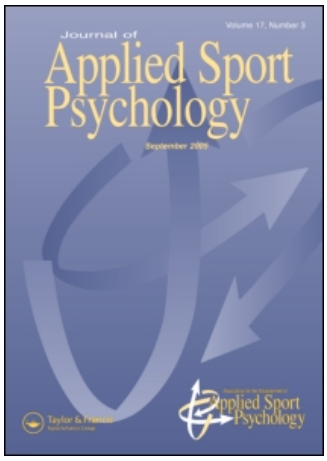

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Emotional Intelligence: A Theoretical Overview and Implications for Research and Professional Practice in Sport Psychology

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Over the past five years, sport psychology researchers and practitioners have become increasingly vocal in their suggestions that emotional intelligence (EI) may be an important construct in the sport domain. Initial research in sport has been valuable for gaining preliminary insights, but use of disparate theoretical frameworks and assessment techniques confuses rather than clarifies potential links between EI and sport. Specifically, the use of different definitions, conceptualizations, and assessment inventories may yield different EI profiles of the same individual or team. This disparity has important implications for applied sport psychology, where there is a call for the use of theoretical paradigms, objective and subjective assessments, and empirical research to inform practice. The purposes of this paper, therefore, are to: (a) review EI models and assessment inventories; (b) review research on EI in business, health, and sport; and (c) identify directions for future research and professional practice in sport psychology.

As suggested in both the popular and scholarly press, emotions play an integral part in the development and performance of athletes and teams (Botterill & Brown, 2002; Jones, 2002; Oneal, 2003; Vallerand & Blanchard, 2000). To date, the scholarly literature (Hanin, 2000; Jones, 2003; Lazarus, 2000) has primarily highlighted how factors such as emotional control and peak emotional experience may influence a myriad of factors relevant in the sport domain (e.g., motivation, anxiety, fun, objective performance). While we know that relationships exist, there is a need to better understand how emotions and related constructs work to influence both objective and subjective outcomes in sport. The need to expand the study of emotion in sport is reinforced by Botterill and Brown (2002) who asserted that "typically athletes just experience their emotional responses and do not stop to reflect on them critically and constructively" (p. 50).

The reflection on, and critique of, emotion is analogous to the construct *emotional intelligence* (EI), or an individual's ability to perceive, utilize, understand, and manage emotions (Mayer & Salovey, 1997). Several of the discrete components of EI (i.e., perceiving emotion, managing emotion) have been identified as important in maximizing sport performance (Jones, 2003; Lazarus, 2000; Ravizza, 1998), yet little research to date has examined contributions

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of the collective EI paradigm to performance in the sport domain. While some may intuit that emotions and EI are synonymous, the hierarchical model which underpins the latter may assist researchers and practitioners alike in better understanding the role of emotion in sport performance.

The hypothesized link between EI and performance in sport should come as little surprise since EI has recently been the focus of research that attempts to predict and explain the role of the construct in other domains. Given parallels typically drawn between performance in business and sport (Jones, 2002; Loehr & Schwartz, 2001; Weinberg & McDermott, 2002), as well as the previously stated importance of emotion in sport, it is not surprising that researchers and practitioners have become increasingly vocal in their suggestion that EI may be an important paradigm in the sports world (Botterill & Brown, 2002; McCann, 1999; Meyer, Fletcher, Kilty, & Richburg, 2003; Zizzi, Deaner, & Hirschhorn, 2003). The purposes of this paper, therefore, are to: (a) critically review EI models and assessment inventories; (b) review research on EI in business, health, and sport; and (c) identify directions for future research and professional practice in sport psychology.

THEORETICAL AND MEASUREMENT PERSPECTIVES ON EMOTIONAL INTELLIGENCE

Most of the research on the application of EI is informed by one of two models: the mixed model or the ability model. Mixed models suggest that EI encompasses both mental abilities (i.e., emotional self-awareness, empathy, problem-solving, impulse control) and self-reported personality characteristics (i.e., mood, genuineness, warmth) (Sternberg et al., 2000). Conversely, the ability model of EI represents an intelligence involving emotion, and the ability to use the information encoded in emotion to direct cognition and motivate behavior. As a mental skill or ability, EI is malleable and develops with experience (Mayer, 2001). While we advocate the use of the ability model to inform research and practice in sport psychology, it is important to provide a thorough overview of both models of EI currently considered. The most commonly utilized mixed model approaches are reviewed below.

Mixed Models of Emotional Intelligence

Goleman's Mixed Model

Goleman and colleagues conceptualize EI as "when a person demonstrates the competencies that constitute self-awareness, self-management, social awareness, and social skills at appropriate times and ways in sufficient frequency to be effective in the situation" (Boyatzis, Goleman, & Rhee, 2000, p. 344). These capabilities are present in 20 competencies that fall within four separate domains: self-awareness, self-management, social awareness, and relationship management. Although Goleman's work is popular among laypersons and scholars who are new to the study of EI, his model is described by academic EI experts as "…too open-ended and loosely specified to constitute a good scientific theory, although in the future it may develop to the point of being empirically testable" (Matthews, Zeidner, & Roberts 2004, p. 15). While Goleman's conceptualization of EI has come under much scrutiny (Matthews et al., 2004; Mayer, Salovey, Caruso, 2000), results of a 69-sample meta-analysis (Van Rooy & Viswesvaran, 2004) suggest adequate predictive validity for his EI-related measure.

The assessment inventory used by Goleman to measure EI, the Emotional Competence Inventory (ECI)—Version 2, is a 110-item self-report measure of 20 behavioral competencies within four domains. Both the validity and reliability of the instrument have been called into

question (Conte, 2005; Matthews et al., 2004), including the identification of considerable overlap between the ECI and measures of the Big Five personality factors (i.e., neuroticism, extraversion, openness to experience, agreeableness, conscientiousness) (Conte, 2005; Matthews et al., 2004; Van Rooy & Viswesvaran, 2004). Since few *independent* peer-reviewed critiques of the ECI have been published, it is difficult to refute or confirm these concerns (Conte, 2005). Speaking about the ECI, Conte (2005) suggested that "... the scale does not deserve serious consideration until peer-reviewed empirical studies using this measure are conducted" (p. 434). Given the nearly unanimous concern voiced about Goleman's characterization of EI and its untested far-reaching impact, we do not recommend the use of the ECI in research on emotion in sport.

Bar-On's Mixed Model

Consistent with Goleman, Bar-On's mixed model approach suggests that EI is comprised of an array of trait and state characteristics, both of which influence an individual's probability of success. In his model, Bar-On (1997) identified five areas of functioning related to success: (a) intrapersonal (i.e., emotional self-awareness, assertiveness, self-regard, self-actualization, independence); (b) interpersonal (i.e., interpersonal relationships, social responsibility, empathy); (c) adaptability (i.e., problem solving, reality testing, flexibility); (d) stress-management (i.e., stress tolerance, impulse control); and (e) general mood (i.e., happiness, optimism).

Bar-On uses the Emotional Quotient Inventory (EQ-i: Bar-On, 1997) to measure EI. The EQ-i is a 133-item self-report measure grouped into five higher-order dimensions. Although adequate test-retest reliability ($r = .73$) (Bar-On, 1997) and acceptable predictive validity ($p = .20$) (Van Rooy & Viswesvaran, 2004) have been established for the instrument, studies of concurrent validity suggest considerable overlap between the EQ-i and other psychological measures. Review of these convergent and discriminant validity data suggest that many items on the EQ-i pertain to personality attributes (e.g., optimism, emotional stability) (Brackett & Mayer, 2001; Conte, 2005; Dawda & Hart, 2000), so much so that it has been suggested that EI as conceptualized by Bar-On "may be a lower-level primary trait that could be placed below the Big Five in a multistratum model" (Matthews et al., 2004, p. 213). It should come as little surprise, then, that we do not recommend the use of the EQ-i in research on EI in sport.

Schutte's Conceptualization

In addition to the ECI and the EQ-i, one other inventory has gained popularity in recent years, and will be reviewed here. Prior to doing so, however, it should be noted that confusion exists with regard to the identification of the model used to inform the creation of the inventory as well as the name of the inventory itself. Although the inventory creators (Schutte et al., 1998) suggested that their survey is informed by the work of Mayer and colleagues, EI is conceptualized as a trait by the former and a state by the latter. The consistent reference by Schutte and colleagues (Schutte, Malouff, Simunek, McKenley, & Hollander, 2002) to EI as a trait, prompts the placement of this presentation within the discussion of mixed models. A second aspect of confusion is the fact that the inventory associated with Schutte's work is identified in publications by any of three different names: Emotional Intelligence Inventory (EIS), Schutte Self-Report Inventory (SSRI), and Self-Report EI Test (SREIT). In this paper we will refer to the inventory in a manner which is consistent with the publications of its developers—the EIS.

That said, the EIS is a 33-item self-report inventory that assesses the extent to which an individual can identify, understand, harness, and regulate emotions in self and others. Contradictory reports exist regarding the conceptualization and scoring of the inventory. While survey developers initially suggested that EI was a multi-dimensional construct with the EIS providing a score for general EI as well as a score for each of the four sub-factors (Schutte

et al., 1998), they have more recently suggested that EI is a uni-dimensional construct with the EIS providing only an overall score of EI (Riley & Schutte, 2003; Schutte et al., 2002). The input of other researchers further confuses the issue, with some (Petrides & Furnham, 2000) supporting the multi-dimensional and others (Brackett & Mayer, 2003) supporting the uni-dimensional nature of the EIS.

Using the uni-dimensional conceptualization and 33-item inventory, adequate internal consistency reliability ($r = .87$ to.90) and test-retest reliability ($r = .78$) have been reported (Schutte et al., 1998). Similarly, meta-analysis results (Van Rooy & Viswesvaran, 2004) indicate that the EIS had higher predictive validity than all other EI measures examined (see Footnote 1).[1] Although less related than EQ-i, studies of concurrent validity suggest moderate to strong correlations between the EIS and other personality measures (Brackett & Mayer, 2003; Schutte et al., 1998; Schutte et al., 2002). Examination of discriminant validity data yield contradictory results (Brackett & Mayer, 2003; Ciarrochi, Chan, Caputi, & Roberts, 2001; Schutte et al., 1998).

While the EIS appears to be a better measure of EI than the aforementioned mixed model measures, the strong association with personality traits along with uncertainties regarding the dimensional structure prompt caution in interpreting results ensuing from its use. Similarly, the self-report nature of the EIS makes it susceptible to social desirability bias (Austin, Saklofske, Huang, & McKenney, 2004; Schutte et al., 1998).

Review of the mixed model, which informs the work of Goleman and Bar-On, and to some degree Schutte and colleagues, suggests that this conceptualization of the construct lacks discriminant validity and is largely indistinguishable from personality constructs (Brackett & Mayer, 2003; Conte, 2005). It appears, then, that assessment inventories based upon the mixed model approach fail to provide new information about this discrete concept, making it difficult to differentiate between EI and various personality constructs. Similarly, this strong grounding in personality traits contradicts claims that EI is a group of skills that can be learned and developed over time (Goleman, 1995). As such, it may be more appropriate to consider the ability model of EI for identifying emotion-based contributions to sport behavior.

Ability Model of Emotional Intelligence

Unlike the mixed model which suggests that EI is a combination of both trait and state characteristics, the ability model of EI conceptualizes the construct as strictly a set of abilities (i.e., states) that can be learned and developed over time. In a seminal work on this topic, Salovey and Mayer (1990) defined EI as a:

> . . . set of skills hypothesized to contribute to the accurate appraisal and expression of emotion in oneself and in others, the effective regulation of emotion in self and others and the use of feelings to motivate, plan and achieve in one's life (p. 185).

Mayer and Salovey's Ability Model

Informed by the aforementioned definition, Mayer and Salovey (1997) conceptualized an ability model consisting of the four following skills or *branches*: (a) Branch 1 (i.e., perception and expression of emotion), which encompasses the ability to identify and express one's

[1]Other measures examined include the Trait Meta-Mood Scale (TMMS), EQ-i, ECI, Multi-Factor Intelligence Scale (MEIS), and miscellaneous measures. It should be noted that studies utilizing the Mayer-Salovey-Caruso Intelligence Test (MSCEIT) were not included in this meta-analysis (Van Rooy & Viswesvaran, 2004).

physical states, feelings, and thoughts; (b) Branch 2 (i.e., assimilating emotion in thought), which consists of the ability to use one's emotions to prioritize thinking in productive ways; (c) Branch 3 (i.e., understanding and analyzing emotion), which encompasses the ability to label emotions and simultaneous feelings, and understand cognitions associated with shifts of emotion; and (d) Branch 4 (i.e., regulation of emotion), which consists of the ability to stay open to regulate emotions reflectively so as to promote emotional and intellectual growth.

The two assessment inventories most frequently associated with the ability model are the Multi-Factor Emotional Intelligence Scale (MEIS: Mayer, Caruso, & Salovey, 1999) and the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT: Mayer, Salovey, & Caruso, 2002). The MEIS was developed first and consists of 402 items and four branches. Given the prohibitive time needed to complete the MEIS (i.e., 2 hours) along with inconsistent reliability coefficients (Conte, 2005; Roberts, Zeidner, & Matthews, 2001; Van Rooy & Viswesvaran, 2004) despite the large number of items (Nunnaly & Bernstein, 1994), a new measure was developed.

The ensuing instrument, the MSCEIT, is a 141-item scale designed to measure the four branches of EI. The MSCEIT yields among other things, a total score and four branch scores. Now in its second version (Mayer, Salovey, Caruso, & Sitarenios, 2003), the MSCEIT can be administered via pencil/paper booklet or on-line format. The correlation between response frequencies across the two measurement techniques is high ($r = .98$) (Mayer et al., 2003), suggesting that the forms of the test are largely indistinguishable. Additionally, the MSCEIT utilizes both expert and consensus scoring. Debate exists with regard to the optimal scoring option, a choice which should be considered carefully by each consumer of the test (Conte, 2005; Matthews et al., 2004).

Factor analysis calculations suggest that the MSCEIT has a factor structure consistent with the four-factor model of EI (Brackett & Mayer, 2001). Further analysis suggests a two-week test-retest reliability of $r = .86$. Similarly, results suggest a lack of convergence between the MSCEIT and self-report (i.e., mixed model) EI measures, and discrimination between the MSCEIT and well-being scales as well as Big Five personality measures (Brackett & Mayer, 2001; Conte, 2005). That is, EI as measured by the MSCEIT exists as a mental ability that is distinct from personality variables as well as other mixed measures of EI.

The disparities between the aforementioned measures of EI, which are informed by distinct models, may generate different representations of the same person. Emotional intelligence as conceptualized by several of the mixed models yields significant overlap with measures of personality, while EI as conceptualized by the ability model proposes a more concise, skill-based construct which is incongruous with personality traits. The ability model also focuses on a set of specific skills that can be learned and mastered over time. While the concomitant measure demonstrates adequate psychometric properties, further research is necessary to determine its predictive validity and representation as an *intelligence* (Conte, 2005; Van Rooy & Viswesvaran, 2004). Similarly, it must be noted that most of the literature supporting the efficacy of both the ability model and the MSCEIT is authored by at least one of the creators of the ability framework. Even so, preliminary review of the available literature prompts us to suggest that EI as conceptualized by Mayer and Salovey's ability model and measured by the MSCEIT, which has been reported to measure EI as a discrete construct (See Footnote 2)[2] free from self report-bias and the influence of other constructs, should be considered for the sport domain.

[2]Although literature exists to refute EI as a *true* intelligence we believe an adequate volume of literature exists to support the characterization of EI as a *true* intelligence. As this debate is not the purpose of the current paper, readers should see Locke (2005) for further discussion.

EMOTIONAL INTELLIGENCE RESEARCH IN APPLIED SETTINGS

As previously suggested, there is a paucity of research devoted specifically to the topic of EI in sport. Literature does exist, however, in domains which inform and are informed by sport psychology. This related literature may be useful to sport psychology researchers and practitioners alike as they continue to consider the utility of EI in understanding sport performance and participation patterns. In the following section we provide an overview of EI research from the areas of business and health in an effort to identify potential links to the sport domain. We then follow with a brief overview of the few studies to date which have examined EI in sport.

Business

It has been suggested (Lazarus, 1991; Lazarus & Folkman, 1984) that emotion provides information about how individuals cope with the challenges and demands faced in the occupational environment as well as the dynamic interactions that take place inside the corporate world. By better understanding our emotions we may be able to alter cognitions so as to facilitate an adaptive and productive work environment. As stated by Matthews et al. (2004), "work-related EI competencies are vital if one is to successfully negotiate the demands, constraints, and opportunities necessary to succeed in the workplace" (p. 470). They further suggested that EI may be linked to several aspects of occupational life (i.e., occupational and career assessment, job performance and satisfaction, coping with occupational stress), therefore playing an important role in workplace training and development. Several of these aspects of occupational life linked to EI (i.e., performance, satisfaction, coping with stress) are consistent with participation in sport (Crocker & Graham, 1995; Pensgaard & Duda, 2003), thereby reinforcing the potential utility of EI to the study and practice of sport psychology.

In that regard, literature in the area of workplace emotion suggests that EI and appropriately regulated emotions result in: (a) better coping strategies for dealing with job insecurity and job-related tension (Jordan, Ashkanasy, & Charmine, 2002), (b) enhanced ability to engage in collaborative conflict resolution (Jordan & Troth, 2002), (c) increased sales (Cherniss, 2000), (d) delivery of higher quality health care (Cherniss, 2000), (e) greater customer service and satisfaction (Ashkanasy, Haertel, & Daus, 2002; Salovey, Mayer, & Caruso, 2002), (f) enhanced health and improved work performance (Slaski & Cartwright, 2002, 2003), (g) better performance in job interviews (Ashkanasy et al., 2002), and (h) more effective and successful leadership (George, 2000; Palmer, Walls, Burgess, & Stough, 2000).

At least four of the outcomes cited above are similarly important in elite sport where participation is often analogous to a job or occupation. Specifically, coping with pressure and job insecurity (Gould, Eklund, & Jackson, 1992; Gould, Finch, & Jackson, 1993), collaboration and cooperation (i.e., cohesion) (Carron & Hausenblas, 1998; Carron, Spink, Prapavessis, 1997), improved health (Mahoney, 2002), and leadership (Riemer & Chelladurai, 1995; Smith & Smoll, 1997) are all thought to contribute to enhanced performance and/or satisfaction in the sports world. These links are supported by literature directly comparing the two areas. In a qualitative study of sport and business leaders, for example, Weinberg and McDermott (2002) found several characteristics common to success in both domains. That is, leadership (e.g., interpersonal skills, leadership style), cohesion, and effective communication were cited by individuals in both populations as critical to success. Similarly, sport psychology consultants are increasingly using their performance-enhancement expertise to help individuals in the business world. Reports suggest (Jones, 2002; Loehr & Schwartz, 2001) that Psychological Skills Training (PST) is easily transferable to the corporate world and that knowledge from that domain may contribute to the sport sciences.

Health Outcomes and Behaviors

Just as research suggests that EI may be linked to several aspects of job performance and satisfaction, it also suggests that EI may be related to biopsychosocial health outcomes and behaviors. The transactional model of stress and coping (Lazarus, 1990; Lazarus & Folkman, 1984) posits that the emotional and/or physiological reaction to a stressor is influenced by one's appraisal of the stressor and coping mechanisms for dealing with that stressor. The severity and duration of an emotional and physiological stress reaction has implications for both acute and chronic health. Recent literature has identified EI as one factor that may mediate the relationship between stress and health (Extremera & Fernandez-Berrocal, 2002; Salovey et al., 2002; Schutte et al., 2002; Slaski & Cartwright, 2002). Specifically, Salovey et al. (2002) suggested "attention to moods, clarity in perceiving mood, and confidence in one's ability to repair negative mood are critical for adaptive psychophysiological coping and subsequent well-being" (p. 613). Through a brief review of the aforementioned literature, we will examine the relationships between EI and psychological well-being as well as EI and health behaviors, concomitantly demonstrating the applicability to the sports world and the need for continued study of EI in sport.

As suggested above, an emerging area of research has begun to examine the link between EI and psychological well-being. For example, Slaski and Cartwright (2002) reported that among middle managers working for a retailer in the United Kingdom, those with higher EI (as measured by the EQ-i) reported significantly better levels of health and psychological well-being. Schutte et al. (2002) reported similar results in their studies of employees at United States retailers, nursing homes, and universities. That is, a significant positive relationship between EI (as measured by the EIS) and positive mood, self-esteem, and maintenance of positive mood was found in spite of attempts to induce negative mood states. It has been suggested that the mechanism(s) responsible for these outcomes may moderate the stress process, increase resilience, and facilitate resistance of environmental influences that may depress mood and self-concept (Schutte et al., 2002; Slaski & Cartwright, 2002). These results and proposed mediators may be important in the sports world, where athletes, coaches, officials, and others are faced with psychosocial stressors both inside and outside the sport arena. Suggestions that depression, anxiety, and negative mood states may adversely affect athletic performance, not to mention quality of life, serve as evidence for the need to examine how to facilitate the appropriate perception and management of emotion (Edwards, Kingston, Hardy, & Gould, 2002; Gould, Guinan, Greenleaf, & Chung, 2002; Hanin, 1995, 2000; Totterdell, 1999; Wertheim, 2003).

Methodological limitations (e.g., model and inventory choice, quasi-experimental design) of the studies reviewed above preclude identification of the importance of *state* EI and prevent discussion of causal relationships between EI and other health-related variables. Regardless, study results still imply an association between some form of EI and stress identification as well as EI and management of the associated emotional response. These abilities have clear implications for the sports world, where athletes, coaches, and others often encounter stressors (i.e., environmental, physical, social) which may impact objective and subjective outcomes. Consistent with the transactional model of stress (Lazarus & Folkman, 1984), research in sport psychology suggests that the appraisal of the stressful situation influences both the selection and implementation of a coping strategy (i.e., Branch 4—managing emotions), which in turn has important implications for performance (Gould et al., 2002; Hanin 1995, 2000; Lazarus, 2000; Robazza & Bortoli, 1998; Tenenbaum, Jones, Kitsantas, Sacks, & Berwick, 2003).

As suggested above, athletes are faced with stressors on and off the field which are linked to their athletic performance as well as their overall health and well-being. The prevalence of legal

and illegal substance use (i.e., tobacco, alcohol, narcotics, steroids) by athletes has gained increased attention over the past decade (Leichliter, Meilman, Presley, & Cashin, 1998; Wechsler, Davenport, Dowdall, Grossman, & Zanakos, 1997). These unhealthy coping mechanisms for managing stressors suggest the need to focus attention on the identification of alternative and healthier ways to manage or cope with the challenges inherent in the sports world (Nelson & Wechsler, 2001). Since an important part of EI involves managing the emotions that may result from such sources as stress, the relationship between EI and substance use/abuse may be important to consider in the sport domain.

For example, Trinidad and colleagues conducted a series of studies examining the relationship between EI and substance use as well as EI and smoking risk factors among a sample of ethnically diverse adolescents. Results of one study (Trinidad & Johnson, 2002) suggest significant negative correlations between EI (as measured by a revised version of the MEIS) and a general overall measure of tobacco and alcohol use, as well as specific tobacco and alcohol behaviors (e.g., ever trying a cigarette, smoking daily, smoking weekly, drinking alcohol in the last week). Results of a follow-up study (Trinidad, Unger, Chou, & Johnson, 2004) report that high EI was associated with increased perception of the negative consequences of smoking, perceived ability to refuse a cigarette if/when it is offered, and less likelihood of intending to smoke in the next year.

Extending this line of research to *problematic* use, or abuse, Riley and Schutte (2003) sampled 141 Australian adults to examine the relationship between EI and problems related to substance use (e.g., loss of job, loss of friendships). Their results suggest that lower EI (as measured by the EIS) was a significant predictor of both alcohol- and drug-related problems. Their results also demonstrated that lower EI is strongly associated with poorer coping, which is significantly correlated to drug-related problems. This link between EI and coping reinforces the need to examine EI in athlete populations, where alcohol consumption is seen as an ordinary coping mechanism, albeit one with hazardous consequences. Specifically, research suggests that athletes who drink to cope report greater frequency and quantity of alcohol consumption (Martens, Cox, Beck, & Heppner, 2003; Wilson, Pritchard, & Schaffer, 2004), more frequent intoxication (Wilson et al., 2004), and more negative consequences of consumption (Martens et al., 2003).

Taken together, the results of these studies, in conjunction with the comparatively high rates of substance use among athletes (Leichliter et al., 1998; Wechsler et al., 1997), indicate the need for further study in the area of EI and sport. The prevalence of substance use as a coping mechanism among athletes underscores the importance of this work, which has implications for both prevention and treatment interventions.

Sport

The potential utility of EI constructs in sport psychology, in conjunction with overlap between EI training and PST, reinforce the need to study more completely the role of EI in sport. Although interest in this area has recently increased, to date, no systematic study of EI in sport has been undertaken. Rather, researchers have utilized both qualitative and quantitative methods, inconsistent and sometimes inappropriate operationalization of the construct, and multiple assessment inventories in their studies of EI and sport. While there is value in a diverse approach to scientific inquiry (Sparkes, 1992), review of these few available studies demonstrates just how difficult it may be to advance research and practice if the foundational materials (i.e., theoretical paradigm, definition, assessment) remain too inconsistent (Conte, 2005; Mayer et al., 2003).

As part of her doctoral dissertation, Miller (2003) used semi-structured interviews to examine the connection between altruistic leadership (i.e., focused on improving well-being of

followers) and EI among 15 Division I college coaches. Specifically, she tried to determine which if any EI factors (i.e., Goleman's [1998] conceptualization and definition) emerged with coaches' perceptions of altruistic leadership. Miller's results suggest that the coaches identified all five of Goleman's EI factors (i.e., self-awareness, social skills, empathy, self-motivation, and self-regulation) as important competencies that may facilitate altruistic leadership styles.

While the aforementioned study is important for its pioneering efforts in making the connection between EI and sport leadership, its reliance on Goleman's work is problematic. Recall that Goleman's conclusions are largely unsupported by peer reviewed and/or data-based research (Landy, 2005; Matthews et al., 2004; Salovey & Pizarro, 2003). Similarly, his reliance on a mixed model inhibits the separation of EI and related constructs (e.g., personality, optimism, mood) and promotes EI as a trait-like construct. It should be noted that this last characteristic is a contradiction to his contention that the skills of EI are trainable (Goleman, 1995). To that end, if training and developing EI skills to facilitate altruistic leadership are part of Miller's ultimate goal, then she is advised to utilize a more dynamic model to inform her work. This suggestion is consistent with her later contention (Miller, 2003) that we need to conduct more research on EI in sport.

In a more recent study of EI and leadership, Magyar (2004) examined the relationship between leader efficacy and EI on personal caring among leaders at two summer sport camps. Eleven leaders participated in a leader caring intervention while 26 leaders did not. Using Wong and Law's (2002) 16-item self-report measure of EI, which assesses four aspects of the construct (i.e., appraisal and expression of emotions in self, appraisal and recognition of emotion in others, use of emotions, regulation of emotion in self), Magyar found that EI was a significant predictor of personal caring. Specifically, use of emotions, regulation of emotions, and appraisal of others' emotions positively predicted coach personal caring. These findings, along with preliminary data of children's perceptions of the coaches who participated in the caring intervention, imply that coaching education programs should be augmented to include EI-related material.

Care must be taken in interpreting and applying the results of Magyar's study, as they are informed by a self-report inventory developed to examine the EI of undergraduate and graduate business students in China and Hong Kong. First, self-report measures are subject to social desirability bias and are more likely to yield an individual's *perception* of ability as opposed to their actual ability. While Law and colleagues (Law, Wong, & Song, 2004) suggested that the use of self-reported perceptions of EI may be advantageous for cross-cultural studies, their mention of culture raises the second point of interest, that little if any mention has been made in the literature regarding language and/or translation issues related to this particular instrument. Is it an appropriate measure to use with American coaches? An even larger question involves the generalizability of the EI construct across cultures.

Review of the previous two studies, both of which examine aspects of the relationship between leadership and EI, is beneficial in illustrating the current state of EI-sport research. That is, use of disparate models and in the case of one study an unsubstantiated assessment tool, make it difficult to draw conclusions that will advance sport psychology research and practice. Issues such as these must be highlighted and discussed to determine the relevance of EI in applied sport psychology.

In another quantitative study, the only published manuscript to date, Zizzi et al. (2003) examined the relationship between EI and sport performance among Division I college baseball players. Informed by the 33-item EIS, Zizzi et al. found that certain aspects of EI were moderately related to pitching performance but not hitting performance. While this research is important as a pioneering work in the area of EI and sport performance, concerns regarding

the model and assessment inventory informing the study suggest the need for cautious interpretation along with the need for future research.

The primary concern about the aforementioned study is its reliance on a trait-based inventory to measure EI. Although Schutte and colleagues suggested that the EIS is informed by the work of Mayer and colleagues, EI is conceptualized as a trait by the former and a state by the latter. Recall that according to Mayer's ability model, EI is a dynamic and malleable capacity (i.e., state) that people can learn and develop over time. This difference in conceptualization has direct implications for sport psychology researchers and practitioners to whom it has been suggested (McCann, 1999; Meyer et al., 2003; Van Rooy & Viswesvaran, 2004; Zizzi et al., 2003) that EI is a mental skill that can be developed and improved (much like concentration and confidence can be developed and improved), thereby enhancing sport performance and/or satisfaction. This discrepancy, in conjunction with previously described inconsistencies regarding characterization of the EIS as a uni-dimensional or a multi-dimensional measure portend cautious interpretation of results ensuing from the EIS.

DIRECTIONS FOR FUTURE RESEARCH AND PROFESSIONAL PRACTICE IN SPORT PSYCHOLOGY

Based on the literature reviewed above, from the overview of disparate theoretical models to the research examining EI in the business, health, and sport domains, future study should be approached with both guarded optimism and industriousness. While preliminary data suggest that EI may be a valuable predictor of performance (Van Rooy & Viswesvaran, 2004) and therefore have a place in applied sport psychology, much work remains to be done before consistently sound contributions can be made toward the advancement of the scientific and applied literatures. First, researchers should utilize a mutually agreed upon definition and model of the construct (Conte, 2005; Landy, 2005). The *moving target* approach (Landy, 2005) that currently predominates confuses rather than elucidates the field of study. Because the ability model conceptualizes EI as a state which is related to general mental ability yet different from personality, and because this *state* can be enhanced or developed over time, we suggest that it be considered for future applied sport psychology research. Concomitantly, consensus must be reached in terms of the *type* of assessment inventory (i.e., self-report, performance or ability-based) to be utilized. As suggested by Conte (2005, p. 437), "compared to ability-based EI measures, self-report measures are likely to receive less attention in the coming years given that they lack psychometric support (particularly discriminant validity from the Big Five personality dimensions)." While work remains to be done, the MSCEIT appears to be the most promising of the ability-based measures. Regardless, it is likely that a cooperative approach will result in the testing of the appropriateness for sport of current assessment inventories, and eventually the development of a sport-specific measure of EI. This standardized and collaborative approach to the study of EI in sport will facilitate the scientific literature in this new area of study.

A second way for researchers to advance the literature in this area is to undertake a comprehensive yet systematic line of research that first attempts to describe EI in a large sample of sport participants (e.g., athletes, coaches). These descriptive data can then be used as a basis for predictive studies which attempt to identify and explain the impact of EI on various outcome variables (e.g., won/lost record and other performance outcomes, athlete satisfaction, retention). Within this context it would be beneficial to examine whether total EI and/or individual branches make unique contributions to the preceding outcome variables. That is, how are the contributions of Branch 1 (i.e., perception of emotions) different from Ravizza's (1998) conceptualization of awareness, or how are the contributions of Branch 4 (i.e., managing emotions)

different from Lazarus' (Lazarus, 2000; Lazarus & Folkman, 1984) conceptualization of coping? If the differences are few, there may be little need to further examine the efficacy of EI in applied sport psychology. Regardless, utilizing the systematic approach described above will do much to advance the scientific literature in this area of study, and depending upon the results, may simultaneously facilitate the application of EI principles in the practice of educational and clinical sport psychology.

As suggested throughout this paper, one of the most obvious applications of EI in sport may be as a systematic and hierarchical framework for enhancing the performance and satisfaction of athletes, teams, and coaches. If it is determined that EI is a unique and important construct in this domain, knowledge of an individual's EI profile can be used to inform the design and delivery of educational and clinical programs. For example, an athlete who scores low on Branch 1 (i.e., perceiving emotion) should be directed to focus on self-awareness before thought-stopping or other cognitive awareness and general management strategies can be implemented. If athletes score low on Branch 2 (i.e., assimilating emotion into thought), they should be encouraged to journal the thoughts that accompany their emotions. Once these fundamental EI skills have been developed, athletes can then be encouraged to understand and manage their emotions by identifying the triggers and behavioral ramifications of their emotion-related cognitions, and then practicing appropriate coping strategies.

In addition to athlete-focused performance enhancement applications, the EI paradigm may be relevant to other performance and health-related aspects of the sport milieu. Consistent with the workplace and leadership literature (Ashkanasy et al., 2002; Riemer & Chelladurai, 1995; Slaski & Cartwright, 2002), EI constructs may be useful in helping athletes and coaches to acknowledge the emotional climate of the team. A group EI profile can be further used to address team dynamics and cohesion, both of which are thought to impact team performance and satisfaction (Carron & Hausenblas, 1998; Carron et al., 1997). The health and well-being of the athlete is another place for potential application. For example, there is an abundant body of anecdotal and empirical literature detailing the clinical issues (i.e., substance use, disordered eating, anger management, anxiety, depression) experienced by some athletes (Brewer & Petrie, 2002). Symptoms can range from acute behaviors to chronic, life-threatening disorders with implications for intervention by mental health professionals. The potential severity of these conditions, in conjunction with research identifying the protective effects of EI, prompt the suggestion to examine the role of EI in the identification, prevention, and treatment of clinical issues among athletes or individuals in the sport environment.

CONCLUSION

The material presented above suggests that the role of EI in sport is worthy of further investigation. Consistent with the general EI literature, there is a call for standardization of the definition, conceptualization, and assessment of EI in applied sport psychology. An effective and efficient way to advance this line of research is to create a systematic approach whereby results can be adequately shared and compared across studies and populations. While the proffered analysis and critique are not unassailable, it appears that the ability model of EI may provide the best fit with applied sport psychology. That ability-based EI is a skill which can be learned, rehearsed, and enhanced is consistent with the practice of sport psychology, where effort is focused on helping athletes and teams to improve their mental and physical skills, their objective performance, and their satisfaction with that performance. This overlap between the underpinnings of the ability model of EI and the field of applied sport psychology inform our suggestion to consider the ability model as a standard for advancing the research into, and application of, this exciting and innovative subject matter.

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