, 2012). In
12 addition, athletes have reported the pressure to perform well at competition (see, e.g., McKay et
13 al., 2008). To illustrate, sport performers have identified the demands of international
14 competition, performing under pressure, and the pressure to beat others. Furthermore,
15 underperforming in competition has been a frequent demand encountered by a variety of sport
16 performers (see, e.g., Dugdale, Eklund, & Gordon 2002). Specifically, athletes have reported
17 pressures related to making mistakes or errors during performance, periods of limited progress,
18 not achieving performance goals, poor personal and team performances, not performing as
19 expected, a loss of form, and performance slumps.

20 One of the most common stressors experienced by athletes is performance expectations
21 (see, e.g., Gould et al., 1993). Internal expectations, that is, pressures that a performer places on
22 his or her self as a result of external demands, include wanting to start well during competition,
23 aspiring to perform to one's ability, and staying at the top of the rankings. External expectations,
24 that is, pressures placed on a performer by an external source, include being the favorite for a
25 competition, starting well for the benefit of the team, other people expecting you to do well,
26 competing for a better ranking place, and competing on live television. Self-presentation issues
27 have been repeatedly identified by numerous athletes (see, e.g., James & Collins, 1997).
28 Frequently cited demands in this subcategory include the evaluation of performance from coaches

1 and teammates, not wanting to let coaches and teammates down, wanting to look the part
2 physically, the demonstration of ability, and seeking recognition. The final type of competitive
3 stressor encountered by sport performers relates to the rivalry experienced as part of competition
4 (see, e.g., Thelwell et al., 2007). Rivalry-related demands include competing against better
5 athletes, opponents behaving deviously, and competing against up-and-coming opponents.

6 **Organizational Stressors**

7 Organizational stressors are defined as “the environmental demands associated primarily
8 and directly with the organization within which an individual is operating” (Fletcher et al., 2006,
9 p. 359). In a number of early studies that identified different types of environmental demands,
10 sport psychology researchers unearthed a variety of organizational-related stressors (see, e.g.,
11 Gould et al., 1993; Scanlan et al., 1991). Subsequently, scholars began to systematically
12 investigate the organizational stressors encountered by athletic performers (see, e.g., Fletcher &
13 Hanton, 2003; Fletcher, Hanton, Mellalieu, & Neil, 2012; Hanton, Fletcher, & Coughlan, 2005;
14 Kristiansen & Roberts, 2010; Woodman & Hardy, 2001).

15 To advance the body of knowledge in this area, Arnold and Fletcher (2012) recently
16 synthesized the research that has identified the organizational stressors encountered by athletes
17 and developed a taxonomic classification of these environmental demands. Using a meta-
18 interpretation method, thirty-four studies (with a combined sample of 1809 participants) were
19 analyzed and yielded 640 distinct organizational stressors. The demands were abstracted into 31
20 subcategories, which formed four categories: leadership and personal issues, cultural and team
21 issues, logistical and environmental issues, and performance and personal issues. Leadership and
22 personal issues consisted of the coach’s behaviors and interactions, the coach’s personality and
23 attitudes, external expectations, support staff, sports officials, spectators, media, performance
24 feedback, and the governing body. Cultural and team issues consisted of teammates’ behaviors
25 and interactions, communication, team atmosphere and support, teammates’ personality and
26 attitudes, roles, cultural norms, and goals. Logistical and environmental issues consisted of
27 facilities and equipment, selection, competition format, structure of training, weather conditions,
28 travel, accommodation, rules and regulations, distractions, physical safety, and technology.

1 Finally, performance and personal issues consisted of injuries, finances, diet and hydration, and
2 career transitions.

3 Beyond the identification of stressors encountered by athletes, researchers in this area
4 have explored the content and quantity of stressors in elite and non-elite sport performers. For
5 example, Hanton et al. (2005) found that elite athletes experienced and recalled more demands
6 associated primarily and directly with the sport organization than with competitive performance.
7 Furthermore, this population appeared more likely to experience similar competitive stressors but
8 varied organizational stressors, perhaps because the former are typically common to most
9 athletes' experiences of performance, whereas the latter are generally disparate and subject to
10 numerous sociocultural, political, economic, occupational, and technological influences. More
11 recently, Fletcher et al. (2012) compared the frequency and content of organizational stressors
12 between elite and non-elite sport performers. They found that the higher skilled participants
13 encountered more stressors than the lower skilled participants. The findings also suggested that
14 across skill levels certain types of organizational stressors are experienced and recalled more
15 frequently than others. More specifically, the elite performers mentioned travel and
16 accommodation arrangements, income and funding, media attention, and a lack of participation in
17 the decision-making process more often than their non-elite counterparts. To examine the
18 potential negative effects of organizational stress on sport performers, Tabei, Fletcher, and
19 Goodger (2012) investigated the relationship between organizational stressors and burnout in
20 collegiate soccer players. Results revealed multiple organizational stressors linked to athlete
21 burnout comprising training and competition load, training and competition environment, travel
22 arrangements, nutritional issues, risk of injury, leadership style, lack of social support, career and
23 performance development, inadequate communication channels, and role overload.

24 **Personal Stressors**

25 Personal stressors are defined as the environmental demands associated primarily and
26 directly with personal "nonsporting" life events. Within this category, stressors encountered by
27 sport performers include: the work-life interface, family issues, and the death of a significant
28 other. Firstly, the work-life interface has been repeatedly identified as a stressor in the sport

1 psychology literature (see, e.g., Gould et al., 1993). Youth athletes in the initial stages of their
2 career have identified difficulties associated with academic commitments, and balancing
3 educational goals with personal relationships (see, e.g., McKay et al., 2008). Older athletes in the
4 latter stages of their career have identified demands related to work commitments, specifically the
5 difficulties of balancing personal relationships with a job (see, e.g., Noblet & Gifford, 2002).
6 Within this subcategory, relocation-related pressures have also been recognized, including
7 problems with finding suitable accommodation, missing family and friends, and adjusting to
8 independent living (see, e.g., Giacobbi et al., 2004). Secondly, family issues have been a frequent
9 demand encountered by a wide variety of athletes. Specifically, sport performers have faced
10 financial pressures of having to provide for a family (see, e.g., Thelwell et al., 2007), relationship
11 problems (see, e.g., Gould et al., 1993), family responsibilities (see, e.g., Weston et al., 2009),
12 and a volatile family life at home (see, e.g., Scanlan et al., 1991). Thirdly, a number of sport
13 performers have identified the death of a significant other. Some athletes have experienced the
14 death of a family member (see, e.g., McKay et al., 2008) whereas others have experienced the
15 loss of team members (see, e.g., Scanlan et al., 1991).

16 In summary, this section has reviewed the stressors encountered by sport performers
17 under the following categories and subcategories: competitive performance (preparation, injuries,
18 pressure, underperforming, expectations, self-presentation, and rivalry), the sport organization
19 within which the athletes operate (leadership and personal issues, cultural and team issues,
20 logistical and environmental issues, and performance and personal issues), and personal
21 “nonsporting” life events (work-life interface, family issues, and the death of a significant other).
22 By synthesizing the wealth of knowledge in this pivotal resilience-related area, across a large
23 number and wide range of studies, it is anticipated that researchers will gain a more complete
24 understanding of the stressors encountered in competitive sport. In the context of psychological
25 resilience, and from an applied perspective, it is crucial that individuals’ immediate environment
26 is carefully managed to optimize the stressors they encounter in their lives. Traditionally, there
27 has been a tendency to assume that negative situations and circumstances impede positive
28 adaptation. However, Seery, Holman, and Silver (2010) recently found that people with a history

1 of some lifetime adversity reported better mental health and well-being outcomes than people
2 with no history of adversity (see also Neff & Broady, 2011; Seery, 2011). Drawing from theories
3 of stress inoculation (Meichenbaum, 1985), it has been suggested that exposure to stressors in
4 moderation can mobilize previously untapped resources, help engage social support networks,
5 and create a sense of mastery for future stressors. Thus, where possible, aspiring high performers
6 should be encouraged to actively seek out challenging situations since this will make subsequent
7 demands seem more manageable, leading to improvements in performance (see, e.g., Arnetz,
8 Nevedal, Lumley, Backman, & Lublin, 2009).

9 **Protective Factors**

10 Within the field of psychology, early research examining resilience represented a
11 “paradigm shift from looking at risk factors that led to psychosocial problems to the identification
12 of strengths of an individual” (Richardson, 2002, p. 309). Increasingly, researchers focused on
13 identifying the characteristics of individuals, particularly young people, who thrived whilst living
14 in difficult circumstances, such as poverty and parental mental illness (Garnezy, 1991; Rutter,
15 1990; Werner & Smith, 1992). Examples of such qualities were: an easy temperament, good self-
16 esteem, planning skills, and a supportive environment inside and outside the family. These
17 qualities have been referred to as protective factors, which Rutter (1985) defined as “influences
18 that modify, ameliorate, or alter a person’s response to some environmental hazard that
19 predisposes to a maladaptive outcome” (p. 600). Since the publication of this work, numerous
20 protective factors have been identified in the resilience research literature, including hope (Horton
21 & Wallinder, 2001), extraversion (Campbell-Sills et al., 2006), optimistic explanatory style
22 (Kleiman, Liu, & Riskind, 2013), self-efficacy (Gu & Day, 2007), spirituality (Peres, Moreira-
23 Almeida, Nasello, & Koenig, 2007), and social support (Brown, 2008). In the context of the
24 present discussion, it is worth noting that a constellation of these factors, that protect individuals’
25 from the stressors they encounter, are assessed in the majority of resilience instruments to date
26 (Windle, Bennett, & Noyes, 2011).

27 In our review of psychometric issues in resilience research, we explored and discussed
28 various issues pertaining to the measurement of protective factors in sport performers (Sarkar &

1 Fletcher, 2013). Perhaps most importantly, we argued that the protective factors assessed in
2 current measures of resilience are specific to the context in which they arise and cannot be easily
3 generalized to other populations. Indeed, when considering the implications for sport psychology,
4 we observed that all of the resilience inventories to date have been developed for use in non-sport
5 contexts, such as psychiatric patients (see, e.g., Connor & Davidson, 2003; Madsen & Abell,
6 2010; Osman et al., 2004). This is particularly problematic for sport psychology researchers since
7 qualities that are meaningful in non-sport participants are unlikely to be entirely relevant to
8 athletic performers (Gucciardi et al., 2011). In light on these arguments, we proposed that as a
9 prerequisite to developing a sport-specific measure of resilience, scholars need to
10 comprehensively review protective factors in the specific context of athletic performance (Sarkar
11 & Fletcher, 2013). Based on our grounded theory of psychological resilience in Olympics
12 champions (Fletcher & Sarkar, 2012), this section will review the five main families of
13 psychological factors (viz. positive personality, motivation, confidence, focus, perceived social
14 support) that the best athletes utilize and optimize to withstand the stressors they encounter.

15 **Positive Personality**

16 Personality traits have been defined as “the relatively enduring patterns of thoughts,
17 feelings, and behaviors that reflect the tendency to respond in certain ways under certain
18 circumstances” (Roberts, 2009, p. 140). We found that Olympic gold medalists possessed
19 numerous positive personality characteristics, which influenced the resilience-related mechanisms
20 of challenge appraisal and meta-cognition (Fletcher & Sarkar, 2012). Indeed, certain dispositional
21 qualities have been frequently associated with sporting excellence by influencing athletes’
22 cognitive processing in a positive fashion (Gould & Maynard, 2009). The main personality traits
23 that have been found to have a desirable impact on athletes’ reactions and responses are: adaptive
24 perfectionism, optimism, competitiveness, hope, and proactivity.

25 Adaptive perfectionism is a healthy type of perfectionism that is characterized by having
26 high personal standards and striving for excellence but, at the same time, having little concern for
27 mistakes and doubts about actions (see, for a review, Stoeber & Otto, 2006). Studies have found
28 that features of adaptive perfectionism are associated with positive attitudes, processes, and

1 outcomes, such as mastery and performance approach goals (see Stoeber, Stoll, Pescheck, &
2 Otto, 2008), competitive self-confidence (see Stoeber, Otto, Pescheck, Becker, & Stoll, 2007),
3 self-serving attributions of success and failure (see Stoeber & Becker, 2008), lower levels of
4 anxiety (see Stoeber et al., 2007), and lower levels of burnout (see Hill, Hall, Appleton, & Kozub,
5 2008).

6 Optimism has been defined in two main ways: as a trait-like expectancy for successful
7 outcomes (Scheier & Carver, 1985) and as an approach to explaining positive and negative events
8 (Peterson, 2000). Based on the first conception, dispositional optimism has been linked with
9 lower levels of pre-competition anxiety (Wilson, Raglind, & Pritchard, 2002), better emotional
10 adjustment during sport competition (Gaudreau & Blondin, 2004), and task-oriented coping
11 following a performance slump (Grove & Heard, 1997). In line with the second conception,
12 athletes with an optimistic explanatory style (i.e., those who usually explain bad events with
13 unstable, contextual, and external causes) have been found to bounce back after failure (Coffee &
14 Rees, 2011; Coffee, Rees, & Haslam, 2009; Martin-Krumm et al., 2003). To illustrate, using an
15 experimental design, Martin-Krumm et al. (2003) examined the relationship between explanatory
16 style and resilience in a group of recreational basketball players. Following failure feedback in a
17 dribbling task, optimistic participants were found to be more confident, less anxious, and perform
18 better, than pessimistic participants.

19 Competitiveness has been described as the desire to win in interpersonal situations (Gill &
20 Deeter, 1988). Using the Sport Orientation Questionnaire (Gill & Deeter, 1988), research has
21 shown that a competitive orientation is positively related to outcome self-efficacy (Martin & Gill,
22 1991) and facilitative interpretations of anxiety (Jones & Swain, 1992). With regards to this latter
23 study, and particularly important in the context of psychological resilience, Jones and Swain
24 (1992) found that competitive athletes reported their anxiety as more facilitative and less
25 debilitating for performance than less competitive athletes. In addition, based on interviews with
26 elite sport performers, competitiveness has recently been found to play an important role in
27 adapting to setbacks (e.g., injuries, performance slumps) that are encountered along the pathway
28 to sporting excellence (MacNamara et al., 2010a; 2010b).

1 Hope is defined as “a cognitive set that is based on a reciprocally derived sense of
2 successful (a) agency (goal-directed determination) and (b) pathways (planning of ways to meet
3 goals)” (Synder et al., 1991, pp. 570-571). High-hope individuals are able to envision alternative
4 routes in the face of goal blockage, develop multiple strategies for overcoming obstacles, and
5 display high levels of dedication and energy in pursuing desirable goals (see Synder, Lehman,
6 Kluck, & Monsson, 2006). Surprisingly, empirical investigations of hope in the sport domain are
7 scarce. Using the Dispositional and State Hope Scales (Snyder et al., 1991; 1996), Curry, Synder,
8 Cook, Ruby, and Rehm (1997) found that sport performers with higher hope performed better
9 academically and athletically after controlling for other possible influences such as self-esteem,
10 mood, and confidence. More recently, Gustafsson, Hassmen, and Podlog (2010) found that
11 feelings of high hope were associated with lower perceptions of burnout among sport performers.
12 By enabling athletes to develop their strengths, to mobilize effort, and to pursue goal-attainment
13 in the face of adversity, hope appears to be associated with better ability to withstand stress in
14 competitive sport.

15 Proactivity has been defined as a “dispositional construct that identifies differences
16 among people in the extent to which they take action to influence their environments” (Bateman
17 & Crant, 1993, p. 103). People who are proactive identify opportunities and act on them, show
18 initiative, and persevere until they bring about meaningful change. Researchers have found a
19 proactive personality to be an important characteristic in predisposing one to higher levels of
20 achievement in various performance domains, including politics (Deluga, 1998), business
21 (Seibert, Kraimer, & Crant, 2001), and sport (Fletcher & Sarkar, 2012). In one of the few studies
22 in this area, Baker, Côté, and Deakin (2005) recognized this personal disposition in athletes and
23 found that expert triathletes were more proactive in their preparation with a greater emphasis on
24 thoughts related to their performance, whereas non-experts reported more passive thoughts
25 unrelated to performance. In the context of psychological resilience, our research has found that a
26 proactive disposition is an important attribute for withstanding the pressure associated with sport
27 at the highest levels (Fletcher & Sarkar, 2012). Collectively, the research in these five areas
28 suggests that positive personality traits are relevant to sport performers’ resilience by influencing

1 their reactions and responses in a positive fashion.

2 **Motivation**

3 The topic of motivation addresses the ‘what’ and ‘why’ of human behavior (cf. Deci &
4 Ryan, 2000), and concerns “energy, direction, persistence and equifinality – all aspects of
5 activation and intention” (Ryan & Deci, 2000, p. 69). Optimal levels of motivation are
6 consistently reported as a required psychological attribute for withstanding stress and pressure in
7 competitive sport (see, for a review, Standage, 2012; Treasure, Lemrye, Kuczka, & Standage,
8 2007). We found that Olympic champions had multiple motives for competing at the highest level
9 including “being the best that you can be”, social recognition, passion for the sport, achieving
10 incremental approach goals, demonstrating competence, and proving their worth to others
11 (Fletcher & Sarkar, 2012). Particularly important in the context of psychological resilience,
12 Olympic gold medalists consciously valued and judged external demands as important and
13 therefore actively chose to perform in challenging sport environments. This process of
14 internalization and integration of regulations and values, whereby one’s goals are brought into
15 line with one’s self identity, is central to self-determination theory (Ryan & Deci, 2000), and
16 appears to be an important psychological asset that protects the best athletes from the potential
17 negative effect of stressors.

18 Previous research that has examined the motivation of elite athletes has suggested that
19 their behavior is not solely intrinsically motivated, that multiple motives are likely to exist, and
20 that the social conditions defining one’s participation are likely to have a significant effect on
21 motivational processes. Chantal, Guay, Dobreva-Martinova, and Vallerand (1996) examined the
22 motivational profiles of 98 elite Bulgarian athletes from a variety of sports using the Bulgarian
23 version of the Sport Motivation Scale (Pelletier et al., 1995). They found that, in comparison with
24 less successful athletes, the best performing athletes exhibited higher levels of non-self-
25 determined types of motivation. Specifically, title holders and medal winners more frequently
26 reported external rewards, feelings of obligation, and pressure as their primary sources of
27 motivation. Interestingly, the authors suggested that the highly competitive sport structure that
28 prevailed in Bulgaria at the time may have influenced the athletes’ motivation in that the sport

1 structure strongly emphasized winning at all costs. To provide a greater insight into the
2 motivation of elite sport performers in less controlling social conditions, Mallet and Hanrahan
3 (2004) explored the motivational processes of elite track and field athletes in Australia using
4 semi-structured interviews. They found that these individuals were characterized by multiple
5 motivations that were both self-determining and non-self determining in nature. Although the
6 interview data revealed excitement, enjoyment, and a sense of relatedness with fellow athletes as
7 important motives, less self-determined reasons also emerged. Indeed, some of the athletes
8 identified beating opponents, money, and social recognition as motives for competing at the
9 highest level. The results of Mallett and Hanrahan's study, however, suggest that elite sport
10 performers appear to be able to internalize and integrate more self-determined forms of extrinsic
11 motivation. That is, they are gradually able to transform external regulations into self-regulation.
12 More specifically, and particularly important in the context of psychological resilience, they find
13 ways to evaluate and bring into congruence the environmental demands of the sport with their
14 personally held values and beliefs.

15 A fundamental tenet of self-determination theory is that individuals engaged in an activity
16 by choice will experience better consequences than those whose participation is less autonomous
17 (see, Ryan & Deci, 2000). Indeed, in sport settings, autonomous motivation has been shown to
18 predict adaptive outcomes, such as better well-being and vitality (Gagne, Ryan, & Bargmann,
19 2003), higher levels of flow (Kowal & Fortier, 1999), greater reported effort, interest, and
20 persistence (Pelletier, Fortier, Vallerand, & Briere, 2001), and positive sportsmanship orientations
21 (Ntoumanis & Standage, 2009). In the case of elite sport, however, a great deal of training can be
22 uninteresting and, although essential to improving performance, extremely repetitive and
23 monotonous. Nonetheless, research has demonstrated that even the most tedious aspects of
24 training can be transcended through the use of interest-enhancing strategies that assist an
25 individual's internalization of self-determined motivation regulations (Green-Demers, Pelletier,
26 Stewart, & Gushue, 1998). The preceding research findings suggest that optimal motivation is an
27 important asset for psychological resilience in sport performers. Specifically, possessing
28 autonomous values and beliefs appear to have a positive influence on athletes' thought processes.

1 **Confidence**

2 Confidence has been identified as a positive influence for withstanding stress and
3 pressure in competitive sport (Galli & Vealey, 2008; Gucciardi et al., 2011). In an athletic
4 context, it is described as the degree of certainty one possesses about their ability to be successful
5 in sport (Vealey, 1986). Confidence was deemed to be a particularly important factor
6 underpinning the resilience-stress-performance relationship in Olympic champions (Fletcher &
7 Sarkar, 2012). Various sources of confidence were salient to the world's best athletes, including
8 multifaceted preparation, experience, self-awareness, visualization, coaching, and teammates.

9 To explore this desirable construct in the specific context of athletic performance, Vealey,
10 Hayashi, Garner-Holman, and Giacobbi (1998) examined the sources of sport confidence in high
11 school and collegiate athletes. Using factor analysis techniques to develop a measure of sport
12 confidence, they identified nine separate sources of sport confidence that grouped into three
13 domains: achievement (mastery and demonstration of ability), self-regulation (physical/mental
14 preparation and physical self-presentation), and social climate (sources of social support, coaches
15 leadership, vicarious experience, environmental comfort, and situational favorableness). Building
16 on this study in an elite sample of sport performers, Hays, Maynard, Thomas, and Bawden (2007)
17 explored the sources and types of confidence salient to athletes who had medalled in at least one
18 major championship (i.e., Olympic Games, World Championship and/or World Cup) using
19 qualitative methods. Nine sources of confidence were identified: preparation, performance
20 accomplishments, coaching, innate factors, social support, experience, competitive advantage,
21 self-awareness, and trust. Analysis also revealed six types of sport confidence: skill execution,
22 achievement, physical factors, psychological factors, superiority to opposition, and tactical
23 awareness. Following on from this investigation, Hays, Thomas, Maynard, and Bawden (2009)
24 examined the role of confidence in relation to the cognitive, affective and behavioral responses it
25 elicits within the organizational subculture of world class sport. Qualitative analysis indicated that
26 high sport confidence facilitated performance through its positive effect on athletes' thoughts,
27 feelings, and behaviors. Specifically, high sport confidence was found to be synonymous with
28 effective cognitions (e.g., focus on the task at hand), positive affect (e.g., enjoyment), and

1 effective behaviors (e.g., confident body language).

2 In a review of this area, Vealey and Chase (2008) noted that solely possessing a general
3 sport confidence may not be enough to perform successfully; rather, they argued that athletes
4 need to possess robust confidence to overcome possible setbacks. Indeed, it has been suggested
5 that the robust nature of confidence (i.e., the ability to maintain belief in the face of disconfirming
6 experiences) may contribute to success over and above the contribution of the level of general
7 sport confidence (where high levels are perceived as sufficient) (cf. Bull, Shambrook, James, &
8 Brooks, 2005). In the first study to specifically explore this area, Thomas, Lane, and Kingston
9 (2011) defined and contextualized the characteristics of robust sport confidence based on semi-
10 structured interviews with elite sport performers. Robust sport confidence was defined as “a set of
11 enduring, yet malleable positive beliefs that protect against the ongoing psychological and
12 environmental challenges associated with competitive sport” (p. 194). Qualitative data analysis
13 procedures also resulted in the identification of six characteristics of robust sport confidence:
14 multidimensional, malleable, durable, strength of belief, developed, and protective. This latter
15 feature is particularly important in the context of psychological resilience since it indicates that
16 robust sport confidence has the potential to act as a buffer against stressors. Building on this
17 construct using quantitative methods, Beattie, Hardy, Savage, Woodman, and Callow (2011)
18 developed and validated a Trait Robustness of Self-Confidence Inventory for use in competitive
19 sport settings. The single-factor eight-item inventory, including questions such as “my self-
20 confidence goes up and down a lot” and “if I perform poorly, my confidence is not poorly
21 affected”, was consistent across both male and female athletes. Regarding the predictive validity
22 of the inventory, high robust confidence scores were associated with more stable self-confidence
23 levels prior to competition, and athletes with high levels of robust confidence managed to
24 maintain higher state self-confidence following disconfirming experiences than those with low
25 robust confidence levels. In sum, both general and robust confidence are important psychological
26 factors for withstanding stress and pressure in competitive sport. More specifically in the context
27 of psychological resilience, general sport confidence appears to have a desirable impact on
28 athletes’ reactions and responses, and robust sport confidence seems to be particularly influential

1 in protecting athletes from the potential negative effect of stressors.

2 **Focus**

3 Focus, or concentration, refers to a person's ability to exert deliberate mental effort on
4 what is most important in any given situation (Moran, 1996). We found that the ability to focus
5 was an important aspect of resilience for the world's best athletes (Fletcher & Sarkar, 2012).
6 Specifically, Olympic champions were able to focus on relevant cues in the environment,
7 maintain focus over long time periods, remain aware of the situation around them, and alter the
8 scope of their attention as demanded by the situation.

9 Two main lines of inquiry illustrate the importance of focus and concentration. The first
10 source of evidence comes from descriptive research exploring the psychological characteristics
11 associated with athletes' ability to withstand – and thrive on – pressure when preparing and
12 performing at major sporting events (see, e.g., Gould & Maynard, 2009). Indeed, numerous
13 aspects of focus and concentration appear to be important for dealing with pressure and adversity
14 in various competitive sport contexts (see, e.g., Bull et al., 2005; Gucciardi, Gordon, &
15 Dimmock, 2008; Jones, Hanton, Connaughton, 2002; 2007). Specifically, elite athletes are able to
16 withstand the pressure associated with sport at the highest level by: remaining fully focused on
17 the task at hand in the face of distractions, switching a sport focus on and off as required, refusing
18 to be swayed by short-term goals (e.g., finances) that will jeopardize the achievement of long-
19 term goals, and remaining focused on processes and not solely outcomes. More recently,
20 researchers have found that having an appropriate attentional focus, and focusing on task relevant
21 cues are fundamental mental qualities that help young elite athletes adapt to setbacks and
22 effectively negotiate key transitions encountered along the pathway to excellence (Holland,
23 Woodcock, Cumming, & Duda, 2010; MacNamara & Collins, 2010).

24 The second source of evidence that demonstrates the importance of focus and
25 concentration has emerged from experimental research. For example, using quantitative methods,
26 Mallett and Hanrahan (1997) found that sprinters who had been trained to use race plans, that
27 deliberately involved focusing on the task at hand, ran faster than those in baseline (control)
28 conditions. Indeed, the authors contended that the improvements observed were due to the

1 employment of a specific cognitive strategy that focused attention on task-relevant information
2 associated with sprint performance. Similarly, research has shown that the use of associative
3 concentration techniques, in which athletes are trained to concentrate on bodily signals such as
4 heart beat and kinesthetic sensations, are effective cognitive strategies that enable faster
5 performances in running (Masters & Ogles, 1998; Morgan, 2000) and swimming (Couture,
6 Jerome, & Tihanyi, 1999). The preceding lines of evidence, therefore, converge on the conclusion
7 that the ability to focus and concentrate appropriately is vital for psychological resilience in sport
8 performers since it has a positive influence on athletes' cognitive processing under pressure.

9 **Perceived Social Support**

10 In an athletic context, perceived social support refers to "one's potential access to social
11 support and is a support recipient's subjective judgment that friends, team-mates, and coaches
12 would provide assistance if needed" (Freeman, Coffee, & Rees, 2011, p. 54). We found that
13 Olympic champions were protected from the pressures of elite sport by perceiving that high
14 quality social support was available to them, including support from family, coaches, team-mates,
15 and support staff (Fletcher & Sarkar, 2012). Results indicated that the perception of available
16 support from a variety of social agents underpinned the resilience-stress-performance relationship
17 in the world's best athletes. This finding shows the stress-buffering effects of perceived social
18 support and suggests that it is an important aspect of resilience in elite sport.

19 In order to gain a better understanding of the social support experiences of sport
20 performers, Rees and Hardy (2000) conducted interviews with high-level athletes regarding their
21 experiences of social support. The results highlighted the multidimensional nature of social
22 support, revealing four primary dimensions: emotional, esteem, informational, and tangible.
23 Emotional support refers to others being there for comfort and security, leading to a person
24 feeling loved and cared for. Esteem support refers to others bolstering a person's sense of
25 competence or self-esteem. Informational support refers to others providing advice or guidance,
26 and tangible support refers to others providing concrete instrumental assistance. In line with these
27 definitions, Freeman et al. (2011) recently developed and validated the Perceived Available
28 Support in Sport Questionnaire (PASS-Q) using confirmatory factor analysis. Specifically, by

1 deriving items from statements made by the high-level athletes in Rees and Hardy's study, they
2 found evidence for a four dimension factor structure in two independent samples of athletes.
3 Regarding the structural and predictive validity of the questionnaire, the findings demonstrated
4 that higher levels of perceived emotional, esteem, informational, and tangible support were
5 associated with higher levels of self-confidence and lower levels of burnout.

6 The four primary dimensions of support have been used to frame research on the stress-
7 buffering effects of social support (see, e.g., Freeman & Rees, 2009; Freeman & Rees, 2010). The
8 stress-buffering hypothesis suggests that high levels of perceived support protect an individual
9 from the potential negative effect of stressors. Specifically, perceived support is hypothesized to
10 intervene when a stressor is encountered, leading it to be appraised as less stressful (Cohen &
11 Wills, 1985). In a sample of university athletes, Freeman and Rees (2010) examined the stress-
12 buffering effects of social support on self-confidence using moderated hierarchical regression
13 analyses. The findings showed that high perceived emotional, esteem and informational support
14 from team-mates buffered the potential detrimental effect of performance-related stressors on
15 self-confidence. Specifically, at low and moderate levels of support, stressors negatively affected
16 self-confidence. However, at high levels of support, stressors did not significantly predict self-
17 confidence. To better understand the potential mechanisms through which perceived support
18 influences performance, Freeman and Rees (2009) examined the relationship between perceptions
19 of support availability and objective performance in a competitive sport environment using
20 observed variable path analysis. Findings revealed that the beneficial effects of perceived support
21 were primarily attributable to esteem support. Perhaps more importantly in the context of
22 psychological resilience, individuals with high levels of available esteem support appraised
23 competitive situations as more of a challenge and less as a threat. In turn, challenge appraisals
24 were associated with better performance. Collectively, the research in this area suggests that
25 different types of perceived support are relevant to sport performers and that the notion of stress
26 buffering may help to better elucidate the shielding effect of perceived available support.

27 In summary, this section has reviewed the five main psychological factors (viz. positive
28 personality, motivation, confidence, focus, perceived social support) that protect athletes from the

1 potential negative effect of stressors. By exploiting the empirical knowledge base in these areas,
2 it is anticipated that researchers will gain a deeper profundity of the numerous protective factors
3 that sport performers utilize and optimize to withstand the stressors they encounter. From an
4 applied perspective, individuals operating in competitive sport should identify and monitor the
5 psychological characteristics outlined in this review that athletes need to develop to exhibit
6 resilience. Practitioners, for example, should help aspiring sport performers' to be proactive in
7 their sporting development, be sensitive to different types of motivation, build confidence from
8 multiple sources rather than focusing on one particular source, focus on what they can control and
9 on processes, and take specific steps to obtain the support that they need.

10 **Future Research Directions**

11 There are a number of directions that future researchers can explore to advance
12 knowledge of psychological resilience in sport performers. Regarding the stressors that athletes
13 encounter, although researchers have extensive information about the different types of
14 environmental demands, there is a limited understanding about the interface between and
15 interactive impact of stressors. It would be beneficial, for example, to investigate the relationship
16 between competitive, organizational and personal stressors and examine their combined effect on
17 athletes' reactions and responses (cf. Brough & O'Driscoll, 2005). In the context of psychological
18 resilience, it is important to consider the suitability of appropriately exposing athletes to stressors
19 and encouraging them to actively engage with challenging situations that present opportunities to
20 raise their performance level. Indeed, in our study of Olympic champions "most of the
21 participants argued that if they had not experienced certain types of stressors at specific times,
22 including highly demanding adversities such as parental divorce, serious illness, and career-
23 threatening injuries, they would not have won their gold medals" (Fletcher & Sarkar, 2012, p.
24 672). As suggested in this observation, it will also be interesting to explore the extent to which
25 significant adversities are instrumental in the resilience-high achievement relationship. However,
26 before addressing these questions, a more fundamental avenue for research is better
27 understanding when a stressor (i.e., an environmental demand) becomes an adversity (i.e, a
28 typically negative event) for sport performers. In the extant sport psychology literature, stressors

1 are often assumed to be adversities for athletes, including performance slumps, coach conflicts,
2 and career transitions (see, e.g., Galli & Vealey, 2008; Tamminen, Holt, & Neely, 2013).
3 However, based on the definition of an adversity, a stressor only represents an adversity if the
4 problems displayed by an individual are typical of those exhibited in normative populations
5 (Luthar et al., 2000). Exposure to parental divorce, for example, constitutes an adversity since
6 children experiencing it are two or three times more likely to exhibit psychological and
7 behavioral problems than those from non-divorced families (Hetherington & Elmore, 2003). This
8 type of epidemiological evidence is required in relation to the stressors encountered by sport
9 performers to ascertain whether they do indeed represent actual adversities.

10 Turning to the protective factors that help athletes withstand stressors, although there is a
11 relatively large knowledge base on the main protective factors (i.e., positive personality,
12 motivation, confidence, focus, perceived social support), there is a dearth of information about
13 whether a matching effect exists between protective factors and stressors; that is whether
14 particular protective factors match best with certain stressors. Furthermore, building on our
15 assertion that “individuals operating in elite sport should . . . intervene to attain the optimum
16 levels of, and balance between, these factors” (Fletcher & Sarkar, 2012, p. 676), research is
17 needed to determine the best combination of protective factors for different sport types and skill
18 levels. This type of research, where the relative importance of each factor is determined and
19 compared, will be best realized once a sport-specific measure of resilience is developed. In terms
20 of better understanding this area, it is worth noting that researchers have distinguished between
21 protective and promotive factors (see, e.g., Sameroff, Gutman, & Peck, 2003). Specifically, they
22 have argued that, while the former implies shielding or insulation from the potential negative
23 effects of an event, there are psychological-related phenomena that impute an independent
24 salutary value by yielding benefits such as frequent success experiences. Sport psychology
25 researchers need to examine the aforementioned factors at a more fine-grained level to determine
26 if they moderate associations between stressors and adaptive outcomes (i.e., protective) or if they
27 have a direct association with adaptive outcomes (i.e., promotive) (cf. Laird, Marks, & Marrero,
28 2011).

1 Regarding our grounded theory of psychological resilience, it is open to extension and
2 can be tested and modified to accommodate new insights (Fletcher & Sarkar, 2012). For example,
3 although our theory focuses on the relationship between psychological resilience and optimal
4 sport performance, future research needs to elucidate other important outcomes of the resilience
5 process (e.g., well-being). In terms of the design of the model, we acknowledged that a potential
6 limitation concerns the validity of the linear stage framework evident within its structure
7 (Fletcher & Sarkar, 2012). Recent evidence from cognitive neuroscience indicates that sequential,
8 unitary approaches are rather simplistic and that parallel, multiple processes offer a more
9 ecologically valid conceptualization of psychological resilience (see, e.g., Feder, Hestler, &
10 Charney, 2009). Another important consideration is the sociocultural context in which an
11 individual operates. Our model was predominantly focused on *psychological* processes
12 underpinning the resilience-performance relationship and future resilience researchers need to
13 explore the sociocultural context within which this occurs (cf. Ungar, 2008). We acknowledge that
14 our model of sport resilience is relatively new and, hence, is currently untested. To determine the
15 utility of our model, future studies should use it to generate research questions and hypotheses
16 about resilience in sport. For example, what psychological factors lead to positive outcomes
17 either directly or indirectly via their influence on challenge appraisal and meta-cognitions? Since
18 our model was derived from data collected from a specific group of participants, such questions
19 might be best answered through large scale quantitative studies, using statistical techniques such
20 as structural equation modeling, to predict resilience across a wider range of athletes and sport
21 settings.

22 This paper has provided a platform for developing a sport-specific measure of
23 psychological resilience (cf. Sarkar & Fletcher, 2013). Due to the conceptually distinct nature of
24 stressors and protective factors, researchers will need to assess these concepts and validate their
25 associated scales separately from the outset. In terms of measuring the stressors that athletes'
26 encounter, when generating a pool of questionnaire items, researchers need to consider the variety
27 of demands associated with competitive performance, the sport organization within which the
28 athletes operate, and personal "nonsporting" life events. To gain a more comprehensive picture of

1 stressors, sport psychology researchers should consider the inclusion of both significant life
2 events and ongoing daily pressures in an initial pool of items. In terms of measuring the factors
3 that protect athletes from negative consequences, researchers will need to assess the protective
4 factors relating to a positive personality, motivation, confidence, focus, and perceived social
5 support. More specifically, when generating a pool of items, questions should focus on aspects of
6 athletes' desirable cognitive tendencies, autonomous values and beliefs, general and robust sport
7 confidence, ability to focus appropriately, and perceptions of available social support.

8 **Concluding Remarks**

9 Psychological resilience is important in sport since athletes must utilize and optimize a
10 constellation of protective factors to withstand the distinct stressors that they encounter (Fletcher
11 & Sarkar, 2012). To help researchers gain a better appreciation of the existing knowledge base in
12 key resilience-related areas, in this paper we reviewed stressors and protective factors in the
13 specific context of athletic performance. The stressors encountered by sport performers can be
14 classified under the following three categories and fourteen subcategories: competitive
15 performance (preparation, injuries, pressure, underperforming, expectations, self-presentation,
16 and rivalry), the sport organization within which the athletes operate (leadership and personal
17 issues, cultural and team issues, logistical and environmental issues, and performance and
18 personal issues), and personal "nonsporting" life events (work-life interface, family issues, and
19 the death of a significant other). In this paper we also synthesized the extant literature pertaining
20 to the five main psychological factors (viz. positive personality, motivation, confidence, focus,
21 perceived social support) that protect athletes from the potential negative effect of stressors. It is
22 hoped that this review will provide a rigorous and robust foundation for the development of a
23 sport-specific measure of resilience, and subsequently help researchers examine the interplay
24 between stressors and protective factors, which will, in turn, focus the analytical lens on the
25 processes underlying psychological resilience in athletes.

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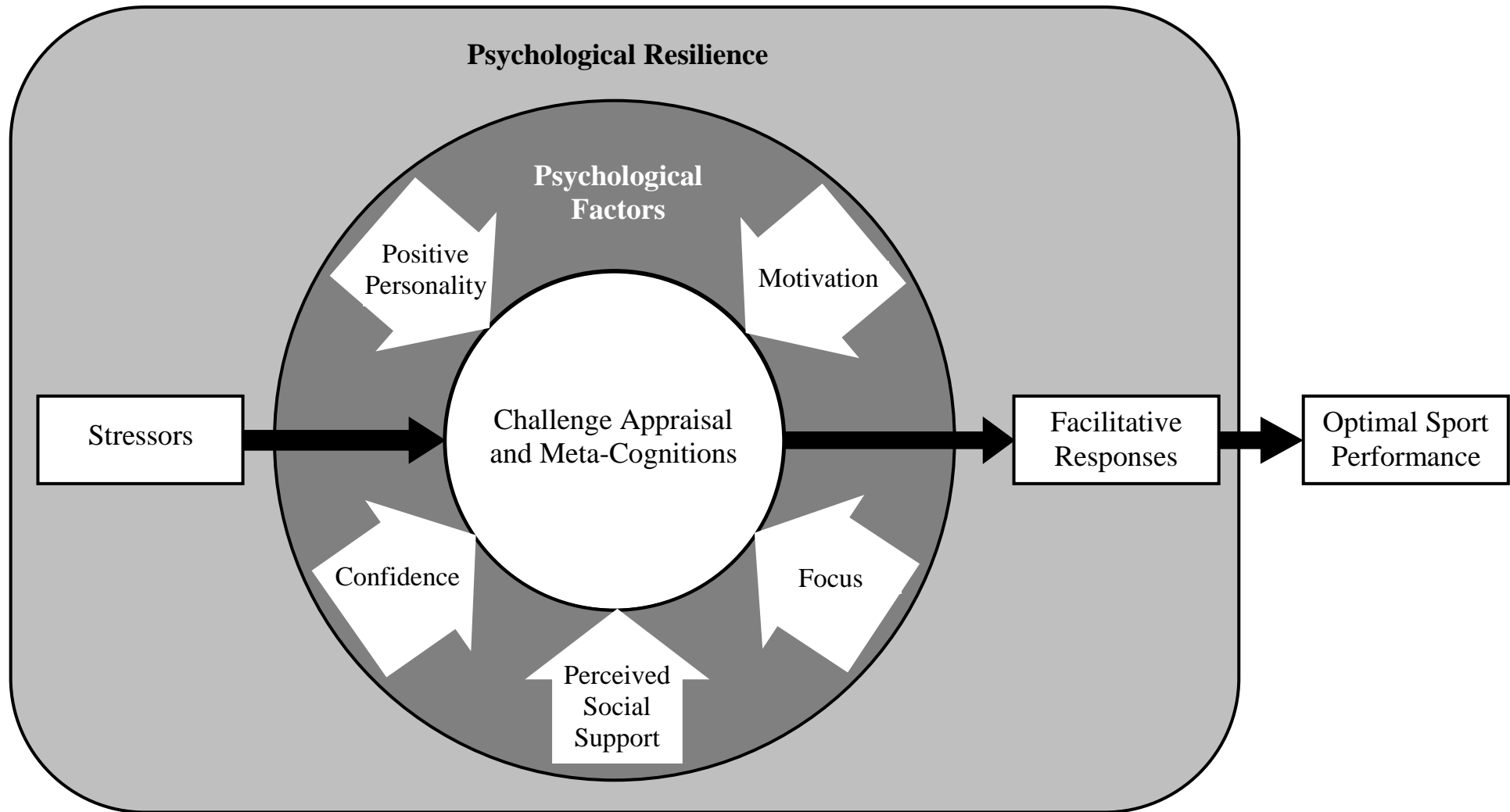


Figure 1. A grounded theory of psychological resilience and optimal sport performance (reproduced with permission from Fletcher and Sarkar, 2012).