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Chapter 10

AN ORGANIZATIONAL STRESS REVIEW: CONCEPTUAL AND THEORETICAL ISSUES IN COMPETITIVE SPORT

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ABSTRACT

This chapter provides a review of current issues in organizational stress in competitive sport. Two main areas are addressed: (a) conceptual and operational considerations, culminating in definitions of stress-related constructs, and (b) theoretical relationships among stress, emotions and performance, based on a meta-model outlining key processes, moderators and consequences. As the chapter progresses, attention focuses on the practical implications and research directions emanating from the literature review.

Key words: transactional perspective, relational meaning, stressor-strain relationships, meta-model, sport performers

INTRODUCTION

Sport in the new millennium is firmly established as a global industry. Spurred on by national pride, sport has successfully traversed almost every border to influence the lives of nearly everyone on the planet (Maguire, Jarvie, Mansfield, and Bradley, 2002; Westerbeek

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and Smith, 2003). Indeed, Westerbeek and Smith (2003) observed that sport as an institution has such a penetrating affect on modern life that there are few places of refuge. Through the expansion of the globalized economy, the explosion of commercialism, the progress of technology and the media, the crossover with entertainment, and the impact of Western culture, sport has become an almost universal phenomenon. It may well be that it was never intended to be such an immense business enterprise, nor anticipated that elite performers could command the emotional and financial commitment of billions of otherwise rationale people (Wann, Melnick, Russell, and Pease, 2001; Westerbeek and Smith, 2003). But the reality is, competitive sport is currently entrenched in the fabric of contemporary society and shows no sign of receding.

Allied to these developments has been the rapid evolution of sport organizations. Making up an integral part of the sport industry is a wide array of public, private and voluntary organizations. A sport organization has been conceived as "a social entity involved in the sport industry; it is goal-directed, with a consciously structured activity system and a relatively identifiable boundary" (Slack, 1997, p. 5). It is important to recognize, however, that when considered in the broadest sense, precise definition becomes elusive because of the intricate systems of historically and socially constructed hierarchies, with constantly changing frontiers. Indeed, an organization often has multiple constituents that have overlapping, sometimes ambiguous, relationships with other sport and nonsport organizations. These include, for example, national governing bodies and international federations; governmental agencies and departments; sports leagues and events; high performance and local participation sports teams, squads and clubs; athletes' agents and representatives; various business enterprises, including media, entertainment, and advertising groups; sponsorship and merchandising companies; doping control; medical personnel; lawyers; gambling; and so the list goes on.

This highly complex social and organizational environment imposes numerous demands on sport performers and other personnel that function within it. As a result, athletes frequently seek advice from psychologists on dealing with the pressures that accompany their participation in competitive sport, particularly at the higher levels. It has become apparent that, in many instances, organizations have not been sufficiently active in recognizing and addressing such issues. In fact, well-respected International Olympic Committee (IOC) member, Dr. Rubén Acosta Hernández, recently commented that:

> Athletes naturally want to win. However, they often bear the brunt of their country's poor organizational structures. They rebel against their national sport organizations for being unsupportive, neglecting their duties, eluding their responsibilities, and shying away from accountability. In developing countries, many organizations conceal their incompetence behind political influence and sometimes a hesitant media's fear of retaliation. Athletes have needs – such as a place to practice sports, an event to compete in, an instructor to improve their skills and abilities, and a performance to achieve – that most sport organizations today are not truly satisfying. If these needs continue to be forgotten, athletes will feel compelled to break the inertia of their own sport organizations and look elsewhere for… the fulfillment of their dreams… (Acosta Hernández, 2002, p. 6)

In view of these observations, it is perhaps somewhat surprising that researchers have failed to systematically investigate stress in sport organizations. This is in contrast to the considerable empirical attention focused on the demands and responses commonly associated

with competitive performance. More than two decades of study have generated a substantial body of evidence on the competitive stress experience, particularly anxiety and its relationship with performance (see, for recent reviews, Burton, 1998; Mellalieu, Hanton, and Fletcher, this volume; Woodman and Hardy, 2001b). Much less is known, however, about athletes' experiences of stress related to the organizational environment within which they are operating. Despite repeated calls for research (see, e.g., Hardy and Jones, 1994; Hardy, Jones, and Gould, 1996; Jones, 1995b), psychologists' understanding of this area remains limited.

The preponderance of organizational stress knowledge has been derived from research conducted in business, medical and educational settings; thus, in the absence of systematic work in the athletic domain, this review draws heavily from this knowledge base to help guide theory and research in sport psychology. The few sport-related studies that exist have tended towards the analysis of elite or professional performers (Fletcher and Hanton, 2003a; Woodman, 2003; Woodman and Hardy, 2001b). This is, of course, not to suggest that recreational or participation-based sport is free from organizational stress, only that it may be more prevalent and pertinent at the higher levels of competitive performance.

This chapter is about organizational stress in competitive sport and concepts, theories and research relating to this area. The review of literature comprises two major sections. The first considers conceptual and operational issues and provides a contemporary definition of organizational stress based on a transactional perspective. The second section discusses a meta-model of stress, emotions and performance and the theoretical relationships among key processes, moderators and consequences of the organizational stress process.

CONCEPTUAL AND OPERATIONAL ISSUES

Almost all reviews of stress (and anxiety) in sport begin by drawing attention to the difficulties associated with, and the confusion surrounding, the way in which stress-related terms have been conceptualized and operationalized (see, e.g., Jones and Hardy, 1990; Hardy et al., 1996; Woodman and Hardy, 2001b). Stress has variously been defined as an environmental stimulus, a person's response, or the result of an interaction between the person and the environment. As the body of knowledge has developed, particularly that surrounding the appraisal of stimuli and the interpretation of responses, researchers have increasingly considered the nature of the interaction and, most importantly, the psychological processes through which it takes place (Jones, 1990; Jones and Hardy, 1989; Woodman and Hardy, 2001b).

The fact that stress has been related to a range of conditions (i.e., stimulus, response, interaction) has impeded systematic development in both sport and mainstream psychology. For this reason, some commentators have suggested that the stress concept be relegated to a secondary position behind a more general framework of "stress research" (e.g., House, 1974), or even abandoned altogether because it is too all encompassing a phenomenon to investigate (e.g., Kasl, 1983). However, we agree with Cooper, Dewe, and O'Driscoll (2001) who maintained that it is important scholars continue to pursue and debate the nature of stress for two main reasons. First, conceptualizations give a sense of time and historical perspective to research that, in turn, provide an insight into why certain approaches prevail and the explanatory potential of such work. Second, operational definitions have a key role to play in

determining the nature and direction of research and provide conceptual boundaries to help guide theoretical and empirical development.

The vague rhetoric often surrounding the study of stress in sport is perhaps best exemplified by the pervasive use of the terms "competition stress" and "noncompetition stress". While at first glance these labels may seem intuitively reasonable, Fletcher and Hanton (2003a) argued that the latter term is too imprecise to adequately contribute to theory and practice and does little to capture the essence of the stress experience. To this end, they proffered the terms *competitive stress*, *organizational stress*, and *personal stress* to conceptually differentiate between major categories of stress in sport performers. Their rationale for this distinction related to three main areas: (a) the specific origins and nature of the stimuli encountered; (b) the differences in the psychological processes underlying the responses to these demands; (c) the appropriateness of interventions to manage competitive, organizational and personal strain (cf. Fletcher and Hanton, 2003b; Hanton, Fletcher, and Coughlan, 2005; Jones, 2002; Woodman and Hardy, 2001a).

Due to the definitional difficulties in this area and the relative infancy of organizational stress in the sport psychology literature, this section provides an overview of traditional views of stress, discusses their strengths and limitations, and describes the evolution of a transactional conceptualization. We conclude the section by providing definitions of relevant constructs, including a contemporary conceptualization of organizational stress based on a transactional perspective.

Stress as a Stimulus and a Response

The phrase "being under stress" is one that most sport performers can relate to. Implied in this expression are environmental stimuli exerting demands on an athlete. The origins of stimulus-based definitions of stress can be found in physics and engineering (Hinkle, 1973; Mason, 1975), where stress refers to external pressure applied to a structure and strain to the deformation of that structure. The aphorism "the straw that breaks the camel's back" has been used to illustrate the essence of this approach (see Cooper et al., 2001). The meaning being that a person who is constantly assailed by demands (i.e., stress) may encounter just one more apparently minor or innocuous event that will disrupt the delicate balance in his or her functioning (i.e., strain). In short, this perspective conceives stress as an environmental or independent variable.

In sport psychology, definitions of stress are often embedded in a stimulus-based conceptualization emphasizing external events or "some demand [which] is placed upon the individual" (Hardy et al., 1996, p. 141). These events or demands, which are commonly referred to as *stressors*, reflect an athlete's environmental conditions and potential sources of strain. Over the past fifteen years or so, qualitative research has unearthed a wide range of "sources of stress" in sport performers (e.g., Campbell and Jones, 2002b; Giacobbi, Foore, and Weinberg, 2004; Giacobbi, Lynn, Wetherington, Jenkins, Bodendorf, and Langley, 2004; Gould, Jackson, and Finch, 1993; Holt and Hogg, 2002: James and Collins, 1997; Noblet and Gifford, 2002; Park, 2004; Scanlan, Stein, and Ravizza, 1991; see also Dugdale, Eklund, and Gordon, 2002). Collectively, the stressors identified in these studies were associated with competitive performance (e.g., opponents), the sport organization within which the athlete was operating (e.g., finances), and personal "nonsporting" life events (e.g., family).

Of course, sport performers don't just talk of "being under stress"; they also speak of actually "being stressed". This phrase refers not so much to environmental stimuli but an athlete's responses to such demands. The origins of response-based definitions of stress can be found in physiology and medicine (Hinkle, 1973; Mason, 1975). In the 1930s and 1940s, Hans Selye (1936, 1946) introduced the notion of stress-related illness in terms of the general adaptation syndrome (GAS), proposing that stress is a nonspecific response of the body to a demand. The stages of response described within the GAS are: alarm, resistance, and exhaustion. The alarm stage is essentially analogous to what Cannon (1914, 1915, 1929, 1932, 1935) labeled the emergency reaction, or "fight or flight" response, involving a neuroendocrine reaction to mobilize the body physiologically for action. In short, this approach considers stress as a person or dependent variable.

Response-based conceptualizations of stress are also popular among sport psychologists (see, e.g., Franks, 1994; Kellmann and Kallus, 2001; Tenenbaum, Jones, Kitsantas, Sacks, and Berwick, 2003a, 2003b). This perspective was reflected in two independent interview studies conducted with figure skaters, which adopted the following definition of stress:

> When we discuss stress or pressure now, I am referring to the negative emotions, feelings, and thoughts that you might have had with respect to your skating experience. These would include feelings of apprehension, anxiety, muscle tension, nervousness, physical reactions (such as butterflies in the stomach, shaking, or nervous sweating), thoughts centered on worry and self-doubt, and negative statements to yourself. (Gould, Jackson, and Finch, 1993, p. 136; Scanlan et al., 1991, p. 105; see also Giacobbi et al., 2004; James and Collins, 1997)

At this juncture it is interesting to note that Selye (1950, 1956), in developing his ideas on stress, actually attempted to apply the previously mentioned analogy from physics and engineering, where stress represents the stimulus and strain the response. But Selye, who was an Austro-Hungarian, misunderstood the English terminology and labeled a person's response as "stress", thereby spoiling the analogy and – to his later regret – causing confusion as to whether stress should be conceived as a stimulus or a response (Selye, 1973, 1975, 1976a, 1976b, 1976c; see also Levi, 1996, 1998). In some instances, sport psychologists appear to have circumvented this ambiguity by essentially operationalizing stress as *both* a stimulus and a response. For example, the "sources of stress" research noted earlier typically included performers' competitive anxiety responses, such as worries and doubts, under the rubric of "sources of stress". Smith, Smoll, and Wiechman (1998) summarized this approach in their review of anxiety in sport:

> The term *stress* is used in two different but related ways. First, it is used in relation to situations (termed "stressors") that place significant demands on the organism… The second use of the term stress refers to the responses of individuals to stressors… including aversive emotional states, such as anxiety, depression, and anger. (pp. 105-106)

Regardless of whether one conceptualizes stress as a stimulus, a response, or both, there are a number of limitations associated with these approaches (Appley and Trumbull, 1986; Cooper et al., 2001; Cox, 1978, 1985, 1990; Lazarus and Folkman, 1984; Lazarus and Launier, 1978; Mason, 1975). First, they largely overlook individual differences that account for the fact that responses to stimuli do not always follow the same pattern. Much of this

drawback can be summed up by the observation that two sport performers in a similar situation, such as a conflict with management, will often react in different ways. Second, by focusing on the distinct components of what is an ongoing process they tend to draw attention away from the process itself. Hence, researchers can only conclude that demands have the *potential* to result in strain or that responses *may* be a negative reaction to a stressor. A stimulus or response can only be regarded as a stressor or strain when the two components are considered in relation to one another. Third, these approaches fail to fully capture the dynamics of the overall stress process. It is the relationship between the person and the environment, and the psychological processes that underpin this relationship, which are pivotal in understanding the nature of stress.

In spite of these shortcomings, some scholars (e.g., Hobfoll, Schwarzer, and Chon, 1996) have argued that a key strength of stimulus and response-based definitions is their impact on research designs which, as a result, are able to rely on empirical observations rather than inferences of abstract processes. Indeed, studies that have adopted this paradigm have generated a substantial amount of information relating to the stressors encountered by sport performers and the nature of their responses to these demands. Such an approach is insightful and necessary; however, it is important that researchers continue to progress by exploring the complex relationship that exists between a person and the environment (Lazarus, 1999; Woodman and Hardy, 2001b). Recent efforts in sport psychology to examine this relationship have tended to focus on the notion of *interaction*.

Stress as an Interaction

The interactional approach to defining stress emphasizes the interaction between a person and the environment (Appley and Turmbull, 1967). As sport psychology researchers have recognized the limitations of stimulus and response-based conceptualizations, they have increasingly used the term “interaction” to describe their perspective of stress (see, e.g., Anshel, Kim, Kim, Chang, and Eom, 2001; Campbell and Jones, 2002b; Fletcher and Hanton, 2003b; Holt and Dunn, 2004; Jones, 1990, 1991; Jones and Hanton, 2001; Kelley, 1994; Kelley, Eklund, and Ritter-Taylor, 1999; Kelley and Gill, 1993; Martens, 1971; Martens, Vealey, and Burton, 1990; Martin, Kelley, and Dias, 1999; Martin, Kelley, and Eklund, 1999; Vealey, Udry, Zimmerman, and Soliday, 1992; Woodman and Hardy, 2001a). In statistical terms, an interaction refers to the combined effect of two (or more) independent variables on a dependent variable. Hence, interaction implies a cause and effect, whereby the person and the environment give rise to cognitive-emotional reactions but nonetheless maintain their distinctiveness (Appley and Turmbull, 1986; Lazarus, 1966; Lazarus and Folkman, 1984). The causal variables are considered detachable structural components which remain unchanged and independent of each other during their interaction. However, although interaction is certainly relevant, it is also important to recognize that during stressful encounters the person and the environment can, and often do, mutually affect one another (Lazarus, 1981; Lazarus and Launier, 1978). Furthermore, the meaning the person construes from his or her relationship with the environment occurs at a higher level of abstraction than the distinct variables themselves. Therefore, in addition to interaction, sport psychologists need to consider the dynamics of *transaction* and *relational meaning*.

Stress as a Transaction and the Notion of Relational Meaning

Transactional definitions of stress are less focused on the specific components of an interaction and more concerned with the psychological processes – such as the cognitive-motivational-relational concepts of appraisal and coping – that underpin an encounter (cf. Dewey and Bentley, 1949; Lazarus and Launier, 1978). Stress is viewed as an ongoing transaction between the environmental demands and a person's resources, with strain resulting from an imbalance between these demands and resources (Cox, 1978, 1985; McGrath, 1970; Lazarus and Folkman, 1984). Rather than implying static relationships involving statistical correlations between variables, Lazarus (1998) argued that the term transaction adds meaning to a person's interaction with his or her environment:[1]

> *Transaction*… is much more than interaction… [it] brings the causal variables together at a higher level of abstraction; namely, the relational meaning constructed by the individual who is confronted by (or selects) a particular environment. (p. xix)

Contemporary definitions adopting a transactional perspective emphasize that stress neither resides in the person nor the environment, but in the relationship between the two (Lazarus, 1981). It is conceived as a dynamic cognitive state reflecting a person's continuous transaction with his or her environment. Hence, in the study of organizational stress in sport, researchers should focus their attention on the critical issues surrounding, and cognitive processes underpinning, a performer's relationship with his or her sport organization. What distinguishes this approach from others is the importance it places on the ongoing process – in particular those features that link the components of the process – and its emphasis on the reciprocal and adaptive nature of the process itself (Aldwin, 2000; Cooper et al., 2001).

The transactional perspective recognizes the recursive principle that a person, the environment, and psychological reactions all mutually affect one another. Relevant here is cybernetics theory (Ashby, 1966; Weiner, 1948), which states that cognitive functioning involves the processing of information and use of feedback to control purposeful behavior. This process essentially represents a homeostatic mechanism operating to maintain a state of equilibrium where behavior is directed at reducing deviations from a specific goal-state (Carver and Scheier, 1981, 1985; Cummings and Cooper, 1979, 1998; Edwards, 1992, 1998; Kagan and Levi, 1975; Latack, Kinicki, and Prussia, 1995; Levi, 1998; McGrath, 1976; Miller, Galanter, and Pribram, 1960; Powers, 1973; Tapp, 1985). Hence, a transactional approach suggests that while environmental demands and personal characteristics combine to influence how sport performers might react to a situation; how they react will, through the processes of coping and adaptation, in turn, affect environmental conditions, personal resources, and future reactions.

Sport psychologists have recognized for some time now the concept of stress as a process (see, e.g., Craft, Magyar, Becker, and Feltz, 2003; Dugdale et al., 2002; Gill, 1994, 2000; Gould, 1987; Gould and Krane, 1992; Jones, 2002; Martens, 1977; Martens et al., 1990; Passer, 1982; Spielberger, 1989; Tenenbaum et al., 2003a, 2003b; Wrisberg, 1994). However,

[1] In elaborating on the difference between *interaction* and *transaction*, Lazarus (1999) made an enlightening analogy with the terms *perception* and *apperception*; to apperceive is to consider the implications of and add meaning to what is perceived.

the term *transaction*, despite making some sporadic appearances in the literature (i.e., Gill, 1994; Rotella and Lerner, 1993; Smith, 1985, 1986) and becoming well established in mainstream psychology, has generally been overlooked by our field. We suspect this has been largely due to the ascendance of interactional definitions, which is unfortunate because, as noted above, the term "interaction" fails to truly capture the essence of the stress experience (Lazarus, 1990). Nevertheless, transactional conceptualizations have made a recent resurgence (see Anshel, Jamieson, and Raviv, 2001; Campbell and Jones, 2002b; Dugdale et al., 2002; Giacobbi, Lynn et al., 2004; Gill, 2000; Hammermeister and Burton, 2001; Holt and Hogg, 2002; Jones, 2002; Kim and Duda, 2003; Tenenbaum et al., 2003a), a trend that needs to continue if significant advances are to be made in the study of stress in sport (Fletcher and Hanton, 2003a; see also Hanton et al., 2005).

Inherent in transactional definitions of stress is the notion of relational meaning, which focuses on the meaning a person construes from his or her relationship with the environment (Lazarus, 1991b, 1998; Lazarus and Launier, 1978). In his recent work, Lazarus (2000c) cited relational meaning as the "conceptual bottom line" (p. 665) of his approach and arguably the most appropriate term to describe the overall dynamics of the stress process:

> Because of confusion between what interaction and transaction are all about, it is better to use the term *relational meaning*, as it is construed by the person… Psychology needs to develop a new conceptual language. Instead of the traditional stimulus and response phraseology, which implies that the two terms are separable, we need a language of relationships. (Lazarus, 1999, p.13)

In line with the assumptions underlying the transactional paradigm, relational meaning is not found in the environment or person alone. It takes the conjoining of both environmental demands and personal characteristics to generate cognitive-evaluative reactions and ascribe meaning to an encounter. Sport psychology researchers have yet to truly espouse the notion of relational meaning (Lazarus, 2000a, 2000b). However, its overarching importance in the stress process would suggest that it offers considerable potential for furthering theory and practice in our field (Fletcher and Hanton, 2003a; see also Hanton et al., 2005).

Definitions of Stress-Related Constructs

Stress has proved to be a heuristic but vague construct in the field of sport psychology; hence, careful consideration has been given here to defining organizational stress before considering theoretical issues in this area. Whilst it is important that conceptualizing stress does not become an onerous initiation for investigators, the key message to emerge from the definitional debate is that it is not just an obligatory exercise in semantics. As Cooper et al. (2001) pointed out, operational definitions have a fundamental impact on the nature and direction of theory and research. Furthermore, researchers in this area have a moral obligation to define stress so that they capture the experiences of those whose lives they wish to investigate. In line with the transactional perspective of stress, this review adopts the following conceptual definitions (cf. Cooper et al., 2001; Fletcher and Hanton, 2003a):

- *Stress*: an ongoing process that involves individuals transacting with their environments, making appraisals of the situations they find themselves in, and endeavoring to cope with any issues that may arise (adapted from Lazarus, 1998, 1999).
- *Stressors*: environmental demands (i.e., stimuli) encountered by an individual.
- *Strain*: an individual's negative psychological, physical and behavioral responses to stressors.

Stressors, therefore, are events, situations or conditions, and *strain* is a person's negative reaction to stressors. The term *stress* should not be used to describe specific components of the transaction between the person and the environment (Lazarus, 1990), but rather to represent the overall process incorporating stressors, strains, appraisals and coping responses. Consequently, the tautology "sources of stress" should be avoided since stress already encapsulates the sources of this process (i.e., stressors); however, the term *sources of strain* may be useful when referring to those stressors that give rise to negative responses. In extending these conceptualizations, we propose the following organizational stress-related definitions (cf. Cooper et al., 2001; Fletcher and Hanton, 2003a):

- *Organizational stress*:[2] an ongoing transaction between an individual and the environmental demands associated primarily and directly with the organization within which he or she is operating (adapted from Woodman and Hardy, 2001a).
- *Organizational stressors*:[3] environmental demands (i.e., stimuli) associated primarily and directly with the organization within which an individual is operating.
- *Organizational strain*: an individual's negative psychological, physical and behavioral responses to organizational stressors.

As alluded to in the introduction of this chapter, identifying issues associated with an organization is rarely straightforward due to the complex nature of the social and organizational environment. It may, therefore, be more operationally useful to consider what is *not* deemed organizational stress. Those issues not normally directly related to the organization, such as demands associated primarily with competitive performance (e.g., opponents) and personal "nonsporting" life events (e.g., family), should not be considered aspects of the organizational stress process (cf. Fletcher and Hanton, 2003a, 2003b; Hanton et al., 2005; Woodman and Hardy, 2001a).

[2] In mainstream psychology, the term *organizational stress* is often used interchangeably with "occupational stress", "workplace stress", and "job stress". We suggest the later terms are perhaps best avoided in a competitive sport context because of the ambiguity often surrounding professional/amateur performers and paid/voluntary personnel that function within sport organizations.

[3] It is worth noting that some organizational psychologists have proposed the term "psychosocial hazards" in preference to *stressors* (and "sources of stress"). This is to bring stress terminology more in line with legislation which governs psychological health at work and the requirements it places on employers relating to risk assessment and the monitoring and control of hazards (see, e.g., Cox, 1993; Rick and Briner, 2000; Rick, Briner, Daniels, Perryman, and Guppy, 2001).

A META-MODEL OF STRESS, EMOTIONS AND PERFORMANCE

The preceding commentary has focused on conceptual and operational issues relating to organizational stress in competitive sport. It is important, however, that definitional debate eventually gives way to a more theoretical- or model-based discussion that provides some insight to help guide inquiry (cf. Popper, 1959). Of course, for theories to aid understanding they require a sound conceptual basis from which models can arise. To this end, scholars have urged researchers investigating stress to employ theoretical models that reflect the sequence of events in transactions (e.g., McGrath, 1970, 1976) and the meaning a person construes from his or her relationship with the environment (e.g., Lazarus, 1998, 1999). Without this conceptual grounding, it is difficult to develop a robust body of knowledge because there are no defined boundaries to be supported or refuted (Cook and Campbell, 1979).

In most instances, theories emerge from a combination of personal intuition, systematic observation, and analytical thinking (Siegrist, 1998). They are conceived to identify those critical components within complex realities that determine outcomes. Gall, Borg, and Gall (1996) defined theory as "an explanation of a certain set of observed phenomena in terms of a system of constructs and laws that relate these constructs to each other" (p. 8). Theoretical models are, therefore, instrumental in illustrating causal relationships among concepts and explaining or predicting variance in observations. They provide not only a platform upon which rational planning can occur but also stimulate systematic lines of inquiry (Levanthal, 1997).

Given the somewhat belated recognition of organizational stress in sport, it is perhaps not surprising that psychologists' understanding of the relationships among organizational stressors, emotional responses, and athletic performance remains limited (Fletcher and Hanton, 2003a). Interestingly, it is also worth noting that while competitive stress researchers have investigated the anxiety-performance relationship in some detail, most of the theoretical models in this area offer little or no explanation of *how* and/or *why* stress-related constructs might affect sport performance (Woodman and Hardy, 2001b). The juxtaposition of these points stimulated Fletcher and Fletcher (2004, 2005) to extensively review the approaches adopted by models which have provided the theoretical context for investigating stress. Following a synthesis of pertinent mainstream and sport psychology theories, they developed a meta-model outlining the relationships among stress, emotions and performance (see Figure 1). It was described as a "meta-model" for a number of reasons. First, it offered a supraordinate and integrative perspective of the stress process and its relationship with human performance. Second, it subsumed the fundamental assumptions and relationships consistent throughout existing theoretical work in this area. Third, it was designed to accommodate the psychological processes that underlie performers' responses to any conceivable situation, thereby encompassing competitive, organizational and personal stressors. Finally, it was intended that it would provide a high degree of explanatory potential for any person functioning in a demanding "performance" environment. Such persons might include athletes, business managers, performing artists, public speakers, and emergency and armed service personnel.

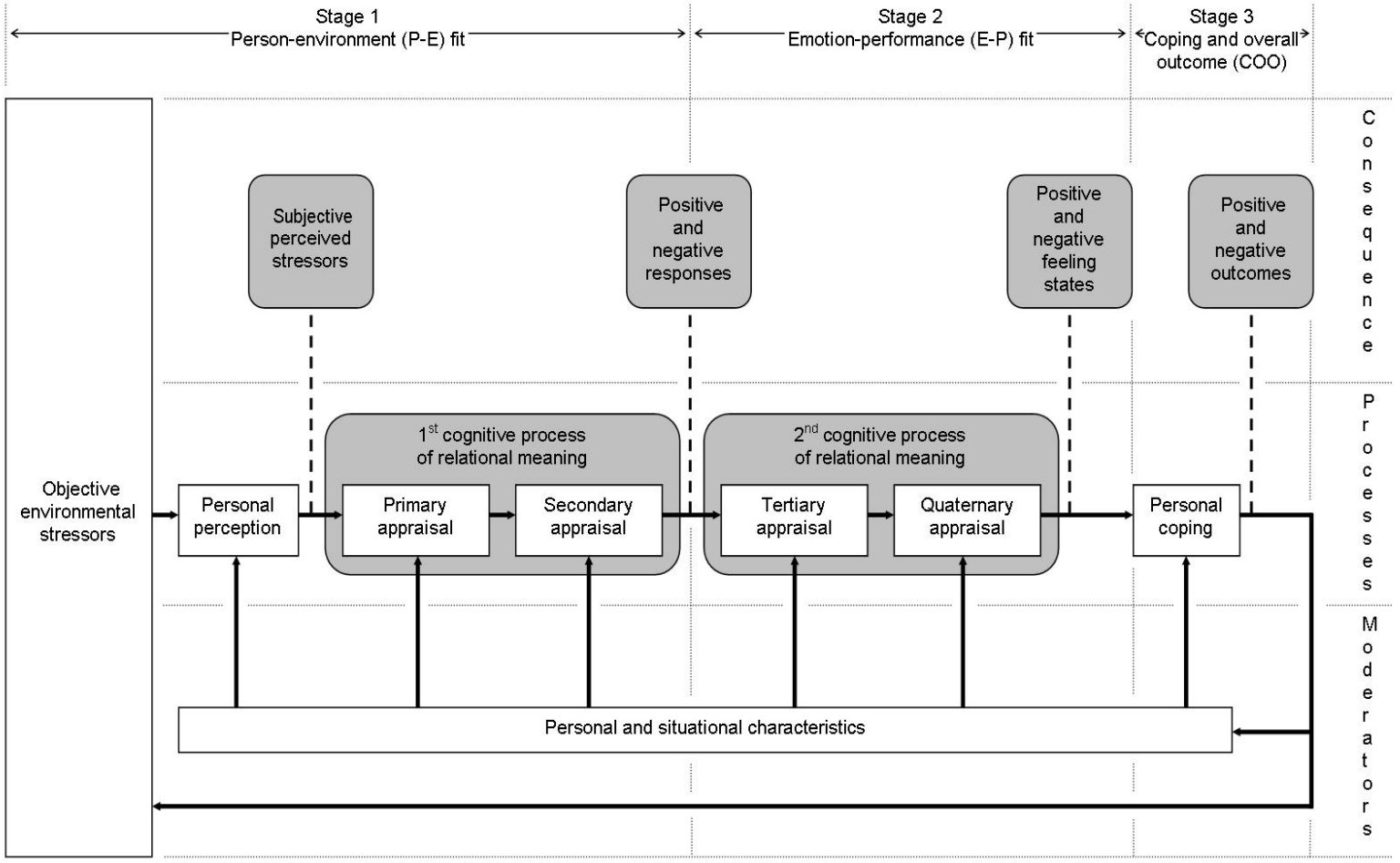

Figure 1. A meta-model of stress, emotions and performance (reproduced with permission from Fletcher and Fletcher, 2004, 2005).

To the best of our knowledge, the meta-model is the first theoretical explanation that was conceived to be readily applicable to the study of organizational stress-related constructs in sport performers. The model's conceptual foundations, theoretical framework, practical implications, and research directions have been discussed in detail elsewhere (see Fletcher and Fletcher, 2004, 2005; Fletcher and Hanton, 2004; see also Mellalieu et al., this volume). This section, therefore, provides an overview of these aspects as they relate to stress in sport organizations.

Conceptual Foundations

Prominent in the development of the meta-model was Lazarus' cognitive-mediational-relational theory of emotions (Lazarus, 1991b, 1993, 1998, 1999, 2000a). Lazarus' theory is based around the notion of relational meaning and the evaluative process of appraisal. According to the theory, relational meaning is the cognitive foundation of emotion, where emotions are the response to appraisal mechanisms. Put simply, the theory relates to how a person thinks about what is happening and how he or she reacts.

In addition to Lazarus' theory, the meta-model drew from the following models from mainstream psychology: the person-environmental (P-E) fit model of stress (Edwards, 1991; French, Rogers, and Cobb, 1974); the stress cycle model (McGrath, 1976); the facet model of occupational stress (Beehr, 1998; Beehr and Newman, 1978; Newman and Beehr, 1979); the cybernetic model of workplace stress (Cummings and Cooper, 1979, 1998; Edwards, 1992, 1998); the job demands-control model of stress (Karasek, 1979); the general systems model of stress (Cox and McKay, 1981); a model of stress and human performance (Sanders, 1983); and the control theory of the job stress process (Spector, 1998). This selection of models was by no means exhaustive, but it did serve to identify a number of common features that reflect the assumptions underpinning contemporary stress theory. Several points of convergence were highlighted, in particular the notion that stress entails a sequence of events that includes: (a) the presence of demands; (b) a set of cognitive processes through which demands are evaluated; and (c) the generation of responses to demands (cf. Cooper et al., 2001; Kahn and Byosiere, 1992). Much of this work is based on the fundamental premise that strain occurs when there is an imbalance or misfit between the environmental demands and personal resources.

The above theories were supplemented with the following models from sport psychology: the notion of directional anxiety interpretations (Jones, 1991; 1995a, 1995b); a conceptual model for integrating arousal construct terminology (Gould and Krane, 1992); a control model of debilitative and facilitative competitive state anxiety (Jones, 1995b); the application of Hanin's individual zones of optimal functioning model to emotions and athletic performance (Hanin, 1997); a model illustrating factors that affect the arousal-performance relationship (Landers and Boutcher, 1998); the application of Lazarus' cognitive-mediational-relational theory of emotions to sport (Lazarus, 2000a, 2000b); and a basic model of stress and coping (Jones, 2002). Although their terminology often differs, these models share a number of key theoretical themes which contributed to the development of the meta-model. Most of these theories are generally congruent with those from mainstream psychology in that they place an emphasis on some kind of cognitive-evaluative process. However, what often

distinguishes this work from the previously mentioned models is the attention they give to the relationship between emotions – particularly anxiety – and performance.

Theoretical Framework

The meta-model itself offers a theoretical explanation of the relationships among stress, emotions and performance (see Figure 1). The basic premise being that stressors arise from the environment the performer operates in, are mediated[4] by the processes of perception, appraisal and coping, and, as a consequence, result in positive or negative responses, feeling states, and outcomes. This ongoing process is moderated by various personal and situational characteristics. The meta-model can be divided into three main theoretical stages: (a) person-environment (P-E) fit; (b) emotion-performance (E-P) fit; and (c) coping and overall outcome (COO).

Stage 1: Person-environment (P-E) Fit

This stage focuses on the notion of P-E fit, which is either explicitly or implicitly common to most contemporary theories of psychological stress. It proposes that strain arises not from the person or environment separately, but rather by their misfit or incongruence with one another (Caplan, 1983, 1987a, 1987b; Caplan and Harrison, 1993; Caplan, Cobb, French, Harrison, and Pinneau, 1975; Edwards, 1991, 1996; Edwards, Caplan, and Harrison, 1998; French, Caplan, and Harrison, 1982; French, Rogers, and Cobb, 1974; Harrison, 1978, 1985; Kulka, 1979). Hence, the main point here relates to an individual's ability to manage an encounter, which, of course, represents the essence of a transactional process. Central to this stage are personal perception and an (initial) cognitive process of relational meaning involving the appraisal of stressors resulting in emotional responses.

Before proceeding, it is important to note the distinction between the processes of personal perception and cognitive appraisal, which is a difference seldom stated in the extant literature (Lazarus, 1999). Perception refers to a person's *awareness* of the environment they are operating in and is filtered, modified and supplemented by perceptual distortions (e.g., repression, denial, illusion), construction processes (Weick, 1979), social information (Salancik and Pfeffer, 1978), information processing capabilities (March and Simon, 1958), and organizational structures with limited access to objective information (Caplan, 1987b; Harrison, 1978). Appraisal (or apperception), which will be discussed in more detail later, refers to a person's cognitive *evaluation* of the meaning and significance of a perceived demand (Lazarus, 1966).

Following on from this point, another important distinction is made between objective and subjective representations of environmental stressors (Parasuraman and Alutto, 1981; Spector, 1998, 1999). Objective stressors include competitive, organizational and personal demands as they exist independent of the person's perceptions, whereas subjective stressors refer to those demands that are perceived by the person. Environmental stressors have

[4] A *mediator* is defined as a variable that "accounts for the relation between the predictor and the criterion" (Baron and Kenny, 1986, p. 1176). A mediator, therefore, provides a link between one variable and another. In contrast, a *moderator* is a variable that "affects the direction and/or strength of the relation between an independent or predictor variable and a dependent or criterion variable" (Baron and Kenny, 1986, p. 1174). That is, some third factor that exerts an influence on the correlation between two variables.

commonly been conceived by scholars as major life events (see, e.g., Dohrenwend and Dohrenwend, 1974; Holmes and Rahe, 1967; Sarason, Johnson, and Siegel, 1978; Turner and Wheaton, 1995) and daily hassles (see, e.g., Eckenrode and Bolger, 1995; Kanner, Coyne, Schaefer, and Lazarus, 1981; Lazarus, 1984b; Monroe, 1983). Over the past few decades, researchers have attempted to measure and study these phenomena within a sport context (e.g., Albinson and Pearce, 1998; Bramwell, Masuda, Wagner, and Holmes, 1975; Hamilton, Hamilton, Meltzer, Marshall, and Molnar, 1989; Passer and Seese, 1983; Rushall, 1987, 1990; Williams, Tonymon, and Andersen, 1991). Regarding major life events, recent studies have identified the organizational structure and climate as a significant factor affecting elite performers' preparation for, and performance in, the Olympic Games (Gould, Guinan, Greenleaf, Mudbery, and Peterson, 1999; Pensgaard and Duda, 2002). From a slightly different perspective, the role of daily hassles in the development of overtraining syndrome in athletes has also been investigated (Kentta and Hassmen, 1998; Meehan, Bull, Wood, and James, 2004). These findings are particularly interesting in the context of this review because they suggest that both major and relatively "minor" organizational-related events can have a significant impact on athletes' well-being and performance.

The initial work investigating organizational stress in sport did not begin with a clearly defined conceptualization or theoretical model. Indeed, the research did not even begin with a focus on organizational stress at all. Rather, it emerged from the studies mentioned earlier examining "sources of stress" in sport performers (i.e., Gould, Jackson, and Finch, 1993; Scanlan et al., 1991; see also Campbell and Jones, 2002b; Dugdale et al., 2002; Giacobbi, Foore et al., 2004, Giacobbi, Lynn et al., 2004; Holt and Hogg, 2002: James and Collins, 1997; Noblet and Gifford, 2002; Park, 2004). This empirical work revealed a wide range of stressors, including a significant number associated with the sport organization within which the athlete was operating (Hardy and Jones, 1994; Hardy et al., 1996; Jones, 1995b). Stressors identified were broadly related to the following areas: preparation and performance problems; judges decisions and competition organization; coach and teammate influences; coaching, managerial, and administrative decisions; social support; accommodation, travel, nutrition, and training facilities; and financial and time pressures.

Given the likely prominence of sub-optimal group dynamics within these areas, Woodman and Hardy (1998, 2001a) developed a theoretical framework of organizational stress in sport based on Carron's (1982) model of group cohesion. This framework represented the first theoretical inroad into the study of organizational stressors in athletes and highlighted four main stress-related areas: environmental issues, personal issues, leadership issues, and team issues (cf. Carron, 1982). In developing their work, Woodman and Hardy (2001a) interviewed elite performers from a single sport with regard to the organizational stressors they encountered in preparation for major international competitions. The main environmental issues identified were: selection, the training environment, and finances. The main personal issues were: nutrition, injury, and goals and expectations. The main leadership issues were: coaches, and coaching styles. The main team issues were: team atmosphere, support network, roles, and communication. Fletcher and Hanton (Fletcher, 2001; Fletcher and Hanton, 2003b; Hanton et al., 2005) provided considerable support for these findings with samples from a wide range of sports. They also identified a number of additional environmental issues: accommodation, travel, competition environment, and safety. Interestingly, the primary focus of Hanton et al.'s study was the comparison of organizational stressors with competitive stressors in elite performers. Contrary to what the wider literary

context might suggest, they found that this population appears to experience (and recall) more stressors associated primarily and directly with the sport organization than with competitive performance. Furthermore, they appear more likely to mention varied organizational stressors but similar competitive stressors, probably because the former are essentially extraneous and widely distributed whereas the latter are, by definition, inherent and endemic to elite sport.

This recent line of inquiry has highlighted organizational stress as an important research domain in contemporary sport psychology and has also provided consultants with a wide range of stressors that athletes' encounter. However, the application of Carron's (1982) model of group cohesion to organizational stress has raised some concerns relating predominately to: (a) the subsequent bias of the framework toward interpersonal dynamics, and (b) the appellation of the different categories within the structure (Fletcher and Hanton, 2003a; see also Bringer, Johnston, and Brackenridge, 2004). In an attempt to overcome these limitations and avoid premature theory building in this area, Fletcher and Hanton (2003a) proposed an alternative framework of organizational stressors in sport performers (see Figure 2). The conceptual foundations of this structure were derived from recent research developments in the fields of organizational behavior (see, for a review, Cooper et al., 2001) and sport psychology (e.g., Fletcher and Hanton, 2003b; Hanton et al., 2005). Specifically, the framework consists of a three-level hierarchical structure of organizational stressors. Based on Cooper et al.'s work, five general dimensions were identified: factors intrinsic to the sport; roles in the sport organization; sport relationships and interpersonal demands; athletic career and performance development issues; and, organizational structure and climate of the sport. Preliminary evidence for the conceptual integrity of the new framework was recently presented in an exploratory study with high-level performers (Hanton and Fletcher, 2003) and a brief report which reflected on potential stressors within each dimension (Hanton and Fletcher, 2005).

While stressors are clearly a salient feature of sport performers' lives, they only reflect one component of the stress process and say little about the evaluative mechanisms underling an encounter. The cognitive process of appraisal is pivotal here (Arnold, 1960; Grinker and Spiegel, 1945; Lazarus, 1964, 1966; Speisman, Lazarus, Mordkoff, and Davison, 1964). As mentioned earlier, appraisal relates to how a person evaluates his or her transactions with the environment. People constantly evaluate the significance of what is happening with respect to its implications for well-being and what might be done about it. In the context of organizational stress in sport, cognitive appraisal involves evaluating the relevance of a stressor, for example a conflict with management, and its personal significance for well-being. If the conflict is considered meaningful, the performer then evaluates whether he or she has the sufficient personal resources available to cope with the stressor. Situational variables that influence the appraisal process include demands, constraints, opportunities and culture. Personal variables include goals and goal hierarchies, beliefs about self and world, and personal resources (Lazarus, 1998, 1999).

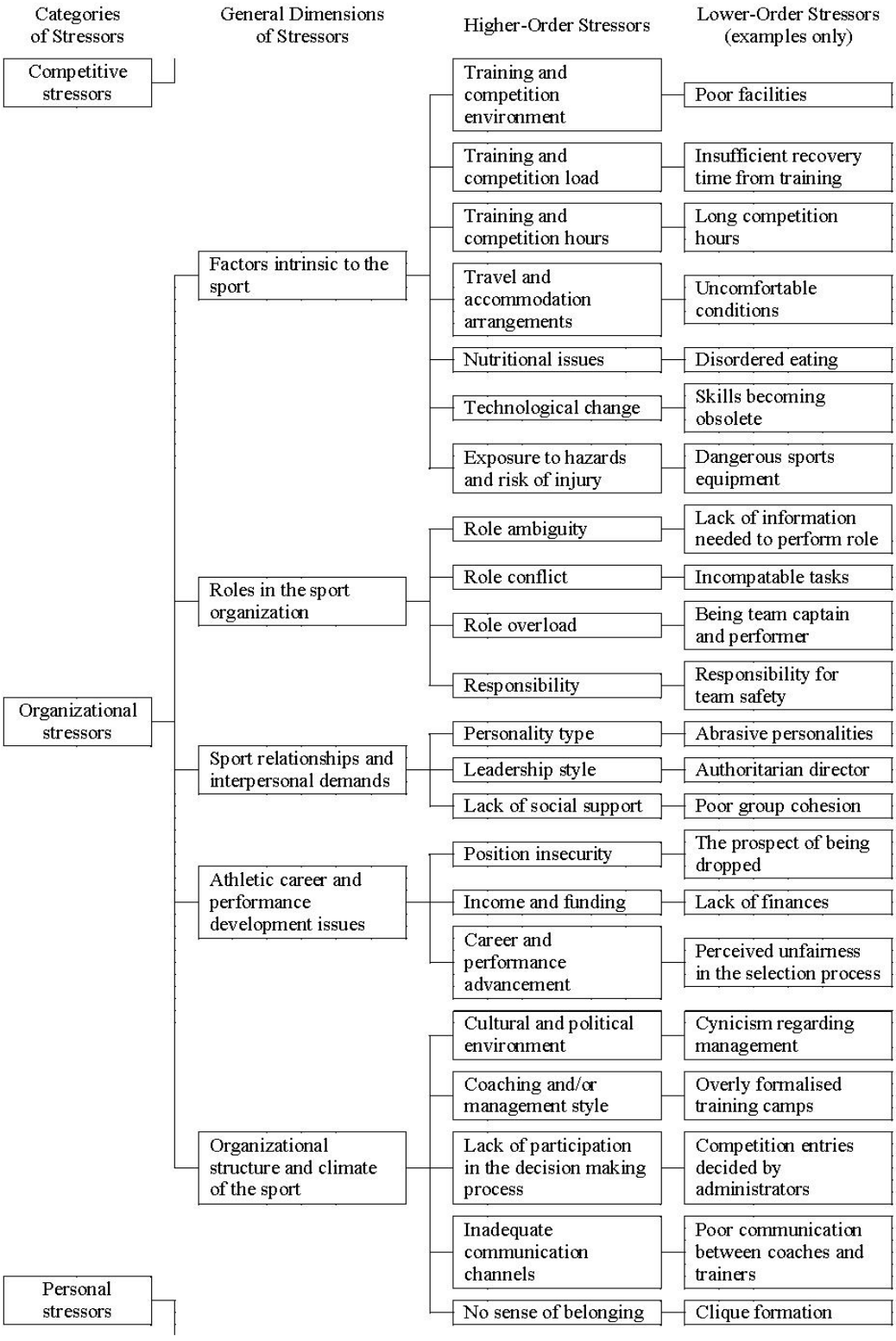

Figure 2. A conceptual framework of organizational stressors in sport performers (adapted with permission from Fletcher and Hanton, 2003a; Hanton and Fletcher, 2003, 2005).

According to Lazarus' (1966) original theory of psychological stress, there are two types of appraisal: primary and secondary. Primary appraisal involves the evaluation of an encounter with regard to whether or not it is relevant to one's values, goal commitments, beliefs about self and world, and situational intentions. During this process, a person considers the implications of what is at stake ("how does this affect me?"), thus giving meaning to an encounter. The meanings that best express a stressful encounter are those involving harm/loss, threat and challenge (Lazarus, 1966, 1981; Lazarus and Folkman, 1984; Lazarus and Launier, 1978). It is important to note that these categories can occur simultaneously in a transaction and should, therefore, only be separated for the convenience of analysis. The term "primary" is used because if the encounter is considered meaningless there is no potential for further cognitive processes. Secondary appraisal begins if meaning is ascribed to an encounter. This process is concerned with the identification and availability of coping resources to deal with the harm/loss, threat and challenge ("what can I do about this?"). Lazarus (1999) emphasized a number of points concerning this stage of the process. First, this mechanism is nothing more than an evaluation of coping options and is not actually the initiation or implementation of coping strategies. Second, the term "secondary" is not intended to connote a process of less importance, but rather an evaluative reaction to the identification of a significant encounter.

Over the past few decades a substantial amount of mainstream psychology research has supported the fundamental premise of Lazarus' appraisal-centered theory of stress and coping (see, for a list of studies, Lazarus, 1999). This literature is supplemented by a growing number of studies in sport psychology that have investigated athletes' appraisals (e.g., Anshel, Jamieson et al., 2001; Campbell and Jones, 2002a; Dugdale et al., 2002; Hammermeister and Burton, 2001; Holt and Dunn, 2004; Kim and Duda, 2003; Lewthwaite, 1990). While this line of inquiry did not specifically examine cognitive-evaluative reactions to organizational stressors, its findings do suggest that such mechanisms may play an important role in this process in sport. For example, Anshel, Jamieson et al. (2001) found that performers who were criticized or reprimanded by a coach reported high levels of threat, moderate levels of harm/loss, and low levels of challenge appraisals. Other research has shown that some anxious endurance athletes evaluate adverse environmental conditions as particularly threatening (Hammermeister and Burton, 2001). In a study of elite male wheelchair basketball players, Campbell and Jones (2002a) found that the demands or costs of the sport, negative coach style/behavior, and relationship issues were more negatively appraised (i.e., threat or harm/loss) than other sources of stress. Other elite performers evaluated unexpected stressors as more threatening than expected stressors (Dugdale et al., 2002), particularly selection-related issues (Holt and Dunn, 2004). Collectively, these findings indicate that the cognitive mechanism of appraisal is central in determining how sport performers react to the stressors they encounter (cf. Anshel, Kim et al., 2001; Burton, 1998; Burton and Naylor, 1997; Gill, 1994; Rotella and Lerner, 1993; Tenenbaum et al., 2003a; see also Anderson and Williams, 1988; Smith, 1980, 1985, 1986).

In developing his theory, Lazarus (1991b, 1993, 1995, 1999; Lazarus and Lazarus, 1994) has increasingly emphasized the role of appraisal in generating emotions, a trend which has been reflected in the sport psychology literature (Gill, 2000; Lazarus, 2000a; Vallerand and Blanchard, 2000; see also Gill, 1994; Gould and Urdy, 1994; Jones, 1995b; Vallerand, 1983). According to this perspective, how a person evaluates a stressor will determine whether or not he or she exhibits a strain reaction. It is generally accepted that there are three major

categories of possible stress responses or strain: physiological, psychological and behavioral (Cooper et al., 2001; Kahn and Byosiere, 1992). For the reminder of this subsection we focus on psychological responses; not because they are necessarily the primary or most frequent reactions to organizational stressors, but because of the available space and central focus of this book.

Particularly prominent within this category of responses are the emotions and their associated cognitive and somatic symptoms. Theorists have commonly attempted to classify emotions based upon their affective tone or valence (see, e.g., Ekman, Friesen, and Ellsworth, 1982; Izard, 1977; Lazarus, 1993). Lazarus (1995), for instance, proposed 15 discrete emotions which he grouped together under three main headings: positive emotions (i.e., happiness, pride, relief, love), negative emotions (i.e., anger, anxiety, guilt, shame, sadness, envy, jealousy, disgust), and mixed emotions (i.e., hope, compassion, gratitude). Each emotion "tells a different tale" about how a person appraises the environmental demands he or she encounters (Lazarus, 1999). Factors that influence the generation of emotions include goal relevance, goal congruence, type of ego involvement, options for coping, coping potential, and future expectations. In a recent excursion into the sport psychology literature, Lazarus (2000b) selected a number of emotions (i.e., anger, anxiety, guilt, relief, happiness and pride) that he considered most important in competitive sport and discussed their influence on athletic performance.

Given that models of stress are essentially theories about emotion (Lazarus, 1993), it is perhaps somewhat surprising that the study of emotions within an organizational context is sparse. Indeed, Pekrun, and Frese (1992) began their review of emotions in work and achievement by stating that "there is little research that speaks directly to the issue of work and emotions… organizational psychology *ought* to take the issue of emotions at work more seriously" (p. 153). A number of reasons have been posited for this lack of interest (see, e.g., Briner, 1995; Cooper et al., 2001; Wright and Doherty, 1998). First, in their search for the happy and productive worker, researchers have frequently confounded emotions (e.g., happiness) with attitudes (e.g., job satisfaction). Second, a "myth of rationality" appears to persist whereby behavior is largely viewed in rational-cognitive terms and emotions are regarded as something of an inconvenience. Finally, of all the possible responses to stressors, emotions may be the most difficult to measure and study.

Within the field of sport psychology, there has been a recent surge of theoretical and empirical interest in the topic of emotions (see, e.g., Cerin 2003; Cerin, Szabo, Hunt, and Williams, 2000; Cerin, Szabo, and Williams, 2001; Gauvin and Spence, 1998; Hanin, 1993, 1997, 2000; Mellalieu, 2003; Pensgaard and Duda 2002, 2003; Robazza, this volume). This has served to establish the importance of the emotions in sport and their potential affect on athletes' well-being and performance. This attention has, however, tended to focus on competitive issues as the antecedents of emotional responses. In one of the few published examples of an organizational antecedent, Pensgaard and Duda (2002) relate an occasion when an Olympic champion reacted angrily to a coach's defensive tactics. In another example, Lazarus (2000b) uses interpersonal conflict to illustrate how anger is likely to be a principal emotion in organizational contexts:

> With respect to anger in competitive sports, actions by… [a] referee, ball handler, the spectators, coach, wife, or lover with whom an angry verbal interchange the night before may have deprived the athlete of needed relaxation and sleep, can readily get the athlete's goat.

> The object of one's anger is the person whom one blames for an offense and toward whom one wants to exact revenge in order to repair a wounded self-esteem. (p. 243)

Stage 2: Emotion-performance (E-P) Fit

This stage focuses upon the notion of E-P fit which proposes that negative feeling states occur when the relationship between an emotion and performance is out of equilibrium (Fletcher and Fletcher, 2004, 2005). A negative feeling state essentially reflects those emotional responses that are interpreted as debilitative to performance. Hence, the main point here is an individual's ability to deal with his or her cognitive and somatic reactions to stressors which, of course, continues the theme of a transactional relationship. Central to this stage is a (further) cognitive process of relational meaning involving the appraisal of emotions resulting in feeling states.

Sport psychologists are increasingly considering the "orientation" of athletes' emotions in relation to their consequences for performance (cf. Hanin, 1997, 2000; see also Jones, 1991, 1995a, 1995b). In the present context, orientation refers to the nature of emotional responses: that is, will these cognitive and somatic symptoms have a positive or negative effect on performance? Fletcher and Fletcher (2004, 2005) referred to this process as the notion of facilitating and debilitating dimensions of emotional responses or "emotional orientation". This approach is, of course, either explicitly or implicitly common to many conceptualizations of the emotions in sport (see, e.g., Hanin, 1997, 2000; Cerin, 2003; Pensgaard and Duda, 2003), including anger (see, e.g., Isberg, 2000) and anxiety (see, e.g., Burton, 1990; Mahoney and Avener, 1977; Murray, 1989; Parfitt, Jones, and Hardy, 1990; Rotella and Lerner, 1993; Nordell and Sime, 1993; Jones, 1991, 1995a, 1995b). According to Hanin (1997, 2000), emotions can be categorized as positive or negative based on two dimensions: hedonic tone (i.e., pleasantness-unpleasantness) and functional impact (i.e., optimizing-dysfunctional). It is the later of these dimensions which is relevant to the second stage of the meta-model. More specifically, the cognitive mechanism underpinning this dimension involves the interpretation and labeling of an emotion with regard to its effect on performance. Jones (1995b) described such a process as:

> A further level of cognitive appraisal which has the function of interpreting the meaningfulness of the cognitive and physiological symptoms experienced following earlier appraisal of the congruence between situational demands and ability to meet those demands. (p. 463)

Fletcher and Fletcher (2004, 2005) elaborated on this second cognitive process by distinguishing between two additional types of appraisal: tertiary and quaternary. Tertiary appraisal involves the evaluation of an emotion with regard to whether or not it is relevant to one's performance. During this process, a person considers the implications of what is at stake ("how does this emotion and performance affect me?"), thus giving meaning to symptoms. It is important to note that emotions can occur simultaneously in a transaction and should, therefore, only be separated for the convenience of analysis. If an emotion is considered meaningless there is no potential for further cognitive processes. Quaternary appraisal begins if meaning is ascribed to an emotion. This process is concerned with the identification and availability of coping resources to deal with the emotion ("what can I do about this emotion?"). This mechanism is nothing more than an evaluation of coping options

and is not actually the initiation or implementation of coping strategies. Furthermore, the terms "tertiary" and "quaternary" are not intended to connote processes of less importance than "primary" and "secondary" appraisal, but rather an interpretative reaction to emotional responses to stressors. Fletcher and Fletcher (2004, 2005) suggested that how a person interprets and labels an emotion with regard to its affect on performance will determine the nature of his or her feeling state. It was hypothesized that performers who have confidence in their ability to control and cope with their emotional responses will experience facilitative feeling states.

Emotional orientations, therefore, refer to how performers interpret their emotions and associated symptoms on a facilitative-debilitative continuum. In an organizational context, one performer might label their anger in response to a conflict with management as having a debilitative effect on performance and, consequently, feel frustrated and in a futile state. Another performer who is also angry due to a similar event might label such an emotional response as facilitative and spur him or her into investing more effort and being more determined, thus resulting in a motivated feeling state (cf. Lazarus, 2000b). Hence, two performers experiencing almost identical emotional responses to their initial appraisal mechanisms might interpret their symptoms at opposite ends of a facilitative-debilitative continuum. Another common organizational-related occurrence is the upheaval of managerial and coaching staff, which often results in changes to funding criteria, team selection, and training programs. Two hypothetical performers, who have the same emotional responses to these events, say, for example, a degree of anxiety about the future, could interpret their symptoms differently with regard to performance. For one individual, the anxiety they are experiencing may result in feelings of apprehension about his or her competitive career, but conversely, the other one may feel excited about his or her performance prospects (cf. Jones, 1995a). In this way, a person's emotional responses and associated symptoms – regardless of whether they are positive or negative reactions to his or her initial appraisal mechanisms – might be positively or negatively orientated with regard to performance, depending on the further level of cognitive appraisal.

It is possible, perhaps even likely, that a feeling state in which symptoms are interpreted as being facilitative to performance bears little resemblance to the initial emotional responses to stressors. The complex cocktail of emotions that a performer is experiencing can potentially be interpreted and labeled in a functional or dysfunctional way depending on the powerful influence of personal and situational characteristics. Such characteristics moderate the processes described above and help account for variance in emotions and feeling states across performers. Put another way, these factors may serve as buffers or exacerbates of P-E and E-P relationships (see Bolger and Zuckerman, 1995; Cohen and Edwards, 1989; Semmer, 1996). Specifically, such variables affect performers' resilience or vulnerability to stressors and help account for the variance in consequences by influencing whether psychological responses are positively or negatively toned.

Of the numerous modifiers identified in the mainstream psychology literature, Type A/B behavior pattern (TABP/TBBP; Ganster, 1987; George, 1992), positive/negative affect (Schaubroeck, Ganster, and Fox, 1992; Spector, Zapf, Chen, and Frese, 2000), hardiness (Orr and Westman, 1990; Kobasa, 1979), self-esteem (Ganster and Schaubroeck, 1995; Pierce, Gardner, Dunham, and Cummings, 1993), and self-confidence and self-efficacy (Jex and Gudanowski, 1992; Schaubroeck and Merritt, 1997) appear to be among the most influential individual difference variables. In addition to those outlined above, several other personality

and dispositional factors have been implicated as potential moderators: optimism/pessimism (Chang, 1998); locus of control (Perrewe, 1987); neuroticism (Bolger and Zuckerman, 1995); emotional state (Watson and Clark, 1984); constructive thinking (Epstein and Meier, 1989); hope (Snyder, Harris, Anderson, Holleran, Irving, Sigmon, Yoshinobu, Gibb, Langelle, and Harney, 1991); learned resourcefulness (Rosenbaum, 1990); sense of coherence (Antonovsky, 1987); coping styles (Menaghan, 1983); self-reliance (Quick, Joplin, Nelson, Mangelsdorff, and Fiedler, 1996); alexithymia (Taylor and Bagby, 2000); and perfectionism (Frost and Marten, 1990). Among the situational moderators and other variables that might influence P-E and E-P relationships include: the degree of available autonomy or control (Jones and Fletcher, 1996); social support (Winnubst and Schabracq, 1996); individual physiological susceptibility; gender; and flexibility (see Beehr, 1998; Quick, Quick, Nelson, and Hurrell, 1997).

Interestingly, it is likely that the ubiquitous term, "mental toughness", represents a composite variable which is a conglomerate of the more manifest personal moderators (cf. Dienstbier, 1989; Garmezy and Masten, 1986; Rutter, 1987; Semmer, 1996; Wofford and Daly, 1997; Wofford, Goodwin, and Daly, 1999; Wolff, 1995). To illustrate, performers high in mental toughness might posses more TBBP, more positive affect, more hardiness, more self-esteem, and more self-confidence and self-efficacy, thus inoculating them against the risk of negative consequences. Conversely, performers low in mental toughness might posses more TABP, more negative affect, less hardiness, less self-esteem, and less self-confidence and -efficacy, thus predisposing them to greater risk of negative responses. Mental toughness can, therefore, be defined as "an individual's propensity to manage the demands of environmental stressors, ranging from an absolute resilience to extreme vulnerability" (Fletcher, 2005, p. 1246; Fletcher and Fletcher, 2005, p. 158). It is likely, of course, that the relevance of the moderators that constitute mental toughness will depend on the combination of the different personal, organizational and competitive stressors encountered by a performer in a particular situation. Unfortunately, empirical research investigating these moderators and the notion of mental toughness in relation to organizational stress in sport is virtually nonexistent.

Stage 3: Coping and Overall Outcome (COO)

This stage focuses on coping with stress-related reactions and proposes that negative outcomes occur through the inadequate or inappropriate use of coping strategies (Fletcher and Fletcher, 2004, 2005). Sub-optimal well-being and/or performance is essentially a reflection of an individual's inability to cope. Hence, the main point here relates to an individual's ability to cope with his or her environmental stimuli and personal responses which, of course, continues the theme of a transactional relationship. Central to this stage is the cognitive process of personal coping resulting in overall outcomes.

There is general agreement that coping is a major component of the overall transactional stress process (Aldwin, 2000; Folkman, Lazarus, Dunkel-Schetter, Delongis, and Gruen, 1986; Lazarus and Folkman, 1984). Following a review of the coping literature, Dewe, Cox, and Ferguson (1993) highlighted three main characteristics of coping: (a) *relational* in that it reflects the relationship between a person and the environment (Folkman, 1982); (b) a *process* in contrast to the more traditional trait-context orientated approaches (Cox, 1987, Edwards, 1988, Folkman, Lazarus, Dunkel-Schetter, De Longis, and Gruen, 1986); and (c) *integrative* in nature linking other components of the stress process (Cox and Ferguson, 1991).

Consistent with these themes, they defined coping as "the cognitions and behaviors, adopted by the individual following the recognition of a stressful encounter, that are in some way designed to deal with that encounter or its consequences" (Dewe et al., 1993, p. 7). Hence, coping involves the occurrence of an event which impinges upon the person, appraisal of that event as threatening to oneself, and the engagement of cognitive or behavioral strategies to remove or alleviate the threat (O'Driscoll and Cooper, 1994).

The most common approach to studying coping can be described as taxonomic, where researchers attempt to categorize coping strategies based upon the focus of a particular cognition or behavior. Lazarus and Folkman (1984) differentiate between two major coping strategies: (a) *problem-focused*, in which an individual attempts to deal with the environmental demands he or she encounters and (b) *emotion-focused*, in which an individual attempts to deal with his or her emotional responses to stressors. This is captured in the meta-model where coping strategies focus on eliminating or reducing the quantity, frequency and/or intensity of the demands or on modifying individuals' responses through altering personal or situational moderators resulting in a more favorable reappraisal of the stressors.

The functions of coping in the organizational stress process have been the focus of considerable interest to mainstream psychology researchers. The extant literature generally goes well beyond the mere description of coping strategies by delineating the conditions under which different strategies are employed and assessing the effectiveness of such strategies. However, because the literature on coping with organizational stress is so diverse and voluminous, the interested reader is directed to relevant reviews of this area for more information (e.g., Dewe et al., 1993; Newton, 1989; O'Driscoll and Cooper, 1994). Within the sport psychology literature, the process of coping has attracted increasing attention in recent years (see, e.g., Anshel, Kim et al., 2001; Crocker, Kowalski, and Graham, 1998; Hardy et al., 1996; Hoar, Kowalski, Gaudreau, and Crocker, this volume). This interest has tended to focus on performers' ability to cope with competitive-related demands and emotions (see, e.g., Campen and Roberts, 2001; Crocker and Graham, 1995; Hammermeister and Burton, 2001; Holt and Dunn, 2004; Kim and Duda, 2003; Krohne and Hindel, 1988; Nicholls, Holt, & Polman, 2005; Williams and Krane, 1992), although a significant number of studies have touched on coping in organizational-related contexts such as environmental conditions, training programs, travelling arrangements, injury rehabilitation, expectations and pressure, interpersonal relationships with coaches and teammates, and communication with the media and officials (see, e.g., Anshel and Delany, 2001; Anshel, Jamieson et al., 2001; Crocker, 1992; Crocker and Isaak, 1997; Dugdale et al., 2002; Gould, Eklund, and Jackson, 1993; Gould, Finch, and Jackson, 1993; Hanson, McCullagh, and Tonymon, 1992; Holt and Hogg, 2002; Madden, Kirkby, and McDonald, 1989; Madden, Summer, and Brown, 1990; Nicholls, Holt, Polman, & James, 2005). Collectively, the findings suggest that sport performers use a wide range of strategies to cope with organizational stressors and strain. These include multiple problem- and emotion-focused strategies which are often used in combination with one another. There is also some evidence to show that different strategies are used to deal with organizational stressors compared to competitive stressors. Furthermore, these strategies may be related to the specific demands encountered by the performer. Finally, coping strategies are often so well learned that some performers automatically execute them in response to particular organizational-related events.

Depending largely on the usage and effectiveness of coping strategies, a wide range of positive or negative overall outcomes may occur. For example, lack of effective stress

management may lead to significant decrements in well-being, feelings of disengagement from the sport, dissatisfaction, and reduced athletic performance (Burton, 1990; Hardy et al., 1996; Schmidt and Stein, 1991). Prolonged maladaptive coping may ultimately induce a chronic, highly debilitating form of strain know as burnout (Cordes and Dougherty, 1993; Hobfoll and Shirom, 1993; Smith, 1986). Conversely, effective stress management may lead to significant increases in well-being, sport satisfaction, self-esteem, and enhanced athletic performance (Aldwin, 2000; Aldwin and Stokols, 1988; Antonovsky, 1987; Dienstbier, 1989; Eysenck and Calvo, 1992; Fay, Sonnentag, and Frese, 1998; Folkman and Moskowitz, 2000; Hardy, 1990, 1997, 1998; Hardy and Fazey, 1987; Hardy et al., 1996; Humphreys and Revelle, 1984; Ickovics and Park, 1998; Lazarus, 2000b, 2000c; Mahoney and Avener, 1977; Masters, 1992; Wegner, 1989, 1994, 1997; Woodman and Hardy, 2001b). Prolonged adaptive coping may ultimately lead to experiences of flow, resonance and self-actualization (Jackson and Csikszentmihalyi, 1999; Maslow, 1968; Newburg, Kimiecik, Durand-Bush, and Doell, 2002).

Unfortunately, there are virtually no studies investigating the psychological and performance-related outcomes of organizational stress in sport. In the first of two notable exceptions, Noblet, Rodwell, and McWilliams (2003) found that job control and work support were significant predictors of job satisfaction in professional Australian footballers and that social support has a significant impact on both job satisfaction and psychological health outcomes. In the second, Fletcher and Hanton (2003c) examined the mechanisms by which organizational stress might affect sport performance. They found that poorly managed organizational issues were generally detrimental to performance via three possible routes: concentration disruption, maladaptive emotional responses, and dysfunctional changes in activation levels. These findings add empirical support to recent theoretical advances which state that emotions can affect performance via complex changes in cognitive, motivational and attentional functioning (see Botterill and Brown, 2002; Cerin et al., 2000; Hanin, 1997, 2000; Janelle, 2002; Jones, 2003; Lazarus, 2000b; Mellalieu, 2003; Vallerand and Blanchard, 2000).

Practical Implications

Despite the growing recognition that organizational stress can potentially affect athletes' well-being and performance, the amount of attention given by sport organizations and psychologists to addressing this issue has been limited, particularly when compared to the strategies designed to deal with competitive stress (see, e.g., Anshel, in press; Burton, 1990; Hardy et al., 1996). Moreover, researchers have commented on the general lack of congruence that often exists between applied practices and theoretical and empirical work in this area of performance enhancement (see, e.g., Fletcher and Hanton, 2003a, 2004; Hanton and Fletcher, 2005; Hanton and Jones, 1999a, 1999b; Hardy et al., 1996; Jones and Hardy, 1990). They have argued for a more cogent approach to stress management in sport, one that is underpinned by a rational evidence-based philosophy.

To this end, Fletcher and Hanton (2004) further developed the meta-model by superimposing a multi-intervention framework for understanding stress management in performance environments (see Figure 3). The overlay of this structure helps bridge the gap between theory and practice and also facilitates knowledge transfer from mainstream

psychology (e.g., Briner and Reynolds, 1999; Cooper et al., 2001; Murphy, 1995; Murphy, Hurrell, Sauter, and Keita, 1995; Quick and Quick, 1997; Quick, Quick, and Nelson, 1998). As a result, Fletcher and Hanton (2003a, 2004) argued that efforts to manage the stress process in performers can be differentiated by: (a) the level at which an intervention occurs (i.e., primary, secondary, tertiary); (b) the scope of the intervention activity; (c) its target; and (d) the assumptions underlying each intervention (Cooper et al., 2001; Quick and Quick, 1997; see also Last, 1988; Winett, 1995). Although the levels of intervention outlined in Figure 3 are designed to manage any of the potential stressors that performers may encounter, the remainder of this subsection will focus on their application in sport-related organizational settings.

Primary interventions are based on the assumption that the most effective way to combat strain is to eliminate or at least reduce the quantity, frequency and/or intensity of organizational stressors, hence alleviating the overall demand placed upon sport performers. This type of intervention is the most proactive and preventative approach to stress management and involves altering training and competition environments, technologies, or organizational structures. Examples include: rule changes, role restructuring, organizational restructuring, profiling the organization, and educational workshops. Secondary interventions focus on stress management training to modify sport performers' psychological responses to stressors, rather than adapting the organizational conditions. These interventions aim primarily to increase performers' awareness of their stress-related reactions and to enhance their resiliency to stressors through "mental toughness" training programs. Examples include: stress management training, communication and information sharing, "wellness" programs, contingency planning incorporating "what if?" scenarios, and simulation training. Tertiary interventions are concerned with minimizing the damaging consequences of stressors by helping athletes cope more effectively with reduced well-being or performance as a result of strain. These interventions focus on the rehabilitation and treatment of problems once they have occurred. Examples include: performer assistance programs, clinical counseling, and educational coping programs.

These levels of intervention are, of course, not mutually exclusive and to some extent there is overlap between the different strategies. For example, Cooper et al. (2001) describe how conflict resolution sessions may be useful for preventing the onset or development of interpersonal conflict (i.e., primary intervention) and/or confronting and dealing with conflict after it has already surfaced (i.e., secondary intervention). Nevertheless, this framework presents a systematic approach to stress management that can aid consultants in optimizing well-being and performance in athletes. Clearly, the choice of approach will have a significant impact on the efficacy of interventions and such strategies need to be tailored to address the specific issues manifested within a sport organization.

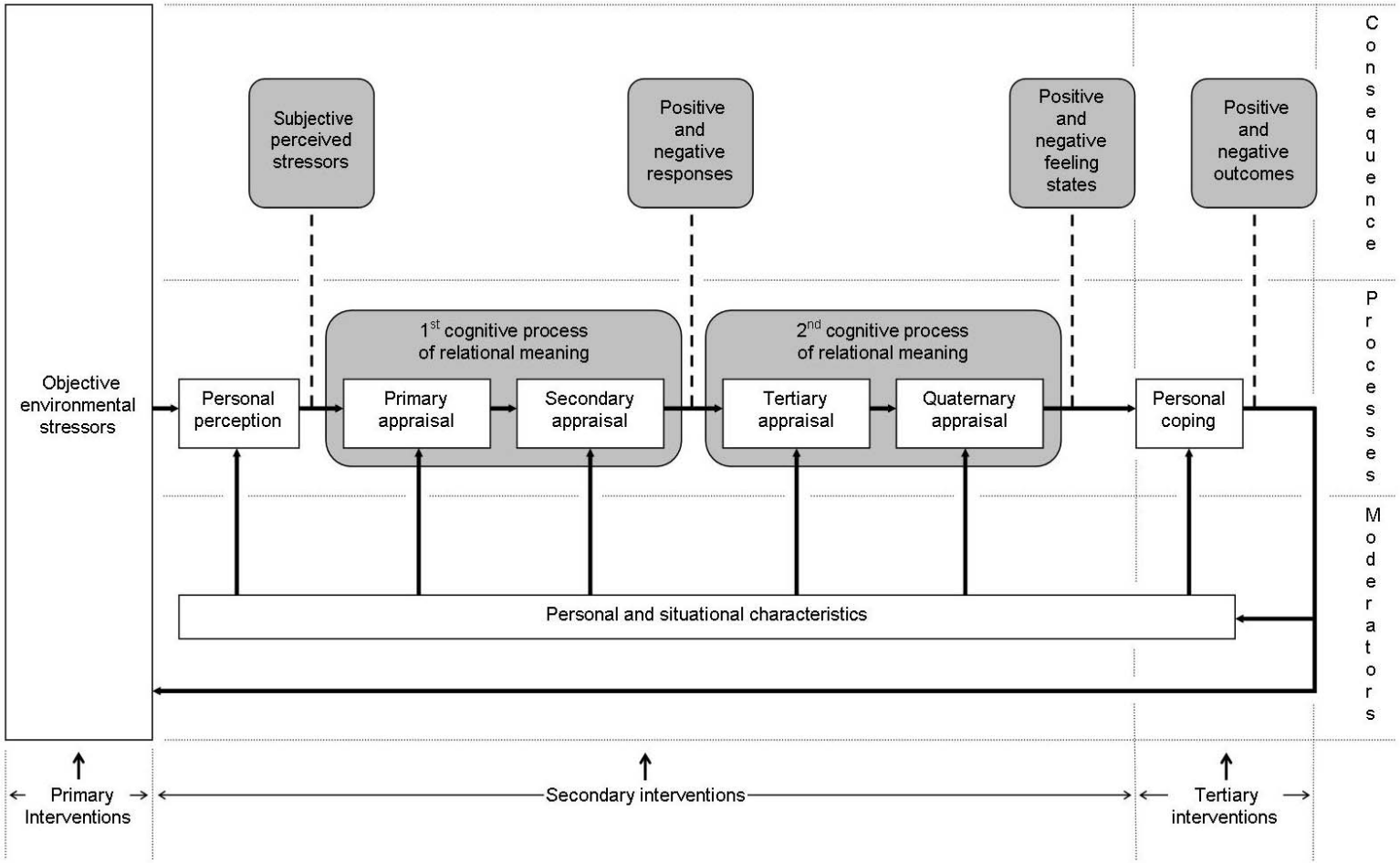

Figure 3. A multi-intervention framework for understanding stress management in performance environments (reproduced with permission from Fletcher and Hanton, 2004).

At this juncture, it is worth exploring some of the practical issues and guidelines relating to the implementation of stress management interventions. Burton's (1990) observation that "stress management is a topic that is easier to theorize about than to apply effectively" (p. 171) is particularly pertinent in the context of this discussion. The climate within sport organizations is often characterized by a skepticism of psychological support, particularly if senior management suspect that an assessment may portray an unfavorable picture of the organization. Hence, given the often sensitive nature of organizational-related issues, consultants should continually emphasize that a greater understanding of this area can provide a positive stimulus for change (Fletcher and Hanton, 2003b; Woodman and Hardy, 2001a). Despite the potential benefits, a psychologist working in a sport organization should not lose sight of the fact that this is one of the most demanding of environments:

> The psychology professional wishing to consult for a sport organization faces an often daunting and confusing task. There are few areas where psychological consultation presents the challenges that are to be found in the sport world. (Perna, Neyer, Murphy, Ogilvie, and Murphy, 1995, p. 235)

There are many reasons why difficulties may arise when attempting to implement organizational-level stress management interventions. These appear to relate predominately to a historical emphasis of placing the onus for stress management on athletes, senior management's beliefs about the impact of the organizational environment on performers, and the financial, legal and political repercussions of making organizational-level changes (Acosta Hernández, 2002; Fletcher and Hanton, 2003a; Hardy et al., 1996). On the occasions when systematic stress management has been evident in sport, the focus has tended to be on psychological skills training to tackle performers' anxiety responses associated with competitive performance (e.g., Hanton and Jones, 1999b; Mamassis and Doganis, 2004). Our intention here is not to undervalue such individual-orientated approaches but simply to highlight that these may not be sufficient in combating all aspects of stress experienced by performers. It may be that this situation has arisen due to the heavy bias that currently exists in many sport psychology certification programs toward psychological skills training and performance enhancement techniques (Hanton and Fletcher, 2005; Woodman and Hardy, 2001a). Another contributory factor may be that, from a managerial perspective, such strategies are often less costly and can be more readily implemented than longer-term organizational restructuring. Interestingly, Cooper et al. (2001) also suggested that, in the business domain, fear of litigation might have resulted in management abnegating their responsibilities in an attempt to circumvent the legal and political ramifications of excessive organizational strain. Regardless of the specific underlying reasons, a climate and culture has prevailed in sport where organizations have tended to resist change when it involved alterations to their practices and procedures.

When this observation is considered in relation to recent empirical findings (i.e., Hanton et al., 2005), it becomes evident that consultants will probably need to exercise a degree of flexibility and pragmatism to optimize the effectiveness of their work. To elaborate, as mentioned earlier, Hanton et al.'s work indicates that whereas competitive stressors are, not surprisingly, inherent and endemic to elite sport, organizational stressors are, on the other hand, essentially extraneous and widely distributed. Hence, they went on to argue that it may be judicious for consultants to focus on secondary level interventions to restructure

performers' responses to competitive stressors and, in contrast, to focus on primary interventions to reduce organizational stressors. However, while it is certainly important to tailor interventions to meet the specific demands encountered by performers, it is also important to balance this need with the constraints imposed by the managerial politics that exist within sport organizations. Furthermore, organizational stress management is not solely about attempting to eliminate stressors. Consultants need to appreciate the ever-changing nature of environments and that some organizational demands are an unavoidable part of contemporary sport. Organizational stress management interventions must also enable performers to develop their own personal resources and enhance their "mental toughness" to cope with stressors and strain. Indeed, it may be that positive consequences result from such an approach:

> Some organizational stress is both inevitable and desirable. The intent of preventative stress management is to maximize eustress and performance, is to minimize distress, but not to eliminate stress. While this is an ongoing process, people at work need not be left with the problem of Sisyphus, king of Corinth in Greek mythology. Sisyphus was left in a state of perpetual, hopeless, joyless struggle after he tricked Death and was condemned to push a rock endlessly up a hill, only to have the rock always roll back down before the task was finished. (Quick et al., 1998, p. 265)

Findings from mainstream psychology indicate that organizational-level interventions are generally most effective when implemented systematically and as a result of careful monitoring of the environment (Burke, 1993; Ivancevich and Matteson, 1987; Murphy, 1988). The processes of assessment and evaluation are critical here. In terms of conducting an organizational level "stress audit", an interdisciplinary approach that utilizes techniques from psychology, physiology and medicine is likely to provide to the most complete picture of the organization and its influences. It should also be emphasized that assessment is an ongoing process involving continued analysis, rather than intermittent snapshot evaluations. Diagnostic methods could include self-monitoring, behavioral observation, self-report inventories, survey questionnaires, interviews, and organizational profiling. Turning to the process of evaluation, a wide range of surveillance indicators and research methods can be employed to assess the impact of stress management interventions on organizational stress-related consequences. These methods should, of course, not only be valid, reliable and feasible but also produce findings that are understandable and meaningful to executive boards and managerial committees (see, e.g., Woodman and Hardy, 1997). A fundamental feature of these recommendations will likely be the establishment and maintenance of communication lines and a dismantling of policies that stimulate, rather than help to alleviate, the negative consequences of organizational stress. Strategies should encourage supportive organizational norms, which recognize that the experience of stress is not a sign of performer weakness or incompetence. The importance of involving athletes and coaches in this process should not be underestimated. An active participation in the stress management process, which promotes greater individual control over the organizational environment, has been repeatedly emphasized in the mainstream psychology literature (Murphy, 1995; Schurman and Israel, 1995).

Finally, in view of the points raised here, the authors concur with Ravizza's (1988) recommendation that consultants should pay careful attention to the constantly unfolding

"organizational politics" within contemporary sport. Of central importance is identifying the key decision-makers within an organization and the personnel (e.g., performance directors) whose input will likely influence any potential interventions. It is also worth noting who within the organization is receptive to psychological support (Hardy et al., 1996). The extent of commitment from all layers of the organization – the executive board, managerial committees, technical and support staff, coaches, athletes – to alleviating the negative consequences of stress is critical to the success of stress management interventions. However, as Hardy et al. (1996) pointed out, consultants should tread carefully in the milieu of organizational politics and not confuse an informed awareness with over involvement:

> Effective consultants, then, must become politically astute so they can understand and hopefully circumvent potential politically based problems. However, in the authors' experience, it is usually a grave mistake for consultants to become involved in organizational politics, so being politically astute certainly should not be interpreted as meaning being politically active. (pp. 292-293)

To summarize, the practical implications of the meta-model offer a rational evidence-based approach to understanding stress management in performance environments. Consultants' efforts to implement such interventions will be more effective if a number of steps are taken. These include: (a) identification of potential organizational stressors; (b) thorough assessment of the levels of organizational strain experienced by performers; and (c) implementation of interventions designed to resolve problems and deal with symptoms (Cooper et al., 2001). The challenge remains to convince personnel of the advantages of systematic stress management that benefits not only athletes' well-being and performance, but also the sport organization as a whole.

Research Directions

To conclude this section, we suggest some directions for future research in this area. These suggestions are not intended to be exhaustive, nor are they presented in any specific order of importance, but they do highlight what we believe are the key issues to be addressed if psychologists are to further their understanding of organizational stress in sport. In light of the foregoing discussion, the majority of these research questions can be categorized under five main areas: (a) objective and subjective stressors, (b) appraisal mechanisms relating to responses and feeling states, (c) personal and situational characteristics that moderate the process, (d) coping processes and strategies, and (e) effects on well-being and performance.

Objective and Subjective Stressors

There is considerable debate in the mainstream psychology literature about whether organizational stressors should be studied objectively or subjectively (see, e.g., Spector, 1999). From an objective standpoint, it is argued that certain stressors transcend individual cognitions and, therefore, attention should focus on establishing a consensus on which events represent significant stressors. On the other hand, the subjective position emphasizes that it is a person's perception and appraisal of a stimulus that is the critical factor in determining its potential significance. It is likely, of course, that progress will only be made in this area by

examining the implications of both objective and subjective aspects of the stress process (Cooper et al., 2001; Spector, 1999). Future researchers in sport psychology may also wish to investigate the different properties of stressors, such as the intensity (high vs. low demand; Cooper et al., 2001), duration (acute vs. chronic; Anshel, Kim et al., 2001; Elliot and Eisdorfer, 1982), prevalence (frequent vs. infrequent occurrence, Fletcher and Hanton, 2003b), quantity (many vs. few demands; Hanton et al., 2005), and other aspects such as the timing (e.g., competition vs. training settings; Fletcher and Hanton, 2003b), specificity (specific vs. global demand; Fletcher and Hanton, 2003b), closeness (proximal vs. distal to the individual; Jessor, 1981), and weighting (additive or multiplicative; Cooper et al., 2001). Finally on the topic of stressors, two other important areas of study are (a) the interface between, and (b) the interactive impact of competitive, organizational and personal stressors (Hanton et al., 2005). To elaborate briefly, it is likely that managing the interface between these categories of stressors places further demands on performers (cf. O'Driscoll, 1996), particularly for those competing at a subelite or amateur standard. Furthermore, the combined effect of all the different stressors encountered by performers needs to be considered because, as Cooper et al. (2001) pointed out, "the whole (effect) may well be more than the sum of the parts!" (p. 53).

Appraisal Mechanisms Relating to Responses and Feeling States

The meta-model points to two processes of relational meaning that link the performer to the environment. These are operationalized in terms of cognitive-evaluative appraisal mechanisms. Further research efforts are needed to explore the explanatory potential of these concepts and their role in the stress process in sport. In terms of performers' responses to organizational stressors, future research should consider adopting an interdisciplinary approach, combining information from psychometric testing (e.g., self-report measures), behavioral analysis (e.g., observational techniques), and physiological indices (e.g., blood pressure, catecholamines and cortisol levels). From a psychological perspective, it is important that researchers consider the distinction between what has been described as display rules (emotions that are expected to be expressed) and feeling rules (emotions that should be felt). Put simply, performers functioning in a sport organizations may express certain appropriate, organizationally desired emotions, which are different from the emotions actually being felt (cf. Ashforth and Humphrey, 1993; Briner, 1995; Rafaeli and Sutton, 1987). It is also worth examining in greater detail the intensity and frequency of emotional responses (cf. Brief and Weiss, 2002; Fisher, 2002; Pekrun and Frese, 1992) and how these dimensions mediate emotional orientations. Given the likely complexity of these relationships, it appears that identifying how performers' responses interact and give rise to feeling states presents a challenging, but potentially fruitful, line of work for future researchers.

Personal and Situational Characteristics that Moderate the Process

The potential influences of the organizational stress process can be considered under two broad categories: (a) personality and dispositional variables, and (b) situational and social variables. It is important that future researchers examine these areas because developing adaptive characteristics and climates will likely play an important role in helping performers deal with organizational stressors that cannot be changed and hence have to be "lived with". Findings from mainstream psychology suggest that some of the most influential individual

difference variables include: Type A/B behavior pattern (TABP/TBBP; Ganster, 1987; George, 1992); positive/negative affect (Schaubroeck, Ganster, and Fox, 1992; Spector, Zapf, Chen, and Frese, 2000); hardiness (Orr and Westman, 1990; Kobasa, 1979); self-esteem (Ganster and Schaubroeck, 1995; Pierce, Gardner, Dunham, and Cummings, 1993); self-confidence and self-efficacy (Jex and Gudanowski, 1992; Schaubroeck and Merritt, 1997); the degree of available autonomy or control (Jones and Fletcher, 1996); and social support (Winnubst and Schabracq, 1996). One important issue to consider in this area of research is the possible confounding of effects due to a lack of conceptual differentiation and measurement redundancy between such variables as optimism, self-esteem, negative affectivity, and neuroticism (Cooper et al., 2001). Researchers examining the significance of mental toughness in sport will need to demonstrate that composite constructs exert direct and interactive influences on the stress process. Hence, a complete understanding of mental toughness and moderator effects can only be obtained if they are studied within the context of a transactional conceptualization of stress.

Coping Processes and Strategies

Despite the accumulated knowledge on coping generated by mainstream and sport psychology researchers, there is still little known about the specific strategies that athletes use to cope with organizational stress. For researchers wishing to explore this area, their first priority should be to develop coping classifications systems that take into account not just the focus (problem vs. emotion) of a particular strategy but also its form (cognitive or behavioral) and the variety of different strategies used (Latack and Havlovic, 1992). Some potential research areas include: (a) the coping strategies used with specific organizational stressors, (b) the effectiveness of such strategies, (c) the personal and situational characteristics which moderate the use of strategies in organizational contexts, (d) the mediational properties of coping in the organizational stress process, and (e) the relationship between coping and performers' well-being and performance. Finally, sport psychologists should ensure that their research designs clearly reflect the conceptual distinction between coping "behaviors" and "styles". Cooper et al. (2001) hypothesized that specific behaviors function as mediators between stressor-strain relationships, with dispositional styles moderating the strength of this relationship.

Effects on Well-being and Performance

A fundamental issue pervading stress research in general is the effect of strain responses on human performance. It behooves sport psychology researchers to examine the mechanisms by which stress responses might affect sport performance (Fletcher and Hanton, 2003c) and how much performance variance might be accounted for by organizational strain (Woodman and Hardy, 2001a). Researchers working in this area should be wary of potential physiological, biomechanical and tactical confounds that may threaten the internal validity of their studies. For example, a performer may identify a lack of food or inappropriate diet as a correlate of poor performance at a competition, but the question remains as to what extent performance decrement is due to psychological mechanisms relating to dysfunctional responses, or physiological mechanisms relating to glycogen depletion (Fletcher and Hanton, 2003c). Other issues that warrant more systematic investigation relate to the impact of organizational strain on psychological health (Noblet et al., 2003), athletic burnout (cf. Smith, 1986), and overtraining syndrome (Meehan et al., 2004). Greater attention needs to be given

to the specific nature of the stressor-strain relationships that are instrumental in affecting the overall outcomes of the process. For example, dissatisfaction with the sport (or aspects of the organization) may have a differential impact on performers who vary in terms of sport involvement. It may be that sport dissatisfaction is more salient for elite athletes whose performance is central to their self-esteem than for nonelite athletes whose performance is peripheral. Future research needs to clearly define the impact of organizational strain on a range of psychological and performance indices.

In addition to these main areas, scholars may wish to further examine the fundamental theoretical tenets of the meta-model. Fletcher and Fletcher (2004) acknowledged that a potential limitation of the model concerns the validity of the linear stage framework evident within its structure. Jones (1990) recognized this potential drawback in stress-performance models over a decade ago when he provocatively posed the question, "do sports performers process information in a strict serial manner, so that a stage becomes passive once it has processed information and passed it on to the next stage?" (p. 37). Indeed, while it has been argued that "the one-dimensional scheme can be used as a frame of reference for interpreting when and how a second dimension operates" (Sanders, 1980, p. 335), more recent evidence from cognitive neuroscience indicates that sequential, unitary approaches are rather simplistic and that parallel, multiple processes offer a more ecologically valid conceptualization (Gazzaniga, 1989; Ornstein and Thompson, 1984). For scholars working in this area, parallel distributive processing theory may be instructive (Hinton, 1992; McClelland, Rumelhart, and the PDP Research Group, 1987; Rogers, and McClelland, 2004; Rumelhart, McClelland, and the PDP Research Group, 1987; Scientific American, 1999). This theory is grounded in models of networked knowledge – sometimes known as "neural networks" or "connectionism" – and posits that the activation of a single brain node stimulates pathways to other nodes, and so forth. In this way, node activity spreads and can occur simultaneously in multiple parts of the brain, with ongoing *processing* occurring in *parallel* and being *distributed* via neural connections throughout the cognitive system. Aldwin's (2000) comments on hemispheric brain functioning suggest that such an approach may have utility in refining the meta-model and, therefore, enhancing psychologists' understanding of performers ongoing appraisals of demands *and* responses:

> If emotional processing is mediated more by the right hemisphere, and rational processing by the left hemisphere, then it should not be surprising that both mechanisms are involved and that one can inform the other… (p. 41)

The adaptation of the meta-model to accommodate recent developments in cognitive neuroscience would offer, in the authors' opinion, something of a middle ground in the cognition-emotion debates of stress reactions (see Ellis, 1985; Lazarus, 1981, 1982, 1984a 1991a; Parkinson, and Manstead, 1992; Zajonc, 1980, 1984). On the one hand, Lazarus (1981, 1982, 1984a 1991a) argued that the cognitive process of appraisal is primary in determining an individual's emotional responses. On the other hand, Zajonc (1980, 1984) argued that emotional responses occur before, and may be at odds with, the cognitive process of appraisal. Hence, if the two processes of relational meaning in the meta-model operate in parallel then it is likely that *both* cognitions and emotions can simultaneously occupy primary positions in the stress process. Put simply, in any instant a performer is thinking and responding, and *also* experiencing emotions and reacting to them.

Such theoretical advances are likely to open up further avenues of inquiry relating to the level and speed of cognitive processing in sport performers (cf. LeDoux, 1995; Murphy, 2001). Lazarus (1999) has argued that appraisal mechanisms can operate at a conscious or unconscious level, and over time or instantaneously:

> …there are two main contrasting ways an appraisal can come about. First, the process of appraising can be deliberate and largely conscious. Second, it can be intuitive, automatic, and unconscious. The distinction is important because the circumstances of appraising vary greatly. Sometimes an appraisal requires a slow, deliberate search for information on which to predicate how we should react, especially about what can be done to cope with one's predicament. At other times, a very rapid appraisal is called for. (p. 82)

Interestingly, it has been argued that these two modes operate in an often simultaneous and parallel fashion, and may in fact be contradictory (Aldwin, 2000; Lazarus, 1999; Lazarus, and commentators, 1995). The proposal that there may be two conflicting appraisals at the same time appears to provide a cognitive explanation as to why an athlete may experience primarily negative emotional responses to a stressor (e.g., anger, anxiety), and yet simultaneously be able to maintain an overall positive feeling state in terms of their outlook on performance (e.g., anticipatory excitement). Indeed, this notion is well-supported by the literature addressing multiple affective systems (e.g., Cacioppo, Gardner, and Berntson, 1999; Davidson, 1992; Gray, 1994) and meta-moods (e.g., Mayer and Gaschke, 1988; Mayer, Salovey, Gomberg-Kaufman, and Blainey, 1991; Mayer and Stevens, 1994). Unraveling the complexities of parallel cognitive processing and the levels at which it may occur represents one of the major challenges for sport psychologists investigating the stress-emotion-performance relationship.

Finally, we conclude this section with a selection of research questions that are particularly worthy of further investigation if psychologists are to gain a more comprehensive understanding of organizational stress in sport:

- What are the experiences of organizational stress in "non-performing" personnel (Woodman and Hardy, 2001a), such as coaches (cf. Kelley, 1994; Kelley, Eklund, and Ritter-Taylor, 1999; Taylor, 1992), managers and directors (cf. Busser, 1990; Byers, 1987; Copeland and Kirsch, 1995; Martin, Kelley, and Eklund, 1999), support team professionals (cf. Reid, Stewart, and Thorne, 2004; Sullivan and Nashman, 1998), and officials, referees and umpires (cf. Anshel and Weinberg, 1995; Rainey, 1995, 1999; Rainey and Hardy, 1999)?
- What are the characteristics and qualities of optimally functioning organizations (Fletcher and Hanton, 2003b; Weinberg and McDermott, 2002)? What are the most effective strategies for managing organizational stress in sport settings (Woodman and Hardy, 2001a)? To what extent can consultants teach performers the necessary skills to cope with organizational stress (cf. Dewe et al., 1993)? What methodological designs are most appropriate for the evaluation of organizational stress management interventions (cf. Beehr and O'Hara, 1987; Hanton and Fletcher, 2005)?

CONCLUDING REMARKS

This chapter has reviewed literature on organizational stress from the fields of mainstream and sport psychology in order to reflect on what this work can tell us about stress in sport organizations. This discussion helps to focus attention on the important conceptual and theoretical issues relating to organizational stress in competitive sport, how such issues affect performers, and the role psychologists can play in better understanding the nature of this phenomenon. Also, this review has hopefully provided the groundwork for scholars and academics in their efforts to identify future areas of fertile research. While many issues arise from the preceding discussion, there are two questions particularly worthy of consideration:

What Methodologies Should we Employ to Investigate Organizational Stress in Sport?

A critical concern for researchers is to ensure that their work captures the complex and dynamic nature of the stress process in sport organizations. The conceptual stance adopted in this chapter has viewed stress as relational in nature, involving ongoing transactions between the performer and the environment. This theme was developed within the meta-model, in which a series of cognitive-evaluative processes were outlined to best express the relational-transactional nature of stress in performance environments. Hence, if understanding organizational stress in sport is best advanced by exploring individual appraisals and subjective meanings, then researchers must utilize methods that capture the contextual richness of such processes and the idiographic nature of the stress experience. This raises an important question of whether the prevailing research methodologies in sport psychology, based largely on cross-sectional designs, satisfactorily capture the dynamics of this process. Indeed, Spicer (1997) argued that rather than addressing the notion of a transaction, traditional research methods employed in mainstream psychology simply reflect an interactional perspective of stress where the various structural components (stressors, strain, and coping) are operationalized as static constructs.

In contrast, the transactional conceptualization suggests that research needs to explore the ongoing interplay that exists among stress-related constructs and examine the possibility of multidirectional (mutual) causality. Given the complexity of such relationships, longitudinal, prospective, and microanalytic approaches would appear to be among some of most effective research strategies because they provide an opportunity to clarify casual relationships that are otherwise indeterminable through cross-sectional analysis (see Kahn and Byosiere, 1992; Lazarus, 2000c). Cooper et al. (2001) suggested that such approaches are probably best operationalized through multivariate analysis and qualitative techniques to expand the scope of research and generate a richer understanding of the organizational stress process.

How do We Measure Organizational Stress in Sport?

Measurement is an important aspect of the scientific method and, as Fletcher and Hanton (2003b) pointed out, it will be very difficult to make significant advances in sport

psychologists' understanding of this area without valid and reliable measures. While there are a number of inventories which assess organizational-related issues in a sport context (see, e.g., Albinson and Pearce, 1998; Bramwell et al., 1975; Rushall, 1987, 1990), these instruments have rarely been exposed to rigorous psychometric testing or employed in systematic research programs. Hence, it appears that researchers are now at a critical stage in building a body of knowledge; namely, that there exists an urgent need to develop a comprehensive measure of organizational stress in sport performers.

Of paramount importance in the progress toward such a measure is the establishment of validity, reliability, relevancy, sensitivity and stability criteria. While space unfortunately precludes a discussion of these issues, it is worth highlighting some key implications that researchers will need to pay careful attention to: (a) the nature and content of items, (b) the scoring of response scales, and (c) the manner in which psychometrics are established (cf. Cooper et al., 2001; Dewe, 2000). Given the conceptual ambiguity that has existed in this area, researchers must be particularly wary of measurement confounding and ensure that inventories do not purport to assess one construct (e.g., a stressor) when in reality they tap into another (e.g., a strain).

In conclusion, this chapter has discussed a wide range of issues and challenges facing sport psychologists and organizations in the early years of the twenty-first century. Consideration has been given to the ever-changing context in which performers function, in particular how sociocultural, political, economic, occupational and technological forces shape sport organizations and how they in turn can affect athletes' well-being and performance. While experiencing some organizational demands is an unavoidable aspect of contemporary sport, there is much that can be done to influence the consequences and overall outcomes of this phenomenon at both an individual and organizational level. Only a concerted effort from the sport community as whole will result in sustained improvements in the well-being and performance of athletes, sport organizations and ultimately the societies in which they live and function. However, the damaging consequences of neglecting these issues are, according to Acosta Hernández (2002), likely to only be matched by their far-reaching impact:

> The worst enemy of a sport organization today is neither another sport organization, nor another sport, nor the social environment, nor the athletes, nor even their critics or opponents; public enemy number one is the local organizational structure and the sport organization itself… Inertia, combined with a lack of organizational structure, the absence of administrative procedures, and the ineptitude of managers, will not only destroy the sport organization itself but also the sport movement as we know is today. (p. 7)

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REFERENCES

Acosta Hernández, R. (2002). *Managing sport organizations*. Champaign, IL: Human Kinetics.

Albinson, J. G., and Pearce, W. (1998). *The Athlete Daily Hassle Scale* (4th ed.). Ontario: Queens University.

Aldwin, C. M. (2000). *Stress, coping, and development: An integrative perspective*. New York: Guilford.

Aldwin, C. M., and Stokols, D. (1988). The effects of environmental change on individuals and groups: Some neglected issues in stress research. *Journal of Environmental Psychology*, *8*, 57-75.

Anderson, C. A., and Williams, J. M. (1988). A model of stress and athletic injury: Prediction and prevention. *Journal of Sport and Exercise Psychology*, *10*, 721-786.

Anshel, M. H. (in press). Strategies for preventing and managing stress and anxiety in sport. In D. Hackford, J. Duda, and R. Lidor (Eds.), *Handbook of research in applied sport psychology*. Morgantown, WV: Fitness Information Technology.

Anshel, M. H., and Delany, J. (2001). Sources of acute stress, cognitive appraisals, and coping strategies of male and female child athletes. *Journal of Sport Behavior*, *24*, 329-353.

Anshel, M. H., Jamieson, J., and Raviv, S. (2001). Cognitive appraisals and coping strategies following acute stress among skilled competitive male and female athletes. *Journal of Sport Behavior*, *24*, 129-143.

Anshel, M. H., Kim, K. W., Kim, B. H., Chang, K. J., and Eom, H. J. (2001). A model for coping with stressful events in sport: Theory, application, and future directions. *International Journal of Sport Psychology*, *32*, 43-75.

Anshel, M. H., and Weinberg, R. S. (1995). Sources of acute stress in American and Australian basketball referees. *Journal of Applied Sport Psychology*, *7*, 11-22.

Antonovsky, A. (1987). *Unraveling the mystery of health: How people manage stress and stay well*. San Francisco: Jossey-Bass.

Appley, M. H., and Trumbull, R. (1967). On the concept of psychological stress. In M. H. Appley and R. Trumbull (Eds.), *Psychological stress*. New York: Appleton-Century-Crofts.

Appley, M. H., and Trumbull, R. (1986). A conceptual model for the examination of stress dynamics. In M. H. Appley and R. Trumbull (Eds.), *Dynamics of stress: Physiological, psychological, and social perspectives* (pp. 21-45). New York: Plenum.

Arnold, M. B. (1960). *Emotion and personality. Vol I: Psychosocial aspects*. New York: Columbia University Press.

Ashby, W. R. (1966). *An introduction to cybernetics*. New York: Wiley.

Ashforth, B. E., and Humphrey, R. H. (1993). Emotional labor in service roles: The influence of identify. *Academy of Management Review*, *18*, 88-115.

Baron, R., and Kenny, D. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173-1182.

Beehr, T. A. (1998). An organizational psychology meta-model of occupational stress. In C. L. Cooper (Ed.), *Theories of organizational stress* (pp. 6-27). Oxford, UK: Oxford University Press.

Beehr, T. A., and Newman, J. E. (1978). Job stress, employee health, and organizational effectiveness: A facet analysis model, and literature review. *Personnel Psychology*, *31*, 365-399.

Beehr, T. A., and O'Hara, K. (1987). Methodological designs for the evaluation of occupational stress interventions. In S. Kasl and C. Cooper (Eds.), *Stress and health: Issues in research methodology* (pp. 79-112). New York: Wiley.

Bolger, N., and Zuckerman, A. (1995). A framework for studying personality in the stress process. *Journal of Personality and Social Psychology*, *69*, 890-902.

Botterill, C., and Brown, M. (2002). Emotion and perspective in sport. *International Journal of Sport Psychology*, *33*, 38-60.

Bramwell, S. T., Masuda, M., Wagner, N. N., and Holmes, T. H. (1975). Psychological factors in athletic injuries: Development and application of the Social and Athletic Readjustment Rating Scale (SARRS). *Journal of Human Stress*, *1*, 6-20.

Brief, A., and Weiss, H. (2002). Organizational behavior: Affect in the workplace. *Annual Review of Psychology*, *53*, 279-307.

Briner, R. B. (1995, April). *The experience and expression of emotion at work*. Paper presented at the 1995 British Psychological Society Occupational Psychology Conference, Warwick, UK.

Briner, R. B., and Reynolds, S. (1999). The costs, benefits and limitations of organizational level stress interventions. *Journal of Organizational Behavior*, *20*, 647-664.

Bringer, J. D., Johnston, L. H., and Brackenridge, C. H. (2004). Maximizing transparency in a doctoral thesis: The complexities of writing about the use of QSR*NVIVO within a grounded theory study. *Qualitative Research*, *4*, 247-265.

Burke, R. (1993). Organizational-level interventions to reduce occupational stressors. *Work and Stress*, *7*, 77-87.

Burton, D. (1990). Multimodal stress management in sport: Current status and future directions. In G. Jones and L. Hardy (Eds.), *Stress and performance in sport* (pp. 171-201). Chichester, UK: Wiley.

Burton, D. (1998). Measuring competitive state anxiety. In J. L. Duda (Ed.), *Advances in sport and exercise psychology measurement* (pp. 129-148). Morgantown, WV: Fitness Information Technology.

Burton, D., and Naylor, S. (1997). Is anxiety really facilitative? Reaction to the myth that cognitive anxiety always impairs performance. *Journal of Applied Sport Psychology*, *9*, 295-303.

Busser, J. A. (1990). The relationship between stress and wellness for public leisure service managers. *Journal of Park and Recreation Administration*, *8*, 44-59.

Byers, S. K. (1987). Organizational stress: Implications for health promotion managers. *American Journal of Health Promotion*, *2*, 21-27.

Cacioppo, J. T., Gardner, W. L., and Berntson, G. G. (1999). The affect system has parallel and integrative processing components: Form follows function. *Journal of Personality and Social Psychology*, *76*, 839-855.

Campbell, E., and Jones, G. (2002a). Cognitive appraisal of sources of stress experienced by elite male wheelchair basketball players. *Adapted Physical Activity Quarterly*, *19*, 100-108.

Campbell, E., and Jones, G. (2002b). Sources of stress experienced by elite male wheelchair basketball players. *Adapted Physical Activity Quarterly*, *19*, 82-99.

Campen, C., and Roberts, D. C. (2001). Coping strategies of runners: Perceived effectiveness and match to precompetitive anxiety. *Journal of Sport Behavior*, *24*, 145-161.

Cannon, W. B. (1914). The emergent function of the adrenal medulla in pain and the major emotions. *American Journal of Physiology*, *33*, 356-372.

Cannon, W. B. (1915). *Bodily changes in pain, hunger, fear, and rage: An account of recent researches into the function of emotional excitement.* New York: Appleton.

Cannon, W. B. (1929). Organization for physiological homeostasis. *Physiological Review*, *9*, 339-430.

Cannon, W. B. (1932). *The wisdom of the body* (2nd ed.). New York: Norton.

Cannon, W. B. (1935). Stresses and strain of homeostasis. *American Journal of Medical Science*, *189*, 1-14.

Caplan, R. D. (1983). Person-environment fit: Past, present, and future. In C. L. Cooper (Ed.), *Stress research* (pp. 35-78). New York: Wiley.

Caplan, R. D. (1987a). Person-environment fit in organizations: Theories, facts, and values. In A. W. Riley and S. J. Zaccaro (Eds.), *Occupational stress and organizational effectiveness* (pp. 103-140). New York: Praeger.

Caplan, R. D. (1987b). Person-environment fit theory and organizations: Commensurate dimensions, time perspectives, and mechanisms. *Journal of Vocational Behavior*, *31*, 248-267.

Caplan, R. D., Cobb, S., French, J. R. P., Jr., Harrison, R. V., and Pinneau, S. R., Jr. (1975). *Job demands and worker health: Main effects and occupational differences*. Cincinnati, OH: National Institute for Occupational Safety and Health.

Caplan, R. D., and Harrison, R. V. (1993). Person-environment fit theory: Some history, recent developments, and future directions. *Journal of Social Issues*, *49*, 253-275.

Carron, A. V. (1982). Cohesiveness in sport groups: Interpretations and considerations. *Journal of Sport Psychology*, *4*, 123-138.

Carver, C. S., and Scheier, M. F. (1981). *Attention and self-regulation: A control-theory approach to human behavior*. New York: Springer-Verlag.

Carver, C. S., and Scheier, M. F. (1985). Self-consciousness, expectancies, and the coping process. In T. M. Field, P. M. McCabe, and N. Schniederman (Eds.), *Stress and coping* (pp. 305-330). Hillsdale, NJ: Erlbaum.

Cerin, E. (2003). Anxiety versus fundamental emotions as predictors of perceived functionality of pre-competitive emotional states, threat, and challenge in individual sports. *Journal of Applied Sport Psychology*, *15*, 223-238.

Cerin, E., Szabo, A., Hunt, N., and Williams, C. (2000). Temporal patterning of competitive emotions: A critical review. *Journal of Sports Sciences*, *18*, 605-626.

Cerin, E., Szabo, A., and Williams, C. (2001). Is the experience sampling method (ESM) appropriate for studying pre-competitive emotions? *Psychology of Sport and Exercise*, *2*, 27-45.

Chang, E. (1998). Dispositional optimism and primary and secondary appraisal of a stressor: Controlling for confounding influences and relations to coping and psychological and physical adjustment. *Journal of Personality and Social Psychology, 74*, 1109-1120.

Cohen, S., and Edwards, J. R. (1989). Personality characteristics as moderators of the relationship between stress and disorder. In W. J. Neufeld (Ed.), *Advances in the investigation of psychological stress* (pp. 235-283). New York: Wiley.

Cook, T. D., and Campbell, D. T. (1979). *Quasi-experimentation: Design and analysis issues for field settings*. Boston: Houghton Mifflin.

Cooper, C. L., Dewe, P. J., and O'Driscoll, M. P. (2001). *Organizational stress: A review and critique of theory, research, and applications*. Thousand Oaks, CA: Sage.

Copeland, B. W., and Kirsch, S. (1995). Perceived occupational stress among NCAA Division I, II, and III athletic directors. *Journal of Sport Management, 9*, 70-77.

Cordes, C., and Dougherty, T. (1993). A review and integration of research on job burnout. *Academy of Management Review, 18*, 621-656.

Cox, T. (1978). *Stress*. New York: Macmillan.

Cox, T. (1985). *Stress* (2nd ed.). New York: Macmillan.

Cox, T. (1987). Stress, coping and problem solving. *Work and Stress, 1*, 5-14.

Cox, T. (1990). The recognition and measurement of stress: Conceptual and methodological issues. In J. R. Wilson and N. E. Corlett (Eds.), *Evaluation of human work: A practical ergonomics methodology* (pp. 628-647). Philadelphia, PA: Taylor and Francis.

Cox, T. (1993). *Stress research and stress management: Putting theory to work*. London: HMSO.

Cox, T., and Ferguson, E. (1991). Individual differences, stress and coping. In C. L. Cooper and R. Payne (Eds.), *Personality and stress: Individual differences in the stress process* (pp. 7-30). New York: John Wiley.

Cox, T., and McKay, C. (1981). A transactional approach to occupational research. In E. N. Corlett and J. Richardson (Eds.), *Stress, work design and productivity* (pp. 91-115). New York: John Wiley.

Craft, L. L., Magyar, T. M., Becker, B. J., and Feltz, D. L. (2003). The relationship between the Competitive State Anxiety Inventory-2 and sport performance: A meta-analysis. *Journal of Sport and Exercise Psychology, 25*, 44-65.

Crocker, P. R. E. (1992). Managing stress by competitive athletes: Ways of coping. *International Journal of Sport Psychology, 23*, 161-175.

Crocker, P. R. E., and Graham, T. R. (1995). Coping by competitive athletes with performance stress: Gender differences and relationships with affect. *The Sport Psychologist, 9*, 325-338.

Crocker, P. R. E., and Isaak, K. (1997). Coping during competitions and training sessions: Are youth swimmers consistent? *International Journal of Sport Psychology, 28*, 355-369.

Crocker, P. R. E., Kowalski, K. C., and Graham, T. R. (1998). Measurement of coping strategies in sport. In J. L. Duda (Ed.), *Advances in sport and exercise psychology measurement* (pp. 149-161). Morgantown, WV: Fitness Information Technology.

Cummings, T. G., and Cooper, C. L. (1979). A cybernetic theory of occupational stress. *Human Relations, 32*, 395-418.

Cummings, T. G., and Cooper, C. L. (1998). A cybernetic theory of organizational stress. In C. L. Cooper (Ed.), *Theories of organizational stress* (pp. 101-121). Oxford, UK: Oxford University Press.

Davidson, R. J. (1992). Emotion and affective style: Hemispheric substrates. *Psychological Science, 3*, 39-43.

Dewe, P. (2000). Measures of coping with stress at work: A review and critique. In P. Dewe, M. Leiter, and T. Cox (Eds.), *Coping, health and organizations* (pp. 3-28). New York: Taylor and Franics.

Dewe, P., Cox, T., and Ferguson, E. (1993). Individual strategies for coping with stress at work: A review. *Work and Stress, 7*, 5-15.

Dewey, J., and Bentley, A. F. (1949). *Knowing and the known*. Boston: Beacon Press.

Dienstbier, R. A. (1989). Arousal and physiological toughness: Implications for mental and physical health. *Psychological Bulletin, 96*, 84-100.

Dohrenwend, B. S., and Dohrenwend, B. P. (1974). *Stressful life events: Their nature and effects*. New York: Wiley.

Dugdale, J. R., Eklund, R. C., and Gordon, S. (2002). Expected and unexpected stressors in major international competition: Appraisal, coping, and performance. *The Sport Psychologist, 16*, 20-33.

Eckenrode, J., and Bolger, N. (1995). Daily and within-day event measurement. In S. Cohen, R. C. Kessler, and L. U. Gordon (Eds.), *Measuring stress: A guide for health and social scientists* (pp. 80-101). New York: Oxford University Press.

Edwards, J. R. (1988). The determinants and consequences of coping with stress. In C. L. Cooper and R. Payne (Eds.), *Causes, coping and consequences of stress and work* (pp. 233-263). New York: John Wiley.

Edwards, J. R. (1991). Person-job fit: A conceptual integration, literature review, and methodological critique. *International Review of Industrial and Organizational Psychology, 6*, 283-357.

Edwards, J. R. (1992). A cybernetic theory of stress, coping, and well-being in organizations. *Academy of Management Review, 17*, 238-274.

Edwards, J. R. (1996). An examination of competing versions of the person-environment fit approach to stress. *Academy of Management Journal, 39*, 292-339.

Edwards, J. R. (1998). Cybernetic theory of stress, coping, and well-being: Review and extension to work and family. In C. L. Cooper (Ed.), *Theories of organizational stress* (pp. 122-152). Oxford, UK: Oxford University Press.

Edwards, J. R., Caplan, R. D., and Harrison, R. V. (1998). Person-environment fit theory: Conceptual foundations, empirical evidence and directions for future research. In C. L. Cooper (Ed.), *Theories of organizational stress* (pp. 28-67). Oxford, UK: Oxford University Press.

Ekman, P., Friesen, W. V., and Ellsworth, P. (1982). Conceptual ambiguities. In P. Ekman (Ed.), *Emotion in the human face* (2nd ed., pp. 7-20). New York: Cambridge University Press.

Elliott, G. R., and Eisdorfer, C. (Eds.). (1982). *Stress and human health: Analysis and implications for research*. New York: Springer.

Ellis, A. (1985). Cognition and affect in emotional disturbance. *American Psychologist, 40*, 471-472.

Epstein, S., and Meier, P. (1989). Constructive thinking: A broad coping variable with specific components. *Journal of Personality and Social Psychology, 57*, 332-350.

Eysenck, M. W., and Calvo, M. G. (1992). Anxiety and performance: The processing efficiency theory. *Cognition and Emotion, 6*, 409-434.

Fay, D., Sonnentag, S., and Frese, M. (1998). Stressors, innovation, and personal initiative. In C. L. Cooper (Ed.), *Theories of organizational stress* (pp. 170-189). Oxford, UK: Oxford University Press.

Fisher, C.D. (2002). Antecedents and consequences of real-time affective reactions at work. *Motivation and Emotion, 26*, 3-30.

Fletcher, D. (2001). *Sources of organisational stress in elite sports performers*. Unpublished master's thesis, Loughborough University, Leicestershire, United Kingdom.

Fletcher, D. (2005). "Mental toughness" and human performance: Definitional, conceptual and theoretical issues [Abstract]. *Journal of Sports Sciences, 23*, 1246-1247.

Fletcher, D., and Fletcher, J. (2004, September). *A meta-model of stress, emotions and performance: Conceptual foundations, theoretical framework, and research directions*. Oral presentation presented at the annual meeting of the British Association of Sport and Exercise Sciences, Liverpool, UK.

Fletcher, D., and Fletcher, J. (2005). A meta-model of stress, emotions and performance: Conceptual foundations, theoretical framework, and research directions [Abstract]. *Journal of Sports Sciences, 23*, 157-158.

Fletcher, D., and Hanton, S. (2003a, April). Research in organisational stress and British Olympic athletes: Conceptual, theoretical and practical issues. In S. J. Bull (Chair), *Building and supporting an Olympic management team*. Symposium conducted at the meeting of the British Olympic Association Psychology Advisory and Steering Group, Milton Keynes, UK.

Fletcher, D., and Hanton, S. (2003b). Sources of organizational stress in elite sports performers. *The Sport Psychologist, 17*, 175-195.

Fletcher, D., and Hanton, S. (2003c, October). *The effects of organizational stress upon sports performance: An exploratory study*. Poster session presented at the annual meeting of the Association for the Advancement of Applied Sport Psychology, Philadelphia, PA.

Fletcher, D., and Hanton, S. (2004, October). *A meta-model of stress, emotions and performance: Practical implications for applied sport psychologists*. Poster session presented at the annual meeting of the Association for the Advancement of Applied Sport Psychology, Minneapolis, MN.

Folkman, S. K. (1982). An approach to the measurement of coping. *Journal of Occupational Behavior, 3*, 95-107.

Folkman, S. K., Lazarus, R., Dunkel-Schetter, C., De Longis, A., and Gruen, R. (1986). Dynamics of a stressful encounter: Cognitive Appraisal, coping and encounter outcomes. *Journal of Personality and Social Psychology, 50*, 992-1003.

Folkman, S. K., and Moskowitz, J. T. (2000). Positive affect and the other side of coping. *American Psychologist, 55*, 647-654.

Franks, B. D. (1994). What is stress? *Quest, 46*, 1-7.

French, J., Caplan, R., and Harrison, R. V. (1982). *The mechanisms of job stress and strain*. New York: Wiley.

French, J. R. P., Jr., Rogers, W. L., and Cobb, S. (1974). Adjustment as person-environment fit. In G. V. Coelho, D. A. Hamburg, and J. E. Adams (Eds.), *Coping and adaptation* (pp. 316-333). New York: Basic Books.

Frost, R. O., and Marten, P. A. (1990). Perfectionism and evaluative threat. *Cognitive Therapy and Research, 14*, 559-572.

Gall, M. D., Borg, W. R., and Gall, J. P. (1996). *Educational research: An introduction* (6th ed.). New York: Longman.

Ganster, D. C. (1987). Type A behavior and occupational stress. In J. M. Ivancevich and D. C. Ganster (Eds.), *Job stress: From theory to suggestion* (pp. 61-84). New York: Haworth Press.

Ganster, D. C., and Schaubroeck, J. (1995). The moderating effects of self-esteem on the work stress-employee health relationship. In R. Crandall and P. Perrewe (Eds.), *Occupational stress: A handbook* (pp. 167-177). Washington, DC: Taylor and Francis.

Garmezy, N., and Masten, A. S. (1986). Stress, competence, and resilience: Common frontiers for therapist and psychopathologist. *Behavior Therapy*, *17*, 500-521.

Gauvin, L., and Spence, J. C. (1998). Measurement of exercise-induced changes in feeling states, affect, mood, and emotions. In J. L. Duda (Ed.), *Advances in sport and exercise psychology measurement* (pp. 325-336). Morgantown, WV: Fitness Information Technology.

Gazzaniga, M. S. (1989). Organization of the human brain. *Science*, *245*, 947-952.

George, J. (1992). The role of personality in organizational life: Issues and evidence. *Journal of Management*, *18*, 185-213.

Giacobbi, P. R., Jr., Foore, B., and Weinberg, R. S. (2004). Broken clubs and expletives: The sources of stress and coping responses of skilled and moderately skilled golfers. *Journal of Applied Sport Psychology*, *16*, 166-182.

Giacobbi, P. R., Jr., Lynn, T. K., Wetherington, J. M., Jenkins, J., Bodendorf, M., and Langley, B. (2004). Stress and coping during the transition to university for first-year female athletes. *The Sport Psychologist*, *18*, 1-20.

Gill, D. L. (1994). A sport and exercise psychology perspective on stress. *Quest*, *46*, 20-27.

Gill, D. L. (2000). *Psychological dynamics of sport and exercise* (2nd ed.). Champaign, IL: Human Kinetics.

Gould, D. (1987). Promoting positive sport experiences for children. In J. R. May and M. J. Asken (Eds.), *Sport psychology: The psychological health of the athlete* (pp. 77-98). New York: PMA.

Gould, D., Eklund, R. C., and Jackson, S. A. (1993). Coping strategies used by U.S. Olympic wrestlers. *Research Quarterly for Exercise and Sport*, *64*, 83-93.

Gould, D., Finch, L. M., and Jackson, S. A. (1993). Coping strategies used by national champion figure skaters. *Research Quarterly for Exercise and Sport*, *64*, 453-468.

Gould, D., Guinan, D., Greenleaf, C., Mudbery, R., and Peterson, K. (1999). Factors affecting Olympic performance: Perceptions of athletes and coaches from more and less successful teams. *The Sport Psychologist*, *13*, 371-394.

Gould, D., Jackson, S. A., and Finch, L. M. (1993). Sources of stress in national champion figure skaters. *Journal of Sport and Exercise Psychology*, *15*, 134-159.

Gould, D., and Krane, V. (1992). The arousal-athletic performance relationship: Current status and future directions. In T. S. Horn (Ed.), *Advances in sport psychology* (pp. 119-142). Champaign, IL: Human Kinetics.

Gould, D., and Urdy, E. (1994). Psychological skills for enhancing performance: Arousal regulation strategies. *Medicine and Science in Sports and Exercise*, *26*, 478-485.

Gray, J. A. (1994). Three fundamental emotion systems. In P. Ekman and R. J. Davidson (Eds.), *The nature of emotions: Fundamental questions* (pp. 243-247). New York: Oxford University Press.

Grinker, R. R., and Spiegel, J. P. (1945). *Men under stress*. Philadelphia, PA: Blakiston.

Hamilton, L. H., Hamilton, W. G., Meltzer, J. D., Marshall, P., and Molnar, M. (1989). Personality, stress, and injuries in professional ballet dancers. *American Journal of Sports Medicine, 17*, 263-267.

Hammermeister, J., and Burton, D. (2001). Stress, appraisal, and coping revisited: Examining the antecedents of competitive state anxiety with endurance athletes. *The Sport Psychologist, 15*, 66-90.

Hanin, Y. L. (1993). Optimal performance emotions in top athletes. In S. Serpa, J. Alves, V. Ferreira, and A. Paula-Brito (Eds.), *Sport psychology: An integrated approach. Proceedings from the VIII World Congress of Sport Psychology* (pp. 229-232). Lisbon, Portugal: ISSP.

Hanin, Y. L. (1997). Emotions and athletic performance: Individual zones of optimal functioning model. *European Yearbook of Sport Psychology, 1*, 29-72.

Hanin, Y. L. (2000). Individual zones of optimal functioning (IZOF) model: Emotion-performance relationships in sport. In Y. L. Hanin (Ed.), *Emotions in sport* (pp. 65-89). Champaign, IL: Human Kinetics.

Hanson, S. J., McCullagh, P., and Tonymon, P. (1992). The relationship of personality characteristics, life stress, and coping resources to athletic injury. *Journal of Sport and Exercise Psychology, 14*, 262-272.

Hanton, S., and Fletcher, D. (2003, October). *Toward a conceptual understanding of organizational stress in sports performers*. Poster session presented at the annual meeting of the Association for the Advancement of Applied Sport Psychology, Philadelphia, PA.

Hanton, S., and Fletcher, D. (2005). Organizational stress in competitive sport: More than we bargained for? *International Journal of Sport Psychology, 36*, 273-283.

Hanton, S., Fletcher, D., and Coughlan, G. (2005). Stress in elite sport performers: A comparative study of competitive and organizational stressors. *Journal of Sports Sciences, 23*, 1129-1141.

Hanton, S., and Jones, G. (1999a). The acquisition and development of cognitive skills and strategies: I. Making the butterflies fly in formation. *The Sport Psychologist, 13*, 1-21.

Hanton, S., and Jones, G. (1999b). The effects of a multmodal intervention program on performers: II. Training the butterflies to fly in formation. *The Sport Psychologist, 13*, 22-41.

Hardy, L. (1990). A catastrophe model of anxiety and performance. In G. Jones and L. Hardy (Eds.), *Stress and performance in sport* (pp. 81-106). Chichester, UK: Wiley.

Hardy, L. (1997). Three myths about applied consultancy work. *Journal of Applied Sport Psychology, 9*, 277-294.

Hardy, L. (1998). Responses to the reactants on three myths in applied consultancy work. *Journal of Applied Sport Psychology, 10*, 212-219.

Hardy, L., and Fazey, J. (1987, June). *The inverted-U hypothesis: A catastrophe for sport psychology?* Paper presented at the annual conference of the North American Society for the Psychology of Sport and Physical Activity, Vancouver, Canada.

Hardy, L., and Jones, G. (1994). Current issues and future directions for performance related research in sport psychology. *Journal of Sports Sciences, 12*, 61-90.

Hardy, L., Jones, G., and Gould, D. (1996). *Understanding psychological preparation for sport: Theory and practice of elite performers*. Chichester, UK: Wiley.

Harrison, R. V. (1978). Person-environment fit and job stress. In C. L. Cooper and R. Payne (Eds.), *Stress and work* (pp. 175-205). New York: Wiley.

Harrison, R. V. (1985). The person-environment fit model and the study of job stress. In T. A. Beehr and R. S. Bhagat (Eds.), *Human stress and cognition in organizations* (pp. 23-55). New York: Wiley.

Hinkle, L. E., Jr. (1973). The concept of "stress" in the biological and social sciences. *Science, Medicine and Man, 1*, 31-48.

Hinton, G. E. (1992, September). How neural networks learn from experience. *Scientific American, 267*, 144-151.

Hoar, S. D., Kowalski, K. C., Gaudreau, P., and Crocker, P. R. E. (this volume). A review of coping in sport. In S. Hanton and S. D. Mellalieu (Eds.), *Literature reviews in sport psychology*. Hauppauge, NY: Nova Science.

Hobfall, S. E., Schwarzer, R., and Chon, K-K. (1996). Disentangling the stress labyrinth: Interpreting the meaning of the term stress as it is studied. *Japanese Health Psychology, 4*, 1-22.

Hobfoll, S., and Shirom, A. (1993). Stress and burnout in the workplace. In R. Golembiewski (Ed.), *Handbook of organizational behavior* (pp. 41-60). New York: Marcel Dekker.

Holmes, T. H., and Rahe, R. H. (1967). The Social Readjustment Rating Scale. *Journal of Psychosomatic Research, 11*, 213-218.

Holt, N. L., and Dunn, J. G. H. (2004). Longitudinal idiographic analyses of appraisal and coping responses in sport. *Psychology of Sport and Exercise, 5*, 213-222.

Holt, N. L., and Hogg, J. M. (2002). Perceptions of stress and coping during preparations for the 1999 women's soccer World Cup finals. *The Sport Psychologist, 16*, 251-271.

House, J. S. (1974). Occupational stress and coronary heart disease: A review and theoretical integration. *Journal of Health and Social Behavior, 15*, 12-27.

Humphreys, M. S., and Revelle, W. (1984). Personality, motivation, and performance: A theory of the relationship between individual differences and information processing. *Psychological Review, 91*, 153-184.

Ickovics, J. R., and Park, C. L. (1998). Paradigm shift: Why a focus on health is important. *Journal of Social Issues, 52*, 237-244.

Isberg, L. (2000). Anger, aggressive behavior, and athletic performance. In Y. L. Hanin (Ed.), *Emotions in sport* (pp. 113-133). Champaign, IL: Human Kinetics.

Ivancevich, J., and Matteson, M. (1987). Organizational level stress management interventions: A review and recommendations. *Journal of Organizational Behavior Management, 8*, 229-248.

Izard, C. E. (1977). *Human emotions*. New York: Plenum Press.

Jackson, S. A., and Csikszentmihalyi, M. (1999). *Flow in sports: The keys to optimal experiences and performances*. Champaign, IL: Human Kinetics.

James, B., and Collins, D. (1997). Self-presentational sources of competitive stress during performance. *Journal of Sport and Exercise Psychology, 19*, 17-35.

Janelle, C. M. (2002). Anxiety, arousal and visual attention: A mechanistic account of performance variability. *Journal of Sports Sciences, 20*, 237-251.

Jessor, R. (1981). The perceived environment in psychological theory and research. In D. Magnusson (Ed.), *Toward a psychology of situations: An interactional perspective* (pp. 297-317). Hillsdale, HJ: Erlbaum.

Jex, S., and Gudanowski, D. (1992). Efficacy beliefs and work stress: An exploratory study. *Journal of Organizational Behavior*, *13*, 509-517.

Jones, F., and Fletcher, B. C. (1996). Job control and health. In M. Schabracq, J. Winnubst, and C. Cooper (Eds.), *Handbook of work and health psychology* (pp. 33-50). New York: John Wiley.

Jones, G. (1990). A cognitive perspective on the processes underlying the relationship between stress and performance in sport. In G. Jones and L. Hardy (Eds.), *Stress and performance in sport* (pp. 17-42). Chichester, UK: Wiley.

Jones, G. (1991). Recent developments and current issues in competitive state anxiety research. *The Psychologist*, *4*, 152-155.

Jones, G. (1995a). Competitive anxiety in sport. In S. J. H. Biddle (Ed.), *European perspectives on exercise and sport psychology* (pp. 128-153). Champaign, IL: Human Kinetics.

Jones, G. (1995b). More than just a game: Research developments and issues in competitive anxiety in sport. *British Journal of Psychology*, *86*, 449-478.

Jones, G. (2002). Performance excellence: A personal perspective on the link between sport and business. *Journal of Applied Sport Psychology*, *14*, 268-281.

Jones, G., and Hanton, S. (2001). Pre-competitive feeling states and directional anxiety interpretations. *Journal of Sports Sciences*, *19*, 385-395.

Jones, G., and Hardy, L. (1989). Stress and cognitive functioning in sport. *Journal of Sports Sciences*, *7*, 41-63.

Jones, G., and Hardy, L. (1990). *Stress and performance in sport*. Chichester, UK: Wiley.

Jones, M. V. (2003). Controlling emotions in sport. *The Sport Psychologist*, *17*, 471-486.

Kagan, A. R., and Levi, L. (1975). Health and environment – psychosocial stimuli: A review. In L. Levi (Ed.), *Society, stress and disease – childhood and adolescence* (pp. 241-260). Oxford, UK: Oxford University Press.

Kahn, R. L., and Byosiere, P. (1992). Stress in organizations. In M. D. Dunnette (Ed.), *Handbook of industrial and organizational psychology* (pp. 571-648). Chicago: Rand McNally.

Kanner, A. D., Coyne, J. C., Schaefer, C., and Lazarus, R. S. (1981). Comparison of two modes of stress management: Daily hassles and uplifts versus major life events. *Journal of Behavioral Medicine*, *4*, 1-39.

Karasek, R. A. (1979). Job demands, job decision latitude, and mental strain: Implications for job redesign. *Administrative Science Quarterly*, *24*, 285-308.

Kasl, S. (1983). Pursuing the link between stressful life experiences and disease: A time for reapprasisal. In C. I. Cooper (Ed.), *Stress research* (pp. 79-102). New York: Mentor Books.

Kelley, B. C. (1994). A model of stress and burnout in collegiate coaches: Effects of gender and time of season. *Research Quarterly for Exercise and Sport*, *65*, 48-58.

Kelley, B. C., Eklund, R. C., and Ritter-Taylor, M. (1999). Stress and burnout among collegiate tennis coaches. *Journal of Sport and Exercise Psychology*, *21*, 113-130.

Kelley, B. C., and Gill, D. L. (1993). An examination of personal/situational variables, stress appraisal, and burnout in collegiate teacher-coaches. *Research Quarterly for Exercise and Sport*, *64*, 94-102.

Kellmann, M., and Kallus, K. W. (2001). *Recovery-stress questionnaire for athletes: User manual*. Champaign, IL: Human Kinetics.

Kentta, G., and Hassmen, P. (1998). Overtraining and recovery: A conceptual model. *Sports Medicine, 26,* 25-39.

Kim, M. S., and Duda, J. L. (2003). The coping process: Cognitive appraisals of stress, coping strategies, and coping effectiveness. *The Sport Psychologist, 17,* 406-425.

Kobasa, S. (1979). Stressful life events, personality and health: An inquiry into hardiness. *Journal of Personality and Social Psychology, 37,* 1-11.

Krohne, H. W., and Hindel, C. (1988). Trait anxiety, state anxiety, and coping behaviors as predictors of athletic performance. *Anxiety Research, 1,* 225-235.

Kulka, R. A. (1979). Interaction as person-environment fit. In L. R. Kahle (Ed.), *New directions for methodology of behavioral science* (pp. 55-71). San Francisco: Jossey-Bass.

Landers, D. M., and Boutcher, S. H. (1998). Arousal-performance relationships. In J. M. Williams (Ed.), *Applied sport psychology: Personal growth to peak performance* (3rd ed., pp. 170-184). Mountain View, CA: Mayfield.

Last, J. M. (1988). *A dictionary of epidemiology* (2nd ed.). New York: International Epidemiological Association.

Latack, J. C., and Havlovic, S. J. (1992). Coping with job stress: A conceptual evaluation framework for coping measures. *Journal of Organisational Behaviour, 13,* 479-508.

Latack, J. C., Kinicki, A. J., and Prussia, G. E. (1995). An integrative process model of coping with job loss. *Academy of Management Review, 20,* 311-342.

Lazarus, R. S. (1964). A laboratory approach to the dynamics of psychological stress. *American Psychologist, 19,* 400-411.

Lazarus, R. S. (1966). *Psychological stress and the coping process*. New York: McGraw-Hill.

Lazarus, R. S. (1981). The stress and coping paradigm. In C. Eisdorfer, D. Cohen, A. Kleinman, and P. Maxim (Eds.), *Models for clinical psychopathology* (pp. 177-214). New York: Spectrum.

Lazarus, R. S. (1982). Thoughts on the relations between emotion and cognition. *American Psychologist, 37,* 1019-1024.

Lazarus, R. S. (1984a). On the primacy of cognition. *American Psychologist, 39,* 124-129.

Lazarus, R. S. (1984b). Puzzles in the study of daily hassles. *Journal of Behavioral Medicine, 7,* 375-389.

Lazarus, R. S. (1990). Theory-based stress measurement. *Psychological Inquiry, 1,* 3-13.

Lazarus, R. S. (1991a). Cognition and motivation in emotion. *American Psychologist, 46,* 352-367.

Lazarus, R. S. (1991b). *Emotion and adaptation*. New York: Oxford University Press.

Lazarus, R. S. (1993). From psychological stress to the emotions: A history of changing outlooks. *Annual Review of Psychology, 44,* 1-21.

Lazarus, R. S. (1995). Vexing research problems inherent in cognitive-mediational theories of emotion – and some solutions. *Psychological Inquiry, 6,* 183-265.

Lazarus, R. S. (1998). *Fifty years of the research and theory of R. S. Lazarus: An analysis of historical and perennial issues*. Mahwah, NJ: Erlbaum.

Lazarus, R. S. (1999). *Stress and emotion: A new synthesis*. London: Free Association.

Lazarus, R. S. (2000a). Cognitive-motivational-relational theory of emotion. In Y. L. Hanin (Ed.), *Emotions in sport* (pp. 39-63). Champaign, IL: Human Kinetics.

Lazarus, R. S. (2000b). How emotions influence performance in competitive sports. *The Sport Psychologist, 14,* 229-252.

Lazarus, R. S. (2000c). Toward better research on stress on coping. *American Psychologist, 55*, 665-673.

Lazarus, R. S., and commentators. (1995). Vexing problems inherent in cognitive-mediational theories of emotion, and some solutions. *Psychological Inquiry*, *6*, 183-265.

Lazarus, R. S., and Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.

Lazarus, R. S., and Launier, R. (1978). Stress-related transactions between person and environment. In L. A. Pervin and M. Lewis (Eds.), *Perspectives in interactional psychology* (pp. 287-327). New York: Plenum.

Lazarus, R. S., and Lazarus, B. N. (1994). *Passion and reason: Making sense of our emotions*. New York: Oxford University Press.

LeDoux, J. E. (1995). Emotion: Clues from the brain. *Annual Review of Psychology*, *46*, 209-235.

Levanthal, H. (1997). Systems as frameworks, theories and models: From the abstract to the concrete instance. *Journal of Health Psychology, 2*, 160-162.

Levi, L. (1996). Introduction: Spice of life or kiss of death? In C. L. Cooper (Ed.), *Handbook of stress, medicine, and health* (pp. 1-10). Boca Raton, FL: CRC Press.

Levi, L. (1998). Preface: Stress in organizations – theoretical and empirical approaches. In C. L. Cooper (Ed.), *Theories of organizational stress* (pp. v-xii). Oxford, UK: Oxford University Press.

Lewthwaite, R. (1990). Threat perception in competitive trait anxiety: The endangerment of important goals. *Journal of Sport and Exercise Psychology, 12*, 280-300.

Madden, C. C., Kirkby, R. J., and McDonald, D. (1989). Coping styles of competitive middle distance runners. *International Journal of Sport Psychology, 20*, 287-296.

Madden, C. C., Summer, J. J., and Brown, D. F. (1990). The influence of perceived stress in coping with competitive basketball. *International Journal of Sport Psychology*, *21*, 21-35.

Maguire, J., Jarvie, G., Mansfield, L., and Bradley, J. (2002). *Sport worlds: A sociological perspective*. Champaign, IL: Human Kinetics.

Mahoney, M. J., and Avener, M. (1977). Psychology of the elite athlete: An exploratory study. *Cognitive Therapy and Research*, *1*, 135-141.

Mamassis, G., and Doganis, G. (2004). The effects of a mental training program on juniors pre-competitive anxiety, self-confidence, and tennis performance. *Journal of Applied Sport Psychology*, *16*, 118-137.

March, J. G., and Simon, H. A. (1958). *Organizations*. New York: Wiley.

Martens, R. (1971). Anxiety and motor behavior: A review. *Journal of Motor Behavior*, *2*, 151-179.

Martens, R. (1977). *Sport competition anxiety test*. Champaign, IL: Human Kinetics.

Martens, R., Vealey, R. S., and Burton, D. (1990). *Competitive anxiety in sport*. Champaign, IL: Human Kinetics.

Martin, J. J., Kelley, B. C., and Dias, C. (1999). Stress and burnout in female high school athletic directors. *Women in Sport and Physical Activity Journal*, *8*, 101-116.

Martin, J. J., Kelley, B. C., and Eklund, R. C. (1999). A model of stress and burnout in male high school athletic directors. *Journal of Sport and Exercise Psychology*, *21*, 280-294.

Maslow, A. (1968). *Toward a psychology of being* (2nd ed.). New York: Van Nostrand Reinhold.

Mason, J. W. (1975). A historical view of the stress field. *Journal of Human Stress, 1*, 6-12, 22-36.

Masters, R. S. W. (1992). Knowledge, knerves, and know-how: The role of explicit versus implicit knowledge in the breakdown of a complex motor skill under pressure. *British Journal of Psychology, 83*, 343-358.

Mayer, J. D., and Gaschke, Y. N. (1988). The experience and meta-experience of mood. *Journal of Personality and Social Psychology, 55*, 102-111.

Mayer, J. D., Salovey, P., Gomberg-Kaufman, S., and Blainey, K. (1991). A broader conception of mood experience. *Journal of Personlity and Social Psychology, 60*, 100-111.

Mayer, J. D., and Stevens, A. A. (1994). An emerging understanding of the reflective (meta-) experience of mood. *Journal of Research in Personlity, 28*, 351-373.

McClelland, J. L., Rumelhart, D. E., and the PDP Research Group (1987). *Parallel distributed processing: Explorations in the microstructure of cognition. Vol. 2: Psychological and biological models*. Cambridge, MA: MIT Press.

McGrath, J. E. (1970). A conceptual formulation for research on stress. In J. E. McGrath (Ed.), *Social and psychological factors in stress* (pp. 10-21). New York: Holt, Rinehart and Winston.

McGrath, J. E. (1976). Stress and behavior in organizations. In M. D. Dunnette (Ed.), *Handbook of industrial and organizational psychology* (pp. 1351-1395). Chicago: Rand McNally.

Meehan, H. L., Bull, S. J., Wood, D. M., and James, D. V. B. (2004). The overtraining syndrome: A multicontextual assessment. *The Sport Psychologist, 18*, 154-171.

Mellalieu, S. D. (2003). Mood matters: But how much? A comment on Lane and Terry (2000). *Journal of Applied Sport Psychology, 15*, 99-114.

Mellalieu, S. D., Hanton, S., and Fletcher, D. (this volume). A competitive anxiety review: Recent directions in sport psychology research. In S. Hanton and S. D. Mellalieu (Eds.), *Literature reviews in sport psychology*. Hauppauge, NY: Nova Science.

Menaghan, E. G. (1983). Individual coping efforts: Moderators of the relationship between life stress and mental health outcomes. In H. B. Kaplan (Ed.), *Psychosocial stress: Trends in theory and research* (pp. 157-191). New York: Academic Press.

Miller, G. A., Galanter, E., and Pribram, K. H. (1960). *Plans and the structure of behavior*. New York: Holt, Rinehart, and Winston.

Monroe, S. M. (1983). Major and minor life events as predictors of psychological distress: Further issues and findings. *Journal of Behavioral Medicine, 6*, 189-205.

Murphy, L. (1988). Workplace interventions for stress reduction and prevention. In C. L. Cooper and R. Payne (Eds.), *Causes, coping and consequences of stress at work* (pp. 301-339). New York: Wiley.

Murphy, L. (1995). Occupational stress management: Current status and future directions. In C. Cooper and D. Rousseau (Eds.), *Trends in organizational behavior* (Vol. 2, pp. 1-14). New York: Wiley.

Murphy, L., Hurrell, J., Sauter, S., and Keita, G. (Eds.) (1995). *Job stress interventions*. Washington, DC: American Psychological Association.

Murphy, S. T. (2001). Feeling without thinking: Affective primacy and the nonconscious processing of emotion. In J. A. Bargh and D. K. Apsley (Eds.), *Unraveling the*

complexities of social life: A festschrift in honor of Robert B. Zajonc (pp. 39-53). Washington, DC: American Psychological Association.

Murray, J. M. (1989). *Competitive anxiety as positive affect*. Unpublished doctoral dissertation, University of Virginia, Charlottesville.

Newburg, D., Kimiecik, J., Durand-Bush, N., and Doell, K. (2002). The role of resonance in performance excellence and life engagement. *Journal of Applied Sport Psychology, 14*, 249-267.

Newman, J. E., and Beehr, T. A. (1979). Personal and organizational strategies for handling job stress: A review of research and opinion. *Personal Psychology, 32*, 1-43.

Newton, T. J. (1989). Occupational stress and coping with stress: A critique. *Human Relations, 42*, 441-461.

Nicholls, A. R., Holt, N. L., and Polman, R. C. J. (2005). A phenomenological analysis of coping effectiveness in golf. *The Sport Psychologist, 19*, 111-130.

Nicholls, A. R., Holt, N. L., Polman, R. C. J., and James, D. W. G. (2005). Stress and coping among international adolescent golfers. *Journal of Applied Sport Psychology, 17*, 333-340.

Noblet, A. J., and Gifford, S. M. (2002). The sources of stress experienced by professional Australian footballers. *Journal of Applied Sport Psychology, 14*, 1-13.

Noblet, A. J., Rodwell, J., and McWilliams, J. (2003). Predictors of the strain experienced by professional Australian footballers. *Journal of Applied Sport Psychology, 15*, 184-193.

Nordell, K. A., and Sime, W. (1993). Competitive trait anxiety, state anxiety, and perceptions of anxiety: Interrelationships in practice and in competition. *The Journal of Swimming Research, 9*, 19-24.

O'Driscoll, M. P. (1996). The interface between job and off-job roles: Enhancement and conflict. *International Review of Industrial and Organizational Psychology, 11*, 279-306.

O'Driscoll, M. P., and Cooper, C. L. (1994). Coping with work related stress: A critique of existing measures and proposal for an alternative methodology. *Journal of Occupational and Organizational Psychology, 67*, 343-354.

Ornstein, R., and Thompson, R. F. (1984). *The amazing brain*. Boston: Houghton Mifflin.

Orr, E., and Westman, M. (1990). Does hardiness moderate stress, and how? A review. In M. Rosenbaum (Ed.), *Learned resourcefulness: On coping skills, self-control and adaptive behavior* (pp. 64-94). New York: Springer.

Parasuraman, S., and Alutto, J. A. (1981). An examination of the organizational antecedents of stressors at work. *Academy of Management Journal, 24*, 48-67.

Parfitt, G., Jones, G., and Hardy, L. (1990). Multidimensional anxiety and performance. In G. Jones and L. Hardy (Eds.), *Stress and performance in sport* (pp. 43-80). Chichester, UK: Wiley.

Park, J. K., (2004). The perceived sources of competitive stress in Korean national athletes. *International Journal of Sport Psychology, 35*, 207-231.

Parkinson, B., and Manstead, A. S. R. (1992). Appraisal as a cause of emotion. *Review of Personality and Social Psychology, 13*, 122-149.

Passer, M. W. (1982). Children in sport: Participation motives and psychological stress. *Quest, 33*, 231-244.

Passer, M. W., and Seese, M. D. (1983). Life stress and athletic injury: Examination of positive versus negative events and three moderator variables. *Journal of Human Stress, 9*, 11-16.

Pekrun, R., and Frese, M. (1992). Emotions in work and achievement. *International Review of Industrial and Organizational Psychology*, *7*, 153-200.

Pensgaard, A. M., and Duda, J. L. (2002). "If we work hard we can do it!" A tale from an Olympic (gold) medallist. *Journal of Applied Sport Psychology*, *14*, 219-236.

Pensgaard, A. M., and Duda, J. L. (2003). Sydney 2000: The interplay between emotions, coping, and the performance of Olympic-level athletes. *The Sport Psychologist, 17*, 253-267.

Perna, F. P., Neyer, M., Murphy, S. M., Ogilvie, B. C., and Murphy, A. (1995). Consultations with sport organizations: A cognitive-behavioral model. In S. M. Murphy (Ed.), *Sport psychology interventions* (pp. 235-252). Champaign, IL: Human Kinetics.

Perrewe, P. (1987). The moderating effects of activity level and locus of control in the personal control-job stress relationship. *International Journal of Psychology*, *22*, 179-193.

Pierce, J., Gardner, D., Dunham, R., and Cummings, L. (1993). Moderation by organization-based self-esteem of role condition-employee response relationships. *Academy of Management Journal*, *36*, 271-288.

Popper, K. R. (1959). *The logic of scientific discovery*. New York: Basic Books.

Powers, W. T. (1973). *Behavior: The control of perception*. Chicago: Aldine.

Quick, J. C., Joplin, J. R., Nelson, D. L., Mangelsdorff, A. D., and Fiedler, E. (1996). Self-reliance and military service training outcomes. *Journal of Military Psychology*, *8*, 279-293.

Quick, J. C., and Quick, J. D. (1997). Stress management programs. In L. H. Peters, C. R. Greer, and S. A. Youngblood (Eds.), *The Blackwell encyclopedic dictionary of human resource management*. Oxford, UK: Blackwell.

Quick, J. C., Quick, J. D., Nelson, D. L., and Hurrell, J. J., Jr. (1997). *Preventative stress management in organizations*. Washington, DC: American Psychological Association.

Quick, J. D., Quick, J. C., and Nelson, D. L. (1998). The theory of preventive stress management in organizations. In C. L. Cooper (Ed.), *Theories of organizational stress* (pp. 246-268). Oxford, UK: Oxford University Press.

Rafaeli, A., and Sutton, R. I. (1987). Expressions of emotions as part of the work role. *Academy of Management Review*, *12*, 23-37.

Rainey, D. W. (1995). Sources of stress among baseball and softball umpires. *Journal of Applied Sport Psychology*, *7*, 1-10.

Rainey, D. W. (1999). Sources of stress, burnout, and intention to terminate among basketball referees. *Journal of Sport Behavior*, *22*, 578-588.

Rainey, D. W., and Hardy, L. (1999). Sources of stress, burnout and intention to terminate among rugby union referees. *Journal of Sports Sciences*, *17*, 797-806.

Ravizza, K. (1988). Gaining entry with athletic personnel for season-long consulting. *The Sport Psychologist*, *2*, 234-274.

Reid, C., Stewart, E., and Thorne, G. (2004). Multidisciplinary sport science teams in elite sport: Comprehensive servicing or conflict and confusion? *The Sport Psychologist*, *18*, 204-217.

Rick, J., and Briner, R. B. (2000). Psychosocial risk assessment: Problems and prospects. *Occupational Medicine*, *50*, 310-314.

Rick, J., Briner, R. B., Daniels, K., Perryman, S., and Guppy, A. (2001). *A critical review of psychosocial hazard measures*. Norwich, UK: HSE Books.

Robazza, C. (this volume). Emotion in sport: An IZOF perspective. In S. Hanton and S. D. Mellalieu (Eds.), *Literature reviews in sport psychology*. Hauppauge, NY: Nova Science.

Rogers, T. T., and McClelland, J. L. (2004). *Semantic cognition: A parallel distributed processing approach*. Cambridge, MA: MIT Press.

Rosenbaum, M. (Ed.) (1990). *Learned resourcefulness: On coping skills, self-control, and adaptive behavior*. New York: Springer.

Rotella, R. J., and Lerner, J. D. (1993). Responding to competitive pressure. In R. N. Singer, M. Murphey, and L. K. Tennant (Eds.), *Handbook of research on sport psychology* (528-541). New York: Macmillan.

Rumelhart, D. E., McClelland, J. L., and the PDP Research Group (1987). *Parallel distributed processing: Explorations in the microstructure of cognition. Vol. 1: Foundations*. Cambridge, MA: MIT Press.

Rushall, B. S. (1987). *Daily analysis of life demands for athletes*. Spring Valley, CA: Sports Science Associates.

Rushall, B. S. (1990). A tool for measuring stress tolerance in elite athletes. *Journal of Applied Sport Psychology, 2*, 51-66.

Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry*, *57*, 316-331.

Salancik, G. R., and Pfeffer, J. (1978). A social information processing approach to job attitudes and task design. *Administrative Science Quarterly*, *23*, 224-253.

Sanders, A. F. (1980). Stage analysis of reaction processes. In G. E. Stelmach and J. Requin (Eds.), *Tutorials on motor behavior* (pp. 331-354). Amsterdam: North-Holland.

Sanders, A. F. (1983). Towards a model of stress and human performance. *Acta Psychologica, 53*, 64-97.

Sarason, I. G., Johnson, J. H., and Siegel, J. M. (1978). Assessing the impact of life changes: Development of the Life Experiences Survey. *Journal of Consulting and Clinical Psychology*, *46*, 932-940.

Scanlan, T. K., Stein, G. L., and Ravizza, K. (1991). An in-depth study of former elite figure skaters: III. Sources of stress. *Journal of Sport and Exercise Psychology, 1*, 102-120.

Schaubroeck, J., Ganster, D., and Fox, M. (1992). Dispositional affect and work-related stress. *Journal of Applied Psychology*, *77*, 322-335.

Schaubroeck, J., and Merritt, D. (1997). Divergent effects of job control on coping with work stressors: The key role of self-efficacy. *Academy of Management Journal*, *40*, 738-754.

Schmidt, G. W., and Stein, G. L. (1991). Sport commitment: A model integrating enjoyment dropout and burnout. *Journal of Sport and Exercise Psychology*, *8*, 254-265.

Schurman, S., and Israel, B. (1995). Redesigning work systems to reduce stress: A participatory action research approach to creating change. In L. Murphy, J. Hurrell, S. Sauter, and G. Keita (Eds.), *Job stress interventions* (pp. 235-264). Washington, DC: American Psychological Association.

Scientific American (Eds.). (1999). *The Scientific American book of the brain*. New York: The Lyons Press.

Selye, H. (1936). A syndrome produced by diverse nocuous agents. *Nature, 138*, 32.

Selye, H. (1946). The general adaptation syndrome and the distress of adaptation. *Journal of Clinical Endocrinology*, *6*, 117-196.

Selye, H. (1950). *The physiology and pathology of exposure to stress*. Montreal: Acta.

Selye, H. (1956). *The stress of life*. New York: McGraw-Hill.

Selye, H. (1973). Evolution of the stress concept. *American Scientist, 61*, 692-699.

Selye, H. (1975). Confusion and controversy in the stress field. *Journal of Human Stress, 1*, 37-44.

Selye, H. (1976a). Forty years of stress research: Principle remaining problems and misconceptions. *Canadian Medical Association Journal, 115*, 53-56.

Selye, H. (1976b). *Stress in health and disease*. Oxford, UK: Butterworths.

Selye, H. (1976c). *The stress of life* (2nd ed.). New York: McGraw-Hill.

Semmer, N. (1996). Individual differences, work stress and health. In M. Schabracq, J. Winnubst, and C. Cooper (Eds.), *Handbook of work and health psychology* (pp. 51-86). New York: Wiley.

Siegrist, J. (1998). Adverse health effects of effort-reward imbalance at work. In C. L. Cooper (Ed.), *Theories of organizational stress* (pp. 190-204). New York: Oxford University Press.

Slack, T. (1997). *Understanding sport organizations: The application of organization theory*. Champaign, IL: Human Kinetics.

Smith, R. E. (1980). Development of an integrated coping response through cognitive-affective stress management training. In I. G. Sarason and C. D. Spielberger (Eds.), *Stress and anxiety* (Vol. 7, pp. 265-280). Washington, DC: Hemisphere.

Smith, R. E. (1985). A component analysis of athletic stress. In M. Weiss and D. Gould (Eds.), *Competitive sports for children and youths: Proceedings of the Olympic Scientific Congress* (pp. 107-112). Champaign, IL: Human Kinetics.

Smith, R. E. (1986). Toward a cognitive-affective model of athletic burnout. *Journal of Sport Psychology, 8*, 35-50.

Smith, R. E., Smoll, F. L., and Wiechman, S. A. (1998). Measurement of trait anxiety in sport. In J. L. Duda (Ed.), *Advances in sport and exercise psychology measurement* (pp. 105-127). Morgantown, WV: Fitness Information Technology.

Snyder, C. R., Harris, C., Anderson, J. R., Holleran, S. A., Irving, L. M., Sigmon, S. T., Yoshinobu, L., Gibb, J., Langelle, C., and Harney, P. (1991). The will and the ways: Development and validation of an individual difference measure of hope. *Journal of Personality and Social Psychology, 60*, 570-585.

Spector, P. E. (1998). A control theory of the job stress process. In C. L. Cooper (Ed.), *Theories of organizational stress* (pp. 153-169). Oxford, UK: Oxford University Press.

Spector, P. E. (1999). Objective versus subjective approaches to the study of job stress. *Journal of Organizational Behavior, 20*, 737.

Spector, P. E., Zapf, D., Chen, P., and Frese, M. (2000). Why negative affectivity should not be controlled in job stress research: Don't throw the baby out with the bath water. *Journal of Organizational Behavior, 21*, 79-95.

Speisman, J. C., Lazarus, L., Mordkoff, A. M., and Davison, L. A. (1964). The experimental reduction of stress based on ego-defense theory. *Journal of Abnormal and Social Psychology, 68*, 367-380.

Spicer, J. (1997). Systems analysis of stress and coping: A testing proposition. *Journal of Health Psychology, 2*, 167-170.

Spielberger, C. D. (1989). Stress and anxiety in sports. In D. Hackfort and C. D. Spielberger (Eds.), *Anxiety in sports: An international perspective* (pp. 3-17). New York: Hemisphere.

Sullivan, P. A., and Nashman, H. W. (1998). Self-perceptions of the role of USOC sport psychologists in working with Olympic athletes. *The Sport Psychologist*, *12*, 95-103.

Tapp, J. T. (1985). Multisystems holistic model of health, stress and coping. In T. M. Field, P. M. McCabe, and N. Schniederman (Eds.), *Stress and coping* (pp. 285-304). Hillsdale, NJ: Erlbaum.

Taylor, G. J., and Bagby, R. M. (2000). An overview of the alexithymia construct. In R. Bar-On and J. D. A. Parker (Eds.), *Handbook of emotional intelligence* (pp. 40-67). New York: Wiley.

Taylor, J. (1992). Coaches are people too: An applied model of stress management for sports coaches. *Journal of Applied Sport Psychology*, *4*, 27-50.

Tenenbaum, G., Jones, C. M., Kitsantas, A., Sacks, D. N., and Berwick, J. P. (2003a). Failure adaptation: Psychological conceptualization of the stress response process in sport. *International Journal of Sport Psychology*, *34*, 1-26.

Tenenbaum, G., Jones, C. M., Kitsantas, A., Sacks, D. N., and Berwick, J. P. (2003b). Failure adaptation: An investigation of the stress response process in sport. *International Journal of Sport Psychology*, *34*, 27-62.

Turner, R. J., and Wheaton, B. (1995). Checklist measurement of stressful life events. In S. Cohen, R. C. Kessler, and L. U. Gordon (Eds.), *Measuring stress: A guide for health and social scientists* (pp. 29-58). New York: Oxford University Press.

Vallerand, R. J. (1983). On emotion in sport: Theoretical and social psychological perspectives. *Journal of Sport Psychology*, *5*, 197-215.

Vallerand, R. J., and Blanchard, C. M. (2000). The study of emotion in sport and exercise: Historical, definitional, and conceptual perspectives. In Y. L. Hanin (Ed.), *Emotions in sport* (pp. 3-37). Champaign, IL: Human Kinetics.

Vealey, R. S., Udry, E. M., Zimmerman, V., and Soliday, J. (1992). Intrapersonal and situational predictors of coaching burnout. *Journal of Sport and Exercise Psychology*, *14*, 40-58.

Wann, D. L., Melnick, M. J., Russell, G. W., and Pease, D. G. (2001). *Sports fans: The psychological and social impact of spectators*. New York: Routledge.

Watson, D., and Clark, L. (1984). Negative affectivity: The disposition to experience negative aversive emotional states. *Psychological Bulletin*, *96*, 465-498.

Wegner, D. M. (1989). *White bears and other unwanted thoughts: Suppression, obsession, and the psychology of mental control*. New York: Viking.

Wegner, D. M. (1994). Ironic processes of mental control. *Psychological Review*, *101*, 34-52.

Wegner, D. M. (1997). Why the mind wanders. In J. D. Cohen and J. W. Schooler (Eds.), *Scientific approaches to consciousness* (pp. 295-315). Hillsdale, NJ: Erlbaum.

Weick, K. E. (1979). *The social psychology of organizing* (2nd ed.). Reading, MA: Addison-Wesley.

Weinberg, R., and McDermott, M. (2002). A comparative analysis of sport and business organizations: Factors perceived critical for organizational success. *Journal of Applied Sport Psychology*, *14*, 282-298.

Weiner, N. (1948). *Cybernetics*. Cambridge, MA: MIT Press.

Westerbeek, H., and Smith, A. (2003). *Sport business in the global marketplace*. Basingstoke, UK: MacMillan.

Williams, J. M., and Krane, V. (1992). Coping styles and self-reported measures of state anxiety and self-confidence. *Journal of Applied Sport Psychology*, *4*, 134-143.

Williams, J. M., Tonymon, P., and Anderson, M. B. (1991). Effects of stressors and coping resources on anxiety and peripheral narrowing in recreational athletes. *Journal of Applied Sport Psychology*, *3*, 126-141.

Winett, R. A. (1995). A framework for health promotion and disease prevention and programs. *American Psychologist*, *50*, 341-350.

Winnubst, J., and Schabracq, M. (1996). Social support, stress and organization: Toward optimal matching. In M. Schabracq, J. Winnubst, and C. Cooper (Eds.), *Handbook of work and health psychology* (pp. 87-102). New York: Wiley.

Wofford, J. C., and Daly, P. (1997). A cognitive process approach to understanding individual differences in stress response propensity. *Journal of Occupational Health Psychology*, *2*, 134-147.

Wofford, J. C., Goodwin, V. L., and Daly, P. S. (1999). Cognitive-affective stress propensity: A field study. *Journal of Organizational Behavior*, *20*, 687-707.

Wolff, S. (1995). The concept of resilience. *Australian and New Zealand Journal of Psychiatry*, *29*, 565-574.

Woodman, T. (2003). Le stress organisationnel dans le sport de haut niveau (Organizational stress in high-level sport). In C. Le Scanff (Ed.) Le Manuel de Psychologie du Sport: L'intervention en Psychologie du Sport (The Handbook of Sport Psychology: Sport Psychology Interventions, 2nd ed., pp. 357-375). Paris: EP.S.

Woodman, T., and Hardy, L. (1997, Winter). Getting the management right. *Coaching Focus*, *36*, 17-18.

Woodman, T., and Hardy, L. (1998, March). *Le stress organisationnel: une étude de cas (Organizational stress: A case study)*. Presentation made at the Journées nationales d'études de la société Française de psychologie du sport, Poitiers, France.

Woodman, T., and Hardy, L. (2001a). A case study of organizational stress in elite sport. *Journal of Applied Sport Psychology*, *13*, 207-238.

Woodman, T., and Hardy, L. (2001b). Stress and anxiety. In R. N. Singer, H. A. Hausenblas, and C. M. Janelle (Eds.), *Handbook of sport psychology* (pp. 290-318). New York: Wiley.

Wright, T. A., and Doherty, E. M. (1998). Organizational behavior "rediscovers" the role of emotional well-being. *Journal of Organizational Behavior*, *19*, 481-485.

Wrisberg, C. A. (1994). The arousal-performance relationship. *Quest*, *6*, 60-77.

Zajonc, R. B. (1980). Feeling and thinking: Preferences need no inferences. *American Psychologist*, *35*, 151-175.

Zajonc, R. B. (1984). On the primacy of affect. *American Psychologist*, *39*, 117-123.