MEASURES OF

PERSONALITY AND SOCIAL PSYCHOLOGICAL CONSTRUCTS

EDITED BY

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Measures of Ability and Trait Emotional Intelligence

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Emotional intelligence (EI) has emerged as a core construct in mainstream psychology and beyond. In an early attempt to describe intelligence beyond the confines of the traditional 'cognitive type', E.L. Thorndike (1920) proposed the notion of social intelligence, which he loosely defined as 'the ability to understand men and women, boys and girls – to act wisely in human relations' (p. 227). The appealing nature of this hypothesis spawned much empirical research that did not, on the whole, match expectations.

Nevertheless, the idea proved highly influential and was substantially extended by Gardner (1983) in his theory of multiple intelligences. This theory also proved more influential than successful in terms of generating empirical support. Of the various intelligences that Gardner suggested, his two personal intelligences (intrapersonal and interpersonal) are especially germane to EI. 'Intrapersonal intelligence involves the capacity to understand oneself, to have an effective working model of oneself – including one's own desires, fears, and capacities – and to use such information effectively in regulating one's own life,' whereas 'interpersonal intelligence denotes a person's capacity to understand the intentions, motivations, and desires of other people and, consequently, to work effectively with others' (Gardner, 1999, p. 43).

Because 'non-cognitive intelligences' tend to be loosely defined, great overlap exists between them. It is almost impossible to delineate where one starts and the other stops because their sampling domains, when specified, overlap very considerably. Indeed, it may be fair to say that the proliferation of labels like 'intrapersonal, interpersonal, emotional, and social' to describe what is, by and large, the same sampling domain is a demonstration of the 'jangle fallacy' (viz., a groundless inference that two constructs are different simply because they have different labels) that has been plaguing personality research for a long time (Block, 1995). Of all these interrelated constructs, EI is by far the most prevalent both in the academic as well as in the popular literature.

Widespread interest in EI led to the development of many different scales purporting to measure the construct (Stough, Saklofske, & Parker, 2009). Early work, some of it featured in this chapter, disregarded the difference between *typical* versus *maximal* performance (Cronbach, 1949). Typical performance concerns how we tend to behave most of the time and relies heavily on self-report measurement, whereas maximal performance concerns how we behave when we exert maximum effort in a situation and relies heavily on performance-based tests.

In the field of EI, just like in the seed field of social intelligence, some researchers developed self-report questionnaires while others tried to develop maximum-performance tests, but all claimed to operationalize the same construct, viz., EI. Petrides and Furnham (2001) argued that such claims are untenable because different measurement approaches yield different results, even if they are based on the same underlying model. This argument has

received consistent empirical support in the literature (e.g., Freudenthaler & Neubauer, 2007; Martins, Ramalho, & Morin, 2010) and provided the grounds for the distinction between two different EI constructs: trait EI and ability EI.

Although the trait EI and ability EI labels are not mere substitutes for self-report and maximum-performance measurement, it is the measurement methodology that lies at the heart of the distinction. In other words, the differentiation between trait EI and ability EI is predicated mainly on the method used to measure the construct and *not* on the elements (facets) that the various models are hypothesized to encompass. As such, it is unrelated to the distinction between 'mixed' and 'ability' models of EI (Mayer, Salovey, & Caruso, 2000), which is based on whether a theoretical model 'mixes' cognitive abilities and personality traits.

Unlike the distinction between trait EI and ability EI, that between 'mixed' and 'ability' models pays no heed to the most crucial aspect of construct operationalization (viz., the method of measurement) and explicitly proposes that cognitive abilities may be measured via self-report (see Mayer et al., 2000), which is psychometrically untenable. Research on self-estimates of intelligence has demonstrated that people tend to provide inflated self-estimates of their abilities and that such estimates correlate only moderately with measured levels of the same ability (Visser et al., 2008). In short, the distinction between mixed versus ability models is at variance both with established psychometric theory as well as with all available empirical evidence.

The trait EI and ability EI literatures have developed relatively independently, with the former being several times larger than the latter. Hundreds of studies have been conducted in the two fields and several meta-analyses have been published (e.g., Dana & Newman, 2010; Martins et al., 2010). It would be beyond the scope of this chapter to provide detailed coverage of all this research, although many studies have been briefly summarized in the validity sections under each instrument below. More details can be found in the various meta-analyses and in an overview chapter by Austin, Parker, Petrides, and Saklofske (2008).

MEASURES REVIEWED HERE

While numerous scales, mainly self-report measures, have appeared in the past 10−15 years, we have elected to report on 13 of these that meet several criteria, including that the scale must fall clearly within the realm described in EI models, have demonstrated reasonable psychometric properties, and proved useful in both research and applied settings. We include both ability and trait EI measures. Workplace-oriented trait EI measures will be described concisely.

Ability EI

1. Mayer−Salovey−Caruso Emotional Intelligence Test (Mayer, Salovey, & Caruso, 2002)
2. Levels of Emotional Awareness Scale (Lane et al., 1990)
3. Situational Test of Emotional Understanding/Management (MacCann & Roberts, 2008)

Trait EI
General

1. Trait Meta-Mood Scale (Salovey, Mayer, Goldman, Turvey, & Palfai, 1995)
2. Emotional Quotient Inventory (Bar-On, 1997) and EQ-i 2.0 (Multi-Health Systems, 2011)
3. Trait Emotional Intelligence Questionnaire (Petrides, 2001, 2009)
4. Assessing Emotions Scale (Schutte et al., 1998)

Workplace-oriented

1. Wong & Law Emotional Intelligence Scale (Wong & Law, 2002)
2. Workgroup Emotional Intelligence Profile (Jordan, Ashkanasy, Härtel, & Hooper, 2002)
3. Multidimensional Emotional Intelligence Assessment (Tett, Fox, & Wang, 2005)
4. Genos Emotional Intelligence Inventory (Gignac, 2010)

OVERVIEW OF THE MEASURES

Measurement of Ability EI

The most prominent measure of ability EI is the MSCEIT (Mayer et al., 2002), although a number of alternatives have been developed more recently. Because these tests adopt different methodologies in order to address the task of creating items with emotional content that must be scored veridically, it is difficult to evaluate them as a single class of instruments.

Broadly speaking, the main challenge that ability EI tests have to tackle is the inherent subjectivity of emotional experience (Watson, 2000). Unlike standard cognitive ability tests, tests of ability EI cannot be objectively scored because in the vast majority of emotion-related domains there are no clear-cut criteria for what may constitute a veridical response (Matthews, Roberts, & Zeidner, 2004). Ability EI tests have tried to bypass this problem by employing alternative scoring procedures, which had been used in the past for addressing similar challenges in the operationalization of social intelligence, but without marked success (O'Sullivan & Ekman, 2004).

Less conventional procedures, such as 'consensus' and 'expert' scoring, attempt to engineer 'correct' responses among a number of equally logical alternatives, but yield scores that are not fully interpretable psychologically. Indeed, it has been pointed out that it is unclear whether such scores reflect a confound with vocabulary size (Wilhelm, 2005), conformity to social norms (Matthews et al., 2006), theoretical knowledge about emotions (Austin, 2010), stereotypical judgments (O'Sullivan, 2007), or some unknown combination, or even an interaction, of some, or of all of these factors (see also Maul, 2012).

A range of other concerns have been highlighted in the literature, touching on conceptual, psychometric, and empirical limitations. Core issues involve logical and conceptual inconsistencies, unstable factor structures, and weak predictive validities (e.g., Brody, 2004; Fiori & Antonakis, 2011; Maul, 2012; O'Sullivan & Ekman, 2004; Roberts, Zeidner, & Matthews, 2001). Such shortcomings have prompted the development of a new wave of ability EI measures, some of which have sufficiently developed nomological networks to merit inclusion in this chapter.

The MSCEIT is viewed as a comprehensive measure of ability EI, as it is based on the developers' four-branch model, which has essentially dominated the field. The LEAS, STEU, and STEM are more specific measures of particular areas associated with ability EI, developed to assess one of the four branches of Mayer and Salovey's (1997) model. These measures depart from the related MSCEIT tasks in their methods of measurement and scoring. Similarly, the LEAS focuses on the measurement of emotional awareness, which is conceptually equivalent to another branch of the same model. Like other measures of specific emotion-related skills, the first LEAS version preceded the burst of EI measures, but more recent publications have situated the measure within the EI context.

Measurement of Trait EI

It is argued that the measurement of EI via self-report is more straightforward than through maximum-performance, because only the former methodology is consistent with the subjective nature of emotional experiences. Self-report measures of EI have generally avoided the pitfalls plaguing ability EI assessment and are much more widely used in the scientific psychology literature. In general, they have higher internal consistencies, more stable factor structures, and are grounded on established psychometric and mathematical models. Meta-analyses have shown that self-report measures of EI outperform performance-based measures of EI by large margins (e.g., Martins et al., 2010; O'Boyle, Humphrey, Pollack, Hawver, & Story, 2011).

On the negative side, self-report measures have often neglected the theoretical aspects of construct operationalization. Few of the current EI measures have been developed within a sound theoretical framework. In fact, many authors continue to claim that such measures actually assess mental abilities, competencies, or skills, and interpret their results accordingly. As mentioned above, this is psychometrically untenable, although this tendency has softened over the years, as the theory of trait EI gained ground in the literature.

Trait EI (or trait emotional self-efficacy) is formally defined as a constellation of emotional self-perceptions located at the lower levels of personality hierarchies (Petrides, Pérez-González, & Furnham, 2007). The label does not merely refer to variance captured by self-report questionnaires claiming to assess 'EI'. Rather it explicitly refers to a comprehensive conceptualization of the affective variance in the realm of personality as expressed in the construct's sampling domain (Table 14.1). This point has direct implications both for the correct interpretation of research findings as well as for meta-analyses adopting potentially flawed grouping practices based on purely semantic criteria (Pace & Brannick, 2010).

TABLE 14.1   The Adult Sampling Domain of Trait Emotional Intelligence

Facets	High scorers view themselves as…
Adaptability	…flexible and willing to adapt to new conditions
Assertiveness	…forthright, frank, and willing to stand up for their rights
Emotion expression	…capable of communicating their feelings to others
Emotion management (others)	…capable of influencing other people's feelings
Emotion perception (self and others)	…clear about their own and other people's feelings
Emotion regulation	…capable of controlling their emotions
Impulsiveness (low)	…reflective and less likely to give in to their urges
Relationships	…capable of maintaining fulfilling personal relationships
Self-esteem	…successful and self-confident
Self-motivation	…driven and unlikely to give up in the face of adversity
Social awareness	…accomplished networkers with superior social skills
Stress management	…capable of withstanding pressure and regulating stress
Trait empathy	…capable of taking someone else's perspective
Trait happiness	…cheerful and satisfied with their lives
Trait optimism	…confident and likely to 'look on the bright side' of life

In addition to the issue of measurement, construct operationalization also has to grapple with the challenge of defining a coherent sampling domain. This challenge does not much affect the performance-based approach that is dominated by a single model wherein the conceptualization and measurement aspects of the operational definition are entirely conflated, but looms large in the self-report approach wherein there seem to be a multitude of sampling domains.

With respect to the elements they encompass, the various EI models tend to be complementary rather than contradictory (Ciarrochi, Chan, & Caputi, 2000). Moreover, salient EI models have many facets in common, even though most of them also include isolated facets that are prima facie irrelevant to emotions. The commonalities between the various models provided the basis for the first formal sampling domain of trait EI, which included shared facets and excluded isolated ones (Petrides & Furnham, 2001).

Of the trait EI measures reviewed here, the majority were developed for the assessment of adults from the general population. Three measures were specifically developed for workplace applications (Gignac, 2010; Jordan et al., 2002; Tett et al., 2005), although one has a general-population version. Furthermore, some of the measures have short forms, 360-degree assessments, and versions specifically developed for children and adolescents (Bar-On, 1997; Gignac, 2010; Jordan et al., 2002; Petrides, 2001). While the measures vary considerably in content breadth and length, most yield an overall trait EI score and at least one level of subscale scores.

ABILITY EI MEASURES

Mayer−Salovey−Caruso Emotional Intelligence Test (MSCEIT)

(Mayer et al., 2002).

Variable

The MSCEIT is an ability-based assessment of EI, measuring how people perform on emotion-related tasks and solve emotional problems; it is based on the authors' four-branch model of EI (Mayer & Salovey, 1997), comprising the abilities to (1) perceive emotions (in oneself, others, objects, arts, music etc.); (2) generate and use emotions to facilitate thought; (3) understand emotional information; and (4) manage emotions in oneself and others. Adding to the MSCEIT is a youth version (MSCEIT-YV) that will be briefly described here alongside the MSCEIT.

Description

MSCEIT

The MSCEIT yields a total ability EI score and scores for each of the four ability EI branches. There are two additional area scores that summarize the four branches: Experiential EI, consisting of the Perceiving Emotions and Facilitating Thought branches, and Strategic EI, which includes the branches of Understanding Emotions and Managing Emotions. Further, performance scores are computed for each of the eight tasks (2 per branch), although the focus is typically on total ability EI and the four branch scores in research. The MSCEIT has a total of 141 items and can be administered in 30 to 45 minutes.

The MSCEIT offers general consensus and expert consensus scoring options, which yield very similar results. In consensus scoring, individual item responses are compared to those of the normative sample. MSCEIT scores based on consensus scoring are computed as empirical percentiles with an average of 100 and a standard deviation of 15. Similarly, the expert consensus scoring option uses the averaged responses of 21 emotions experts as the correct criterion. Across the MSCEIT's total, area, branch, and task scores, correlations between expert and consensus rating range between .93 to .99 (Mayer et al., 2002).

MSCEIT-YV

The MSCEIT-YV is currently being developed and thus only available for research. The scale structure of the MSCEIT-YV is the same as that for the adult version. The MSCEIT-YV has 184 items and therefore a longer administration time in its present state.

Sample

MSCEIT

The normative data comes from over 5000 respondents at over 50 research sites, with an unspecified majority from the U.S. The sample included individuals of both genders (52.0% female, 10.7% unreported) and the majority of respondents were under the age of 30 years ($M = 24.13$, $SD = 9.89$, range: $17-79$). The ethnic classifications of White (58.6%), Asian (26.4%), Black (5.4%), and Hispanic (4.9%) were unevenly represented. Although a large percentage of the sample had college or university experience, including some with Masters degrees or higher, there were some who had graduated from high school or elementary school only.

As the authors recommend general consensus scores for most samples, normative data will be reported for this scoring method. The sample had a total ability EI raw score of .51 ($SD = .06$) and branch raw scores of .52 ($SD = .10$) for Perceiving Emotions, .48 ($SD = .08$) for Facilitating Thought, .55 ($SD = .08$) for Understanding Emotions, and .45 ($SD = .08$) for Managing Emotions (raw scores have a theoretical range of 0 to 1). Both area scores had a mean of .50 and a standard deviation of .07. All scores had a negative skew close to 1.

MSCEIT-YV

There is little information available so far on the standardization sample and psychometric properties of the youth version (see Papadogiannis, Logan, & Sitarenios, 2009). In a sample of 102 U.S. elementary and middle school students (mean age: 10.25 years, $SD = 1.29$; 41% male), a total ability EI standard score of 93.62 ($SD = 15.94$) and branch standard scores of 87.25 ($SD = 19.66$) for Perceiving Emotions, 97.53 ($SD = 16.97$) for Facilitating Thought, 91.08 ($SD = 15.10$) for Understanding Emotions, and 96.43 ($SD = 15.01$) for Managing Emotions were reported. The area scores were 92.15 ($SD = 17.51$) for Experiential EI and 93.08 ($SD = 15.04$) for Strategic EI (Windingstad et al., 2011).

Reliability (MSCEIT)

Internal Consistency

Due to item heterogeneity, the MSCEIT uses the split-half coefficients as a measure of internal consistency at the total, area, and branch levels; Cronbach alpha coefficients are used for the eight subtest scores, as these have homogeneous items. The general consensus scoring method has produced slightly higher split-half coefficients (those for expert scoring are reported in parentheses): .93 (.91) for total EI, .91 (.90) for Perceiving Emotions, .79 (.76) for Facilitating Thought, .80 (.77) for Understanding Emotions and .83 (.81) for Managing Emotions.

Split-half coefficients for the area scores were .90 (.90) for Experiential EI and .88 (.86) for Strategic EI. The task scores have lower levels of internal consistency, with Cronbach alpha coefficients ranging from .64 (.62) to .88 (.87; Mayer et al., 2002).

Test−Retest

A test−retest reliability coefficient of $r = .86$ was found for a sample of 60 respondents over a three-week interval (Brackett & Mayer, 2003). Over an unspecified period, test−retest correlations ranged from .74 to .89 across branch scores (Mayer et al., 2002; $N = 62$).

Reliability (MSCEIT-YV)

Internal Consistency

Item homogeneity was reported for a sample of 50 U.S. students with an age range from 10 to 18 years ($M = 14.3$, $SD = 2.5$). The Cronbach alpha coefficient was high ($\alpha = .84$ for total EI; Peters, Kanzler, & Rossen, 2009).

Validity (MSCEIT)

Convergent/Concurrent

Correlations of the MSCEIT with the STEM and STEU were .36 and .33 (Austin, 2010). Correlations with cognitive ability tend to be significant within a weak to moderate range (e.g., Livingstone & Day, 2005; Mayer et al., 1999).

Divergent/Discriminant

Correlations with self-report measures of trait EI, such as the EQ-i ($r = .21$) or AES ($r = .18$; Brackett & Mayer, 2003), tend to be weak. Further, the MSCEIT scores are conceptually and empirically distinct from well-established personality traits, showing small correlations ($r = .00$ to .24) with general personality factors (for a review, see Mayer, Salovey, & Caruso, 2004). Management and Emotional Understanding both exhibited a low correlation with verbal ability ($r = .14$), and Emotional Understanding also correlated weakly with problem solving ($r = .15$). Total EI ability correlated weakly ($r = .05$) with Raven's progressive matrices (Ciarrochi et al., 2000), indicating that the construct does not simply reflect 'g'.

Construct/Factor Analytic

The MSCEIT was developed and validated with respect to Mayer and Salovey's (1997) ability EI model. Empirically, when the branch scores were constrained to load on higher-order factors, the data failed to support the four-factor model, $\chi^2_{(16)} = 39.78$, $p < .05$, RMSEA = .10, CFI = .91 (e.g., Fiori & Antonakis, 2011). A meta-analytic structural equation modeling approach using the pooled data of more than 10,000 individuals showed excellent model fit (Fan, Jackson, Yang, Tang, & Zhang, 2010). However, the authors of this study proposed an alternative three-factor solution for the MSCEIT, as the first two branches were highly correlated ($r = .90$).

Criterion/Predictive

MSCEIT scores exhibited low to moderate correlations with life enthusiasm ($r = .22$), tobacco and alcohol use ($r = .19$), social deviance ($r = -.27$), and drug use ($r = -.32$; Mayer et al., 2004). MSCEIT scores have not demonstrated incremental predictive validity when controlling for general intelligence and personality factors (Brody, 2004).

Validity (MSCEIT-YV)

Two independent studies found that the MSCEIT-YV scores correlated moderately with the EQ-i-YV scores, indicating that these instruments measure overlapping, but distinct constructs, as is the case with the adult versions (Peters et al., 2009; Windingstad et al., 2011). Overall EI correlated with general cognitive ability ($r = .35$) and reading achievement ($r = .35$), but was not significantly associated with mathematics ($r = .17$). Further, overall EI correlated negatively with emotion-oriented coping ($r = -.46$) and the number of discipline referrals ($r = .35$; Peters et al., 2009).

Location

Mayer, J.D., Salovey, P., & Caruso, D.R. (2002). *Mayer−Salovey−Caruso Emotional Intelligence Test (MSCEIT): User's manual.* Toronto, Ontario: Multi-Health Systems, Inc.

Results and Comments

The MSCEIT has been used in organizational, educational, clinical, social, and health settings. It is important to keep in mind that research has yet to overcome the challenges associated with measuring and scoring emotion-related skills objectively, in a way that resembles more established domains of intelligence. It is also uncertain that the underlying model, which has been used as a basis for several other EI measures, covers a particular ability dimension comprehensively (for a more detailed discussion of these and other issues, see Brody, 2004; Maul, 2012; and Roberts, Schulze, & MacCann, 2008). Future research needs to test and, if necessary, modify the ability EI model underlying the MSCEIT and other measures.

MSCEIT SAMPLE ITEMS

What mood(s) might be helpful to feel when figuring out what caused a fight among three young children? Each of the three young children is telling a different story about how the fight started. Figuring out what happened requires attending to the details of the stories and weighing many facts.

Not Useful/Useful

a. happiness 1 2 3 4 5
b. surprise 1 2 3 4 5
c. sadness 1 2 3 4 5

A feeling of concern most closely combines the emotions of _____.

a. love, anxiety, surprise, anger
b. surprise, pride, anger, fear

c. acceptance, anxiety, fear, anticipation
d. fear, joy, surprise, embarrassment
e. anxiety, caring, anticipation

Imagine you are feeling loud, large, delicate, and bright green. How much is that feeling like each of the following?

Not Alike/Very Much Alike

a. excited 1 2 3 4 5
b. jealous 1 2 3 4 5
c. afraid 1 2 3 4 5

Notes: The MSCEIT is commercially available through MHS (www.mhs.com), with discounts offered to researchers.
Reproduced with permission.

Levels of Emotional Awareness Scale (LEAS)

(Lane et al., 1990).

Variable

The LEAS focuses on the awareness of one's own and others' emotions, which are key factors in the majority of EI models. The LEAS assesses the five levels of emotional awareness identified in Lane and Schwartz's (1987) cognitive-developmental theory: bodily sensations, action tendencies, single emotions, blends of emotions, and combinations of blends. This model provides a framework explaining individual differences in the experience and expression of emotions, emphasizing structure over content. The original LEAS preceded the burst of research on EI and, thus, was not initially considered a measure of this more general construct. However, more recent articles have situated the construct assessed with the LEAS within the dimensional boundaries of ability EI (e.g., Igarashi et al., 2011; Veirman et al., 2011).

Description
LEAS

The LEAS is a paper-pencil performance questionnaire, which presents 20 interpersonal, emotion-evoking situations, each of which is described in two to four sentences and involves two persons. The scenes are selected to elicit four types of emotion (anger, fear, happiness, and sadness), which increase in their level of complexity. The respondent is asked to describe how s/he would feel in that situation and how the other person might feel

in that situation. Each scene is scored separately for the emotion assigned to the self and the other person on a scale from 0 to 4, using the following criteria (a sample item is presented at the end of this review):

- Level 0 (lowest score) − non-emotion response where the word 'feel' reflects a thought, rather than true feeling.
- Level 1 − awareness of physiological cues (e.g., 'I'd feel tired').
- Level 2 − includes words typically used in other contexts, but nonetheless conveying relatively undifferentiated emotion (e.g., 'I'd feel bad,' using the word feel to convey an action tendency, such as 'I'd feel like punching the wall').
- Level 3 − uses one word that conveys typical, undifferentiated emotion (e.g., happy, sad, angry).
- Level 4 − uses two or more Level 3 words that convey greater emotional differentiation than either word on its own.

A total score represents the higher of the two scores, unless there are two Level 4 scores. In case of two Level 4 scores, a total score of 5 is awarded if the self and other descriptions can be differentiated from each other. The scores range from 0−80 for Self and Other descriptions and 0−100 for total although only the total score is to be used. The initial 20-item version requires 30 min for completion by the participant and scoring by a trained rater. For this reason, a computer-scoring method has been developed, producing alpha coefficient and validities that are comparable to hand scoring (Barchard et al., 2010). A Japanese version (LEAS-J; Igarashi et al., 2011) has recently appeared in the literature.

LEAS − Children   A child version (LEAS-C; Bajgar, Ciarrochi, Lane, & Deane, 2005) was developed by using items from the adult version, modified slightly in terms of vocabulary, grammar, and context, where necessary. Two items were added, resulting in a total of 12 items (three per emotion: happiness, anger, sadness, and fear). As with the adult version, the particular emotions reflected in the scenarios have no implications for scoring. Instead, the focus is on the emotion complexity of children's responses, rather than their correctness. The LEAS-C can be administered individually or in groups, mirroring the adult version in response and scoring format. The estimated completion time is 20 minutes. Total scores range from 0 to 48 for Self- and Other-awareness and from 0 to 60 for total awareness. The LEAS-C has been translated into Dutch (Veirman et al., 2011).

Sample
LEAS

In the initial study, the LEAS was administered to 40 undergraduate students (20 female), who were mostly in their late teens and early 20s (Lane et al., 1990). Sample means were not reported. Normative data for a larger sample of 380 community members (age range 18−80 years) were reported in Lane et al. (1996). Participants in this study had a mean total score of 61.9 ($SD = 10.7$). The sample used to assess the reliability and validity of the Japanese LEAS-J consisted of 344 Japanese university students aged 18−38 years ($M = 20.13$). Sample means for the Self, Other, and total scores were 40.79 ($SD = 10.98$), 36.76 ($SD = 9.53$), and 50.05 ($SD = 9.38$), respectively.

LEAS-C

The LEAS-C was initially administered to a group of 51 children (25 female), who were 10 and 11 years of age and recruited at two private schools. Girls had a mean total score of 38.20 ($SD = 3.60$), whereas boys had a mean of 34.15 ($SD = 4.32$). Mean Self and Other scores for girls were 33.88 ($SD = 4.53$) and 32.96 ($SD = 4.00$), respectively; for boys, these scores were 30.65 ($SD = 6.20$) and 29.31 ($SD = 6.10$), respectively (Bajgar et al., 2005). The Dutch version of the LEAS-C was administered to a Belgian sample of primary and secondary school children (47% male; aged 10−17 years, $M_{Age} = 13.30$, $SD = 1.80$), whose first language was Dutch. The sample means for the Self, Other, and total scores were 30.94 ($SD = 5.98$), 29.22 ($SD = 6.30$), and 34.85 ($SD = 5.49$; Veirman et al., 2011).

Reliability (LEAS)
Internal Consistency

The Cronbach alpha coefficient was found to be .81 (Lane et al., 1990). In a larger sample ($N = 380$), alpha coefficients were high for the Self ($\alpha = .84$), Other ($\alpha = .83$), and total ($\alpha = .88$) scores (Lane et al., 1996). Similar Cronbach alpha coefficients (Self = .82, Other = .77, total = .83) were reported for the LEAS-J subscales (Igarashi et al., 2011).

Inter-Rater

Twenty protocols scored independently by two trained raters led to high inter-rater reliability, $r = .84$ (Lane et al., 1990). In Lane et al. (1996), inter-rater reliabilities were high for the Self ($r = .98$), Other ($r = .91$), and total ($r = .92$) scores. Similarly, Igarashi et al. (2011) reported acceptable levels of inter-rater reliability (Self = .88, Other = .87, total = .90).

Reliability (LEAS-C)

Internal Consistency

For the LEAS-C, Cronbach alpha coefficients were .71 for Self scores, .64 for Other scores, and .66 for total scores (Bajgar et al., 2005). In the Dutch-speaking sample, alpha coefficients were .73 for Self, .73 for Other, and .76 for total scores (Veirman et al., 2011).

Inter-Rater

Inter-rater reliability was .93 for Self scores, .86 for Other scores, and .86 for total scores (Bajgar et al., 2005).

Validity (LEAS)

Convergent/Concurrent

In the initial publication of the LEAS, scores were shown to correlate with other measures of cognitive-developmental complexity: the Parental Descriptions Scale ($r = .35$) and the Washington University Sentence Completion Test of Ego Development ($r = .40$; Lane et al., 1990).

Divergent/Discriminant

There was little correlation with emotion scales ($r = .08$ to $-.27$). Further, the LEAS did not correlate with the number of words used ($r = .12$), suggesting that complexity does not simply reflect verbal productivity (Lane et al., 1990). The Japanese version correlated weakly with the Big Five ($r = .02-.20$) and alexithymia ($r = .00-.05$).

Validity (LEAS-C)

Convergent/Concurrent

Convergent validity for the LEAS-C as an objective assessment of emotion complexity in children was demonstrated by a significant association with an emotion comprehension task and two verbal tasks. Also, as anticipated, the LEAS-C was more strongly associated with emotion comprehension than emotion expression (Bajgar et al., 2005). Convergent validity of the Dutch version was demonstrated with measures of ability EI, intelligence, and personality (Veirman et al., 2011).

Divergent/Discriminant

Discriminant validity was apparent from associations with measures of social and emotional impairment (Veirman et al., 2011).

Construct/Factor Analytic

For the LEAS-C (Veirman et al., 2011), the one-factor structure showed acceptable to good fit in a CFA ($\chi^2(54) = 102.23$, $\chi^2/df = 1.89$; SRMR = .05; RMSEA = .05 CFI = .91; BIC = 9107.56). In addition, the evidence showed that the self and other scores should be viewed as distinct, yet highly ($r = .79$) correlated subfactors of emotional awareness.

Criterion/Predictive

No criterion/predictive validity evidence is currently available.

Location

Lane, R.D., Quinlan, D.M., Schwartz, G.E., Walker, P.A., & Zeitlin, S.B. (1990). The levels of emotional awareness scale: A cognitive-developmental measure of emotion. *Journal of Personality Assessment, 55*, 124–134.

Bajgar, J., Ciarrochi, J., Lane, R., & Deane, F. (2005). Development of the Levels of Emotional Awareness Scale for Children (LEAS-C). *British Journal of Developmental Psychology, 23*, 569–586.

Results and Comments

The unique feature of the LEAS in the ability EI literature is its narrow measurement domain (emotional awareness) and focus on qualitatively distinguishable levels, rather than scores on continuous measurement scales. A strength over other maximum-performance measures of emotion-related qualities is that responses are scored against strictly defined criteria, instead of elusive expert or consensus data. By pooling the data of various samples, it was shown that there is a stable and generalizable sex difference in emotional awareness (Feldman-Barrett, Lane, Sechrest, & Schwartz, 2000). Clinical research with the LEAS showed that patients with PTSD score significantly lower on the LEAS than non-PTSD controls. Also, LEAS scores were differentially associated with activation in the ventral anterior cingulate cortex between PTSD patients and healthy controls during trauma-script imagery (Frewen et al., 2008).

LEAS SAMPLE ITEM
Scene 20 from the LEAS (as reported in Lane et al., 1996)

You and your best friend are in the same line of work. There is a prize given annually to the best performance of the year. The two of you work hard to win the prize. One night the winner is announced: your friend. How would you feel? How would your friend feel?

Example of responses at each level

0 − I don't work hard to win 'prizes.' My friend would probably feel that the judges knew what they were doing.

1 − I'd feel sick about it. It's hard for me to say what my friend would feel − it would all depend on what our relationship was like and what the prize meant to her.

2 − I'd probably feel bad about it for a few days and try to figure out what went wrong. I'm sure my friend would be feeling really good.

3 − We would both feel happy. Hey, you can't win 'em all!

4 − I would feel depressed − the friend in this light is just like any other competitor. I would also begrudgingly feel happy for my friend and rationalize that the judges had erred. My friend would feel very gratified but would take the prize in stride to save the friendship.

5 − I'd feel disappointed that I didn't win but glad that if someone else did, that person was my friend. My friend probably deserved it! My friend would feel happy and proud but slightly worried that my feelings might be hurt.

Notes: The LEAS and its scoring manual may be obtained from Dr. Lane at lane@u.arizona.edu. The child form LEAS-C (including three translations) can be obtained from: www.uow.edu.au/health/iimh/archives/UOW024727.html (Reproduced with permission).

Situational Test of Emotional Understanding (STEU) and Management (STEM)

(MacCann & Roberts, 2008).

Variable

The STEU and STEM are two newer measures of ability EI. As their labels indicate, these measures more specifically assess emotional understanding and management, which are also two of the four EI dimensions of Mayer and Salovey's (2000) model.

Description

The STEU and STEM were developed to distinguish between construct and test effects, as the MSCEIT was at that point the only measure of ability EI and specifically of Mayer et al.'s (2000) four-branch model. Another driving force that prompted the authors to develop these measures was the MSCEIT's rate-the-extent procedures and expert or population-based scoring procedures. Consistent with Roseman's (2001) appraisal theory, STEU items are scored according to clearly defined standards. The STEU consists of 42 multiple-choice items (14 related to specific contexts, 14 related to personal life in general, and 14 related to the workplace), from which a total score is derived by calculating the mean. The total scores range from 0 to 1.

Based on the Situational Judgement Test paradigm, the STEM measures people's management of three emotions (fear, anger, and sadness), providing two response formats: (a) multiple-choice, whereby the respondent

selects the most appropriate response to the situation (score range: 0−1); and (b) rate-the-extent, in which the respondent rates different response options according to their effectiveness (response range: 1−6). The multiple-choice option is scored according to expert weights, whereas an additional rate-the-extent option is scored based on the distance of a response from the expert rating. The purpose of having these two response formats is to distinguish between test effects and construct effects. There are 44 items on the STEM, of which 18 focus on anger content, 14 on sadness, and 12 are directed at fear content.

Sample

The initial investigation was carried out on two separate samples. The first sample consisted of 207 Psychology undergraduate students (140 women) with a mean age of 21.1 years (Median = 19.0, SD = 5.6). Most of the participants were of Anglo-Celtic and Asian backgrounds. Two-hundred participants completed the STEU, resulting in a mean score of 0.60 (SD = 0.13); one-hundred-twelve participants completed the STEM in multiple-choice format, obtaining a mean score of .52 (SD = .07), whereas 91 participants achieved a mean score of 2.57 (SD = .46) with the rate-the-extent method (MacCann & Roberts, 2008).

A non-student work sample of 149 participants (107 women) completed the same STEU as the first sample, but a modified STEM which was reduced to 30 items and administered in multiple-choice format only. The age range of this sample was 18 to 59 years with mean age of 35.33 years (SD = 11.03). This sample had a mean STEU score of .63 (SD = .09) and a mean STEM score of .61 (SD = 0.08). The comparable STEM mean in the first sample (with 13 items removed) was .57 (SD = .09; MacCann & Roberts, 2008).

Reliability

Internal Consistency

The undergraduate student sample responses exhibited Cronbach alpha coefficients of .71 (STEU), .68 (STEM-multiple choice), and .92 (STEM-rate the extent); the 30-item STEM (multiple-choice format) produced scores with an alpha coefficient of .72 in this sample. The STEU and STEM (multiple-choice) scores in the work sample exhibited alpha coefficients of .43 and .61, respectively. The Cronbach alpha was significantly lower in the work sample than in the student sample (MacCann & Roberts, 2008).

Test−Retest

Over a 10-week period, test−retest correlations were .55 for the STEM and .66 for the STEU (MacCann, 2010).

Validity

Convergent/Concurrent

Correlations with measures of vocabulary (r = .49, .41) and university grades (r = .37, .16) indicated that the STEU and STEM, respectively, measure a form of intelligence. In particular, the multiple-choice format seems to represent ability, as the scores produced with this method were more strongly associated with vocabulary than personality dimensions, whereas the opposite was true for rate-the-extent scores. STEU scores explained incremental variance over vocabulary in STEM scores and in the Multifactor Emotional Intelligence Scale stories subtest scores, which load highest on the general ability EI factor. A problematic pattern, however, was that both STEM and STEU scores were more strongly associated with vocabulary than the stories test, indicating that these measure verbal intelligence primarily, rather than specifically EI (MacCann & Roberts, 2008).

Austin (2010) examined the STEU and STEM's associations with intelligence, emotion perception, and ability EI, as assessed with the MSCEIT. Only the STEU and MSCEIT (Understanding Emotions) were significantly associated with intelligence and measures of emotion perception. Both the STEU and STEM scores correlated with the MSCEIT total score and most branch scores, whereas neither was related to trait EI.

Divergent/Discriminant

Divergent validity was assessed by correlating the STEM and STEU with two trait EI measures (Austin, 2010). Correlations of the STEU with the TEIQue and AES were .03 and −.04, respectively. The STEM's correlations with these measures were .12 and .13. All four correlations were not statistically significant. Correlations with personality were modest (r = .02 to .24) and mostly non-significant.

Construct/Factor Analytic

A study by Ferguson and Austin (2010) supported the unidimensional structure of both measures. The KMO statistics in principal-component analyses reached acceptable levels of .55 (STEU) and .56 (STEM).

Criterion/Predictive

A strength demonstrated by the STEU and STEM is that both predicted incremental variance in psychology course grades (beyond the effects of intelligence and personality). Consistent with previous findings involving the MSCEIT's Understanding Emotions branch as the strongest predictor of academic success, the STEU also predicted overall grades incrementally (MacCann & Roberts, 2008).

Location

MacCann, C., & Roberts, R.D. (2008). New paradigms for assessing emotional intelligence: Theory and data. *Emotion*, *8*, 540−551.

Results and Comments

While the STEU and STEM entail potential advances in the scoring of respondents' interpretation of, and reaction to emotional scenarios, they have only appeared in a few studies. More research is necessary to examine and develop the reliability and construct validity of these measures. Future research is also needed to ascertain that these measures tap primarily the emotion-related aspects of intelligence, rather than more fundamental aspects of intelligence, such as verbal ability.

STEU-LIKE AND STEM-LIKE ITEMS

STEU: Pete just had a paper accepted for publication. He is most likely to feel (a) regret; (b) hope; (c) relief; (d) sadness; (e) joy.

STEM: Upon arriving at her gym, Colleen becomes angry as she finds out that her scheduled yoga class has just been cancelled for the second week in a row.

Which of the following is the most appropriate response to the situation?

(a) Try to ignore her anger and go home; (b) Complain at the reception; (c) Participate in a similar class − aerobics; (d) Cancel her membership

Rate each response option in terms of its effectiveness.

Note: MacCann and Roberts' (2008) original paper includes online Appendices at: http://dx.doi.org/10.1037/a0012746.supp (Retrieved January 3, 2014).

TRAIT EI MEASURES

Trait Meta-Mood Scale (TMMS)

(Salovey et al., 1995).

Variable

The TMMS was developed to assess enduring qualities of the reflective experience of mood, encompassing the abilities to reflect upon and manage one's own emotions. Although the authors made it clear that they do not consider the TMMS an EI measure, they view it has having utility for identifying core individual differences that characterize people who are high in EI, specifically people who can disclose feelings to themselves and others (Salovey et al., 1995).

Description

Based on self-report, the TMMS specifically measures people's tendency to attend to emotions (Attention, 21 items), discriminate between, or understand feelings (Clarity, 15 items), and regulate moods (Repair, 12 items). In contrast to other EI measures, the TMMS was not developed to give a global EI score. The 48 items are presented on a 5-point scale ranging from 1 (*strong disagree*) to 5 (*strongly agree*). A revised 30-item version was constructed by dropping items with low loadings less than .40; for this version, the numbers of items per scale are 13 for Attention, 11 for Clarity, and 6 for Repair (Salovey et al., 1995).

A Spanish short version of the TMMS was developed by Fernández-Berrocal, Extremera, and Ramos (2004). This version consists of 24 items from the original English version (eight per scale).

Sample

Undergraduate students had scale means of 4.10 ($SD = 0.52$) for Attention, 3.27 ($SD = 0.70$) for Clarity, and 3.59 ($SD = 0.90$) for Repair (Salovey, Stroud, Woolery, & Epel, 2002).

The scale means of the Spanish short version were quite similar across the three scales in a Spanish sample of 184 undergraduate students. Specifically, this sample had means of 3.25 ($SD = .80$) for Attention, 3.19 ($SD = .81$) for Clarity, and 3.22 ($SD = .78$) for Repair (Extremera, & Fernández-Berrocal, 2005).

Reliability

Internal Consistency

For the English version of the TMMS, Cronbach alpha coefficients were .86 for Attention, .87 for Clarity, and .82 for Repair; alpha coefficients were equal for the 30-item version (.88 for Clarity; Salovey et al., 1995). For the 24-item Spanish version, Cronbach alphas were .88 for Attention, .89 for Clarity, and .86 for Repair (Extremera, & Fernández-Berrocal, 2005).

Test–Retest

Test–retest correlations over a four-week period were .60 for Attention, .70 for Clarity, and .83 for Repair (Fernández-Berrocal et al., 2004).

Validity

Convergent/Concurrent

The AES correlated positively with the TMMS subscales of Attention to feelings ($r = .63$, $N = 48$), Clarity of feelings ($r = .52$, $N = 47$) and Mood Repair ($r = .68$, $N = 47$). Further, the Attention scale correlated positively with public ($r = .36$) and private ($r = .42$) self-consciousness, while the Clarity scale correlated negatively with ambivalence over emotional expression ($r = -.25$) and depression ($r = -.27$). The Repair scale correlated negatively with depression ($r = -.37$) and positively with optimism ($r = .57$) and beliefs regarding negative mood regulation ($r = .53$; Salovey et al., 1995). Correlations with the Big Five were moderate between Attention and Neuroticism ($r = .37$), between Clarity and Extraversion ($r = .32$) or Openness ($r = .30$), and between Repair and Neuroticism ($r = -.44$; Extremera, & Fernández-Berrocal, 2005).

Divergent/Discriminant

The divergent/discriminant validities of the three scales have not been deliberately examined. However, the scales showed different patterns of associations with various criteria ($N = 86$; Salovey et al., 1995). Attention was unrelated to depression ($r = -.08$), optimism ($r = .09$), and mood regulation ($r = .17$). Clarity and Repair were unrelated to self-consciousness ($r = .01 - .18$), and Clarity also correlated non-significantly ($r = .12$) with both optimism and mood regulations.

Construct/Factor Analytic

A confirmatory factor analysis ($N = 148$) of the 48 items supported to the theoretical three-factor structure of the TMMS ($\chi^2(48) = 49.56$, $p > .05$; GFI = .94; RMSEA = .05; Salovey et al., 1995).

Criterion/Predictive

The TMMS scales appear to predict various emotion-related criteria. Mood Repair predicted less passive coping ($r = -.31$ to $-.34$) and a decreased perception of induced laboratory stressors as threatening ($r = -.35$); Clarity predicted a greater increase in negative mood ($r = .32$), but decreased cortical release during stressful situations ($r = -.31$, $-.40$); Attention correlated negatively with cortical and blood pressure as a function to laboratory challenges ($r = .27$; Salovey et al., 2002). Thompson, Waltz, Croyle, and Pepper (2007) found Repair to be a unique predictor of well-being vis-à-vis demographic and affective variables, whereas the Attention and Clarity scales predicted somatic symptoms incrementally. In terms of mental health, the TMMS has shown some criterion validity, although it is among the weaker trait EI measures in the literature (Martins et al., 2010).

Location

Salovey, P., Mayer, J. D., Goldman, S., Turvey, C., & Palfai, T. (1995). Emotional attention, clarity, and repair: Exploring emotional intelligence using the Trait Meta−Mood Scale. In J. W. Pennebaker (Ed.), *Emotion, disclosure, and health* (pp. 125−154). Washington, DC: American Psychological Association.

Results and Comments

The TMMS focuses exclusively on intrapersonal feelings. It must be remembered that the self-report response format has implications for the nature of the factors being measured, rendering them akin to personality traits rather than 'abilities,' as originally envisaged. The non-significant to weak associations among the Attention, Clarity, and Repair factors suggests that these scales represent fairly distinct trait dimensions.

The full TMMS is included in Salovey et al. (1995), which can be accessed from: www.unh.edu/emotional_intelligence/ei%20Measuring%20Mood/mm%20SMMS.htm (Retrieved January 3, 2014).

Emotional Quotient Inventory (EQ-i and EQ-i 2.0)

(Bar-On, 1997; MHS, 2011).

Variable

Bar-On (1997) conceptualized EI as 'an array of non-cognitive capabilities, competencies, and skills that influence one's ability to succeed in coping with environmental demands and pressures' (p. 14). However, it has been noted that the EQ-i should really be viewed as measure of trait EI (Petrides & Furnham, 2001).

Description

EQ-i

The EQ-i instruments are based on Bar-On's EI model, which consists of 15 specific components that fall into five theoretical clusters (Bar-On, 2006): Intrapersonal (comprising Self-Regard, Emotional Self-Awareness, Assertiveness, Independence, and Self-Actualization); Interpersonal (comprising Empathy, Social Responsibility, and Interpersonal Relationship); Stress Management (comprising Stress Tolerance and Impulse Control); Adaptability (comprising Reality-Testing, Flexibility, and Problem-Solving); and General Mood (comprising Optimism and Happiness).

The EQ-i is suitable for adults 17 years or older. There is a total of 133 items with 7−9 items measuring each of the model's facets. Each item is presented as a self-statement, rated on a 5-point Likert scale with a range of 1 (*very seldom true* or *not true for me*) to 5 (*very often true of me* or *true of me*). The items produce a total EQ score, five composite scores reflecting each of the five broad clusters, and scores for each of the 15 facets. The total score has been revised to exclude the general mood items, which can be calculated separately (Bar-On, 2000). The scale also includes subscales to assess the validity of the responses: an inconsistency index, a positive impression scale, and a negative impression scale.

A short version of 51 items (EQ-i:Short; Bar-On, 2002) was derived from the items of four theoretical clusters of the Bar-On (1997) model: intrapersonal, interpersonal, stress management, and adaptability. In addition to providing composite scores for these four clusters, the EQ-i:Short yields a total EI score and indicators of inconsistency and positive impression. Translations of both adult forms are available in numerous languages (Wood et al., 2009).

EQ-i:Youth Version

A youth version (EQ-i:YV, Bar-On & Parker, 2000) has been developed for children and adolescents 7 to 18 years of age. Also based on Bar-On's (1997) model, the EQ-i:YV consists of 60 items belonging to 7 scales: interpersonal, intrapersonal, stress management, adaptability, general mood, positive impression, and an inconsistency index. The first four scales are included in the overall EQ score for this version. A short form, the EQ-i:YV (S), contains 30 items that are distributed across 5 scales: interpersonal, intrapersonal, stress management, adaptability, and positive impression. An additional observer rating scale to be completed by teachers and parents was developed in recent years.

EQ-i 2.0

A new adult version, the EQ-i 2.0, has recently become available (MHS, 2011) and is suitable for individuals 18+ years. While having the same number of composites, subscales, and items, there are some significant changes to the items, norms, factors, and subscales. Compared to the EQ-i, in which individual items had been keyed on multiple subscales, the EQ-i 2.0 items are unique to individual subscales. The composites and subscales are: Self-Perception (Self-Regard, Self-Actualization, Emotional Self-Awareness), Self-Expression (Emotional Expression, Assertiveness, Independence), Interpersonal (Interpersonal Relationships, Empathy, Social Responsibility), Decision Making (Problem Solving, Reality Testing, Impulse Control), and Stress Management (Flexibility, Stress Tolerance, Optimism). Five validity indices are employed to assist in determining the 'accuracy' of the self-reported responses.

Sample

The North American normative sample of the EQ-i comprised 3,831 adults from most American states and all Canadian provinces (Bar-On, 1997). Normative data for the EQ-i:YV (Bar-On & Parker, 2000) were obtained from 9172 children and adolescents.

EQ-i 2.0 normative sample comprises 4000 adults from all American states and Canadian provinces of the U.S. and Canadian general populations.

Reliability

Internal Consistency

Across seven samples, the EQ-i had an average alpha level of .76 for its 15 facets. The range of Cronbach alpha coefficients was .69 for social responsibility to .86 for self-regard. The EQ-i:Short also had acceptable alpha levels, ranging from .76. to .93, as well as an acceptable average of inter-item correlations, which ranged from .18 to .43 (Bar-On, 2002).

For both the full and short forms of the EQ-i:YV, Cronbach alpha coefficients ranged from .65 to .90 for the full form and from .65 to .90 for the short form (Bar-On & Parker, 2000).

The EQ-i 2.0 total scale alpha coefficient was .97. The alpha coefficients for the five composite scales ranged from .88 to .93 and all subscales showed a minimum Cronbach alpha of .77. These alpha coefficients held also for the age and gender normative groups (MHS, 2011).

Test−Retest

The EQ-i's test−retest reliability in a South African sample was .85 over a one-month period and .75 over a four-month period, with a low of .78 for social responsibility and a high of .92 for self-regard (Bar-On, 1997). Over a six-month period, test−retest correlations ranged from .57 to .80 for the EQ-i:Short (Bar-On, 2002). In a study of 238 undergraduate students, test−retest correlations were stable over a 32-month period, ranging from .43 for adaptability to .75 for stress management (Parker et al., 2005b).

For the EQ-i:YV, adequate levels of test−retest reliability were reported over a 3-week period, ranging from .77 for general mood to .89 for total EI for the full form and from .81 for interpersonal EI to .88 for stress management for the short form (Wood et al., 2009).

Over a 2−4 week time interval, test−retest correlations of the EQ-i 2.0 were .92 for the total score, .86 to .91 for the five factors, and .78 to .89 for the subscales ($N = 204$). Eight-week test−retest correlations for 104 individuals were .81 for the total score, .76 to .83 for the composite scores, and .70 to .84 for the subscales.

Validity (EQ-i)

Convergent/Concurrent

The EQ-i total score exhibited a moderate correlation of .43 with the AES (Schutte et al., 1998) and shared considerable variance with the Big Five ($r = .75$) in a sample of college students (Brackett & Mayer, 2003). In a sample of Canadian military personal, correlations with the Big Five ranged from .15 (stress management and extraversion) to .66 (stress management and emotional stability) across factor scores (Livingstone & Day, 2005). These results support the trait EI framework proposed for self-report measures of the concept.

Divergent/Discriminant

The EQ-i total score correlated weakly with the MSCEIT ($r = .21$) in college students. In the military sample, the EQ-i exhibited low to moderate correlations with MSCEIT scores ($r = .13$ to $.31$), and only the Interpersonal factor correlated with cognitive ability, specifically with spatial ability ($r = -.16$).

Construct/Factor Analytic

The 15 facets consistently load on to a single higher-order EI factor across cultures, indicating that they share a unifying, coherent trait content. Yet, studies have failed to replicate the theoretical five-factor structure (e.g., Livingstone & Day, 2005), with some producing factor structures of 10 (Bar-On's, 1997, 2000) or six factors (Palmer, Manocha, Gignac, & Stough, 2003). A study of measurement invariance and differential item functioning in work and student samples from different cultures demonstrated the cross-cultural robustness of the EQ-i:Short (Ekermans, Saklofske, Austin, & Stough, 2011).

Criterion/Predictive

The EQ-i was found to predict a range of life outcome variables surrounding success and well-being, such as depression ($r = -.56$), job competence ($r = .51$), drug use ($r = -.24$), alcohol use ($r = -20$), and antisocial deviance ($r = -.21$; see Wood et al., 2009, for a summary). A meta-analysis resulted in a weighted average association of $r = .44$ between the EQ-i global score and mental health (Martins et al., 2010). This association was slightly lower than that for the TEIQue, but considerably stronger than those for the AES and TMMS.

Validity (EQ-i:YV)

Construct/Factor Analytic

In a study of Aboriginal children and adolescents, the four-factor structure of the EQ-i:YV was found to fit the data (Parker et al., 2005a), supporting the use of the measure within this population. Likewise, this study found that the four-factor structure could be extracted from the data of a non-Aboriginal youth sample.

Criterion/Predictive

The EQ-i:YV scores differed significantly across different levels of academic achievement, as assessed by the end-of-year GPA. Specifically, successful students exhibited significantly higher scores on the adaptability, interpersonal, and stress management dimensions than less successful students (Parker et al., 2004).

Validity (EQ-i 2.0)

Convergent/Concurrent

The total EI scores from the original and version 2.0 correlated .90. Correlations in the expected directions with other psychological measures added further support to the convergent validity of the EQ-i 2.0. Total EI was positively and significantly correlated with both the Social Skills Inventory (Riggio & Carney, 2003) total score ($r = .54$) as well as the majority of SSI subscales. EI total score was also positively and significantly correlated with Extraversion ($r = .57$), Agreeableness ($r = .36$), and Conscientiousness ($r = .61$) measured by the NEO-FFI (Costa & McCrae, 1992). The six EI composite scales also showed lower but positive correlations with these three personality factors.

Divergent/Discriminant

A correlation between the EQ-i 2.0 and the NEO-FFI indicative of discriminative validity was Openness ($r = .10$, $N = 100$). Orthogonality with ability EI, as assessed with the MSCEIT, was indicated by a non-significant correlation ($r = .12$) between the total scores; the various composite and subscale scores were also not significantly associated.

Construct/Factor Analytic

Two demographically matched groups from the 4000 subject normative data set were employed to examine the factor structure of the EQ-i 2.0. Principal axis factoring with direct oblimin rotation supported the 5-factor and 15 subscale structure of scale. Confirmatory factor analysis confirmed this theoretical factor structure through the testing of six models. All goodness of fit indices (GFI, AGFI, NFI, NNFI, CFI) were above .90 and the RMSEA was below .10 which was considered to 'further support the factor structure of the E-i 2.0 as outlined by theory and EFA results' (MHS, 2011, p. 140).

Criterion/Predictive

Several studies attesting to the criterion validity of the EQ-i 2.0 are presented in the manual. Corporate job success was positively related to the EQ-i 2.0 total score, with comparisons between leaders and the normative average showing medium to large effects. As well, EI was higher for postgraduate versus high school students ($d = 0.33$) and this difference was further supported by higher scores on most of the composite scales and subscales for the university groups. An examination of clinical groups, defined as either depressed/dysthymic or other clinical diagnosis, showed that they scored lower on the total EI score than the normative sample ($d = 0.57$ and 0.45, respectively). This trend held for all composite scales except the Interpersonal scale.

Location

Bar-On, R. (1997). *The Emotional Quotient Inventory (EQ-i)*. Technical manual. Toronto: Multi-Health Systems, Inc.

Bar-On, R., & Parker, J.D.A. (2000). *Bar-On Emotional Quotient Inventory: Youth version*. Technical manual. Toronto: Multi-Health Systems, Inc.

Results and Comments

A major conceptual concern is that the EQ-i is intended to assess capabilities, competencies, and skills through self-report. More appropriately, the scores can be interpreted through the trait EI framework outlined by Petrides and Furnham (2001). Further, even though the EQ-i seems to assess a coherent domain of characteristics, it may not cover the construct domain it is intended to represent adequately. The EQ-i includes some facets that appear unrelated to emotions (e.g., Reality testing, Self-actualization, Independence), while missing facets that have appeared across other measures reviewed in this chapter, such as emotion perception and emotion regulation. At the time of writing this chapter, no study using the EQ-i 2.0 can be found in the peer-reviewed literature.

EQ-I AND EQ-I 2.0 SAMPLE ITEMS

EQ-i

These questions are ranked with these responses:

1. Very seldom or Not true of me
2. Seldom true of me
3. Sometimes true of me
4. Often true of me
5. Very often true of me or True of me

When faced with a difficult situation, I like to collect all the information about it that I can.
I'm generally motivated to continue, even when things get difficult.
I'm sensitive to the feelings of others.

EQ-i 2.0

These questions are ranked with these responses:

Never/ Rarely	Occasionally	Sometimes	Often	Always/ Almost Always
1	2	3	4	5

I'm aware of the impact of my mood on others.
I feel overwhelmed when I need to make a decision.
I care about other people's feelings.

Note: All EQ-i versions are commercially available from MHS at: www.mhs.com (Reproduced with permission).

Trait Emotional Intelligence Questionnaire (TEIQue)

(Petrides, 2001, 2009).

Variable

Trait EI is defined as a constellation of emotional self-perceptions located at the lower levels of personality hierarchies (Petrides, Pita et al., 2007). The construct concerns people's self-perceptions of their emotional abilities, which is why it has also been labeled as trait emotional self-efficacy.

Description

TEIQue and TEIQue − Adolescent Form

The trait EI sampling domain was derived from a comprehensive content analysis of other EI models and similar constructs, resulting in a total of 15 facets: adaptability, assertiveness, emotion expression, emotion

management, emotion perception, emotion regulation, low impulsiveness, relationships, stress management, self-esteem, self-motivation, social awareness, trait empathy, trait happiness, and trait optimism.

The TEIQue, currently in version 1.50, comprises several forms and has been translated and validated in numerous languages. The 15 facets are reduced to a global trait EI composite and four factors: Well-Being, Self-Control, Emotionality, and Sociability. The standard 153-item self-report forms for adults (TEIQue) and adolescents (TEIQue−AF, aged 13−17 years) have a completion time of 25 minutes, whereas the 30-item short forms can be completed in seven minutes for adults (TEIQue−SF) and ten minutes for adolescents (TEIQue−ASF; aged 12−17 years). Peer ratings are obtained using the TEIQue−360 (153 items) and its short version, the TEIQue−360S (15 items). Items of all forms are answered on a 7-point Likert-type response scale, ranging from 1 (*completely disagree*) to 7 (*completely agree*).

TEIQue − Child Form

A developmentally appropriate sampling domain of nine facets was established for children aged between 8 and 12 years (Mavroveli, Petrides, Shove, & Whitehead, 2008). The child form (TEIQue−CF) has 75 items and a completion time of 25 minutes; its short-form variant (TEIQue−CSF) of 36 items has a completion time of 10−15 minutes. The TEIQue−CF does not yield factor scores, but measures nine distinct facets, in addition to yielding a global trait EI score: adaptability, affective disposition, emotion expression, emotion perception, emotion regulation, low impulsivity, peer relations, self-esteem, and self-motivation. Items are rated on a 5-point Likert-type response scale. Short TEIQue forms are to be used primarily for assessing global trait EI, although it is possible to derive *a priori* factor scores for the adult and adolescent forms.

Sample
TEIQue

The UK adult normative sample included 1721 individuals (912 female, 764 male, 61 unreported) with a mean age of 29.65 years ($SD = 11.94$, range 15.7−77). A majority of the sample is of White UK origin (58%) and holds high-school diplomas (30.8%) or undergraduate degrees (29.5%). The sample means are 4.82 ($SD = 0.57$) for females and 4.95 for males ($SD = 0.61$). Factor means range from 4.26 ($SD = 0.76$) for females on Self-Control to 5.28 ($SD = 0.83$) for males on Well-Being (Petrides, 2009).

TEIQue−AF

Descriptive statistics for a large sample of adolescents ($N = 1842$, age range: 14−16 years) were presented in Petrides (2009). Global trait EI and factor means were: global trait EI ($M = 4.53$, $SD = 0.58$), Emotionality ($M = 4.71$, $SD = 0.67$), Self-Control ($M = 4.01$, $SD = 0.75$), Sociability ($M = 4.65$, $SD = 0.73$) and Well-Being ($M = 4.89$, $SD = 0.96$).

TEIQue−CF

For the TEIQue−CF, normative data was initially provided for a male sample of 188 British students (mean age: 10.18 years; Mavroveli et al., 2008). Global trait EI means ranged from 3.19 ($SD = 0.29$) to 3.43 ($SD = 0.32$) across experimental groups. In a sample of 565 children (mean age = 9.12 years, $SD = 1.27$), boys ($n = 274$) had an overall trait EI mean of 3.55 ($SD = 0.43$), which was significantly lower than that of girls ($M = .65$, $SD = 0.45$; $n = 286$; $p < .01$; Mavroveli & Sanchez-Ruiz, 2011).

Reliability (TEIQue)
Internal Consistency

Cronbach alpha coefficients for global trait EI were .89 for females and .92 for males; for females, alpha coefficients at the factor-level were .75 (Emotionality), .78 (Self-Control), .79 (Sociability), and .83 (Well-Being); for males, alpha coefficients are .80 (Emotionality), .78 (Self-Control), .82 (Sociability), and .84 (Well-Being).

Test−Retest

Temporal stability was reported for 58 university students with a mean age of 19.14 years ($SD = 1.17$ years). Over a 12-month period, the test−retest reliability coefficients were 0.59 for Emotionality, 0.74 for Self-Control, 0.71 for Sociability, 0.86 for Well-being, and 0.78 for global trait EI (Petrides, 2009). These values are consistent with the stability coefficients of higher-order traits.

Reliability (TEIQue−AF)

Internal Consistency

The Cronbach alpha coefficient was .84 for a pre-adolescent sample, using the TEIQue-ASF (Petrides et al., 2006). In a British sample of 490 high school students with a mean age of 16.65 years, a similar alpha of .83 was obtained (Mikolajczak, Petrides, & Hurry, 2009). Petrides (2009) reported alpha coefficients of .74 (Emotionality), .76 (Self-Control), .80 (Sociability), .85 (Well-Being), and .89 (Global trait EI) for 1842 adolescents, which are only slightly lower than those of the adult population.

Reliability (TEIQue−CF)

Internal Consistency

Cronbach alpha coefficients were found to be .76 in a mixed-gender sample ($N = 139$, mean age: 11.23 years) and .73 for the boy-only sample (Mavroveli et al., 2008). In another mixed-gender sample ($N = 565$), the alpha coefficient was found to be .84 for global trait EI, ranging from .57 (adaptability and emotion perception) to .76 (Affective disposition) − (see Mavroveli & Sanchez-Ruiz, 2011).

Test−Retest

Over a 3-month period, in a mixed-gender sample, the attenuated and disattenuated test−retest reliabilities were found to be .79 and 1.00, respectively (Mavroveli et al., 2008).

Validity (TEIQue)

Convergent/Concurrent

The TEIQue correlated positively with the AES ($r = .73$) and the MEIA ($r = .77$; Gardner & Qualter, 2010).

Divergent/Discriminant

The TEIQue's correlations with the STEM and STEU were .03 and .16, respectively (Austin, 2010).

Criterion/Predictive

Petrides et al. (2007) showed that the TEIQue scores predict various emotion-laden criteria, such as depression ($\beta = -.56$), dysfunctional attitudes ($\beta = -.38$), coping styles ($\beta = .44$ to .57), and hostility ($\beta = -.21$) after controlling for personality, as well as depression ($\beta = -.20$) and various maladaptive personality dimensions ($\beta = .21$ to $-.49$) after controlling for positive and negative affect. TEIQue scores also predicted nine distinct personality disorders after controlling for positive and negative mood states.

Validity (TEIQue−CF)

Convergent/Concurrent

No convergent/concurrent evidence is currently available.

Divergent/Discriminant

Consistent with trait EI theory, the TEIQue−CF exhibited only a weak correlation with verbal ability ($r = .15$; Mavroveli et al., 2008). The TEIQue−CF correlated negatively with a scale assessing behavioral and social problems, when completed by teachers ($r = -.34$; Mavroveli & Sanchez-Ruiz, 2011).

Criterion/Predictive

The TEIQue-CF scores differentiated between pupils with a record of unauthorized absences or exclusions from school and controls (Mavroveli et al., 2008). It also predicted teacher-rated positive behavior ($r = .24$) and negative behavior ($r = -.34$).

Location

Petrides, K.V. (2009). *Technical manual for the Trait Emotional Intelligence Questionnaires (TEIQue)*. London: London Psychometric Laboratory.

Petrides, K.V., & Furnham, A. (2006). The role of trait emotional intelligence in a gender-specific model of organizational variables. *Journal of Applied Social Psychology*, 36, 552−569.

Results and Comments

The family of TEIQue instruments are among the most widely used measures to tap emotion-related individual differences in organizational, clinical, health, educational, and research settings. Hitherto, they have been translated into more than 20 languages worldwide. The TEIQue instruments provide a solid basis for further research into trait EI and, specifically, studying the domain of the construct and its implications in research and applied contexts.

TRAIT EMOTIONAL INTELLIGENCE QUESTIONNAIRE – SHORT FORM

Instructions: Please answer each statement below by putting a circle around the number that best reflects your degree of agreement or disagreement with that statement. Do not think too long about the exact meaning of the statements. Work quickly and try to answer as accurately as possible. There are no right or wrong answers. There are seven possible responses to each statement ranging from 'Completely Disagree' (number 1) to 'Completely Agree' (number 7).

1. Expressing my emotions with words is not a problem for me.	1 2 3 4 5 6 7
2. I often find it difficult to see things from another person's viewpoint.*	1 2 3 4 5 6 7
3. On the whole, I'm a highly motivated person.	1 2 3 4 5 6 7
4. I usually find it difficult to regulate my emotions.*	1 2 3 4 5 6 7
5. I generally don't find life enjoyable.*	1 2 3 4 5 6 7
6. I can deal effectively with people.	1 2 3 4 5 6 7
7. I tend to change my mind frequently.*	1 2 3 4 5 6 7
8. Many times, I can't figure out what emotion I'm feeling.*	1 2 3 4 5 6 7
9. I feel that I have a number of good qualities.	1 2 3 4 5 6 7
10. I often find it difficult to stand up for my rights.*	1 2 3 4 5 6 7
11. I'm usually able to influence the way other people feel.	1 2 3 4 5 6 7
12. On the whole, I have a gloomy perspective on most things.*	1 2 3 4 5 6 7
13. Those close to me often complain that I don't treat them right.*	1 2 3 4 5 6 7
14. I often find it difficult to adjust my life according to the circumstances.*	1 2 3 4 5 6 7
15. On the whole, I'm able to deal with stress.	1 2 3 4 5 6 7
16. I often find it difficult to show my affection to those close to me.*	1 2 3 4 5 6 7
17. I'm normally able to 'get into someone's shoes' and experience their emotions.	1 2 3 4 5 6 7
18. I normally find it difficult to keep myself motivated.*	1 2 3 4 5 6 7
19. I'm usually able to find ways to control my emotions when I want to.	1 2 3 4 5 6 7
20. On the whole, I'm pleased with my life.	1 2 3 4 5 6 7
21. I would describe myself as a good negotiator.	1 2 3 4 5 6 7
22. I tend to get involved in things I later wish I could get out of.*	1 2 3 4 5 6 7
23. I often pause and think about my feelings.	1 2 3 4 5 6 7
24. I believe I'm full of personal strengths.	1 2 3 4 5 6 7
25. I tend to 'back down' even if I know I'm right.*	1 2 3 4 5 6 7
26. I don't seem to have any power at all over other people's feelings.*	1 2 3 4 5 6 7
27. I generally believe that things will work out fine in my life.	1 2 3 4 5 6 7
28. I find it difficult to bond well even with those close to me.*	1 2 3 4 5 6 7
29. Generally, I'm able to adapt to new environments.	1 2 3 4 5 6 7
30. Others admire me for being relaxed.	1 2 3 4 5 6 7

Notes:

*Reverse worded item.

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Any commercial use of this instrument is strictly prohibited.

All TEIQue forms and information pertaining to their use can be obtained from the London Psychometric Laboratory website at: www.psychometriclab.com (Retrieved January 3, 2014).

Assessing Emotions Scale (AES)

(Schutte et al., 1998).

Variable

This scale is based on Salovey and Mayer's (1990) original model that focuses on appraising, expressing, regulating, and using emotions. More recently, Mayer *et al.* (2004) have somewhat modified their model, defining EI as an 'ability', but the AES has remained grounded in the original model.

Description

The AES has been variously referred to as the Emotional Intelligence Scale, the Self-Report Emotional Intelligence Test, and the Schutte Emotional Intelligence Scale. It has 33 items with minimal reading level, answered on a 5-point Likert-type response scale that ranges from 'strongly disagree' to 'strongly agree'. The intent of the scale is to provide an overall measure of EI, with scores ranging from 33 to 165 and higher scores indicating greater levels of EI. Variants of the scale have been proposed by Austin, Saklofske, Huang, and McKenney (2004) as well as Gignac, Palmer, Manocha, and Stough (2005).

Sample

While the scale-validation sample was not extensively described, it did include both university students and 'individuals from diverse community settings' (Schutte et al, 1998, p. 170) with a mean age of 29.27 years ($SD = 10.23$). Of a total of 346 participants, 218 were women and 111 men (17 did not report their gender). The mean EI scores were 13.94 ($SD = 15.09$) for women and 124.78 ($SD = 16.52$) for men, a difference that was statistically significant, ($p < 0.001$).

Reliability

Internal Consistency

The Cronbach alpha coefficient was .90 in the initial study. A second study was conducted with a very small sample of USA college students (27 female, 5 male; mean age = 30.11 years, $SD = 8.45$), yielding an alpha coefficient of .87. Since then, a number of studies have reported internal consistency estimates for the AES using diverse populations (e.g., university students, community members, employees) from different countries (e.g., Canada, Israel, New Zealand, Poland). Those studies reported alpha coefficients ranging from .76 to .95, with the majority being in the .80 to .90 range (Schutte, Malouff, & Bhullar, 2009).

Test−Retest

A small sample of USA college students (22 females, 5 males; mean age = 32 years, $SD = 10.13$) completed the AES on two occasions separated by two weeks, resulting in a test−retest coefficient of .78.

Validity

Convergent/Concurrent

Several studies supporting the validity of the AES were included in the original article. For example, the AES was positively and significantly correlated ($p < .0001$) with the TMMS subscales of Attention to feelings ($r = .63$, $N = 48$), Clarity of feelings ($r = .52$, $N = 47$) and Mood Repair ($r = .68$, $N = 47$), as well as with the optimism scale of the Life Orientation Test ($r = .52$, $N = 26$). Further, it correlated strongly with both the TEIQue ($r = .73$), MEIA ($r = .84$; Gardner & Qualter, 2010), and the EQ-i ($r = .21$; Brackett & Mayer, 2003).

Correlations between the AES and the Big Five scores derived from various measures have been weak to moderate across studies, with Openness ($r = .43$ to $.54$) and Extraversion ($r = .31$ to $.61$) emerging as the strongest personality correlates (Schutte et al., 2009).

Divergent/Discriminant

The AES did not correlate with social-desirability indicators (Kirk et al., 2007) and correlated weakly with the MSCEIT ($r = .18$; Brackett & Mayer, 2003).

Construct/Factor Analytic

The intended single-factor solution is supported by the finding of a strong higher-order first factor (Schutte, et al., 1998). Using the crude 'Little Jiffy' factor-analytic approach (principal-components, orthogonal rotation), 33 of the original 62 items loaded .40 and higher on the first factor. The remaining three factors also with eigen-values greater than 1 were deemed to be 'conceptually distinct' from the first large factor. Other studies have suggested that subscales be formed from a factor analysis of items, resulting in four-factor (e.g., Saklofske, Austin, & Minski, 2003) or three-factor solutions (Austin et al., 2004).

Criterion/Predictive

Schutte et al. (1998) found that therapists ($M = 134.92$, $SD = 20.25$) scored significantly higher than incarcerated criminals ($M = 120.08$, $SD = 17.71$, $p < .012$) and a sample receiving treatment in a substance abuse program ($M = 122.23$, $SD = 14.08$, $p < .035$). The AES scores also predicted year-end college grade point average ($r = .32$, $p < .01$, $N = 63$), although AES and SAT scores were uncorrelated ($r = -.06$, $N = 41$). Other predictive studies are summarized in Schutte et al. (2009).

Location

Schutte, N.S., Malouff, J.M., Hall, L.E., Haggerty, D.J., Cooper, J.T., Golden, C.J., & Dornheim, L. (1998). Development and validation of a measure of emotional intelligence. *Personality and Individual Differences, 25*, 167−177.

Results and Comments

The AES has been very widely used in research (for a summary, see Schutte et al., 2009). It is one of the earlier self-report EI measures, it is brief, and available without cost to both researchers and practitioners. Overall, research has shown that the AES has good psychometric properties and it does generally support a general-factor interpretation of EI. Other scales reviewed in this chapter, such as the EQ-i have the advantage of assessing EI facets and should be preferred where more detailed emotional profiling is required.

ASSESSING EMOTIONS SCALE

Directions: Each of the following items asks you about your emotions and reactions associated with emotions. After deciding if a statement is generally true for you, use the 5-point scale to respond to the statement. Please circle the '1' if you strongly disagree that this is like you, the '2' if you somewhat disagree that this is like you, the '3' if you neither agree nor disagree that this is like you, the '4' if you somewhat agree that this is like you, and the '5' if you strongly agree that this is like you.

There are no right or wrong answers. Please give the response that best describes you.

1 = strongly disagree
2 = somewhat disagree
3 = neither agree nor disagree
4 = somewhat agree
5 = strongly agree

1. I know when to speak about my personal problems to others.
2. When I am faced with obstacles, I remember times I faced similar obstacles and overcame them.
3. I expect that I will do well on most things I try.
4. Other people find it easy to confide in me.
5. I find it hard to understand the non-verbal messages of other people.*
6. Some of the major events of my life have led me to re-evaluate what is important and not important.
7. When my mood changes, I see new possibilities.
8. Emotions are one of the things that make my life worth living.
9. I am aware of my emotions as I experience them.
10. I expect good things to happen.
11. I like to share my emotions with others.
12. When I experience a positive emotion, I know how to make it last.
13. I arrange events others enjoy.
14. I seek out activities that make me happy.
15. I am aware of the non-verbal messages I send to others.
16. I present myself in a way that makes a good impression on others.
17. When I am in a positive mood, solving problems is easy for me.
18. By looking at their facial expressions, I recognize the emotions people are experiencing.
19. I know why my emotions change.

20. When I am in a positive mood, I am able to come up with new ideas.
21. I have control over my emotions.
22. I easily recognize my emotions as I experience them.
23. I motivate myself by imagining a good outcome to tasks I take on.
24. I compliment others when they have done something well.
25. I am aware of the non-verbal messages other people send.
26. When another person tells me about an important event in his or her life, I almost feel as though I have experienced this event myself.
27. When I feel a change in emotions, I tend to come up with new ideas.
28. When I am faced with a challenge, I give up because I believe I will fail.*
29. I know what other people are feeling just by looking at them.
30. I help other people feel better when they are down.
31. I use good moods to help myself keep trying in the face of obstacles.
32. I can tell how people are feeling by listening to the tone of their voice.
33. It is difficult for me to understand why people feel the way they do.*

Notes:
*Reverse worded item.
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The authors permit use of the scale for research and/or clinical purposes (see Schutte et al., 1998).

WORKPLACE-ORIENTED MEASURES

Wong & Law Emotional Intelligence Scale (WLEIS)

(Wong & Law, 2002).

Variable

Wong and Law (2002) defined EI as a four-dimensional construct, including Self Emotional Appraisal (SEA), Others' Emotional Appraisal (OEA), Regulation of Emotion (ROE), and Use of Emotion (UOE) following from the conceptual framework of Salovey and Mayer (1990).

Description

The Wong and Law Emotional Intelligence Scale (Wong & Law, 2002) is a self-report measure comprised of 16 items and answered on a 7-point Likert-type response scale. Four items are used to assess each of the four dimensions: SEA, OEA, ROE and UOE. A general EI score can be obtained by summing up the responses to all 16 items.

Sample

Several samples were used in the creation of the WLEIS reported in Wong and Law (2002). Thirty-six items were administered to 189 undergraduate Hong Kong business students and 16 retained items were then completed by two groups of 72 and 146 undergraduate students. This was followed by another administration of the WLEIS to 110 undergraduate and 116 Hong Kong university employees (mean total EI score = 4.95, SD = .79, n = 116) and then to 149 supervisor-subordinate dyads (60 supervisors rating up to 4 subordinates). Subordinates' supervisor-rated total EI was 4.63 (SD = .83). Data are not provided on age and gender for the various samples except for the subordinates in the last sample (mean age = 29.02 years, SD = 6.97, 52.8% female).

Reliability

Internal Consistency

Cronbach alpha coefficients reported in various studies in Wong and Law's (2002) article were: 0.86−0.92 for SEA; 0.82−0.93 for OEA; 0.85−0.91 for UOE; and 0.71−0.84 for ROE. The alpha coefficient for the total 16-item scale in the supervisor-subordinate study was .94.

Test−Retest

No test−retest reliability coefficients are currently available.

Validity

Convergent/Concurrent

Convergent validity evidence of all four dimensions is found in the significant correlations with the Life Satisfaction, which ranged from $r = .16$ to $r = .46$, and from $r = .12$ to $r = .40$ in the second cross-validation study (Wong & Law, 2002). A moderate and significant correlation with EQ-i ($r = .63$) also attests to the WLEIS' convergent validity (Wong & Law, 2002).

Divergent/Discriminant

Intelligence correlated between .06 and $-.29$ with the WLEIS factors. Furthermore, correlations of the WLEIS with measures of the Big Five indicated that the WLEIS and personality share some variance, but this varied from negligible to moderate.

Construct/Factor Analytic

An exploratory-factor analysis (maximum-likelihood method, varimax rotation) on the data from a sample of 189 undergraduate students indicated a clear four-factor structure with the selected 16-items; the average factor loading of these items on their respective WLEIS dimensions was .80. The four-factor solution explained 71.5% of the total variance and fit the data reasonably well in a confirmatory-factor analysis ($N = 72$) from the first cross-validation study, $\chi^2_{(98)} = 132.41$, RMR = .08, CFI = .95, TLI = .93. The second study ($N = 146$) also showed that the four-factor model fit the data reasonably well, $\chi^2_{(98)} = 179.33$, RMR = .07, CFI = .91, TLI = .89 (Wong & Law, 2002).

Criterion/Predictive

Many studies have examined and demonstrated the WLEIS's criterion and predictive validity. For example, its global score was found to predict perceived organizational justice ($r = .17$) and turnover intentions in employees of a financial organization ($r = -.14$; Meisler, 2013), as well as indicators of job satisfaction ($r = .35$ to .46) and burnout ($r = -.32$ to $-.56$) in doctors (Weng et al., 2011).

Location

Wong, C.S., & Law, K.S. (2002). The effects of leader and follower emotional intelligence on performance and attitude: An exploratory study. *Journal of Applied Psychology, 13*, 193−324.

Results and Comments

Overall, there is support for the reliability and factor structure of the WLEIS based on samples from North America and South East Asia. The appeal of this scale is that it is readily available and brief. A 16-item scale that has four replicable factors and also yields a composite score is another advantage of the WLEIS.

WONG & LAW EMOTIONAL INTELLIGENCE SCALE

This scale also contains items about how people feel and act. Using the 1−7 scale below, please indicate your agreement with each item by circling the appropriate number.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree

1. I have a good sense of why I have certain feelings most of the time.	1	2	3	4	5	6	7
2. I have good understanding of my own emotions.	1	2	3	4	5	6	7
3. I really understand what I feel.	1	2	3	4	5	6	7
4. I always know whether or not I am happy.	1	2	3	4	5	6	7
5. I always know my friends' emotions from their behavior.	1	2	3	4	5	6	7
6. I am a good observer of others' emotions.	1	2	3	4	5	6	7
7. I am sensitive to the feelings and emotions of others.	1	2	3	4	5	6	7
8. I have good understanding of the emotions of people around me.	1	2	3	4	5	6	7

9. I always set goals for myself and then try my best to achieve them.	1	2	3	4	5	6	7
10. I always tell myself I am a competent person.	1	2	3	4	5	6	7
11. I am a self-motivated person.	1	2	3	4	5	6	7
12. I would always encourage myself to try my best.	1	2	3	4	5	6	7
13. I am able to control my temper and handle difficulties rationally.	1	2	3	4	5	6	7
14. I am quite capable of controlling my own emotions.	1	2	3	4	5	6	7
15. I can always calm down quickly when I am very angry.	1	2	3	4	5	6	7
16. I have good control of my own emotions.	1	2	3	4	5	6	7

Notes:

Scales: SEA = 1–4; OEA = 5–8; ROE = 9–12; UOE = 13–16.

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Workgroup Emotional Intelligence Profile (WEIP)

(Jordan et al., 2002).

Variable

The WEIP is a self-report measure of the EI of work team members. It was constructed to tap emotion-related intrapersonal and interpersonal abilities that contribute to performance within work teams.

Description

The WEIP conforms to Mayer and Salovey's (1997) revised ability model, but focuses specifically on people's attitudes and behaviors in relation to work team members. There are 30 items with a 7-point response scale, yielding a total EI score, two broad scale scores (Ability to deal with own emotions and the Ability to deal with others' emotions), and seven subscale scores: Awareness of own emotions, Ability to discuss own emotions, Ability to use own emotions to facilitate thinking, Ability to recognize others' emotions/detect false displays of emotion, and Ability to manage others' emotions.

A short version (WEIP-S) of 16 items was developed measuring four factors (four items each): Awareness of own emotions, Management of own emotions, Awareness of others' emotions, and Management of others' emotions (Jordan & Lawrence, 2009). This four-factor structure was replicated with a Spanish translation of the WEIP-S (Lopez-Zafra, Martos, Martos, & Augusto-Landa, 2012).

Sample

Descriptive statistics were reported for total EI ($M = 115.47$, $SD = 13.16$) and the broad scales of Dealing with own emotions ($M = 76.74$, $SD = 9.30$, min. = 7, max. = 126) and Dealing with others' emotions ($M = 38.73$, $SD = 5.88$, min = 7, max = 126). The shortened version (WEIP-S) development sample comprised 620 employees of a large public sector organization (Jordan & Lawrence, 2009). The means for the four factors were 4.14 ($SD = 1.15$) for Awareness of own emotions, 5.32 ($SD = .79$) for Management of own emotions, 4.45 ($SD = .93$) for Awareness of others' emotions, and 4.71 ($SD = .88$) for Management of others' emotions.

Reliability

Internal Consistency

Jordan and Troth (2004) reported Cronbach alpha coefficients for total EI ($\alpha = .80$), the two broad scales (Dealing with own emotions $\alpha = .79$, Dealing with others' emotions $\alpha = .80$), and the five subscales ($\alpha = .71$ to .80). In the validation sample, Cronbach alphas for the WEIP-S factors were .85 for Awareness of own emotions, .77 for Management of own emotions, .81 for Awareness of others' emotions, and .81 for Management of others' emotions.

Test−Retest

In a sample of 99 employees, test−retest reliabilities over a four-month period ranged from .67 (Management of own emotions) to .83 (Awareness of others' emotions; Jordan & Lawrence, 2009). Over an eight-month period, they ranged from .64 (Management of own emotions) to .80 (Awareness of own emotions), with a mean of .59.

Validity

Convergent/Concurrent

Convergent validity was assessed with the TMMS. The WEIP scores had small-to-moderate correlations with mood Clarity ($r = .17−.25$) and Repair ($r = .22−.28$), and non-significant correlations with Attention to moods ($r = .03−.08$). Similar correlations with the TMMS were observed for the Spanish version. Concurrent validity was demonstrated through correlations with the self-monitoring ($r = −.09$ to .40), perspective taking ($r = 27.$ To .43), personal distress ($r = −.25$ to $−.31$), creative thinking ($r = .29$ to .34), and emotional control ($r = .24$ to .29).

Divergent/Discriminant

The WEIP correlated weakly ($r = .23$) with cognitive ability in one study (Sue-Chan & Latham, 2004). In another study, two subscales (ability to express one's own emotions and ability to identify others' emotions) showed non-significant correlations of .04 and $−.02$, respectively, with the Wonderlic Personnel Test.

Construct/Factor Analytic

Confirmatory factor analyses supported the scale's four-factor model across two organizational samples, relative to competing models that were also tested (Jordan & Lawrence, 2009). Model fit indices were $\chi^2_{(98)} = 271.33$, $p < .001$, RMSEA = .05, SRMR = .05, CFI = .95, IFI = .95, NFI = .92, NNFI = .94 for the first sample and $\chi^2_{(98)} = 151.54$, $p < .001$, RMSEA = .05, SRMR = .06, CFI = .95, IFI = .95, NFI = .87, NNFI = .94 for the second sample.

Criterion/Predictive

The WEIP scores correlated moderately with team playing behavior ($r = .32$), course grades ($r = .26$; Sue-Chan & Latham, 2004), and a dominant conflict resolution style ($r = .35$; Jordan & Troth, 2004) for individuals. They also predicted integrative problem solving ($r = .45$) for teams (Jordan & Troth, 2004).

Location

Jordan, P.J., & Lawrence, S.A. (2009) Emotional intelligence in teams: Development and initial validation of the Workgroup Emotional Intelligence Profile − Short Version (WEIP-S). *Journal of Management & Organization, 15,* 452−469.

Results and Comments

Individuals high in the total EI score sought collaborative solutions when presented with conflict (Jordan & Troth, 2002, 2004), and the ability to deal with own, but not others' emotions predicted work collaboration (Jordan & Troth, 2002). In another study, EI completely mediated the relationship between the Situational Interview and team-playing behavior (Sue-Chan & Latham, 2004). In this latter study, EI was assessed through WEIP peer ratings, yielding a high level of internal consistency ($\alpha = .93$).

WORKGROUP EMOTIONAL INTELLIGENCE PROFILE − SHORT VERSION

The questions in this survey ask you about your attitudes and behaviors in relation to team members in your work unit. While you are completing these questions, please think about the *immediate work unit* in which you work most of the time.

Please indicate your level of agreement with *each* of the following statements about your feelings when working with team members in your work unit.

Strongly Disagree	Disagree	Not sure tend to Disagree	Neither Agree nor Disagree	Not sure tend to Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

1. I respect the opinion of team members, even if I think they are wrong.		1 2 3 4 5 6 7
2. I can explain the emotions I feel to team members.		1 2 3 4 5 6 7
3. I can read my fellow team members 'true' feelings, even if they try to hide them.		1 2 3 4 5 6 7
4. I can discuss the emotions I feel with other team members.		1 2 3 4 5 6 7
5. When I am frustrated with fellow team members, I can overcome my frustration.		1 2 3 4 5 6 7
6. I am able to describe accurately the way others in the team are feeling.		1 2 3 4 5 6 7
7. When deciding on a dispute, I try to see all sides of a disagreement before I come to a conclusion.		1 2 3 4 5 6 7
8. My enthusiasm can be contagious for members of my team.		1 2 3 4 5 6 7
9. When I talk to a team member I can gauge their true feelings from their body language.		1 2 3 4 5 6 7
10. If I feel down, I can tell team members what will make me feel better.		1 2 3 4 5 6 7
11. I can tell when team members don't mean what they say.		1 2 3 4 5 6 7
12. I am able to cheer team members up when they are feeling down.		1 2 3 4 5 6 7
13. I can talk to other members of the team about the emotions I experience.		1 2 3 4 5 6 7
14. I can get my fellow team members to share my keenness for a project.		1 2 3 4 5 6 7
15. I can provide the 'spark' to get fellow team members enthusiastic.		1 2 3 4 5 6 7
16. I give a fair hearing to my fellow team members' ideas.		1 2 3 4 5 6 7

Notes:
Scales:
Awareness of Own Emotions = 2, 4, 10, 13
Management of Own Emotions = 1, 5, 7, 16
Awareness of Others' Emotions = 3, 6, 9 ,11
Management of Others' Emotions = 8, 12, 14, 15
The various WEIP versions should be requested from the authors.
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Multidimensional Emotional Intelligence Assessment (MEIA)

(Tett et al., 2005).

Variable

The MEIA is based on a multidimensional conceptualization of EI again aligned to Salovey and Mayer's (1990) model. Assessed through self-report, EI is viewed as a trait-like quality pertaining to the capacity and willingness to deal with emotions in the self and others.

Description

The MEIA consists of 150 items measuring 10 distinct dimensions. The items are rated on 6-point Likert-type response scales, ranging from *strongly disagree* to *strongly agree*. Consistent with their multidimensional view of EI, the scale developers aimed to build the 10 dimensions such that they are maximally distinct from each other. The 10 dimensions are grouped into core EI facets and proximal EI outcomes. The core EI facets are Recognition of Emotion in the Self, Regulation of Emotion in the Self, Recognition of Emotion in Others, Regulation of Emotion in Others, Nonverbal Emotional Expression, and Empathy. The proximal EI outcomes are Intuition vs. Reason, Creative Thinking, Mood Redirected Attention, and Motivating Emotions.

A version developed for workplace applications, the MEIA-W (122 items), has been adapted from the original version. Items of the MEIA-W are placed in a work context. Both versions are available for individuals 16 years and older.

Sample

In an American student sample, aged 18 to 20 years (54% female), the 6-point scale means ranged from 3.30 ($SD = .69$) to 3.72 ($SD = .67$) among the six core dimensions and from 3.15 ($SD = .61$) to 3.85 ($SD = .63$) among the four proximal outcomes (Tett & Fox, 2006). In a sample of 225 American and Australian workers from different sectors (50.5% female), the core-dimension scale means ranged from 3.81 ($SD = .58$) to 4.54 ($SD = .69$), whereas proximate-outcome scale means ranged from 3.12 ($SD = .67$) to 4.73 ($SD = .61$; Tett & Fox, 2006).

Reliability

Internal Consistency

Cronbach alpha coefficients for the 10 MEIA dimensions averaged .79 and ranged from .74 to .83 (Tett & Fox, 2006). In independent studies, the alpha coefficients have ranged from .82 to .90 (Gardner & Qualter, 2010) and from .74 to .84 (Barchard & Christensen, 2007). Alpha coefficients for the MEIA-W ranged from .61 to .88, with a mean level of .75 (Tett & Fox, 2006).

Test−Retest

The test−retest reliability coefficients ranged from .67 to .88 with a median of .76 over a period of four to six weeks (Tett et al., 2005).

Validity

Convergent/Concurrent

The MEIA correlated strongly with the TEIQue ($r = .77$) and the AES ($r = .84$; Gardner & Qualter, 2010).

Divergent/Discriminant

The dimensions showed low to moderate correlations with social desirability ($r = .00$ to .38; Tett et al., 2005). Discriminant correlations with other relevant constructs (e.g., ability EI, cognitive ability) have not been examined.

Construct/Factor Analytic

Results from a 10-factor confirmatory factor analysis [Satorra-Bentler scaled $\chi^2_{(332)} = 674.93$, $p < .001$; RMSEA = .05, CFI = .93, SMRMR = .05] and small to moderate intercorrelations ($r = .04$ to .62) among the 10 dimensions provided evidence that the 10 dimensions of the MEIA are distinguishable (Barchard & Christensen, 2007). This independent study also supported a higher-order model of three factors (Self Orientation, Other Orientation, and Emotional Sharing), Satorra-Bentler scaled $\chi^2_{(128)} = 282.29$, $p < .001$, RMSEA = .05, CFI = .95, SMRMR = .06, AIC = 26.29, which is consistent with the model that was empirically derived during scale development (Tett et al., 2005) and subsequently confirmed in a different sample (Tett & Fox, 2006). However, the results indicated that higher-order factors cannot account for the associations among the 10 dimensions (Barchard & Christensen, 2007).

Criterion/Predictive

The MEIA scores predicted a diverse range of social and emotional criteria ($\beta = .04$ to .26 for the global score), which were assessed concurrently (Gardner & Qualter, 2010). They also predicted incremental variance in many of these criteria over personality.

Location

Tett, R.P., Fox, K.E., & Wang, A. (2005). Development and validation of a self-report measure of emotional intelligence as a multidimensional trait domain. *Personality and Social Psychology Bulletin, 31*, 859−888.

Results and Comments

The MEIA is a relatively recent addition to the list of EI measures and its evidence base seems to be growing. Gardner and Qualter (2010) found the concurrent predictive effects of the MEIA to be consistently lower than those of the TEIQue but higher than those of the AES across a range of outcomes (e.g., anger, loneliness, alcohol abuse, and happiness). The incremental predictive effects over gender, age, and the Big Five were similar to those of the AES.

Notes: Both versions are available through Sigma Assessment Systems Inc. (www.sigmaassessmentsystems. com). Sample items for each dimension can be found in Tett and Fox (2006).

Genos Emotional Intelligence Inventory (Genos EI)

(Palmer & Stough, 2006).

Variable

EI as measured with the Genos EI is broadly defined as 'the ability to purposely adapt, shape, and select environments through the use of emotionally relevant processes' (Gignac, 2010, p. 1). However, the developers have emphasized the focus on 'typical EI performance' as opposed to 'maximal EI performance', measuring the frequency of emotionally intelligent workplace behaviors.

Description

The Genos EI is the successor of the 64-item Swinburne University Emotional Intelligence Test (SUEIT). The measure was designed for the identification, selection, and development of employees. Similar to the more general TEIQue, the Genos EI model was derived from a comprehensive analysis of other EI measures. Seventy items are evenly distributed across seven dimensions: Emotional Self-Awareness, Emotional Expression, Emotional Awareness of Others, Emotional Reasoning, Emotional Self-Management, Emotional Management of Others, and Emotional Self-Control. The items have a 5-point Likert response scale, ranging from 1 (*Almost Never*) to 5 (*Almost Always*), and yield a Total EI score, seven subscale scores, an inconsistency index score, and two socially desirable responding scores.

Two abbreviated versions of 31 and 14 items have been developed for use in research contexts.

Sample

The normative sample consists of 4775 individuals (52.9% female), recruited from research, workshop, and professional settings in mostly industrialized countries across the world. The sample has an age range of 18 to 76 years ($M = 41.5$, $SD = 9.62$), making the measure administrable to adults (18 + years) from the general workforce. Furthermore, the sample is representative of various educational levels, occupations, role levels (e.g. CEOs and employees), and industries.

The overall sample has a mean Total EI score of 270.13 ($SD = 27.76$) and subscale scores range from 38.36 ($SD = 4.72$) for Emotional Self-Management to 41.94 ($SD = 4.56$) for Emotional Self-Awareness. The score ranges are 7 to 350 for Total EI and 1 to 70 for the seven subscales (Palmer, Stough, Harmer, & Gignac, 2009).

The Concise Version has a Total EI normative sample mean of 121.86 ($SD = 13.84$), with subscale means ranging from 15.75 ($SD = 5.89$) for Emotional Self-Control to 20.16 ($SD = 6.65$) for Emotional Reasoning. The score ranges for this version are 7 to 217 for Total EI and 1 to 4 or 5 for the subscales. Total EI as measured with the Short Version (score range: 7–98) had a sample mean of 55.88 ($SD = 6.67$; Palmer et al., 2009).

Reliability

Internal Consistency

The mean Cronbach alpha coefficient was .96 for Total EI, ranging from .71 to .85 across subscales (Palmer et al., 2009).

The Concise Version exhibited alpha coefficients of .93 for Total EI and .71 to .75 for the subscales. The alpha coefficient of the Short Version was .87 (Palmer et al., 2009).

Test−Retest

Correlations between Total EI scores were examined at 2- and 8-month intervals, reaching high stability levels of .83 and .72, respectively (Gignac, 2010).

Validity

Convergent/Concurrent

The Total EI score correlated significantly with the SUEIT. The seven-factor model, as uncovered in the SUEIT, also showed a high level of shared variance (46.2%) with the TMMS scores in a sample of Australian female managers (Taylor, Bagby, & Parker, 2003). Furthermore, the Genos EI correlated with different types of leadership, a range of workplace-specific well-being indicators, job satisfaction, and organizational commitment (Gignac, 2010).

Divergent/Discriminant

Non-significant correlations with a transactional leadership style ($r = -.01$ to $-.11$) and modest correlations with socially desirable responding ($r = -.03$ to .29) were reported (Gignac, 2010). Of the Big Five personality traits, only agreeableness correlated weakly with the Genos EI scores, showing average correlations of .10 and .17 across two samples (the other four factors reached moderate average correlations in at least one of the two samples; Gignac, 2010).

Construct/Factor Analytic

Confirmatory factor analyses showed that the Genos EI 7-factor model fit the normative sample ($N = 4775$) data significantly better than a range of competing models, CFI = .95, RMSEA = .07, SRMR = .04 and TLI = .93, including the one underlying its predecessor, the SUEIT (Gignac, 2010).

Criterion/Predictive

Job performance has been used as a general criterion for the predictive validity of the Genos EI (Gignac, 2010). Genos scores demonstrated considerable predictive and incremental validity, as evidenced through correlations with sales performance when controlling for specific work-related behaviors (e.g., days on territory, length of calls) and with annual revenue generation among recruitment consultants over and above the Big Five, intelligence, and socially desirable responding.

Location

Gignac, G.E. (2010). *Genos Emotional Intelligence Technical Manual* (2nd edition). Sydney, NSW: Genos.

Results and Comments

The Genos EI is one of the most comprehensive workplace related measures of EI. As noted by the developers, further evidence of the inventory's predictive validity is needed, taking a process-oriented approach (e.g., using criteria such as dealing with unpredictable situations, demonstrating cultural adaptability, and learning new tasks and procedures successfully) and not only an outcome-oriented approach (Palmer et al., 2009).

GENOS EI SAMPLE ITEMS

You are required to indicate on the response scale how often you believe you demonstrate the behavior in question. There are five possible responses to each statement (shown below). You are required to circle the number that corresponds to your answer where...

1 = Almost Never
2 = Seldom
3 = Sometimes
4 = Usually
5 = Almost Always

Emotional Self-Awareness: I fail to recognize how my feelings drive my behavior at work.'*
Emotional Expression: 'When I get frustrated with something at work, I discuss my frustration appropriately.'

Emotional Awareness of Others: 'I find it difficult to identify the things that motivate people at work.'*
Emotional Reasoning: 'I consider the way others may react to decisions when communicating.'
Emotional Self-Management: 'I engage in activities that make me feel positive at work.'
Emotional Management of Others: 'I am effective in helping others feel positive at work.'
Emotional Self-Control: 'I fail to control my temper at work.'*

Notes:
*Reverse worded item.
The different Genos EI versions and the technical manual (2nd edition; Gignac, 2010) are available from Genos International at: www.genosinternational.com/emotional-intelligence (Reproduced with permission).

FUTURE RESEARCH DIRECTIONS

Research in the field of ability EI must continue to focus on the development of objective measurement and scoring methods. Moreover, much of the research in this area is based on Mayer and Salovey's (1997) four-branch model, which either could be seen as overly restricting the EI construct or alternatively giving it a clear, concise and precise definition. But as has been the case with intelligence, the construction of a theoretical model of ability EI requires ongoing development. Taken together, it will be important to develop and compare different maximum-performance measures of the same model to help disentangle the effects of measurement methods and theoretical content.

Research in the field of trait EI would benefit from moving towards a unifying model and measurement domain to be used as a common basis for all measures. The presence of several measures is important to the extent that they are based on a single model, or at least a small set of competing models. Having numerous measures with varying measurement domains, on the other hand, complicates the comparison of scores and the accumulation of findings. Greater certainty in the boundaries of the underlying dimension and confidence in the uniquely representative facets is needed.

Considering the wealth of facets across, and even within trait EI measures, a key issue to address is the identification of facets that are primarily related to individual-difference dimensions other than the one targeted by the research community (trait EI). The same applies to potentially redundant facets, whose general variance is efficiently distributed across other facets. Both these types of facet lead to inadequate representations of the underlying dimension and are prone to compromising the explanatory power and incremental validity of trait EI (Siegling & Petrides, 2013).

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