Practical Intelligence, Emotional Intelligence, and Social Intelligence

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Over the years, practical intelligence, social intelligence, and especially emotional intelligence have received substantial attention in the academic and practitioner literatures. However, at the same time, these individual difference “constructs” have also fueled controversies and criticisms, including their applications to employee selection. It is without doubt that their definition, dimensionality, and operationalization (measurement) have been much more questioned as compared with the more traditional or established constructs (i.e., cognitive ability, personality) in this section of the book.

This chapter has two main objectives. The first objective is to review and clarify the conceptualization and measurement of these three constructs (or categories of constructs). In doing so, we aim to identify commonalities and differences among the three constructs. The second objective is to advance research on practical, social, and emotional intelligence. We aim to achieve both objectives by placing the three intelligence constructs in an integrative conceptual framework that relates them to traditional individual difference constructs and critical criterion constructs. We end by proposing five strategies for future research.

DEFINITIONS AND CONCEPTUALIZATIONS

In this section, we review how practical, emotional, and social intelligence have been conceptualized and the research that attempted to empirically test these conceptualizations.

PRACTICAL INTELLIGENCE

Sternberg and colleagues introduced the construct of practical intelligence in the mid- to late-1980s (Sternberg, 1988; Wagner & Sternberg, 1985). As a common thread running through the various definitions of practical intelligence, it is generally considered to refer to the ability of an individual to deal with the problems and situations of everyday life (Bowman, Markham, & Roberts, 2001). In lay terms, it can be characterized as “intuition” or “common sense,” and it is often referred to as “street smart” to contrast with “book smart,” which is used to characterize traditional analytical or academic intelligence.

A central element in practical intelligence is tacit knowledge. Sternberg, Wagner, Williams, and Horvath (1995) defined tacit knowledge as “action-orientated knowledge, acquired without direct help from others, that allows individuals to achieve goals they personally value” (p. 916). This definition encompasses the key characteristics of tacit knowledge (see Hedlund et al., 2003). First, tacit knowledge is difficult to articulate because it is not formalized in explicit procedures and rules.
Second, tacit knowledge is typically procedural knowledge, telling people how to act in various situations. Third, individuals acquire tacit knowledge on the basis of their own everyday experience related to a specific domain. Thus, tacit knowledge is not formally taught. Fourth, tacit knowledge is practical because it enables individuals to obtain the goals that they value in life. These characteristics exemplify the claim of practical intelligence and tacit knowledge being constructs that are conceptually distinct from academic intelligence, technical job knowledge, or personality.

Research by Sternberg and colleagues as well as by others have found some support for or at least produced findings consistent with some of these claims. First, tacit knowledge seems to increase with experience. For example, business managers received higher tacit knowledge scores than business graduate students, who in turn outperformed undergraduate students although sample sizes in these groups were often small (Wagner, 1987). Second, scores on tacit knowledge inventories showed low correlations (below .20) with measures of fluid and crystallized intelligence (Legree, Heffner, Psotka, Martin, & Medsker, 2003; Tan & Libby, 1997). Finally, Bowman et al. (2001) reviewed research on tacit knowledge in organizational, educational, and military settings and concluded that the assessment of tacit knowledge has certain promise for predicting performance in these real-world environments, although the level of prediction does not reach the values obtained with g (see also Van Rooy, Dilchert, Viswesvaran, & Ones, 2006).

Bowman et al. (2001) leveled various criticisms with respect to the construct of practical intelligence. From a conceptual point of view, questions have been raised whether practical intelligence (tacit knowledge) at all exists as a single construct that is different from other types of intelligence, job knowledge, and personality (see also Gottfredson, 2003; McDaniel & Whetzel, 2005). In particular, McDaniel and Whetzel (2005) put various claims related to practical intelligence (tacit knowledge) to the test. To this end, they used research related to situational judgment tests (SJTs), a measurement method that is closely related to tacit knowledge inventories (see below). Consistent with research by Sternberg and colleagues, McDaniel and Whetzel concluded that such tests predict job performance and have incremental validity over more common selection procedures. However, they argued that there was no support for the other claims. Specifically, they cited studies showing that SJTs of practical intelligence were factorial complex and could not be represented by a general factor in factor analytic studies and studies showing that these test scores were significantly related to scores on established constructs such as g, conscientiousness, emotional stability, and agreeableness. Later in this chapter, we argue that such criticisms are right and wrong—they are right that practical intelligence is not a unitary construct, but they are wrong to conclude that the factorially complex results and significant correlations with established constructs imply that practical intelligence is not a distinct and valid construct.

**Emotional Intelligence**

Since the mid-1990s, emotional intelligence is probably the psychological construct that has received the greatest attention in practitioner and academic literatures. Generally, a distinction is made between two conceptualizations of emotional intelligence; namely, an ability emotional intelligence model and a trait emotional intelligence model (e.g., Matthews, Zeidner, & Roberts, 2007).

The first model conceptualizes emotional intelligence as an ability akin to cognitive ability and measures it via performance-based tests. In this paradigm, emotional intelligence is viewed as another legitimate type of intelligence. Hence, this model is also referred to as emotional cognitive ability or information processing emotional intelligence. Emotional intelligence is then defined as “the ability to monitor one’s own and others’ emotions, to discriminate among them, and to use the information to guide one’s thinking and actions” (Salovey & Mayer, 1990, p. 189). This definition shows that the higher order construct of emotional intelligence is broken down into four branches. The first branch—emotional identification, perception, and expression—deals with the ability to accurately perceive emotions in others’ verbal and nonverbal behavior. Emotional facilitation of thought is the second branch, referring to the ability to use emotions to assist thinking and
problem-solving. Third, emotional understanding denotes the ability to analyze feelings, discriminate among emotions, and think about their outcomes. Finally, emotional management deals with abilities related to maintaining or changing emotions.

The second model, the trait EQ model, views emotional intelligence as akin to personality and assesses it via self-report. In this model, emotional intelligence is defined as “an array of non-cognitive capabilities, competencies, and skills that influence one’s ability to succeed in coping with environmental demands and pressures” (Bar-On, 1997, p. 16). As the name suggests, this model uses a broad definition of emotional intelligence. Abilities such as emotion perception are typically combined with noncognitive competencies, skills, and personality traits. For example, one of the most popular mixed models (Bar-On, 1997) measures five broad factors and 15 facets: (a) intrapersonal (self-regard, emotional self awareness, assertiveness, independence, and self-actualization), (b) interpersonal (empathy, social responsibility, interpersonal relationship), (c) stress management (stress tolerance and impulse control), (d) adaptability (reality testing, flexibility, and problem solving), and (e) general mood (optimism and happiness). In the Goleman (1995) model, a similar expanded definition of emotional intelligence is used, referring to emotional intelligence as a set of learned competencies. Emotional intelligence competence is then defined as “an ability to recognize, understand, and use emotional information about oneself or others that leads to or causes effective or superior performance” (Boyatzis & Sala, 2004, p. 149). A distinction is further made between five main competency clusters (with various subcompetencies): self-awareness, self-regulation, motivation, empathy, and social skills. Given the trait-like nature of the mixed model, some researchers have suggested using terms such as “trait emotional intelligence,” “emotional self-efficacy” (Petrides & Furnham, 2003), or “emotional self-confidence” (Roberts, Schulze, Zeidner, & Matthews, 2005).

Recent meta-analytic research (Van Rooy, Viswesvaran, & Pluta, 2005) has demonstrated that these two models are not measuring the same constructs. Measures based on the two models correlated only .14 with one another. In addition, these two models had different correlates. Emotional intelligence measures based on the mixed model overlapped considerably with personality trait scores but not with cognitive ability. Conversely, emotional intelligence measures developed according to an emotional intelligence ability model correlated more with cognitive ability and less with personality. Other research has clarified that ability model measures correlate especially with verbal (crystallized) ability, with correlations typically between .30 and .40 (Mayer, Roberts, & Barsade, 2008). Hence, some have posited that the term “emotional intelligence” should be replaced by the term “emotional knowledge” (Zeidner, Matthews, & Roberts, 2004).

In addition to the construct validity of emotional intelligence, the criterion-related validity has also been scrutinized. Van Rooy and Viswesvaran (2004) conducted a meta-analysis of emotional intelligence measures (collapsing both models) for predicting performance. Their analysis of 59 independent empirical samples obtained a mean corrected correlation of .23. The validity of emotional intelligence measures was .24, .10, and .24 for predicting performance in occupational, academic, and life settings, respectively. However, a caveat is in order when interpreting the results of this meta-analysis as it included only a small number of studies using ability-based emotional intelligence instruments and a sizable number of studies using self-report measures of performance. Thus, we are still far from being at the point of rending a decision as to the incremental value of emotional intelligence for selection purposes. However, in recent years, more positive conclusions regarding the validity of emotional intelligence for predicting performance have been drawn. For instance, Druskat and Jordan (2007) reviewed 26 studies that examined the validity of emotional intelligence (both models) for predicting performance at the individual, team, and leadership level. Importantly, all of the studies reviewed were published in peer-reviewed journals. The overall conclusion was that “emotional intelligence predicts work performance over and above measures of personality and general mental ability” (p. 2).

Despite this recent optimism, there are conceptual and methodological problems associated with the research on emotional intelligence. Most criticisms were directed at the mixed model.
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(Mayer et al., 2008). First, the ambiguous (all-encompassing) definition and the very broad content of the mixed model have been criticized (e.g., Landy, 2005; Locke, 2005; Matthews, Roberts, & Zeidner, 2004). For example, Landy (2005) succinctly noted: “The construct [of emotional intelligence] and the operational definitions of the construct (i.e., the actual measurement instruments) are moving targets” (p. 419). Similarly, Locke (2005) posited that “The concept of EI [emotional intelligence] has now become so broad and the components so variegated that no one concept could possible encompass or integrate all of them, no matter what the concept was called; it is no longer even an intelligible concept” (p. 426).

Another criticism relates to redundancy of the mixed model with Big Five personality traits. For instance, De Raad (2005) explored to what extent emotional intelligence (mixed model) can be expressed in terms of personality traits. To this end, he gathered a total of 437 items from emotional intelligence inventories. Sixty-six percent of the emotional intelligence descriptors could be classified in a well-known Big Five framework (The Abridged Big Five-Dimensional Circumplex). The lion share of the terms was categorized under agreeableness and emotional stability. The main reason for items not being classifiable was that they were ambiguous because they were related to various Big Five factors. In other studies, the multiple correlation between Big Five scores and scores on mixed model emotional intelligence measures ranged between .75 and .79 (Brackett & Mayer, 2003; Grubb & McDaniel, 2007). However, other studies found incremental validity of the mixed model over and above personality (Law, Wong, & Song, 2004; Tett, Fox, & Wang, 2005). Nonetheless, in the scientific community, there have been calls to give up the mixed model (that is very popular in practice) and focus solely on the ability model (Daus & Ashkanasy, 2005).

The ability model is not without limitations either. For example, a large-scale examination of many emotional intelligence, cognitive intelligence, and personality measures showed that emotion perception (as represented by measures of perception of emotions in faces and pictures) was the only branch of the four branches of the ability model that could not be classified under established measures (Davies, Stankov, & Roberts, 1998). But even the emotion perception construct has drawbacks because the construct does not seem to have generalizability across different measures (Gohm, 2004). That is, existing emotion perception measures correlate lowly among themselves (Roberts et al., 2006).

In comparing the findings from the ability and the trait models, a major methodological problem exists because of a method-construct confound resulting from the fact that the ability model is often measured using performance-based tests whereas the trait model is often measured using self-reports. To advance research on the comparison of ability and trait models of emotional intelligence (and also on the comparison of these models when applied to practical intelligence or social intelligence), rigorous designs that allow us to clearly isolate construct and method variances are needed (Chan & Schmitt, 2005).

Social Intelligence

Of the three intelligence constructs, social intelligence has the longest history. The idea goes back to Thorndike (1920), who defined social intelligence as “the ability to understand and manage men and women, boys and girls – to act wisely in human relations” (p. 228). As noted by Landy (2005), Thorndike did not build a theory of social intelligence but he only used the notion of social intelligence to clarify that intelligence could manifest itself in different facets (e.g., abstract, mechanical, social).

Social intelligence has a checkered history. Early studies tried to distinguish social intelligence from academic intelligence (e.g., Hoeper & O’Sullivan, 1968; Keating, 1978). However, these research efforts were unsuccessful. The problem was that measures of social intelligence did not correlate highly among themselves and that academic intelligence and social intelligence formed one factor. Methodologically, it was troublesome that both intelligences were measured with the same method (paper-and-pencil measures). The early research led to the conclusion that the “putative
domain of social intelligence lacks empirical coherency, at least as it is represented by the measures used here” (Keating, 1978, p. 221).

Two advancements led to more optimism. The first was the distinction between *cognitive* social intelligence (e.g., social perception or the ability to understand or decode verbal and nonverbal behaviors of other persons) and *behavioral* social intelligence (effectiveness in social situations). Using this multidimensional definition of social intelligence and multiple measures (self, teacher, and peer ratings), Ford and Tisak (1983) were able to distinguish social intelligence from academic intelligence. In addition, social intelligence predicted social behavior better than academic intelligence (see also Marlowe, 1986). The second advancement was the use of multitrait-multimethod designs (and confirmatory factor analysis) to obtain separate and unconfounded estimates of trait and method variance (Jones & Day, 1997; Wong, Day, Maxwell, & Meara, 1995).

These more sophisticated multitrait-multimethod designs have brought further evidence for the multidimensionality of social intelligence and for its discriminability vis-à-vis academic intelligence. For example, the aforementioned distinction made between cognitive social intelligence and behavioral social intelligence has been confirmed (e.g., Wong et al., 1995). Similarly, a distinction is often made between fluid and crystallized social intelligence. The fluid form of social intelligence refers to social-cognitive flexibility (the ability to flexibly apply social knowledge in novel situations) or social inference. Conversely, a term such as social knowledge (knowledge of social etiquette, procedural and declarative social knowledge about social events) denotes the more crystallized component of social intelligence (Jones & Day, 1997). Despite these common findings, the dimensions, the definitions, and measures of social intelligence still vary a lot across studies. Along these lines, Weis and Süss (2005) recently gave an excellent overview of the different facets of social intelligence that have been examined. This might form the basis to use a more uniform terminology when describing social intelligence subdimensions.

In recent years, interest in social intelligence has also known a renaissance under the general term of *social effectiveness constructs*. According to Ferris, Perrewé, and Douglas (2002), social effectiveness is a “broad, higher-order, umbrella term, which groups a number of moderately-related, yet conceptually-distinctive, manifestations of social understanding and competence” (p. 50). Examples are social competence, self-monitoring, emotional intelligence, social skill, social deftness, practical intelligence, etc. The value of social skills has been especially scrutinized. Similar to social intelligence, social skills are posited to have a cognitive component (interpersonal perceptiveness) and a behavioral component (behavioral flexibility; Riggio, 1986; Schneider, Ackerman, & Kanfer, 1996).

A key distinction between social skills and personality traits is that the former are learned (i.e., an ability), whereas the latter are relatively stable. Research has found that they are only moderately (.20) correlated (Ferris, Witt, & Hochwarter, 2001). However, both constructs are also related in that social skills enable personality traits to show their effects (Ferris et al., 2001; Hogan & Shelton, 1998). Research has indeed confirmed that social skills moderate the effects of personality traits (conscientiousness) on job performance (Witt & Ferris, 2003). Social skills were also found to have direct effects on managerial job performance, although personality and cognitive ability were not controlled for in most studies (Semadar, Robins, & Ferris, 2006).

Conclusions

Our review of practical, social, and emotional intelligence highlights that these three constructs share remarkable similarities. Specifically, we see at least three parallels. First, the origins and rationale behind each of the constructs can be summarized as “going beyond g.” Cognitively oriented measures of ability and achievement have been traditionally used in employment and educational contexts. However, at the same time, there has always been substantial interest in exploring possible supplemental (“alternative”) predictors for broadening the constructs measured and reducing possible adverse impact. Supplementing cognitive with alternative predictors is seen as a mechanism for
accomplishing this (Sackett, Schmitt, Ellingson, & Kabin, 2001). Whereas social intelligence is the oldest construct, practical intelligence came into fashion at the end of the 1980s. Since Goleman’s (1995) book, emotional intelligence is the newest fad. Every time, the construct was introduced as the panacea for the problem of an exclusive reliance on g. We agree that there is need to go beyond g and identify new and non-g constructs, but a new construct has little scientific explanatory and utility value if it is defined solely by negation (i.e., as non-g). Hence, good construct validity evidence for the three constructs is needed and the current state of research indicates to us that more rigorous construct validation studies are needed. Second, the conceptualizations of these three constructs have salient parallels. Each of these three constructs has various definitions, is multidimensional, and there exists debate about their different dimensions. Third, for each of these constructs, investigations of incremental validity over and above more established constructs such as cognitive ability and personality have been the focus of debate and research.

So, are there conceptual differences between the three constructs? According to Landy (2005), emotional intelligence as a so-called new construct has simply replaced the older notion of social intelligence. Similarly, Bowman et al. (2001) posited that “it is not certain to what extent tacit knowledge, social, and EQ measures are structurally independent” (p. 148). Although our review shows that these three constructs are definitely overlapping, it is possible to make at least some subtle distinctions. On the one hand, emotional intelligence might be somewhat narrower than social intelligence because it focuses on emotional problems embedded in social problems (Mayer & Salovey, 1993). That is probably why Salovey and Mayer (1990) defined emotional intelligence as a subset of social intelligence (p. 189). Conversely, one might also posit that emotional intelligence is broader than social intelligence because internal regulatory processes/emotions are also taken into account, something that is not the case in social intelligence. Practical intelligence with its emphasis on real-world problems is more distinct than the other two constructs because it makes no reference to interpersonal skills (Austin & Saklofske, 2005). Domain specificity is another aspect of tacit knowledge that contrasts to the more generic nature of social and emotional intelligence. In any case, these conceptual distinctions are open to investigation because no study has explicitly examined the three constructs together (Weis & Süss, 2005).

MEASUREMENT APPROACHES

In the previous section, we showed that the conceptual debate around practical, social, and emotional intelligence shared many parallels. The same can be said about the measurement approaches used because the similarities in how practical intelligence, social intelligence, and emotional intelligence are measured are striking. Generally, six measurement approaches might be distinguished: (a) self-reports, (b) other-reports, (c) interviews, (d) tests, (e) SJTs, and (f) assessment center exercises. The following discusses each of these approaches including their advantages and disadvantages. Examples of instruments are also given and these are summarized in Table 16.1.

SELF-REPORTS

The self-report approach presents respondents with descriptive statements and asks them to use a sort of rating scale to indicate the extent to which they agree or disagree with the respective statements. An important advantage of self-report measures is that they can be administered inexpensively and quickly to large groups of respondents.

Examples of the self-report approach are many. In fact, most examples of self-report emotional intelligence measures are based on the popular mixed model approach to emotional intelligence. Examples are the Emotional Competence Inventory (ECI; Sala, 2002), the Trait Meta-Mood Scale (TMMS; Salovey, Mayer, Goldman, Turvey, & Palfai, 1995), EQ-I (Bar-On, 1997), and the Trait Emotional Intelligence Questionnaire (TEIQue; Petrides & Furnham, 2003). Other emotional intelligence measures are based on the four-branch model (or its predecessors) (Salovey & Mayer, 1990)
but use a self-report methodology (instead of performance-based tests) for measuring it. Examples are the Wong Law Emotional Intelligence Scale (WLEIS; Law et al., 2004; Wong & Law, 2002), the Multidimensional Emotional Intelligence Assessment (MEIA; Tett et al., 2005), the Swinburne University Emotional Intelligence Test (SUEIT; Palmer & Stough, 2001), or the Schutte Self-Report Emotional Intelligence Test (SREIT; Schutte et al., 1998). We refer to Pérez, Petrides, and Furnham (2005) for a comprehensive list of trait EQ measures. There are also self-report inventories of social intelligence/social skills (e.g., Ferris et al., 2001; Riggio, 1986; Schneider et al., 1996). We are not aware of self-report instruments (excluding SJTs as self-report measures) that assess tacit knowledge.

In the personality domain, there is a long history of using self-report measures and an equally long debate over its use. Clearly, the debate and issues concerning the use of self-report measures

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### TABLE 16.1
Overview of Methods (Including Some Examples) for Measuring Practical, Emotional, and Social Intelligence

<table>
<thead>
<tr>
<th>Method</th>
<th>Ability Emotional Intelligence Model</th>
<th>Trait Emotional Intelligence Model</th>
<th>Practical Intelligence</th>
<th>Social Intelligence</th>
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</thead>
<tbody>
<tr>
<td>Self-reports</td>
<td>- WLEIS</td>
<td>- EQ-I</td>
<td>- Self-reports of people’s behavior in everyday situations</td>
<td>- Social skills inventories</td>
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<td></td>
<td>- SREIT</td>
<td>- ECI</td>
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<tr>
<td></td>
<td>- MEIA</td>
<td>- TMMS</td>
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<td></td>
<td>- SUEIT</td>
<td>- TEIQue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other-reports</td>
<td>- Same as self-reports</td>
<td>- Same as self-reports</td>
<td>- Other-reports of people’s behavior in everyday situations</td>
<td>- Same as self-reports</td>
</tr>
<tr>
<td></td>
<td>- Workgroup Emotional Intelligence Profile</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance-based tests</td>
<td>- MSCEIT</td>
<td>- No known examples</td>
<td>- Basic skills tests</td>
<td>- LEAS</td>
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<td></td>
<td>- DANVA2</td>
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<td>- IPT-15</td>
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<td></td>
<td>- PONS</td>
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<td>- Four/six-factor tests of social intelligence</td>
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<td>- JACBART</td>
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<td>- EARS</td>
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<td></td>
<td>- VOCAL-I</td>
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<td></td>
<td>- MSFDE</td>
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</tr>
<tr>
<td>Interviews</td>
<td>- Interview rating on components of the four-branch model of Mayer, Salovey, and Caruso</td>
<td>- Interview rating on mixed model emotional intelligence competencies (interpersonal sensitivity, stress tolerance, etc.)</td>
<td>- Interview rating on people’s reported behavior in everyday situations</td>
<td>- Interview rating on applied social skills</td>
</tr>
<tr>
<td>SJTs</td>
<td>- STEU</td>
<td>- SJTs that aim to measure mixed model emotional intelligence competencies</td>
<td>- Tacit Knowledge Inventories</td>
<td></td>
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<td></td>
<td>- STEM</td>
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<tr>
<td>ACs</td>
<td>- AC rating on components of the four-branch model of Mayer, Salovey, and Caruso</td>
<td>- AC rating on mixed model emotional intelligence competencies</td>
<td>- Case situational problems</td>
<td>- AC rating on applied social skills</td>
</tr>
</tbody>
</table>

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in personality research is readily generalizable to the use of self-report measures in assessing social and emotional intelligence. A detailed review of the pros and cons of self-report measures is beyond the scope of this chapter. Suffice to say that self-report data are by no means perfect and it are in principle susceptible to various validity problems such as faking and inflation of correlations because of common method variance. However, it is noteworthy that the severity of many of the purported problems of self-report data may be overstated (for details, see Chan, in press).

**Other-Reports**

Other-reports (or informant reports) have also been used for measuring emotional and social intelligence. One reason is that knowledgeable others might provide less lenient and more reliable measurement. Another reason is that multidimensional constructs such as emotional and social intelligence inherently have an important interpersonal component. Hence, it makes sense that in other-reports the same emotional and social intelligence scales as listed above are used, with others (peers, colleagues, teachers, parents, friends) now rating the focal person on descriptive statements. For example, peers or supervisors can also complete the ECI of Goleman. There also exist emotional intelligence measures that were specifically developed for use in team settings. For instance, Jordan, Ashkanasy, Hartel, and Hooper (2002) developed a specific work group emotional intelligence measure, namely the Workgroup Emotional Intelligence Profile.

Although there exists much research supporting the use of peers in the personality domain (e.g., Borkenau & Liebler, 1993; Funder, 1987; Kenny, 1991), research with other-based emotional intelligence measures is relatively scarce. Van der Zee, Thijs, and Schakel (2002) confirmed that peer ratings of emotional intelligence were more reliable. However, they also found that these peer ratings suffered from leniency. Law et al. (2004) reported that peer-reports of a trait-based emotional intelligence measure had substantial incremental validity over self-reports of emotional intelligence and personality. So, it seems beneficial to use peers for mixed model emotional intelligence measures.

**Performance-Based Tests**

Whereas both self-reports and peer-reports are assumed to be measures of typical performance, performance-based tests are posited to measure maximal performance. The rationale behind these tests parallels the one behind cognitive ability tests because these tests present people with social or emotion-based problem solving items. For example, in popular tests of emotion perception, individuals are presented with faces, voices, or pictures and are then asked to describe the emotions.

Historically, performance-based tests have been used for measuring social intelligence. An often-cited example is O'Sullivan, Guilford, & deMille's (1965) tests of social intelligence (see Landy, 2006, for other older examples). A more modern example is the Levels of Emotional Awareness scale (LEAS; Lane, Quinlan, Schwartz, Walker, & Zeitlin, 1990), although this test has also been used as a measure of emotional intelligence (e.g., Barchard, 2003). Similarly, the Interpersonal Perception Task-15 (IPT-15; Costanzo & Archer, 1993) is a performance-based measure that presents videotapes to participants.

Recently, these tests have known a renaissance in the context of the ability model of emotional intelligence, with the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) as the best-known example. Other well-known examples are the Japanese and Caucasian Brief Affect Recognition Test (JACBART; Matsumoto et al., 2000), the Diagnostic Analysis of Nonverbal Accuracy (DANVA2; Nowicki, 2004), the Profile of Nonverbal Sensitivity (PONS; Rosenthal, Hall, DiMatteo, Rogers, & Archer, 1979), the Emotional Accuracy Scale (EARS; Mayer & Geher, 1996), The Montreal Set of Facial Displays of Emotion (MSFDE; Beaupré, Cheung, & Hess, 2000), and the Index of Vocal Emotion Recognition (Vocal-I; Scherer, Banse, & Wallbott, 2001).

As noted by Spector and Johnson (2006), there is a difference between knowledge about emotions and the actual skill. It is not because one knows how to regulate one’s emotion in the face
of problems that one will also do this in an actual context. Using basic skills tests (Diehl, Willis, & Schaie, 1995) has circumvented this problem with regard to practical intelligence. These tests measure among others the ability to perform daily tasks such as cooking or using a bus schedule. Scoring constitutes another problem of performance-based tests. In contrast to cognitive ability tests, emotional intelligence tests using the ability model, for instance, do not have objectively correct answers.

**INTERVIEWS**

Interviews constitute another possible method for measuring practical, social, and emotional intelligence. In the past, especially social skills (social intelligence) have been frequently measured in interviews. This is demonstrated by the meta-analysis of Huffcutt, Conway, Roth, and Stone (2001), who reviewed the type of constructs most frequently targeted by interviews in 47 studies. Specifically, social skills were measured in 27.8% of the interviews. Moreover, applied skills were twice as frequently rated in high-structure interviews (behavior description interviews and situational interviews) as compared with low-structure interviews (34.1% vs. 17.7%).

Essentially, interviews are measurement methods that can be used to assess a wide variety of constructs. On the basis of multiple job-related questions, interviewees are asked to describe behavior that is relevant for constructs deemed important. Therefore, interviews could also be used for measuring practical intelligence (Fox & Spector, 2000) and emotional intelligence (mixed model; Schmit, 2006). Schmit notes how interview questions can try to elicit situations from interviewees wherein they had to recognize emotions of others and how they dealt with this. Yet in interviews observable samples of behavior can be observed only for specific dimensions (e.g., interpersonal skills or oral communication skills; Van Iddekinge, Raymark, & Roth, 2005). For other dimensions, candidates report past behavior (in behavior description interviews) or intended behavior (in situational interviews).

**SJTs**

SJTs might be another approach for measuring practical, social, and emotional intelligence (Chan, 2000, 2006; O’Sullivan, 2007; Schulze, Wilhelm, & Kyllonen, 2007). SJTs are measurement methods that present respondents with job-related situations and sets of alternate courses of action to these situations. For each situation, respondents either select the best and worst options or rate each of the alternative actions in terms of its effectiveness. Because respondents have to respond to realistic (written and especially video-based) scenarios, SJTs might constitute a more contextualized (ecologically valid) way of measuring practical, social, and emotional intelligence. This judgment in a realistic context contrasts to the decontextualized nature of standardized tests. Technological advancements make it possible to develop interactive SJTs that present different video fragments on the basis of responses to earlier video fragments. This allows the SJT to simulate the dynamics of interaction. Similar to emotional intelligence tests (ability model), multiple-choice SJTs are scored using expert (excellent employees) or empirical (large pilot samples) grounds.

Over the years, SJTs have been developed for measuring each of the three constructs. First, as noted by McDaniel, Morgeson, Finnegan, Campion, and Braverman (2001), the first SJTs were social intelligence tests, namely the Judgment in Social Situations subtest of the George Washington Social Intelligence Test. Second, instruments very similar to SJTs are used under the label “tacit knowledge tests” for measuring practical intelligence (Sternberg et al., 1995). Examples are the Tacit-Knowledge Inventory for Managers or the Tacit-Knowledge Inventory for Military Leaders. Third, recent research has explored the use of SJTs for measuring two branches of Mayer and Salovey’s emotional intelligence model. Specifically, MacCann, and Roberts (2007) developed the Situational Test of Emotional Understanding (STEU) and the Situational Test of Emotion Management (STEM). There have also been recent attempts to develop video-based SJTs for measuring emotional intelligence (Bedwell & Chuah, 2007).
SJTts are also referred to as low-fidelity simulations. Although they aim to provide a more ecologically valid approach for measuring practical, social, and emotional intelligence, they do not require candidates to actually show how they would handle a specific situation. Candidates have to pick the “correct” answer from a limited set of predetermined response options. Nevertheless, a meta-analysis of McDaniel et al. (2001) found a corrected correlation between SJTs and job performance in employment settings of .34. In addition, recent research (Chan & Schmitt, 2002; McDaniel, Hartman, Whetzel, & Grubb, 2007) provided evidence for the incremental validity of SJTs in predicting job performance over and above the prediction provided by cognitive ability and personality. Other validity research also found that video-based SJTs are more valid than written ones (Lievens & Sackett, 2006).

An interesting aspect of SJTs is that differences in mean SJT scores between racial subgroups are typically smaller than those reported for cognitive ability tests. The meta-analysis of Nguyen, Biderman, and McDaniel (2005) found a difference in mean SJT scores between Whites and Blacks of about .30 SD in favor of White candidates, which is much smaller than the 1.00 SD typically found for cognitive ability tests (Jensen, 1998). A key determinant of whether SJTs show adverse impact is the correlation of SJTs with cognitive ability. Yet, it should be noted that the lower reliability of SJTs might also partially explain the lower subgroup differences found.

SJTts are inherently multidimensional because SJT items may refer to a range of situations and include different types of content to which applicants attend when making a decision. In addition, responses to SJT items with multiple options are the result of a combination of ability, experience, and personality (McDaniel et al., 2001; McDaniel & Whetzel, 2005). The multidimensional nature of SJTs makes it often difficult to assess what they exactly measure. For instance, factor analytic research on SJTs typically reveals a plethora of factors that are difficult to interpret (Chan & Schmitt, 2005).

Assessment Center Exercises

A final possible approach for measuring practical, social, and interpersonal intelligence consists of putting people in a simulated situation, observing their actual behavior, and then making inferences about their standing on the construct of interest. Performance (or authentic) assessment is often used as a general term for describing this strategy. In industrial and organizational (I-O) psychology, this contextualized approach focusing on actual behavior is exemplified by assessment centers (ACs). In ACs, several job-related simulations (e.g., role-play, interview simulation, in-basket, group discussion) aim to elicit behavior relevant to the constructs under investigation. The assumption is that individuals’ responses to these simulations reflect the responses that they would exhibit in the real world. Multiple trained assessors observe and rate the candidates on these constructs.

According to Gowing (2001), the roots of the measurement of social, practical, and emotional intelligence can be traced to this AC approach. Although these constructs are not explicitly measured in AC exercises, they correspond well to the typically competencies targeted by AC exercises. In particular, some AC competencies such as flexibility, awareness for others, interpersonal skills, flexibility, stress tolerance, and communication have clear resemblances with practical, emotional, and social intelligence. The context sensitivity of what constitutes good performance in AC exercises and the ease with which situations may temporally unfold or change through injecting novel demands as the exercise progresses are features of the AC that make it a useful method for measuring the adaptability competencies associated with practical, emotional, and social intelligence (Chan, 2000).

Several researchers have explicitly related the measurement of these AC dimensions to the measurement of the one or more of the three intelligence constructs. Specifically, Spector and Johnson (2006) presented various examples of how AC exercises might be adapted for measuring emotional intelligence. For example, in a role-play, a participant might be asked to deal with an irate customer or to comfort an upset colleague. Assessors might then rate the assessees on broad-based
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Competencies or on more detailed verbal/nonverbal behaviors. Another example is Stricker and Rock’s (1990) Interpersonal Competency Inventory (ICI), wherein participants have to respond orally to videotaped scenes. Similarly, Sternberg and colleagues have argued that the typical AC exercises are very useful for assessing practical intelligence. For example, Hedlund, Wilt, Nebel, Ashford, and Sternberg (2006) developed so-called “case scenario problems” as a skill-based measure of practical intelligence. These case scenario problems consist of a fictitious business case wherein participants are given information such as the history of the organization, their role, memos, e-mails, and financial tables. Individuals have to use their practical intelligence (practical problem-solving skills) to solve these contextual and poorly defined problems. Clearly, this methodology is very similar to the in-basket format that has been used for decades in ACs.

Although the emphasis on simulations and actual behavior results in good AC validities (Arthur, Day, McNelly, & Edens, 2003) and little adverse impact (Terpstra, Mohamed, & Kethley, 1999), the quality of construct measurement remains the Achilles heel of ACs (Lance, Lambert, Gewin, Lievens, & Conway, 2004). Ratings of the same competency do not converge well across exercises (i.e., poor convergent validity). In addition, there is little distinction between dimensions within a specific exercise because within-exercise dimension ratings are highly correlated (i.e., poor discriminant validity).

CONCLUSIONS

Our review of measurement approaches suggests parallels in how the three constructs are measured. Although it is often thought that the three constructs are primarily measured with self-reports and performance tests, this section highlighted that there are a wide array of other options possible. Specifically, interviews, peer-reports, and instruments with somewhat more fidelity (e.g., SJTs and AC exercises) are viable measurement approaches. Future research should explore these alternative measurement methods.

CONCEPTUAL FRAMEWORK FOR EXAMINING PRACTICAL, EMOTIONAL, AND SOCIAL INTELLIGENCE

In Figure 16.1, we present a conceptual framework that we adapted from Chan and Schmitt (2005) to organize the discussion and guide future research on the validity of practical, emotional, and social intelligence. Following Chan and Schmitt, the framework construes all three types of intelligence as competencies that are multidimensional constructs, each of which is a partial mediator of the predictive or causal effect of unidimensional knowledge, skills, abilities, and other characteristics (KSAOs) on job performance or other job-relevant criteria. In addition, our framework construes the three types of intelligences as distinct but related competencies with common and unique construct space as depicted by the three overlapping circles representing practical, emotional, and social intelligence.

The framework in Figure 16.1 shows that proponents and opponents of each of these three constructs are right and wrong in different ways. Specifically, the opponents typically focus on the KSAOs and correctly argue that practical, emotional, and social intelligences are not factorially pure (unitary) KSAOs, but they incorrectly dismissed the validities and value of these intelligence constructs. Conversely, the proponents typically focus on the multidimensional competencies and correctly argue that practical, emotional, and social intelligences are proximal (and hence sometimes better) predictors of performance and other criteria, but they incorrectly ignore the important role of KSAOs in determining the nature of these intelligence constructs.

Our framework is consistent with and may reconcile several extant findings and the debate over the value of the three types of intelligence. For example, each of the three intelligence constructs is inherently multidimensional in the sense that it is conceptualized as a multidimensional competency resulting from a combination of several different individual difference constructs. The relationships
linking each type of intelligence and the various individual difference constructs explain the consistent findings from factor analytic studies that the intelligence measure is factorially complex and the data from the measure do not produce good fit with a single factor model. These relationships also explain the significant and sometimes substantial correlations between the intelligence measure and the established measures of traditional KSAOs such as cognitive ability and personality traits. In addition, these relationships provide the conceptual bases for examining ability models, trait models, and mixed models of emotional (as well as practical or social) intelligence.

The findings on the substantial zero-order validities and incremental validities of practical intelligence in predicting job performance over the prediction provided by cognitive ability and personality traits (e.g., Chan & Schmitt, 2002) are consistent with the proximal status of practical intelligence competencies (relative to the distal status of KSAOs) in the prediction of job performance. Similarly, the proximal status of emotional and social intelligence also explains the findings from studies that showed zero-order and incremental validities of these intelligence measures in the prediction of job performance and other criteria (for meta-analytic review of studies, see Druskat & Jordan, 2007). Interestingly, Figure 16.1 may also explain why SJTs and ACs, which are multidimensional measures, do better than factorially pure measures of single unitary constructs (e.g., cognitive ability, personality) in predicting job-relevant performance criteria, which are often multidimensional in nature. That is, much of what SJTs and ACs are assessing may well be multidimensional competencies similar, if not identical, to practical, emotional, and social intelligence.

We believe the conceptual framework in Figure 16.1 is consistent with existing findings and reconciles much of the debate on the validity of practical, emotional, and social intelligence, but more direct empirical support of the framework is certainly needed. We reiterate the call in Chan and Schmitt (2005) that to obtain more direct evidence for a framework that construes the intelligence competencies as multidimensional mediators in the relationship between KSAOs and job performance (and other criteria), we would need to specify and test hypothesized and alternative structural equation models (on the basis of primary data from a single study or cumulation of results from past studies using meta-analyses) linking KSAOs, intelligence competencies, and job performance or other criterion outcomes. Future research could derive theory-driven specific models from the general framework depicted in Figure 16.1 to empirically examine the validity of one or more of the three intelligence constructs that would facilitate the interpretation of the correlations

![Conceptual framework for examining practical, emotional, and social intelligence.](image-url)
between the intelligence construct and more established individual difference KSAOs, as well as the zero-order and incremental validities of the intelligence construct in predicting different criterion outcomes. In the following section, we suggest various strategies for formulating theory-driven testable models that are likely to advance research in ways that make conceptual and practical contributions to the study of practical, emotional, and social intelligence.

**STRATEGIES FOR FUTURE RESEARCH**

We suggest the following five strategies for future research on the three types of intelligence: (a) matching predictor and criterion, (b) disentangling methods and constructs, (c) going beyond bivariate relationships, (d) using longitudinal validation designs, and (e) adopting a multilevel perspective.

**MATCHING BETWEEN PREDICTOR AND CRITERION**

An important development in personnel selection research is the movement away from general discussions of predictors as “valid” to consideration of “valid for what?”. This development of more nuanced questions about predictor-criterion relationships was spurred by the taxonomic work on job performance led by Campbell, McCloy, Oppler, and Sager (1993) that differentiated performance into multiple distinct dimensions. Since then, selection researchers have significantly expanded the notion of job performance to include distinct performance dimensions such as those listed in the criterion space of the framework in Figure 16.1. The expansion of the definition of performance and recognition of the multidimensional nature of performance led to streams of research demonstrating that different predictor constructs and selection tests will offer optimal predictive validity depending on the performance dimension(s) of interest (Chan, 2005a). For example, research has shown that task performance is better predicted by cognitive ability tests, whereas contextual performance is better predicted by personality tests (McHenry, Hough, Toquam, Hanson, & Ashworth, 1990). The key message here is that one needs to carefully attend to the constructs underlying both predictors and criterion dimensions in developing hypotheses about predictor-criterion relationships.

Unfortunately, research on practical, social, and emotional intelligence has typically ignored linking these constructs to relevant criterion variables (Landy, 2005). These constructs are often proposed to predict almost everything. Probably, this is best exemplified by studies investigating the validity of emotional intelligence for predicting academic performance (e.g., Amelang & Steinmayer, 2006; Barchard, 2003; Jaeger, 2003; Newsome, Day, & Catano, 2000; Parker, Hogan, Eastabrook, Oke, & Wood, 2006). There is no clear theoretical basis or conceptual match between emotional intelligence and grade point average (GPA). Clearly, emotional intelligence will have at best moderate predictive value for predicting an omnibus cognitively loaded criterion such as GPA. Hence, we need studies that carefully match the three intelligence constructs and their subdimensions to relevant criteria. For example, trait emotional intelligence might be a good predictor of courses that require teamwork instead of cumulative GPA (see also Lievens, Buyse, & Sackett, 2005) and satisfaction at school.

Referring to Figure 16.1, we could apply the conceptual matching between predictor and criterion to foster our understanding of the link between the three intelligence constructs and the difference dimensions of job performance. For instance, task performance might be predicted by ability-based emotional intelligence, whereas contextual performance might be predicted by trait-based emotional intelligence. As another example, practical intelligence might predict adaptive performance better than it predicts routine task performance.

**DISENTANGLING METHODS AND CONSTRUCTS**

In recent years, there is increased recognition that methods should be distinguished from constructs in the comparative evaluation of predictors (Arthur & Villado, in press; Arthur et al., 2003; Bobko,
Roth, & Potosky, 1999; Chan & Schmitt, 1997, 2005; Lievens, Harris, Van Keer, & Bisqueret, 2003). Constructs refer to the substantive conceptual variables (e.g., conscientiousness, cognitive ability, finger dexterity, field dependence-independence, reaction time, visual attention, emotional intelligence) that the measures were designed to assess. Conversely, methods refer to the tests, techniques, or procedures (e.g., paper-and-pencil tests, computer-administered tests, video-based tests, interviews, ACs, self-reports, peer reports) used to assess the intended constructs. This distinction between constructs and methods is especially crucial for multidimensional predictors (Bobko et al., 1999). Conceptual and methodological issues of variance partition associated with the construct-method distinction and their applications to constructs such as practical intelligence are available in Chan and Schmitt (2005).

Given the multidimensional nature of practical, social, and emotional intelligence, clarity of the method-construct distinction is critical. As shown in Table 16.1, practical, social, and emotional intelligence might be measured in multiple ways. As noted above, recent research on social intelligence has adopted such multitrait-multimethod design and cleared some of the confusion around this construct. For example, social intelligence constructs (e.g., social understanding, memory, and knowledge) were operationalized in a multitrait-multimethod design applying verbal, pictorial, and video-based performance measures.

A similar strategy could be followed for clarifying some of the confusion related to emotional intelligence. So far, research mainly compared self-reports of ability-based emotional intelligence or mixed model emotional intelligence to personality inventories (see Roberts et al., 2006, for an exception). However, many more strategies are possible. One possibility is to operationalize a specific branch of the emotional intelligence ability model via different measurement approaches (Wilhelm, 2005). For example, the emotion understanding branch of the ability model might be measured via the MSCEIT and an SJT. Similarly, the emotion perception branch might be measured via faces, pictures, movies, voices, etc. As another example, people might complete an ability emotional intelligence test, they might provide self-reports of their emotional intelligence, and they might be rated by trained assessors on emotional intelligence (or conceptually similar competencies such as interpersonal sensitivity) in AC exercises. Such research designs (see also Landy, 2006) focus on convergent validity and enable one to answer key questions such as the following:

- How well do these different methods converge in assessing emotional intelligence?
- How much variance is accounted for by method factors and how much variance is accounted for by substantive construct factors?
- What does this tell us about the construct?

It is important to distinguish between methods and constructs because comparative evaluations of predictors might be meaningful only when one either (a) holds the method constant and varies the content, or (b) holds the constructs constant and varies the method. This is another reason why it is crucial to operationalize emotional intelligence constructs via multiple methods. Moreover, it shifts the attention from measures to constructs (Matthews et al., 2004). Similarly, the need to include diversity in measurement also applies to the criterion side (see also Figure 16.1) because most studies on trait emotional intelligence are prone to common method variance (predictors and criteria are measured with the same method, namely self-reports). We need studies that link the three intelligence constructs to objective measures of the various performance constructs.

**GOING BEYOND BIVARIATE RELATIONSHIPS**

Current personnel selection research has gone beyond documenting simple bivariate relationships between individual difference predictor and job performance criterion to examine mediator and moderator relationships. Identifying mediators in the predictor-criterion relationship increases our understanding of the prediction and helps in the search for alternative predictors or design of
interventions that influence individuals’ scores on the criteria (by understanding what might affect the mediator). Research could attempt to explicate the precise affective, cognitive, motivational, and behavioral mechanisms that mediate the effects of practical, emotional, or social intelligence on the criterion and directly measure and test these hypothesized mediation mechanisms. For example, cognitions and motivations (expectancy and instrumentality beliefs), or more subtle mediators (likeability) may mediate the intelligence effects on criteria such as job satisfaction and performance.

When an intelligence construct interacts with another predictor (e.g., personality trait) to affect the criterion, the interaction effect is mathematically equivalent whether we select intelligence or the other predictor as the moderator. However, conceptually, which predictor is selected as the moderator reflects different research questions. Identifying moderators that affect the magnitude and even nature of the relationship between the intelligence and criterion constructs is important as the moderator effect clarifies the range and boundary conditions of the predictive validity of the intelligence construct. There has been increasing research examining moderator effects in the predictive validity of personality traits (e.g., Barrick, Parks, & Mount, 2005). However, in the domain of practical, emotional, and social intelligence, research on moderator effects on their validity is still scarce. For instance, Côté and Miners (2006) found that emotional intelligence was linked to task performance and OCB toward the organization only for people low on cognitive ability. Another rare example is Ferris et al. (2001), who reported that the relationship between social intelligence and job performance was stronger among workers high rather than low in cognitive ability. On the other hand, when the intelligence construct is the moderator affecting the relationship between another predictor and the criterion, the importance of the intelligence construct is demonstrated not in terms of its bivariate predictive validity of the criterion, but in terms of its role in determining the range and boundary conditions of the bivariate predictive validity of another predictor. Several studies have demonstrated important moderator roles of practical, emotional, and social intelligence constructs. For example, Witt and Ferris (2003) found that the conscientiousness-performance relationship was moderated by social intelligence in that high levels of conscientiousness together with poor social intelligence led to lower performance. Chan (2006) found that proactive personality predicts work perceptions (procedural justice perception, perceived supervisor support, social integration) and work outcomes (job satisfaction, affective organizational commitment, job performance) positively among individuals with high practical intelligence (construed in terms of situational judgment effectiveness) but negatively among those with low practical intelligence. The findings on the disordinal interaction effects show that high levels of proactive personality may be either adaptive or maladaptive depending on the individual’s level of practical intelligence and caution against direct interpretations of bivariate associations between proactive personality and work-relevant criteria. In short, fruitful future research could be conducted by adopting a strategy that goes beyond bivariate relationships to examine the mediators that link the intelligence construct to the criterion construct, the moderators that affect the nature of the intelligence-criterion relationship, and the role of the intelligence construct as a moderator affecting the nature of a predictor-criterion relationship.

**USING LONGITUDINAL VALIDATION DESIGNS**

The time spans over which criteria are gathered for validation studies often reflect practical considerations. In predictive studies, the time period selected for the criterion rarely exceeds a year or two. Validation studies of practical intelligence, social intelligence, or emotional intelligence are no exception. As such, criterion-related validities reported for these three constructs may or may not accurately estimate the long-term validities associated with these constructs. That is, early performance may not be reflective of typical performance over an individual’s tenure in an organizational or educational context, and if so, early validation efforts would provide misleading results.

In the personnel selection domain, research has shown that predictors of job performance might differ across job stages. Along these lines, the transitional job stage at which there is a need to learn new things is typically contrasted to the more routine maintenance job stage (Murphy, 1989).
For instance, Thoresen, Bradley, Bliese, and Thoresen (2004) found that openness was related to performance and performance trends in the transition stage but not to performance at the maintenance stage. As another example, Jansen and Stoop (2001) discovered that the AC dimension of interpersonal effectiveness showed validity only after several years on the job.

We believe that future studies on practical, social, and emotional intelligence should also adopt a longitudinal design where possible. Similar to personality, it might well be that the validity of these intelligence constructs differs in the long run for predicting job performance. For example, the transitional job stage typically involves more adaptive demands than the routine maintenance job stage. So, practical intelligence might predict job performance stronger in the transitional job stage than in the routine maintenance job stage.

A construct-oriented approach to the study of practical, emotional, and social intelligence that locates the constructs in the framework presented in Figure 16.1 would provide the conceptual basis to hypothesize, test, and interpret performance changes over time. Using appropriate longitudinal designs and change assessment techniques allows one to draw practical implications for key issues such as changes in test validities, changes in mean performance, changes in rank order of individuals’ performance, and changes in dimensionality (i.e., number and/or nature of dimensions) of performance (see Chan, 1998a, 2005a).

ADOPTING A MULTILEVEL PERSPECTIVE

In many contexts, personnel selection researchers have to move beyond the individual level to consider variables at the higher levels (e.g., group, organization) of analysis. For example, a study concerned with identifying individual difference variables that predict work group performance has to deal with constructs and data at the individual and group levels of analysis. In the conceptual framework presented in Figure 16.1, the three intelligence constructs, and all of the other constructs in the individual difference and criterion spaces could be conceptualized, measured, and analyzed in multiple levels of analysis (e.g., individual, group, organization).

So far, the research on practical, emotional, and social intelligence has not adopted a multilevel approach. With the increasing reliance on the use of teams to accomplish work in various organizations, the relevant job performance criteria are often at the higher level (e.g., team, organization) than the individual level of analysis. When each of the three intelligence constructs is examined as predictors in the multilevel context of staffing teams or organizations and relating them to job performance at the individual, team, and organizational levels, we would need appropriate composition models (Chan, 1998b) that explicate the functional relationships linking the same intelligence constructs at the different levels of analysis so that we have clear conceptual understanding of what is meant by team social intelligence and how to measure and analyze social intelligence at the team level. Unlike the traditional KSAOs, which are single unitary constructs, the multidimensional nature of the practical, emotional, and social intelligence constructs would pose challenges to multilevel research because of the increased difficulty in formulating and testing appropriate composition models for these intelligence constructs.

Multilevel constructs and data bring with them complex conceptual, measurement, and data analysis issues and discussion of these issues is beyond the scope of this chapter (for reviews, see Chan, 1998b, 2005b). Our basic point is that a multilevel approach is a strategy for future research on practical, emotional, and social intelligence that is not just desirable but probably necessary, given the inherently multilevel nature of the criteria of interest (e.g., team performance) that are emerging in personnel selection research.

EPILOGUE

We have, under the constraint of a relatively short chapter length, critically reviewed the vast literature on practical, emotional, and social intelligence constructs. We have proposed a conceptual framework, adapted from Chan and Schmitt (2005), which provides a way to organize the conceptualizations.
of the intelligence constructs and their relationships with other individual difference and criterion constructs. We believe that this framework also reconciles some if not most of the findings and debates in the literature on the intelligence constructs. Finally, by explicating several strategies for future research, we hope that more scientifically rigorous studies could be conducted on practical, emotional, and social intelligence to provide practitioners in personnel selection and other HR functions a more evidence-based basis for the use of these intelligence constructs and measures.

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