19

Emotional Intelligence

What Do We Know?

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ABSTRACT

This chapter describes recent advances in the scientific study of emotional intelligence. Setting the idea of an emotional intelligence in a historical context, the authors' four-branch model of these competencies is then described. Research on the measurement of emotional intelligence, especially as a set of abilities rather than as self-reported personality traits, is described. The psychometric properties of a new measure of emotional intelligence, the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT), are presented, as are preliminary findings concerning the predictive validity of this construct in the domains of family, school, and workplace.

The starting point for the idea that there could be an emotional intelligence is that, rather than "hijacking" one's thoughts and behaviors (Goleman, 1995, p. 13), emotions often serve adaptive, purposeful, and helpful functions (Leeper, 1948). It is the emotional system, in this view, that focuses attention, organizes memory, helps us to interpret social situations, and motivates relevant behavior. Accordingly, it makes little sense to place emotions in opposition to reason and rationality (de Sousa, 1987). The concept of emotional intelligence, which elsewhere (e.g., Mayer & Salovey, 1997) we have defined as the ability to perceive, understand, manage, and use emotional information, simply takes this functionalist perspective one step further by calling attention to the need for research on individual differences in the ability to reason about emotions and to use emotions in reasoning.

Although the idea of an emotional intelligence strikes some investigators as nearly an impossibility (e.g., Roberts, Zeidner, & Matthews, 2001),

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neuroscientists such as Damasio (1984) have provided colorful examples of the kinds of cognitive and behavioral deficits that result when individuals suffer damage to centers of the brain integral to the perception and experience of emotion. We share his view that "higher cognition requires the guidance provided by emotion" (Adolphs & Damasio, 2001, p. 45). Not that emotions cannot, on occasion, leave us terribly misguided, but we believe greater emphasis should be placed on the fact that we have evolved an intelligent emotional system rather than a set of vestigial processes no longer relevant to thinking and acting in the modern world (Darwin, 1872).

The idea that individuals might differ in the skills with which they identify and understand their emotions, manage these feelings, and use them to think rationally and behave adaptively is not actually new. The history of psychological research on emotion has witnessed attempts to measure, for example, accuracy in recognizing emotions (e.g., Buck, 1976, 1984; Gross & Bailif, 1991; Campbell, Kagan, & Krathwohl, 1971; Kagan, 1978; Rosenthal, Hall, Archer, DiMatteo, & Rogers, 1979); communicating emotional expressions in the face (e.g., Hall, 1984), using words to describe feelings (e.g., Bagby, Parker, & Taylor, 1993a, 1993b; Bretherton, Fritz, Zahn-Waxler, & Ridgeway, 1986; Lane, Quinlan, Schwartz, Walker, & Zeitlin, 1990); appreciating display rules (e.g., Saarni, 1979); responding with empathy (e.g., Flury & Ickes, 2001; Ickes, 1993; Mehrabian & Epstein, 1970); and managing emotions with self-regulatory strategies (e.g., Thayer, Newman, & McClain, 1994). Indeed, other investigators have developed frameworks organizing emotional competencies from developmental (e.g., Saarni, 1990, 1999) and other perspectives (e.g., Garner, 1983). For some reason, however, labeling these individual differences as an "intelligence," as we did more than a decade ago, somehow catapulted this field of study into the public imagination (Salovey & Mayer, 1990; see also Payne, 1986, for another use of the term "emotional intelligence"). A best-selling, popular book titled *Emotional Intelligence* certainly helped things along (Goleman, 1995).

It is the purpose of this chapter to argue that the idea of an emotional intelligence is a scientifically reasonable one, that such skills can be measured, and that they predict relevant outcomes. Although the term "emotional intelligence" is now used in many domains – from school-based programs to organizational development (Caruso & Wolfe, 2001; Elias, Hunter, & Kress, 2001), we argue that dismissive attitudes toward the idea are not warranted (Barrett, Miguel, Tan, & Hurd, 2001; Davies, Stankov, & Roberts, 1998; Stankov, 2000). Moreover, we believe that the identification of individual differences in the recognition, understanding, management, and use of emotions may give rise to an increased focus on ideographic aspects of emotional experiences in theorizing about emotion. Whether in philosophy, the neurosciences, or psychology, emotion theory in the past two decades has largely taken a nomothetic approach, identifying, for example, the triggers in the environment or in shared cognitive representations

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that give rise to emotion. Because individuals vary in the competency with which they process information relevant to emotion or use emotion in reasoning processes, these normative models may not capture variability in actual experiences. As an example, consider the classic romantic jealousy triad: Person O threatens to take X away from Person P. Person P experiences jealousy as he or she becomes aware of the possible loss of the relationship with X. In some individuals, this awareness manifests itself in feelings of anxiety, in others deep sorrow, and in still others, anger and, perhaps, homicidal rage (Salovey & Rodin, 1986, 1989). We believe that the construct of emotional intelligence allows investigators to focus on some of the potential roots of these individual differences.

A FOUR-BRANCH MODEL OF EMOTIONAL INTELLIGENCE

We began work on a model of emotional intelligence in the late 1980s by reviewing the research literature and asking what emotion-related skills and abilities had modern investigators of emotion tried – successfully or not – to operationalize over the years (reviewed in Salovey, Woolery, & Mayer, 2001). Could we pull these skills together into a coherent whole? It seemed that these skills could be grouped into four clusters or "branches" (Mayer & Salovey, 1997; Salovey & Mayer, 1990): (1) perceiving emotions; (2) using emotions to facilitate thought; (3) understanding emotions; and (4) managing emotions in a way that enhances personal growth and social relations. We view a distinction between the second branch (using emotions) and the other three. Whereas the first, third, and fourth branch all involve reasoning about emotions, the second branch uniquely involves using emotions to enhance reasoning. The four branches form a hierarchy, with perceiving emotion as the most fundamental or basic-level skill and managing emotions as the most superordinate skill; the ability to regulate emotions in oneself and others is built up from the competencies represented by the other three branches. We have reviewed the literature concerning individual differences in these four sets of skills elsewhere (e.g., Mayer, Salovey, & Caruso, 2000a, 2000b; Salovey, Bedell, Detweiler, & Mayer, 2000; Salovey, Mayer, & Caruso, 2002; Salovey, Woolery, & Mayer, 2001), although we provide a brief summary here and in Table 19.1.

Perceiving Emotions

Emotional perception involves registering, attending to, and deciphering emotional messages as they are expressed in facial expressions, voice tone, or cultural artifacts. Individuals differ in their abilities to discern the emotional content of such stimuli. These competencies are basic information-processing skills in which the relevant information consists of feelings and mood states. For example, some individuals, called *alexithymic,* have

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TABLE 19.1. *The Four-Branch Model of Emotional Intelligence*

Branch Names and Exemplary Skills
Branch 1: Perceiving Emotion
• Ability to identify emotion in one's physical and psychological states
• Ability to identify emotion in other people
• Ability to express emotions accurately and to express needs related to them
• Ability to discriminate between accurate/honest and inaccurate/dishonest feelings
Branch 2: Using Emotions to Facilitate Thought
• Ability to redirect and prioritize thinking on the basis of associated feelings
• Ability to generate emotions to facilitate judgment and memory
• Ability to capitalize on mood changes to appreciate multiple points of view
• Ability to use emotional states to facilitate problem solving and creativity
Branch 3: Understanding Emotions
• Ability to understand relationships among various emotions
• Ability to perceive the causes and consequences of emotions
• Ability to understand complex feelings, emotional blends, and contradictory states
• Ability to understand transitions among emotions
Branch 4: Managing Emotions
• Ability to be open to feelings, both pleasant and unpleasant
• Ability to monitor and reflect on emotions
• Ability to engage in, prolong, or detach from an emotional state
• Ability to manage emotions in oneself
• Ability to manage emotions in others

difficulty expressing their emotions verbally, presumably because they have difficulty identifying those feelings (Apfel & Sifneos, 1979).

Using Emotions to Facilitate Thought

This second branch of emotional intelligence focuses on how emotion affects the cognitive system and, as such, can be harnessed for more effective problem-solving, reasoning, decision-making, and creative endeavors. Of course, cognition can be disrupted by emotions, such as anxiety and fear, but emotions also can prioritize the cognitive system to attend to what is important (Easterbrook, 1959; Mandler, 1975; Simon, 1982), and even to focus on what it does best in a given mood (e.g., Palfai & Salovey, 1993; Schwarz, 1990).

Understanding Emotions

The most fundamental competency at this level concerns the ability to label emotions with words and to recognize the relationships among exemplars

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of the affective lexicon. The emotionally intelligent individual is able to recognize that the terms used to describe emotions are arranged into families and that groups of emotion terms form fuzzy sets (Ortony, Clore, & Collins, 1988). Perhaps more important, the relations among these terms are deduced – that annoyance and irritation can lead to rage if the provocative stimulus is not eliminated, or that envy often is experienced in contexts that also evoke jealousy (Salovey & Rodin, 1986, 1989). This is the branch of emotional intelligence that we would expect to be most related to verbal intelligence, as typically assessed.

Managing Emotions

The emotionally intelligent individual can repair her negative moods and emotions and maintain positive moods and emotions when doing so is appropriate (it is also sometimes desirable to maintain negative emotional states, such as when one anticipates having to discipline an employee, negotiate with a car salesman, or compete against an enemy). This regulatory process comprises several steps. Individuals must (*a*) believe that they can modify their emotions; (*b*) monitor their moods and emotional states accurately; (*c*) identify and discriminate those moods and emotions in need of regulation; (*d*) employ strategies to change these moods and emotions, most commonly, to alleviate negative feelings or maintain positive feelings; and (*e*) assess the effectiveness of those strategies.

Individuals differ in the expectancy that they can alleviate negative moods. Some people believe that when they are upset they can do something that will make them feel better; others insist that nothing will improve their negative moods. Individuals who believe they can successfully repair their moods engage in active responses to stress, whereas people low in self-efficacy of regulation display avoidance responses, as well as depressive and mild somatic symptoms (Cantanzaro & Greenwood, 1994; Goldman, Kraemer, & Salovey, 1996). The ability to help others enhance their moods is also an aspect of emotional intelligence, as individuals often rely on their social networks to provide not just a practical but an emotional buffer against negative life events (Stroebe & Stroebe, 1996). Moreover, individuals appear to derive a sense of efficacy and social worth from helping others feel better and by contributing to the joy of loved ones.

Integration and Definition

Our definition of emotional intelligence relies heavily on the four-branch model presented above. We consider emotional intelligence an actual intelligence, in the psychological sense of that term, and define it more generally as: "the ability to recognize the meanings of emotions and their relationships, and to reason and problem-solve on the basis of them. Emotional

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intelligence is involved in the capacity to perceive emotion, assimilate emotion-related feelings [to facilitate cognitive activities], understand the information of those of emotions, and manage them" (Mayer, Caruso, & Salovey, 1999, p. 267).

It is important to distinguish this kind of ability- or competence-based definition of emotional intelligence from those which have been generated by writers focused more on the general public. Goleman (1995, p. 22) based his definition of emotional intelligence on our original one (Salovey & Mayer, 1990), but broadened it to include "knowing one's emotions . . . managing emotions . . . motivating oneself . . . recognizing emotions in others . . . and handling relationships." By 1998, however, Goleman's (1998) definition had so strayed from this conceptualization that it is nearly unrecognizable as related to emotional abilities, including such attributes as self-confidence, trustworthiness, innovation, initiative, optimism, political awareness, and team capabilities. As another example, the developer of a self-report measure of emotional intelligence called the EQi defines emotional intelligence as "an array of noncognitive capabilities, competencies, and skills that influence one's ability to succeed in coping with environmental demands and pressures" (Bar-On, 1997, p. 14) and includes self-actualization, social responsibility, reality testing, impulse control, and optimism. We believe that research progress will be facilitated by definitions that are more narrowly focused on emotional skills and competencies rather than a broad array of valued traits that have in common only the fact that they are not measured by conventional intelligence tests.

MEASURING EMOTIONAL INTELLIGENCE AS A SET OF ABILITIES

We have been working with two task-based tests of emotional intelligence, the Multifactor Emotional Intelligence Scale (MEIS) and the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT). The first represented an attempt merely to show that measuring emotional intelligence reliably as an ability was feasible. The second is a more professional and user-friendly assessment battery, and the one that we recommend for research and applied use. It is considerably shorter and better normed than the MEIS. Elsewhere, we have tried to make the case that ability-based measures may be a more appropriate way to operationalize our model of emotional intelligence as compared to self-report inventories (Mayer, Caruso, & Salovey, 2000).

The Multifactor Emotional Intelligence Scale (MEIS)

The first comprehensive, theory-based battery for assessing emotional intelligence as a set of abilities was the Multifactor Emotional Intelligence

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Scale (MEIS), which can be administered through interaction with a computer program or via pencil and paper (Mayer, Caruso, & Salovey, 1998, 1999). The MEIS comprises twelve ability measures divided into four branches, reflecting the model of emotional intelligence presented earlier: (1) perceiving and expressing emotions; (2) using emotions to facilitate thought and other cognitive activities; (3) understanding emotion; and (4) managing emotion in self and others (Mayer & Salovey, 1997). Branch 1 tasks measure emotional perception in Faces, Music, Designs, and Stories. The second branch measures Synesthesia Judgments (e.g., "How hot is anger?") and Feeling Biases (translating felt emotions into judgments about people). Branch 3's four tasks examine the understanding of emotion. Sample questions include, "Optimism most closely combines which two emotions?" A participant should choose "pleasure and anticipation" over less specific alternatives such as "pleasure and joy." Branch 4's two tests measure Emotion Management in the Self and in Others. These tasks ask participants to read scenarios and then rate four reactions to them according to how effective they are as emotion management strategies focused on the self or on others.

The Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT)

More recently, we have developed a test of emotional intelligence in an attempt to improve upon the psychometric qualities of the MEIS while shortening the battery to about thirty minutes (Mayer, Salovey, & Caruso, 2001). The Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) contains 141 items, with two subtasks for each of the four branches of emotional intelligence, as illustrated in Table 19.2. Like the MEIS, the MSCEIT can be scored according to a general consensus criterion. That is, if .56 of the sample says that there is a moderate amount of happiness in a face, and a participant agrees, his or her score is incremented by .56. As reported by Mayer, Salovey, Caruso, and Sitarenios (2001), when over two thousand participants' scores on the MSCEIT were calculated, the full-scale, split-half reliability was over .90, and reliabilities for each of the four branches ranged from $r = .79$ to .91 using consensus scoring and $r = .77$ to .90 using expert scoring (these two types of scoring are described below). The progression of tests from the MEIS to various versions of the MSCEIT showed a gradual rise in reliability at the level of the individual tasks. Whereas using consensus scoring on the twelve tasks of the MEIS yielded individual task reliabilities ranging from Cronbach's alphas of .49 to .94 (Mayer et al., 1999), similar scoring for the eight tasks of the MSCEIT V2.0 outlined in Table 19.2 yielded individual task split-half correlations from $r = .65$ to .88 and reliabilities for the four branches from $r = .79$ to .91. (Mayer, Salovey, Caruso & Sitarenios, 2003). Nonetheless, we recommend scoring the MSCEIT at the branch level but not at the task level.

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TABLE 19.2. *The Four-Branch Model of Emotional Intelligence as Operationalized by the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT V2.0)*

Branch Names and Exemplary Tasks
Branch 1: Perceiving Emotion
• *Faces*: Identifying emotions expressed in faces
• *Pictures*: Identifying emotions suggested by photographs of landscapes and abstract artistic designs
Branch 2: Using Emotions to Facilitate Thought
• *Sensations*: Matching tactile, taste, and color terms to specific emotions
• *Facilitation*: Indicating how moods and emotions affect cognitive processes such as thinking, reasoning, problem solving, and creativity
Branch 3: Understanding Emotions
• *Blends*: Identifying the emotions that may encompass a complex feeling state
• *Changes*: Noticing how feelings and emotions progress or traverse from one state to another
Branch 4: Managing Emotions
• *Management*: Estimating the effectiveness of various strategies that could modify one's feelings in various situations
• *Relationships*: Estimating the consequences of various strategies for emotional reactions involving other people

Scoring Systems

An issue that comes up in task-based tests of emotional intelligence concerns what constitutes the correct answer. We have experimented with three different criteria for determining the "correct" answer to questions such as identifying the emotions in facial expressions or making suggestions about the most adaptive way to handle emotions in difficult situations. The first involves *target* criteria. Here, we would ask the person whose facial expression is depicted on our test item what he or she was feeling. To the extent that the respondent's answer matched the target's, the answer would be scored as correct. A second approach is to use *expert* criteria. In this strategy, experts on emotion such as psychotherapists or emotion researchers would read test items and provide answers. To the extent that the respondent's answers matched those of the experts, they would be scored as correct. Lastly, the *consensus* criterion involves norming the test on a large, heterogeneous sample. The test taker now receives credit for endorsing answers that match those of the larger group.

One might think that a consensus or a target criterion would not be an appropriate approach to scoring tasks measuring emotional competence. After all, aren't most people misguided about their true feelings? We were able to look at how the target, expert, and consensus criteria are interrelated

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across some of the MEIS ability tasks. The correlations were actually rather high; half were above r = .52 (Mayer, Caruso, & Salovey, 1999).

As with the MEIS, we used expert and consensus scoring for the MSCEIT, but not target scoring. Rather than using two authors as experts, which is what we had done for the MEIS, however, we asked twenty-one members of the International Society for Research on Emotion (ISRE) to answer the MSCEIT questions. We then scored the MSCEIT according to an expert-consensus criterion, based on the proportion of experts from ISRE who answered each item in a particular way. When over two thousand participants' scores on the MSCEIT were calculated by general- and by expert-consensus scoring, the intercorrelation between the two sets of scores was greater than .90 (Mayer, Salovey, Caruso, & Sitarenios, 2001, 2003).

The Validity of EI Scores

The MSCEIT appears to show appropriate discriminant validity from measures of analytic intelligence and many personality constructs. In a data set collected from 103 college undergraduates (Lopes, Salovey, & Straus, 2003), the MSCEIT was administered along with various personality measures. MSCEIT scores did not appear to be associated with social desirability (Crowne & Marlowe, 1960) or mood. They were not related to scores on measures of public and private self-consciousness (Fenigstein, Scheier, & Buss, 1975), and self-esteem (Rosenberg, 1965). Verbal intelligence, as assessed by the WAIS-III vocabulary subscale and Verbal SAT scores (ranges on both were somewhat restricted in this sample), correlated modestly with the Understanding Emotions branch of the MSCEIT (which relies on knowledge of emotional vocabulary), but verbal intelligence did not correlate significantly with any of the other branches or with the total score.

The correlations between the MSCEIT and the Big Five personality traits (Costa & McCrae, 1992) were generally low. The highest correlation was between the managing emotions branch of he MSCEIT and agreeableness (r = .33). There is clearly discriminant validity with respect to traditional personality constructs when emotional intelligence is measured with the MSCEIT. Other studies using the MSCEIT have also yielded relatively low correlations with personality traits, although these correlations vary to some extent with differences in samples and the personality measures used (Salovey, Mayer, Caruso, & Lopes, 2003).

Two self-report measures tapping the quality of one's social interactions provided some evidence for the convergent validity of the MSCEIT in the Lopes et al. data set. The Managing Emotions branch of the MSCEIT was associated with the Positive Relations with Others subscale of Ryff's (1989) Scales of Psychological Well-Being. This scale assesses satisfaction with

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the quality of one's engagement in, and support obtained from, the social domain of life. All four branches of the MSCEIT were inversely associated with the negative interaction (with close friend) factor of the Network of Relationship Inventory (NRI; Furman & Buhrmester, 1985). This scale assesses conflict and antagonism in the relationship. The Managing Emotions branch of the MSCEIT also was related to the Social Support factor of the NRI in relation to a parent. This scale measures the degree of companionship, intimacy, and affection in the relationship. The relationships between the MSCEIT and these measures of self-perceived quality of social interaction remained significant even when we controlled statistically for personality traits and verbal intelligence.

There were relatively weak associations between the MSCEIT and self-report measures of the meta-mood experience (the way individuals reflect on their moods). We found correlations in the .2 to .3 range between the MSCEIT branches of Managing and Understanding Emotions and the Mood Repair factor of the Trait Meta-Mood Scale (TMMS; Salovey et al., 1995), which taps into the use of optimistic thinking to regulate negative moods. However, only an abbreviated (although reliable) version of the TMMS was used in this study.

Because the MSCEIT was published in 2001, there are few completed studies in which it has been used to predict actual outcomes in the workplace, home, or school. However, the precursor to the MSCEIT, the MEIS, was used in many studies in several different laboratories, and these findings suggest that the four-branch theory of emotional intelligence has predictive validity. Trinidad and Johnson (2002), for example, explored the relation between emotional intelligence and substance abuse among southern California teenagers. Youths with higher emotional intelligence scores were less likely to have ever smoked cigarettes or to have smoked recently, and were less likely to have used alcohol in the recent past. Schoolchildren scoring higher on the MEIS were rated as being less aggressive by their peers and as more prosocial by teachers than those students with low emotional intelligence (Rubin, 1999). Insurance company customer claim team leaders with higher as compared to lower MEIS scores were rated by their managers as being more effective, and overall team performance for customer service was also correlated with the teams' average MEIS scores (Rice, 1999). Emotional intelligence, as measured by the MEIS, also is associated with scores on measures of empathy (Ciarrochi, Chan, & Caputi, 2000; Mayer, Caruso, & Salovey, 1999; Rubin, 1999) and life satisfaction (Ciarrochi et al., 2000). In a study using a preliminary version of the MSCEIT among other measures, Barchard (2000) found that emotional intelligence predicted year-end grades among college students even after cognitive abilities (e.g., verbal ability, verbal closure, inductive reasoning, visualization) and personality variables (e.g., Big Five) were taken into account. Similarly, scores on the managing emotions branch of the MSCEIT

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predicted the quality of interactions with opposite-sex individuals (Lopes, Brackett, Nezlek, Schütz, Sellin, & Salovey, in press). Although these findings must be viewed as preliminary, they represent promising suggestions that emotional intelligence can predict relevant behaviors in various life domains, such as school, work, and family. Whether the interesting relationships involving the MEIS are replicated with the MSCEIT awaits further research.

Neuroscience

The validity of emotional intelligence can be established in ways other than merely showing that scores on tests like the MSCEIT predict relevant outcomes in the school, workplace, and social situations. One of these ways is to look at the brain. As the pathways involving the processing of emotional-relevant information are elucidated (for recent reviews, see Dolan & Morris, 2000; Lane, 2000; LeDoux, 1996, 2000), one can attempt to establish that the component skills involved in emotional intelligence have more than just a psychometric reality but also a neurological one.

Such work is beginning to appear in the neuroscience literature. For example, Jaušovec, Jaušovec, and Gerlič (2001) used the MSCEIT to create two groups of participants, those with low-to-average emotional intelligence (Mean = 89, range from 60 to 114) and those with above average emotional intelligence (Mean = 120, range from 116 to 128). These individuals were asked to judge the emotions in pictures of people's faces displayed on a computer. At the same time, EEG activity was monitored over nineteen scalp locations. Overall, there was a significant correlation between MSCEIT scores and EEG frequency, $r(45) = .45$. More important, the groups differed in event-related and induced brain activity in the theta, lower-2 alpha, and upper alpha bands. Individuals scoring higher on the MSCEIT showed less desynchronization in the upper alpha band generally and at the C4 and T6 electrode locations in the lower-2 alpha band. Because desynchronization in the lower alpha band is thought to be related to attentional processes, whereas decreased activity in the upper alpha band is related to semantic memory processes (Klimesch, 1999), Jaušovec and colleagues interpret their findings as meaning that highly emotionally intelligent individuals require less cortical activity needed for tasks like this one, but that those individuals lower in emotional intelligence are less efficient at decoding the semantic meaning of pictures of emotional faces. Their findings suggest that individuals with greater emotional intelligence had fewer problems identifying displayed emotions and used a strategy that was less verbal and semantic and more attentional. Because these findings parallel those for individuals higher or lower in verbal and performance intelligence (Neubauer, Sange, & Pfurtscheller, 1999), Jaušovec et al. believe that emotional intelligence is a distinct component of general

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intelligence (2001). Obviously, these findings are quite preliminary, and a more fine-grained analysis would examine emotional intelligence at the level of the four branches of our model. Studies using fMRI would seem especially valuable.

CRITICISM

The very idea of an emotional intelligence strikes some as inherently contradictory. The field of psychology, and the broader culture, have often viewed emotions as erratic, immature, and irrational – poor guides to action. Emotions are seen as the very antithesis of a reliable, consistent human intelligence, often depicted as cool, cognitive processes based on so-called rational knowledge. Such a viewpoint may well be a carryover from the Stoics of ancient Greece. Whatever its origins, however, it is a pervasive philosophy. An opposing idea is that emotions contain information that one might use in reasoning, which departs dramatically from this cultural belief (see Mayer, Salovey, & Caruso, 2000a, for a review of EI as a historical and cultural phenomenon). The claim that emotional intelligence not only exists but is, in fact, a standard intelligence is, perhaps, even more radical and controversial. Over the past decade, we have been developing just that idea (Mayer & Salovey, 1997; Mayer, Caruso, & Salovey, 1999; Mayer, Salovey, Caruso, & Sitarenios, 2001, 2003; Salovey & Mayer, 1990).

The most systematic challenges to the idea of an emotional intelligence have come from Roberts and his colleagues (e.g., Roberts, Zeidner, & Matthews, 2001). They are most concerned that questions on tests like the MEIS and MSCEIT do not have an objectively "correct" answer (as would, say, a block-design task on a traditional intelligence test). They are concerned that matching test takers' responses to consensual norms may be a valid way of measuring social conformity but not emotional skills. They also worry about deviations between scores based on general consensus versus expert algorithms, although, as discussed earlier, we report substantial overlap between the two types of scoring (Mayer, Salovey, Caruso, & Sitarenios, 2001, 2003).

It is not ridiculous to argue that there could be "right" answers with respect to questions about emotions. Emotions do convey set meanings, which philosophers have been elucidating for centuries. For example, the experience of anger often designates the presence of a real or perceived injustice or blockage of a desired goal. The experience of sadness indicates a real or perceived loss. In addition, there are evolutionary bases for the meanings of many emotions (e.g., Darwin, 1872). Moreover, emotions develop in predictable patterns that are interrelated with developments in complex social situations. For example, if a person is happy and sad at the same time, only some types or patterns of events could bring about such a reaction, and intelligence is necessary to track down the sort of event that

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brings such feelings about (e.g., a close-by friend finding a much-wanted job in a faraway city). Emotions, in other words, satisfy a complex, coherent, and consistent symbol system that can be puzzled over, understood, and planned for, in abstract thought.

Moreover, even the developers of so-called objective intelligence tests such as the WAIS relied on consensual and/or expert judgment to establish the correctness of responses for some of the subtasks. For example, the manual for the WAIS-III describes the following procedure that was used to arrive at correct answers for some of the items:

> To refine the scoring criteria of those subtests for which many acceptable responses are possible (Vocabulary, Similarities, Information, and Comprehension . . .), the development team conducted several scoring studies. . . . Two team members independently coded each response, identified discrepancies between the code assignments, and resolved the differences so that each response had only one code. At this point, team members had to agree on the groupings of responses and the assignment of codes but not on what score value to assign a code. . . . After the codes were assigned, the team evaluated the quality of the responses and assigned a score value (0, 1, or 2) to each code on the basis of the accuracy of the response. (The Psychological Corporation, 1997, p. 37)

Although there is a subjectivity to deciding upon ideal answers with respect to tests measuring emotional intelligence, it would be wrong to claim that this is in contrast to the assessment of standard, analytic intelligence. In matters related to social interaction, it is difficult to draw a clear-cut distinction between objective knowledge or skill, on the one hand, and social conformity, on the other. Accurate and skillful management of emotional information necessarily has to reflect social norms and expectations. For example, emotional intelligence entails understanding how other people interpret emotional cues, and how they expect us to handle our emotions. It also entails conforming to those expectations, unless there is good reason to behave differently. As a result, any ability measure of emotional (or social) skills must also reflect, to some degree, social conformity.

Complex, real-life problems often lack a single, clear-cut solution. Sternberg and his colleagues (2000) have argued that this is an important difference between analytical and practical intelligence. Unlike the problems that children are usually given to solve in school, which allow only one right answer, the problems we face in real life are often ill-defined and allow for multiple solutions. Testing analytical skills is clearly easier, and that is one of the reasons why Western education has overemphasized them to the detriment of practical intelligence, creativity, and social and emotional competencies. To move beyond this state of affairs, expand our knowledge base, and evaluate the real importance of nonanalytic skills, it is essential to develop ability tests that take into account the fact that there may be no single correct solution to complex, real-life problems.

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Reflection on these issues also brings up a concern about cultural differences in emotional intelligence, especially if there are differences due to culture in the "right" way to behave emotionally in particular situations. There is no doubt that such differences exist. In the United States, one needs only to attend funerals among families of different ethnic origins to experience the inconsistencies in the way grief is expressed. New Englanders of old Yankee stock (with origins among the Puritans of England) tend to appear stoical at funerals, maintaining a "stiff upper lip." Those of us with eastern or southern European roots are likely to grieve more openly. And some African Americans, such as those living in New Orleans, for example, may celebrate a loved one's passing on to a better world with joyful singing, jazz music, and a public parade. As can be seen in this illustration, it is not the case that emotional intelligence necessarily means blunting, controlling, or inhibiting emotional expression, but rather behaving in ways that are considered adaptive in a particular cultural or situational context.

There are at least two ways in which these cultural differences can be addressed in the measurement of emotional intelligence. One is to develop consensual norms (or expert norms, for that matter) separately for various cultures. Of course, this approach presents the challenge of deciding how narrowly to "slice" cultures. So, for instance, are different norms needed for Parisians versus French-speaking residents of Geneva or Brussels? Another approach is to attempt to identify situations to include on measures such as the MSCEIT that produce relatively universal consistencies in responses. So, for example, the MSCEIT task having to do with identifying facial expressions of emotion was based on classic work by Ekman and his colleagues concerned with more or less universally recognized emotions.

A FINAL COMMENT

In the midst of the debate about whether emotional intelligence is a useful construct and the swirl of psychometric data concerning its measurement, it is easy to forget that the goal here is to describe people – people with particular strengths in appreciating and using emotions as guides to thinking and action. In that spirit, we would like to end this chapter by providing a sense of such individuals. The young woman quoted below participated in a qualitative study of emotional intelligence among gifted teenagers (Mayer, Perkins, Caruso, & Salovey, 2001). This sixteen-year-old was the highest scoring in EI in the sample using the Multifactor Emotional Intelligence Scale (MEIS; Mayer, Caruso, & Salovey, 1999). She described a conflict she had had with some friends:

> Once my friends wanted to sneak in someone's room and paint him while he slept. It began as joking around ("Wouldn't this be funny; could you believe it if?"). Then

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it slowly evolved into dares ("I bet you wouldn't," or "I dare you to."). I felt like it was betraying the trust I had with the other person, I didn't feel right with sneaking up on a sleeping person with no way to defend himself, and I thought doing this would make the person have his feelings hurt. I know how little pranks like this could really hurt someone's feelings, make them feel like everyone is making fun of them, taking away their dignity and disrespecting them. I won't do that to someone because I understand how badly that can hurt. [How did you handle it?] Told them straight out that it was a degrading thing to do and they shouldn't be so cruel. Asked them how they would like it? [Relation to long-term goals?] I'm not sure. One of my everyday goals is to try my hardest not to judge or make fun of someone. [Parents' reaction?] They would have been proud, but it's just one of those things that sort of never gets talked about because they would have also said I ruined a perfectly harmless joke. [Parents' goals?] My parents want me to be respectful. (Mayer et al., 2001, p. 136)

There is little doubt that this young woman can identify emotions, understand them, manage them, and use this information as the basis for subsequent thought and action. In this sense, she is emotionally intelligent. More important, the concept of emotional intelligence provides a way of describing her assets that, we suspect, is not captured in most theories of intelligence or personality.

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