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CASE STUDY:

Understanding and Refining the Resilience of Elite Athletes: An Intervention Strategy

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ABSTRACT

Over the past decade, researchers at the University of Pennsylvania have developed a resilience training protocol designed to improve the output of both professional executives and under-graduate students in adverse circumstances. A parallel program was also designed to enhance the self-esteem of children. Longitudinal studies using these programs suggest that not only can human resilience be taught, but their benefit is a fostering of achievement. Recently, Schinke and Peterson designed, in collaboration with their colleagues at the University of Pennsylvania, parallel resilience training modules for national team athletes and coaching staff members. Initial results from the training of these groups indicate that performance can be improved in challenging settings through the development of targeted cognitive skills. This paper will provide an overview of three general optimism skills that can be honed for national teams and explain how each one can be taught as part of a broader comprehensive resilience program. Recommendations are provided for sport psychology researchers and consultants, coach staff, and team management interested in assisting elite athletes improve performance in adverse competitive situations.

"There is often more to words than meets the eye"

For more than twenty years sport psychologists have attempted to better understand the meaning underlying athletes' explanations for performance outcomes. Attempts at understanding have spanned different topic areas from methodology (Martens, 1979; Martens, 1987; Schinke & da Costa, 2000) to frameworks, such as attribution theory (Brawley & Rajeski, 1983; Brawley, 1984; Biddle, 1993) and learned helplessness (Seligman, 1991). There remains, however, a dearth of literature supporting the view that the sport scientist's appropriate interpretations of athletes' post-performance attributions provide insight regarding their future achievements in both the short- and long-term (Peterson, 1980; Biddle, 1993; Rettew & Reivich, 1995; Gould, Guinan, Greenleaf, Medbery & Peterson, 1999)

Schinke and da Costa (2001) contend that, in some instances, the consistency of entire athletic careers can be tied to explanatory patterns. Some athletes do not move forward rapidly and address the reasons underlying their ongoing accumulation of setbacks, whereas others accept accountability and progress expeditiously toward success (Rettew & Reivich, 1995; Schinke, 2000). Existing empirical evidence suggests that causal explanations may contribute to the prediction of sport performance in difficult settings. The evidence also suggests that each athlete's method of explanation reflects a deeper learned behaviour and perceptual screen than might initially be acknowledged (Schinke, 2000; Schinke & Jerome, 2002).

The purposes of this paper are, first, to outline the two types of explanations prevalent with elite athletes and illustrate how each links with performance over time and, second, to overview a series of resilience training skills that are currently showing promise as an intervention package with one group of major- games athletes and their support staff.

Evaluating Athlete's Explanations

Athletes' explanations are more than an assignment of cause after a given performance (Reber, 1995). They are also important as a means for predicting biases, explanations, expectations, future variances in exertion, and final outcomes (Seligman, 1991; Peterson, 2000).

Researchers, including Weiner (1985) and Abrahamson, Seligman and Teasdale (1978), have developed frameworks through which attributions can be better evaluated and understood. Weiner's (1985) framework has provided a means of categorizing isolated attributions and human tendencies in terms of accountability and biases after both wins and losses (Brawley, 1984; Biddle, 1993). It has also provided insight into how people tend to foster and maintain self-esteem after varied levels of achievement (Myers & Spencer, 2001). The stability dimensions of the framework have been linked to feelings of hopelessness (attributing losing to stable causes) and helpfulness (attributing winning to stable causes) (Weiner, 1985).

Weiner's use of the term "hopelessness" is somewhat related to Seligman's (1995) notion of learned helplessness (Cox, 2002). Seligman's research linked pessimism with learned helplessness and resulted in his recommendation that "children should be taught to interact with their environment in an optimistic but realistic way" (Cox, 2002, p.62). Abramson et al's (1978) learned helplessness framework has provided insight to researchers and practitioners, though its emphasis has been the longer-term prediction and refinement of variances in motivated behaviour. It is this latter framework to which the current paper will adhere given its emphasis on the long-term motivational monitoring of elite athletes.

The dimensions included in the learned helplessness framework evaluation process are stability, locus of control, and pervasiveness (Seligman, 1991; Rettew & Reivich, 1995).

Stability refers to the predicted constancy of an assigned cause in the future, be the outcome positive or negative. Locus of control refers to the athlete's assignment of causal responsibility to either internal or external factors. Pervasiveness refers to the perceived extent to which an attribute in one setting confines or extends to other facets of one's life. These three dimensions couple with Weiner's four main attributions to provide a fuller understanding regarding the athlete's perceptions and expectations of future control (Weiner, 1985). The attributions borrowed from Weiner's (1979) work on achievement motivation, and integrated as part of Abramson and colleagues' (1978) learned helplessness model, are ability, effort, task difficulty and luck. It is this multiple level evaluation process of identifying more specific assignment and the underlying expectations of future occurrences that delineates motivating, from debilitating, assignments of causality.

The following section will outline the importance of the learned helplessness attribution framework to elite athletes' expectations of success, their motivations, and their performances.

Stability. Athletes' explanations can, in part, be considered in terms of perceived stability; whether a given result is likely to reoccur in the future and, if so, how often (Rettew & Reivich, 1995). While some athletes believe that their setbacks in performance will continue well into the future, others tend to view similar incidents as fleeting (Schinke & Peterson, 2002a). Consider Eric Lucas, the 2001-2002 WBC Super Middleweight Boxing Champion. Eric experienced four losses against tough opponents early in his professional development. Causality was assigned immediately after each loss and, in each instance, he attributed the loss to inexperience. With this explanation of impermanence and an on-going expectation of future success, Eric captured the world title in June of 2001 and has not lost a bout since.

In comparison, as the authors learned earlier when working with several elite amateur athletes, expectations of permanence can undermine athletic performance when no expectation of future resolution of sub-par performance is perceived (Schinke & da Costa, 2001; Schinke & Jerome, 2002). In place of solution-based thinking, some athletes

tend to ruminate about their inabilities, the inabilities of those around them, or the inadequacies in both parties concurrently (Seligman, 1991). With a focus on the inability to overcome their constraints, such athletes perpetuate apathy and minimize the activity required for positive expectations, motivated behaviour, and success (Schinke & Patterson, 2002a). When considering the athlete's expectation of causal stability, it is worth noting that setbacks do not have to be assessed as de-motivating, providing they are regarded as temporary and the result of a transient deficiency in personal or support staff attributes (Rettew & Reivich, 1995).

Locus of Control. Explanations of athletic performance need also be considered in terms of to whom or where responsibility is directed (Rotter, 1989; Seligman, 1991). When athletes explain their wins and losses in terms of personal efforts and abilities, assignments are viewed as personally regulated (Biddle, 1993). If, on the other hand, explanations are directed to other people or environmental circumstances, the assignments are regarded as externally regulated or as entirely uncontrollable (Schinke & Patterson, 2002a).

Previous research summarized by Biddle (1993) indicates that athletes allocate internal assignments frequently after wins, and infrequently after losses. The self-serving tendency after winning, and its associated onus on personal attributes, is believed to contribute to athlete self-confidence through an anticipated increase in perceived control (Bandura, 1997). Many, including Brawley (1984), have found the ego-protecting attributions following unsuccessful athletic performances tend to be assigned to external causes, thus ensuring the athlete's maintenance of self-esteem. Potential guilt and shame are typically sublimated following the diminishment of performance when that diminishment has more to do with someone or something else than with one's self (Weiner, 1986).

When taken from the vantage point of explanatory research, assignments of accountability also clarify matters beyond the athlete's tendency to preserve and promote self-esteem. They also offer, in addition to momentary understanding, an opportunity to evaluate the athlete's expectancy of future success (Schinke, Jerome & da Costa, 2002). As Schinke (2000) indicated recently, ego-protective tendencies differ among elite athletes. Some elite athletes tend to attribute declines in performance more willingly to a personal responsibility than do others (Schinke & Peterson, 2002a). The first subset of athletes is more solution-oriented after a setback and, thus, are able to re-establish success rapidly, much as professional boxer Eric Lucas did. The latter athlete subset tends to be more externally focused in their explanations and problem-oriented in their analysis. Given a belief of non-contingency between their resources and potential solutions, the latter group of elite athletes block themselves from an expedited return to success while engaging in helplessness (see Seligman, 1975).

Thus, coaches and sport psychology consultants alike serve their athletes well when they encourage a well-timed search for personal accountability and potential control, especially after set-backs are experienced (Rettew & Reivich, 1995). When personal accountability is not possible, then reflections can turn to the promise of future regulation

through refined support-staff actions (Schinke & Jerome, 2002). Given the momentary increase in emotional investment following deficient performance, a search for solutions can challenge self-esteem; however it will subsequently direct athletes toward a cognitive shift, more analytical thought, a resulting search for future control, and the amelioration of future mishaps via appropriately selected strategies (Schinke & da Costa, 2001).

Pervasiveness. The third aspect in the interpretation of an athlete's explanation is its evaluation on a continuum between situation and trait (Seligman, 1991). Qualities that can be identified in one context, while potentially spanning across several contexts, include courage, self-confidence and optimism (see Peterson, 2000). To illustrate pervasiveness in sport, let us consider the attribute of courage in boxing. For a boxer, the attribute of courage can be limited to one bout, one season, or extended across an entire amateur career (Schinke & Peterson, 2002a). Courage can also span several contexts, such as if this same boxer accepts a position as an air marshal given the high level of risk associated with air travel these days. The difference between the extending levels of courage distinguishes situational and contextual behaviour from courage as a broader trait.

Though momentary and contextual behaviours are of primary interest given this paper's emphasis on resilience in elite athletics, it needs to be noted that optimism can be learned in one context and transferred to others (Schinke, da Costa and Andrews, 2001). This possibility will undoubtedly be encouraging to coaches and sport psychologists who attempt to teach positive and transferable life skills through sport.

Teaching Resilience to Athletes

To this point, the paper has addressed the common explanatory patterns found in groups of athletes. The more positive pattern is found among those who are more hopeful in their expectations of both self and support staff, and is defined as optimistic based on criteria set forth by Seligman (1991). The second pattern is found in athletes who expect less control over future environmental demands and performance and is regarded as pessimistic. When comparing athletes exhibiting these two explanatory patterns, Rettew & Reivich (1995) found that under adverse conditions, optimistic athletes are more likely to maintain or improve upon past performances than are pessimists.

However, even the most optimistic of athletes sometimes waiver in resilience when faced with adversity (Schinke, 2000; Schinke & Peterson, 2002d). Being an optimistic athlete does not ensure improved performance; it only increases the probability (Schinke & Peterson, 2002a). It follows, then, that resilience skills should be based upon the attributes that underlie only the resilience producing behaviours exhibited by optimists, such as solution-based thinking (Peterson, 2000; Seligman, 1991). The intention of resilience training is to teach positive re-attributing techniques in order to foster expectations of future regulatory abilities to those with debilitating thought patterns (Försterling, 1985). Resilience skills training should enhance the likelihood of situational increases in effort for both optimistic and pessimistic athletes before foreseeable encounters with adversity.

Three resilience techniques developed by Gillham, Jaycox, Reivich, Seligman and Silver (2001) for school children, then tweaked for elite sport by Schinke and Peterson (2002a; 2002b), are (1) the assessment of personal assumptions, (2) disputing strategies, and (3) de-catastrophizing. During the remaining portion of this paper these skills will be reviewed as unique progressive interventions.

Evaluating Personal Assumptions. The assessment of personal assumptions is a preliminary step used during pre- and post-season intervention to refine athletes' assumptions. During the non-competitive period, athletes are permitted sufficient time to consider how errors in their evaluations occur, while also considering the relationship between interpretations of the past and expectations of future performance (Shatté, Gillham & Reivich, 2000). Based upon the ABC framework developed by Ellis (1962) as part of cognitive therapy, this initial step is used to teach the sequence underlying declines in motivation from the initial incident catalyst to resulting behaviour. For example, in the case of a boxer with a tendency toward untimely outbursts both in and out of the ring, a link was identified between his specific external catalyst, being insulted, and the ultimate outburst (the behaviour). The link was as follows: The insult (the incident) was perceived as making him look inadequate (the thought) which brought about feelings of humiliation (the emotion) with a resulting loss of control materializing almost immediately into unregulated aggression (the behaviour). By pointing out a sequenced deterioration of self-regulatory capacities, one comes to understand that all behaviours result, at least in part, from cognitive processes, as opposed to occurring solely by instinct.

Given that causal chains can be easily assessed in a sequential manner using the ABC model, it follows that a systematic process can be implemented to teach athletes how to re-consider their personal assumptions. Schinke and Peterson have devised a four-step process for athletes (2002b) and coaching staff members (2002c). The first step for the athletes is an identification of the circumstance catalyzing one or more previous patterns of behaviour. Athletes were found to escalate to unregulated behaviour without any understanding of the chronology from initial catalyst to eventual loss of composure. Thus, teaching an initial reflective step of incident identification helps clarify factors that serve as emotional triggers. The second step is a consideration of the relationship between the activating incident and the thoughts that follow, most likely as part of a schematic framework (see Myers & Spencer, 2001). Understanding how one's personal thoughts typically intertwine with the catalyzing incident encourages an identification of where personal errors were made at the cognitive level. As a result, the athlete can consider optimized mastery or coping responses for use in similar circumstances in the future (Shatté et al, 2000). Understanding is framed in relation to the causal dimensions (Abramson et al, 1978) and attributions (Weiner, 1979) previously discussed. In the third step, the athlete is encouraged to consider how emotions follow logically from earlier thoughts. This crucial step allows for a potential increase in athlete self-regulation given that thoughts can be monitored through self-awareness and, as a result, control over subsequent emotional responses can be fostered (Beck, 1999). The fourth step is to consider the athlete's behaviours as resulting from the three easily regulated steps that precede it. Inevitably, from an understanding of one's circumstantial or pervasive

tendencies and the sequencing involved in those tendencies, hope for positive change in both the short- and long-term, can ensue.

Disputing Negative Thoughts. Following the assessment of personality causality, it should become clear to athletes that they create many of their own adversities based on their interpretation of events, particularly when those interpretations are negative and regarded as permanently uncontrollable. As Schinke and Peterson (2002a) have pointed out, athletes' interpretations facilitate investments in positions that are often degenerative of performance in the short- and long-term. Given that negative interpretations create both affect-laden responses and negative solutions to adversity, constructive problem-solving techniques are essential if positive change is to occur (Shatté et al, 2000). One constructive technique used in clinical non-sport settings is disputing; the garnering of positive arguments to counter ruminative reactions, inefficacy, and debilitation (Seligman, 1991).

Disputing has recently been refined into a five-step intervention for athletes and coaches by Schinke and Peterson (2002b; 2002c). Its application as an intervention strategy is most appropriate when there is sufficient time to fully evaluate affect-laden responses, either in- between tournaments or during post-season. Its first step, identical to the previous skill (examining assumptions), is to identify how athletes evaluate their previous circumstances based on differences in causal assignment. During the second step, the athletes are encouraged to consider the evidence used in their evaluation. For instance, if the initial evaluation is one of support-staff inability or disinterest, the evidence used might include one, or a series of supportive memories. The athlete then considers whether the actions are regarded as intentional and constant over time. A consideration of circumstances surrounding one or a series of incidents will delineate the athlete's imperfectly recollected recanted memory and its associated emotions (Brehm, Kassin & Fein, 1999; Myers & Spencer, 2001). Explorations of interpretation, in turn, allow the discussants to start the third step of the disputing process: the identification and ownership of potential inaccuracies in their evaluation. Initially, evaluations might require the guidance of a support-staff member regarded as creditable to act as devil's advocate. However, with time, athletes can follow through on this process autonomously and challenge negative reflection with personally garnered optimistic evidence. When athletes have identified their errors in appraisal, they will automatically consider a more positive and constructive thought process as their fourth step. If initial reflections are targeted at support-staff inactivity or ineptness, then a disputing strategy might indicate the circumstance as impermanent, unintentional, or as incorrectly evaluated. The follow-through would be a re-framing of support-staff behaviour as well-intended and potentially facilitative of future athletic competence. As a fifth step, the athlete is encouraged to find a more optimistic marshaling procedure to replace earlier pessimistic evaluative habits.

Decatastrophizing. Bandura (1997) has noted that it is not unusual for athletes to detract from their own confidence, reciprocally, immediately before and during important competitions. Catastrophic thoughts arise by considering potential inability and the likelihood of ensuing negative outcomes, and then performing to expectation (Seligman,

1991). Shatté et al (2000) suggest that thoughts of inability and negative case scenarios develop exponentially, with smaller concerns fostering larger ones. One of the authors consulted with a national team marathon runner whose escalating concern was the likelihood of being elbowed violently during the latter part of important races. Though the concern was realistic, it had increased to a debilitating level. The athlete anticipated that she would be overpowered by her adversary at a crucial moment in a forthcoming race, and that her performance would end in personal injury, elimination, and de-selection. As a solution to such uncontrollable momentary concerns, especially during the competitive season when perceptions are less likely to alter, the final skill to be addressed in this paper, decatastrophizing, can be implemented.

Decatastrophizing has been defined by Shatté et al (2000) as the ability to accurately examine a worst-case scenario and, then, consider a wider number of potential outcomes. Decatastrophizing, like the previously discussed cognitive skills, is most effective when implemented in a sequence. The first step in the process is to identify the potential degeneration from the athlete's current state through to a worst-case scenario, be it injury, sub-par performance, or both concurrently. As a second step, the athlete is asked to examine the likelihood of the worst possible scenario occurrence. More times than not, the athlete's worst-case scenario will be evaluated as improbable, or at least not as a certainty, given sufficient preparation. The third step in the process is the generation of best-case scenarios that hold some possibility of materializing. For the marathon runner, the best-case scenario would be a race without physical exchange. Typically, elite athletes who question their own capabilities do not consider the likelihood of success as reasonable. Considering a potential success story often catalyzes adaptive thoughts, emotions and behaviours. As a fourth step, the athlete can be encouraged to consider one more option: a most-likely case scenario. The most-likely scenario is a circumstance located between the most positive and negative of outcomes. For the marathon runner, discussions included the possibility of physical exchanges without injury. This leads to the final step in the discussion: how to manage self and environment optimally in relation to each circumstance. Through this five-step process, the athlete learns how to develop concurrent mastery and coping strategies for increased resilience given numerous potentialities. For the marathon runner, the result was a more comprehensive preparatory plan, success and, subsequently, selection to the national team.

Preliminary Implications of Resilience Training with National Team Athletes

Given that resilience skills have been presented as facilitators of athlete success, it is essential that the discussion turn briefly to their success as performance enhancement strategies. Currently, Schinke and Peterson (2002d) are in the first year of a three year longitudinal study monitoring the relationship between resilience training and major-games performance. This study will culminate after the 2004 Summer Olympics. During the first year the researchers evaluated male and female athletes from two national boxing teams. The athletes were asked to complete Peterson, Semmel, von Baeyer, Abramson, Metalsky & Seligman's (1982) Attribution Style Questionnaire. The questionnaire was administered before the intervention in order to predict both the likelihood of resilience and subsequent success in major-games. Afterward, all athletes were taught the

aforementioned resilience training skills. The first of three years of performance results have been monitored, along with the verbatim post-performance explanations provided to newspapers and television (see Rettew & Reivich, 1995). Though their explanatory styles will continue to be assessed over a three year period, the initial results are promising. Twenty national team athletes have competed in two major-games against athletes from approximately 70 other countries. In both instances, the monitored athletes have won the overall team awards for their country for the first time. In terms of individual performances, the athletes were awarded 16 medals. Though these outcomes must be considered as tentative, indications of what is to come, given the ongoing increase in major-games difficulty leading to an upcoming Olympic year, are promising.

Table 1. Major-Games Medals Achieved by Intervention Athletes - Year One

Results	Total Athletes	Gold	Silver	Bronze	Total Medals
Male	10	2	2	3	7
Female	10	1	4	4	9
Total Medals	20	3	6	7	16

Recommendations on How to Implement Resilience Training

The three skills outlined in this paper must not be regarded as the definitive answer in teaching resilience to elite athletes. They do, however, provide some suggestions for practitioners who may wish to foster constructive thought in athletes and their associated support systems. On one level, as noted by Seligman (1991) and Shatté et al (2000), each of the skills provide suggestions on how to increase constructive thought, perceived control, and success under adversity, as well as how to further constructive thought in a cyclical manner. In order for resilience skills to work, however, it must be remembered that they develop with practice and cumulative successful experiences (Peterson, 2000). Resilience interventions are, what have been termed by Seligman (1991), "waxed skills". They require more than an immediate change in interpretation; they require a change in habitual thought patterns. So, for at least the first six months, the proposed skills must be used in a deliberate way until they are eventually integrated as habits (see Maddux, 1993).

Second, based on refinements by Schinke and Peterson (2002b; 2000c), the resilience skills proposed in this paper are useful because they provide a step-by-step procedure for how athletes and their support-staff can work through different types of internal struggles when faced with adversity. It is recommended that the steps to each skill be closely adhered to. Eventually, a quick reference to the steps might be a sufficient catalyst to alter thoughts, emotions and behaviours. However, if athletes were to overlook either the cognitive or affective aspects of each skill, there is a chance that their habitual emotional responses might return and subsequently detract from appropriate interpretations and the

chance of improved performance. Hence, vigilance is suggested when following any or all resilience protocols during their preliminary implementation.

Third, perhaps the greatest merit of the resilience skills outlined in this paper is their intention; an eventual shift toward athlete-regulated resilience (Schinke & Peterson, 2002a). Though it is suggested in this paper that interventions be initially monitored with the assistance of a support-staff member, the intention is to foster long-term resilience with limited external guidance. To ensure ongoing improvements in resilience, it is necessary that support staff decrease their involvement in the suggested skills to the point of invisibility and monitoring. Only then will resilience be likely to withstand the test of adverse performance environments. Then again, with increases in athlete resilience and performance, it is worth speculating that formal support-staff might increase the probability of their own long-term appointments.

Finally, it must be reiterated that perceptions are learned and unlearned in social contexts (Schinke, da Costa & Andrews, 2001; Seligman, 1991). In terms of elite sport, athlete interventions are also applicable to coaches and managerial staff (Gould et al, 1999). Schinke's (2000) earlier doctoral research indicates that increases in athlete resilience become hardier when athletes are placed in resilience-producing environments. It appears that athletes learn their situational expectations from personal coaches, and that these perceptions are often supported by experiences with formal coaching and managerial staff on national and professional sport teams (Schinke & da Costa, 2001). An optimistic athlete placed in a context where successes are attributed to uncontrollable factors, and where failures are viewed as typical, would thus be unlikely to maintain the appropriate skills in the most adverse elite sport tournaments (Bandura, 1997). Hence, it seems reasonable that resilience training be broad in nature, starting with personal coaches and formal support-staff (Schinke and Patterson, 2002c). After all, as Bandura (1997) recognized several years ago, athletes do not perform as social isolates and cannot be assisted without assisting those influencing their athletic performance at all competitive levels.

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