Beyond IQ: Theories of Hot Intelligence

8

There is nobody so irritating as somebody with less intelligence and more sense than we have.
Don Herold (1889–1966)

An intelligence test sometimes shows a man how smart he would have been not to have taken it.
Laurence J. Peter (1919–88)

Key Terms

emotional intelligence
hot intelligences
multiple intelligences
practical intelligence
social intelligence
trait emotional intelligence

Chapter Outline

8.1 INTRODUCTION

Despite the accuracy of cognitive ability measures in predicting school and work success (see chapters 5 and 6), the importance of IQ scores has been repeatedly challenged in the last ten years. In turn, this has encouraged researchers to conceptualize alternative or novel abilities such as social, practical, and emotional intelligence. Thus some have argued that the ability to solve mathematical or logical problems, such as those included in traditional IQ tests, bears little relation to real-life success and that IQ researchers have simply been "missing the point" when conceptualizing cognitive abilities. Because of the array of non-cognitive (e.g., affective, interpersonal, dispositional) traits they encompass, these types of abilities are often referred to as **hot intelligences**, in contrast to the more analytical, logical, and perhaps "cold" characteristics of traditional cognitive abilities.

hot intelligences types of ability that encompass an array of non-cognitive traits, e.g., the ability to interact with others in social situations, in contrast to the more analytical, "cold" characteristics of traditional cognitive abilities, e.g., the ability to solve abstract mathematical problems

Throughout this chapter, I examine both claims and evidence associated with theories of hot intelligences. Although their contribution to individual differences theory and research has met wide disapproval from the academic establishment, hot intelligences have attracted more popular interest than any other recent topic in individual differences and represent a growing area of research in differential psychology. What these abilities have in common is that they attempt to *expand* the traditional concept of intelligence and provide explanations for individual differences in performance *beyond IQ* in the real world.

Figure 8.1 summarizes basic labels, main authors, and quick definitions of the four most salient theories of hot intelligence, namely, Thorndike's original *social intelligence*, Gardner's *multiple intelligences* (which include traditional as well as novel abilities, the latter including bodily, social, spiritual, and musical intelligences), Sternberg's *practical intelligence*, and Salovey, Mayer, and Goleman's *emotional intelligence*. This chapter focuses mainly on social and emotional intelligence, though many of the conceptual and methodological problems underlying these abilities can be applied to any theory of hot intelligence.

8.2 STREETWISE RATHER THAN BOOK-SMART

Few arguments have been more effective in persuading people about the futility of IQ than the stereotypical example of the scientist who is practically handicapped when it comes to interacting with others. Likewise, IQ skeptics are full of examples of people who succeed in life despite their apparently low IQs, for example, famous politicians who did poorly at school, rich businessmen with no formal education, and so on. Being *streetwise*, it seems, is almost incompatible with, and more important than, being *book-smart*. Consider, for instance, the following case:

> Paolo is 30 years old and has a PhD in physics, an IQ of 146, and the ability to solve mathematical problems most people would not even be able to read. Yet, the "power" of Paolo's brain is not as clearly manifested in apparently simple everyday life tasks. For example, he finds it difficult to make friends and has trouble communicating and, above all, establishing romantic or sexual relationships with others. It seems as though he is as incapable of understanding other people as he is capable of understanding the complex world of Black Holes, protons, and water molecules. Despite multiple academic awards, Paolo is single, unhappy, and has no close friends.

Most hot intelligence theorists have quoted similar examples to persuade people that traditional cognitive ability tests measure the wrong type of abilities. These tests, they say, may be useful to predict academic success but the abilities they measure say little or nothing about a person's ability to do well in real life or where it really matters. Thus, regardless of their specific conceptual and empirical approaches, hot intelligence theories have more or less assumed that:

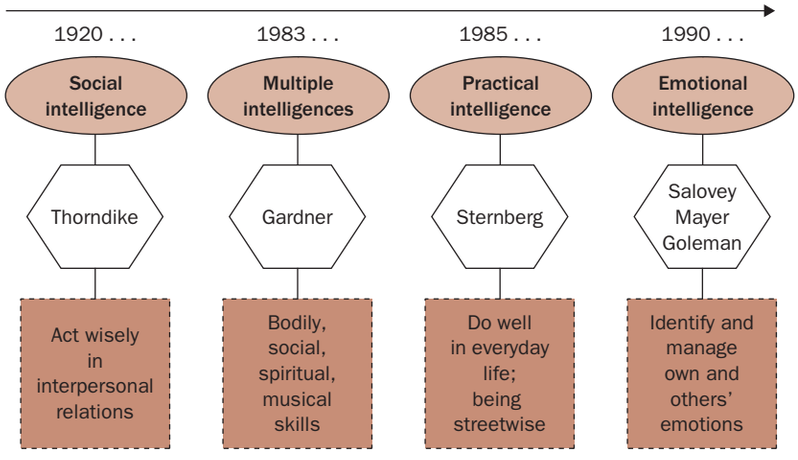

Figure 8.1 Hot intelligences at a glance.

1. *IQ is not everything*, i.e., it does not provide a full account of individual differences in the real world or everyday life success.
2. *Interpersonal skills are independent of cognitive abilities*, i.e., people who score on IQ tests are not necessarily "able" when it comes to dealing with others.
3. *Interpersonal skills are more important in real life than academic abilities*.
4. Interpersonal skills should be conceptualized as a form of ability or intelligence, i.e., it is better to be streetwise than book-smart.

However, such assumptions require an array of scientific evidence that would largely disconfirm previous findings on intelligence (and by previous I mean 100 years of evidence for the validity of IQ tests, as reviewed in chapters 5 and 6).

Why, how, and when, then, did psychologists begin the quest for novel abilities?

8.3 EARLY BEGINNINGS: THORNDIKE'S SOCIAL INTELLIGENCE

At a time when psychologists were largely concerned with the prediction of academic performance or military aptitude (see chapter 5), Edward Thorndike (1874–1949), a student of J. M. Cattell (see section 5.3.2), conceptualized individual differences in two domains he hypothesized to be independent from the type of abilities that were normally regarded as determinants of educational and occupational success. These domains were the ability to *manage others* and *act wisely in relationships* and represented the essence of **social intelligence**. Although Thorndike was one of the pioneers of traditional intelligence test development, his distinction between "abstract" and "social" intelligence would many decades later inspire researchers to look beyond psychometric or traditional intelligence tests. In fact, several contemporary attempts to identify novel abilities were actually anticipated by Thorndike. For instance, Sternberg's theory of practical intelligence (see section 8.11) is largely defined in terms of social competence, and the now famous concept of emotional intelligence (see section 8.7) has its origins in Thorndike, too.

social intelligence one of three facets of intelligence hypothesized by Thorndike (the others being mechanical and abstract intelligence) which he defined as the ability to manage others and act wisely in relationships – put simply, the ability to get on with others

8.3.1 Defining social intelligence

Thorndike (1920) saw intelligence as having three major facets, namely, *mechanical intelligence* or the ability to manage concrete objects, *abstract intelligence* or the ability to manage ideas, and *social intelligence* or "the ability to understand and manage men and women, boys and girls – to act wisely in human relations" (p. 228) (see Figure 8.2).

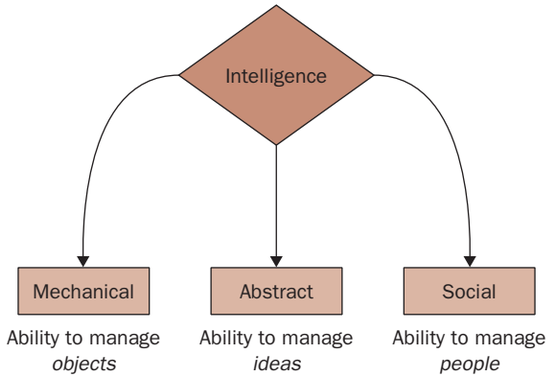

Figure 8.2 Thorndike's three intelligences, mechanical, abstract, and social.

Soon thereafter, Moss and Hunt (1927) provided a simplified definition of social intelligence in terms of "the ability to get along with others" (p. 108), which is helpful to provide a quick and straightforward explanation of the construct.

Another classic, more comprehensive description of the construct of social intelligence was Vernon's (1933) definition as the "ability to get along with people in general, social technique or ease in society, knowledge of social matters, susceptibility to stimuli from other members of a group, as well as insight into the temporary moods or underlying personality traits of strangers" (p. 44). This definition points towards a number of aspects or components of social intelligence, namely (1) getting along, (2) social technique, (3) social knowledge, (4) social sensitivity, (5) social insight, and (6) awareness of others' moods and personalities.

Last but not least, Gardner (1983) argued that "the capacity to know oneself and to know others is an inalienable part of the human condition" (p. 243). Although he uses the labels interpersonal (knowing others) and intrapersonal (knowing oneself), this definition has been largely applied to the notion of social intelligence.

Unlike most intelligence experts, Gardner rarely attempted to validate social intelligence or any of the other abilities he conceptualizes psychometrically. Rather, Gardner based his theory of **multiple intelligences** on case studies and medical evidence for the idea that the isolation of specific brain injuries may impair some but not other abilities. For example, the Phineas Gage case (see section 4.4) can be used to support the idea that the areas of the brain responsible for *cognitive* ("abstract" in Thorndike's words) operations are largely independent of those associated with *social* skills or personality traits. Likewise, Luria's (1972) case of Zazetsky, "the man with a shattered world,"

multiple intelligences Gardner's theory that there are many independent intelligences, including traditional as well as novel abilities such as bodily, social, spiritual, and musical intelligences

Table 8.1 Some well-known definitions of social intelligence

Reference	*Definition*
Thorndike (1920, p. 228)	"The ability to understand and manage men and women, boys and girls – to act wisely in human relations."
Moss & Hunt (1927, p. 108)	"The ability to get along with others."
Vernon (1933, p. 44)	"The ability to get along with people in general, social technique or ease in society, knowledge of social matters, susceptibility to stimuli from other members of a group, as well as insight into the temporary moods or underlying personality traits of strangers."
O'Sullivan et al. (1965, p. 5)	"[The] ability to judge people."
Gardner (1983, p. 243)	"The capacity to know oneself and to know others [which] is an inalienable part of the human condition."
Wong et al. (1995, p. 118)	"Social perception" or "a person's ability to understand or decode others' verbal and nonverbal behaviors." "Behavioral social intelligence" or "effectiveness in heterosexual interactions." "Social insight" or "the ability to comprehend observed behaviors in the social context in which they occur." "Social knowledge" or "knowing the rules of etiquette."

showed how Alzheimer's disease may progressively lead to the decay of cognitive but not social functions.

Finally, Wong, Day, Maxwell, and Meara's (1995) definition is representative of modern approaches to social intelligence as it conceptualizes the construct as multifaceted or multi-dimensional. Thus the authors distinguish between the components of social perception, behavioral social intelligence, social insight, and social knowledge. More recent theoretical conceptualizations of social intelligence have emphasized its role in *solving life tasks* and managing *personal projects* (Cantor & Kihlstrom, 1987).

Table 8.1 presents a sample of well-known definitions of social intelligence in chronological order.

8.4 THEORETICAL IMPORTANCE OF SOCIAL INTELLIGENCE

There are several reasons why it may be important to study individual differences in social intelligence.

- First, academic or cognitive abilities (such as those examined in chapters 5, 6, and 7) are not perfect predictors of performance and do not provide a *full picture* of an individual's capacity to succeed in life.
- Second, there is the related assumption that one may be clever in an academic sense but relatively incompetent in interpersonal relations (Sternberg, Conway, Ketron, & Bernstein, 1981; Thorndike, 1920). Although this idea is in conflict with Spearman's (1927) *g* theory of intelligence (which predicts positive intercorrelations amongst *all* abilities; see section 5.3.4), the idea of an independent social intelligence factor has occasionally been supported by psychometricians. For instance, Guilford's (1967) structure of intellect model (discussed in section 5.7) conceptualized 30 facets of social intelligence that were largely independent of academic abilities. Moreover, Jensen (1998), one of the most stalwart supporters of *g*, admitted that social competence "show[s] remarkably low correlations with psychometric abilities, both verbal and quantitative" (p. 576).
- Third, there is the notion that, in some situations, success is more dependent on our ability to relate to others or "manage people" than our ability to think abstractly or "manage ideas." Whereas such claims are yet to be supported by empirical evidence, the mere possibility of their being true would justify the study of individual differences in social intelligence.
- Last but not least, there is the idea that individual differences in social intelligence may help us understand psychological disorders, in particular where cognitive skills fail to distinguish between healthy and mentally ill individuals. Thus the DSM-IV's conceptualization of psychological impairment includes "communication, self-care, home living, social and interpersonal skills, use of community resources, self-direction, functional academic skills, work, leisure, health, and safety" (American Psychiatric Association, 1994, p. 46), which overlaps with some of the key elements of social intelligence. Studies on *autism*, an obscure neurodevelopmental disorder that consists of problems with social relatedness, communication, interest, and behavior, have also suggested that autistic and non-autistic individuals may merely differ in their ability to decode and understand *others'* intentions and behaviors. Whether this capacity is labeled "theory of mind" (Baron-Cohen, 1995; Premack & Woodruff, 1978) or "social intelligence," it is clear that interpersonal skills may be the key to understanding specific aspects of psychopathology.

Irrespective of scientific evidence, the above assumptions have met with wide approval and enthusiasm among laypeople. Indeed, this might add up to being a fifth argument to justify the study of social or hot abilities. For example, studies have shown that teachers, parents, and students consider the development of social abilities, such as having satisfying relationships, treating people respectfully, and communicating well, to be of critical importance (Ford, 1986).

8.5 EARLY PROBLEMS

If defining social intelligence has been relatively straightforward, *measuring* it has almost been impossible. In fact, many of the problems underlying the assessment and measurement of individual differences in social intelligence had already been anticipated by Thorndike (1920) when he observed that "convenient tests of social intelligence are hard to devise," and that social intelligence could be found "in the nursery, on the playground, in barracks and factories and salesroom [*sic*], but [it] eludes the formal standardized conditions of the testing laboratory" (p. 231). Thus the theoretical idea that some individuals are simply more likely to do "the right thing at the right time" (O'Sullivan et al., 1965, p. 5) may be difficult to demonstrate in practice, let alone under experimental laboratory conditions. Although early measures of social intelligence predicted social behavior (Chapin, 1942; Gough, 1968; Moss & Hunt, 1927; Moss, Hunt, Omwake, & Ronning, 1927), these were also positively correlated with academic performance or personality scales (Feshbach & Feshbach, 1987; Green, Forehand, Beck, & Vosk, 1980).

One of the earliest measures of social intelligence was the George Washington Social Intelligence Test (GWSIT; Hunt, 1928) and included the facets of *Judgment in Social Situations*, *Memory for Names and Faces*, *Observation of Human Behavior*, *Recognition of the Mental States Behind Words*, *Recognition of Mental States from Facial Expression*, *Social Information*, and *Sense of Humor*. Hunt (1928) reported significant correlations between these facets and job status, extracurricular activities, and supervisor's ratings at work. Subsequent studies, however, found that GWSIT scores were substantially correlated with Extraversion and verbal intelligence tests. Thus Thorndike and Stein (1937) concluded that GWSIT "is so heavily loaded with ability to work with words and ideas, that differences in social intelligence tend to be swamped by differences in abstract intelligence" (p. 282).

Despite the theoretical soundness and importance of the justifications for studying social intelligence (see section 8.4), more often than not differential psychologists have expressed skepticism about the notion of autonomous or independent individual differences in the ability to manage and get along with others. Criticisms fall under different categories but are almost always associated with the lack of *reliability* and *validity* of social intelligence measures. Thus there is a lack of empirical evidence in support of the construct of social intelligence.

The major problem with social intelligence measures is that they are often not distinguishable from traditional cognitive ability tests. Thus early measures of social intelligence were significantly and positively correlated with traditional intelligence measures (Gresvenor, 1927; Hoepener & O'Sullivan, 1968; Pintner & Upshall, 1928; Thorndike & Stein, 1937), the most evident overlap being found between measures of social and verbal intelligence (Thorndike & Stein, 1937; for a different view see Wong et al., 1995).

Typically, validation studies (e.g., Keating, 1978) attempted to show that social intelligence is (1) *different* from academic intelligence (IQ) and (2) a more *accurate* predictor of social outcomes than are IQ scores. Studies have sometimes supported one hypothesis or the other (generally the former), but rarely both. Thus Keating (1978) argued that paper-and-pencil tests are too similar (in form and content) to standard IQ tests, and concluded that "the putative domain of social intelligence lacks empirical coherency, at least as it is represented by the measures used here" (p. 221).

Wechsler (1955), the creator of the *Wechsler Adult Intelligence Scale* (WAIS) and *Wechsler Intelligence Scale for Children* (WISC), two of the most widely used IQ measures (see section 6.2), argued that social intelligence is merely a form of general intelligence that is used or applied to social situations. In line with this assertion, studies reported high intercorrelations between the Picture Arrangement subtest, which requires participants to put a sequence of randomly arranged pictures into chronological order to create a meaningful story, and other more cognitive sections of the Wechsler IQ test. Thus the ability to comprehend social situations, which is reflected in high scores on the Picture Arrangement subtest, seems strongly associated with the ability to score high on other sections of the test.

Low intercorrelations between different measures of social intelligence (Walker & Foley, 1973) indicate they are measuring different things. Accordingly, the "core" components of social competence may depend on a number of unrelated factors, which begs the question of *which* is the real social intelligence. (See Figure 8.3.)

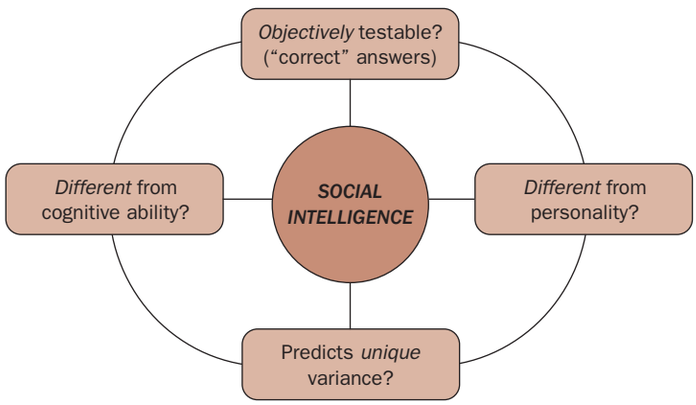

Figure 8.3 Four related problems with the notion of social intelligence.

Table 8.2 A comparison between sample items from traditional and social intelligence tests

Item	*Item example*
Verbal intelligence	Foot is to shoe as head is to (a) brain, (b) pain, (c) hat, (d) hut
Numerical intelligence	1000 × 50 = (a) 500,000, (b) 5,000, (c) 50,000, (d) 10,500
General knowledge	The capital of Brazil is (a) Buenos Aires, (b) Rio, (c) Brasilia, (d) São Paulo
Social intelligence (self-report)	I am generally very perceptive of other people's intentions YES/NO
Social intelligence (vignette)	You are driving back home after several drinks and are stopped by the police. Do you (a) apologize to the officer and confess to being drunk, (b) pretend you are sober, (c) tell the officer you've only had one drink, (d) try to run away?

A second major obstacle to the validation of social intelligence measures has been the difficulty of designing actual "tests" of social competence. Thus most scales have relied on self-report items, which resemble personality rather than intelligence measures. Unlike traditional cognitive ability tests, which rely on questions with one and only one correct answer, social intelligence measures tended to include self-descriptions (such as "I am very good at managing others") or *vignettes* ("If your boss does not like you it is best to (a) change jobs, (b) seduce him, (c) ignore him, or (d) none of the above") with uncertain or subjective answers. Indeed, this is a problem for most hot intelligences.

Table 8.2 presents sample items/questions for different types of intelligence. As seen, the first row provides an example for a verbal intelligence item, which requires participants to establish an analogy (association) on the basis of semantic relations (word meaning). Although the *only* correct solution to this problem is (c) hat, one may argue that, amongst the incorrect responses, some are more reasonable than others. For example, if you answered (d) hut, you were probably closer to the correct answer than if you answered (a) brain (and some may argue that (a) brain is more correct than (b) pain). It is, however, clear that the only objectively correct answer is (c). The second row features an example of a numerical intelligence item. Here it may even be more difficult to disagree with the fact that there is *only* one correct response, which is (c) 50,000. Then there is the third row, which contains an example of a general knowledge question, namely, what is the capital of Brazil. Again, there is *only* one correct answer, which is (c) Brasilia. Yet, one could again argue that choosing (b) Rio or (d) São Paulo would be "closer" to the correct answer than choosing (a) Buenos Aires (which is not even in Brazil). However, someone may argue that, like Brasilia, Buenos Aires is also a capital, whilst São Paulo and Rio are not. Yet all that would be irrelevant as the *only* objectively correct response is Brasilia.

Now, what happens when we attempt to assess or measure social intelligence? Rows four and five present two sample items for self-report and vignette, respectively. The self-report follows the same methodological approach as any personality inventory item. It requires participants to describe themselves by means of standardized, preselected statements that are supposedly related to essential aspects of the assessed latent construct – in this case social intelligence. Thus the same problems apply as with personality inventories, namely, people can lie, exaggerate, and fake responses or simply not know themselves well enough. Moreover, when Likert-type scales such as "1 2 3 4 5 6 7" are used, respondents may be more or less inclined to pick extreme answers.

The approach represented by the vignette item in the final row seems more innovative and appears to follow a similar logic to traditional ability tests (numerical and verbal intelligence or general knowledge). However, this similarity is only apparent as there is *no* objectively correct response to the item. Vignettes attempt to encapsulate real-life scenarios or everyday problems that may, theoretically, require skills associated with the latent construct one tries to measure (here social intelligence). In fact, it may not be too difficult to agree on the fact that individuals with a higher social intelligence should, in theory, be more likely to *choose the right behavior* or *make the correct decision* when it comes to solving real-life problems such as that described by the vignette in Table 8.2. The problem, however, is that any of the possible choices may be as successful as unsuccessful. Even if one thinks that some responses are "better" than others (in this case response (b) "pretend you are sober" seems like a good candidate), there is no *a priori* justification for any choice, and there are no ways of testing whether one response "would" have been better than others or not. In fact, we are not even sure that there are no *other* responses – not included in the vignette – that may work better than the ones listed, for instance (e) "bribe the officer," (f) "seduce the officer," or (g) "improvise."

Thus the difference between social and traditional intelligence items is that the former are based on *ill-defined* problems that have no clear-cut solutions and are very much context-dependent and difficult to solve in theory. Conversely, traditional intelligences (as seen throughout chapter 5) are based on well-defined problems that have objectively correct answers regardless of the context or situation.

Although the above examples may suggest it is easier to *assess* social intelligence through self-reports than to *measure* it through vignettes or IQ-type items, self-reports of social intelligence are bound to have a substantial overlap with established personality dimensions. As seen in section 2.10, the lexical approach to personality traits assumes that the Big Five factors are representative of all aspects of personality; thus any attempt to capture individual differences underlying behavior, thought, and emotionality will inevitably develop into a classification of a person's level of Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness. Whilst these traits are well established, social intelligence appears to "struggle" between

the realms of intelligence (which demands objective performance measures such as IQ tests) and personality (which is largely based on self- and other-reports). Accordingly, using self-reports to assess social intelligence may lead one to conceptualize it as a personality trait, whereas using objective performance tests to measure social intelligence (if that were possible) would lead one to conceptualize it as an ability.

8.6 RECENT APPROACHES: FROM MULTI-DIMENSIONALITY TO IMPLICIT THEORIES

After decades of disappointing results for those attempting to find empirical support for the notion of social intelligence, Ford and Tisak (1983) succeeded in identifying a psychometrically coherent social intelligence factor in a sample of 600 high school students. The authors attributed this success to their redefinition of the construct in terms of "behavioral effectiveness" and the use of *multiple* measures (self-, teacher-, and peer-ratings of social competence and behavioral observation). As they expected, academic and social intelligence loaded on different factors, and ratings of social competence predicted observed social competence better than did academic intelligence measures.

The pattern of results found by Ford and Tisak (1983) was later replicated by Marlowe (1986). The author used a *multitrait–multimethod* design (Campbell & Fiske, 1959) consisting of five dimensions of social intelligence:

1. interest and concern for other people;
2. social performance skills;
3. emphatic ability;
4. emotional expressiveness and sensitivity to others' emotional expressions;
5. social anxiety and lack of social self-efficacy and self-esteem.

As predicted, these dimensions were largely unrelated to measures of verbal and abstract intelligence.

Barnes and Sternberg (1989) found that social intelligence had two distinguishable aspects, a cognitive component, i.e., *decoding non-verbal cues*, and a behavioral aspect, i.e., *self-reported social competence*. These components were positively and significantly correlated with each other but *not* with IQ.

In general, research has been much more successful conceptualizing social intelligence in terms of multiple rather than single approaches. Thus Schneider, Ackerman, and Kanfer (1996) found seven dimensions of social competence: (1) *extraversion*, (2) *warmth*, (3) *social influence*, (4) *social insight*, (5) *social openness*, (6) *social appropriateness*, and (7) *social maladjustment*. The authors concluded that "it is time to lay to rest any residual notions that social competence is a monolithic entity, or that it is just general intelligence" (p. 479).

Likewise, Wong et al. (1995) identified three dimensions of social intelligence, namely social *perception*, social *knowledge*, and social *behavior* (see again Table 8.1). Although these components could be distinguished from academic or cognitive abilities, the sample consisted of high IQ individuals and was therefore unrepresentative of the wider population. In fact, the authors admitted that "academic and social intelligences may be discriminable only in young adults or in intellectually gifted populations" (p. 131).

Despite recent progress and some encouraging findings, differential psychologists remain largely unconvinced about the existence and usefulness of a social intelligence factor within the wider realm of human abilities. Furthermore, in the past ten years differential psychologists attempting to expand the traditional notion of IQ have predominantly focused on emotional rather than social abilities, though often assessing social competence and interpersonal skills as well.

8.7 EMOTIONAL INTELLIGENCE

The most famous exponent of hot intelligence is no doubt **emotional intelligence** (often referred to as EQ or EI). This construct owes much of its popularity to Daniel Goleman's (1995) bestselling book of the same name. Indeed, no other alternative conception of ability has even approached the impact of emotional intelligence in the field of differential psychology, and it has been argued that no other novel construct has had a comparable impact in so many areas of psychology alike (see Roberts, Zeidner, & Matthews, 2001, for a comprehensive review). But what is emotional intelligence?

emotional intelligence (EQ) the capacity of individuals to identify and manage their own emotional state and to accurately interpret and deal with others' emotions

Although definitions have varied, there is relative consensus (Sternberg & Kaufman, 1998) on the idea that emotional intelligence refers to individual differences in:

1. the ability to *perceive*, *appraise*, and *express* emotions;
2. the ability to *access* and/or *generate* emotions advantageous for thought;
3. the ability to *understand* emotion and emotional knowledge;
4. the ability to *regulate* emotions that enable emotional and intellectual growth.

The recurrent themes in these definitions (or components) are "ability" and "emotion," though some emphasize perception, regulation, or expression. Whilst emotional intelligence may be part of many people's vocabulary these days, the notion is conceptually and psychologically counterintuitive because it "bridges the gap" between the two worlds of thought and feeling, cognition and affect, reason and feeling.

Years before achieving international fame with Goleman's bestseller, the construct of emotional intelligence was introduced by Salovey and Mayer (1990). As with social intelligence, the two basic claims of EQ are that it is:

a) *independent* from traditional cognitive ability (IQ);
b) *more important* than IQ when it comes to determining performance in real-life settings.

Unlike social intelligence EQ emphasizes "emotions," though as will be seen the construct also conceptualizes individual differences in the ability to relate to others (interpersonal) skills. Moreover, identifying and managing one's emotions may simply be a different name for intrapersonal competence (which, as seen, had already been conceptualized by Thorndike and Gardner).

If true, however, EQ's claims would have substantial implications for intelligence research and theory, which is why they have prompted a significant wave of research in the past ten years. In fact, the number of articles on EQ seems to multiply by two or three every year, particularly in individual difference journals such as *Personality and Individual Differences* and *Intelligence*, though the topic has also spread to non-specialist publications. Inevitably, this means a review of the topic is bound to be inconclusive and soon outdated. Insofar as the quantity of EQ studies has already justified many textbooks and handbooks, in the following sections I shall only introduce the central claims, findings, and, in particular, problems underlying the scientific conceptualization of individual differences in emotional intelligence.

8.8 DEBATE AND CONTROVERSY SURROUNDING EMOTIONAL INTELLIGENCE

With the inherent dialectic of any debate, emotional intelligence has divided laypeople and academics into believers and non-believers. To be precise, this division has occurred not only between laypeople and scientists but also within the respective communities, though popular support has clearly exceeded academic endorsement. Arguably, the reasons underlying the popularity of EQ amongst laypeople are no different from the ones explaining its unpopularity in academic settings, namely:

a) The theory of emotional intelligence poses a challenge and theoretical threat to traditional or academic abilities such as IQ.
b) The measurement of individual differences in emotional intelligence has been largely unsuccessful, particularly when judged by traditional psychometric criteria.

To put it simply, most people dislike IQ tests and the idea that it is more important to be in touch with one's own and others' emotions to succeed in life is far more appealing than having to solve mathematical or logical problems such as those contained in traditional cognitive ability tests. On the other hand, informed differential psychologists are aware of the predictive power of traditional cognitive ability tests (reviewed in chapter 6): they know IQ tests are both reliable and valid and very useful for predicting numerous aspects of individuals' performance in school, at university, and in the workplace. Furthermore, even when it is appealing to conceptualize a form of ability that takes into account individual differences in emotion, it is crucial to provide empirical evidence for the existence and usefulness of such individual differences.

Whereas laypeople may simply believe in emotional intelligence or not, the scientific study of individual differences in this – or any other – ability is only possible if we are able to measure the construct. This not only requires the development of specific psychometric tests but also adequate reliability and validity. In fact, the claims of emotional intelligence, and pretty much any other novel ability one wishes to put forward, have to address a number of questions (see Figure 8.4), namely:

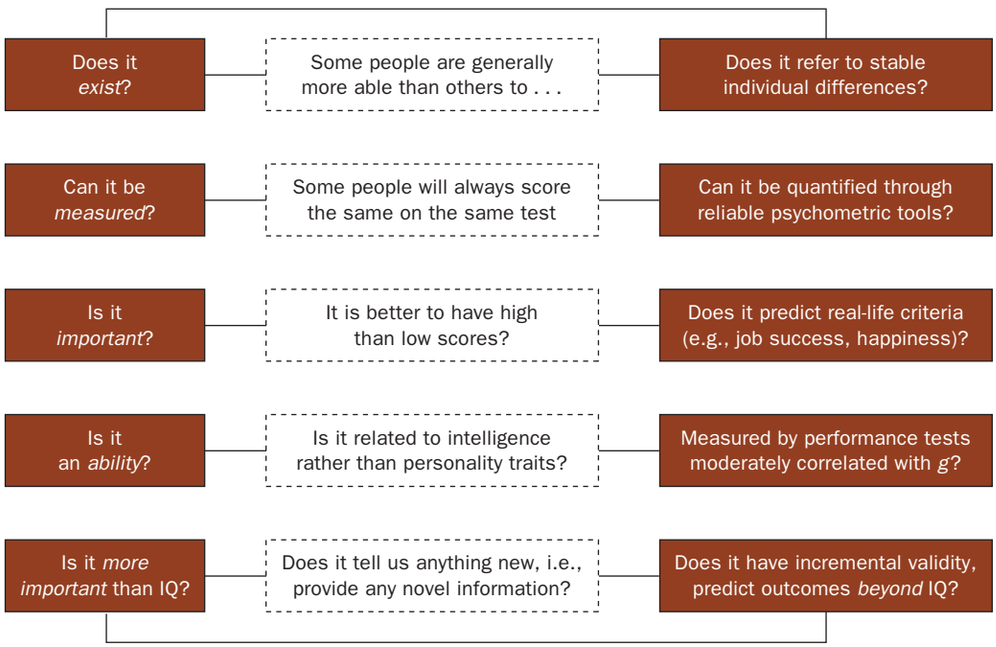

Figure 8.4 Testing hot intelligence theories: five main questions for research.

1. Does it *exist*?
2. Can it be *measured*?
3. Is it *important*?
4. Is it an *ability*?
5. Is it *more* important than IQ?

There are also specific methods and procedures for addressing these questions. Thus if emotional or any other form of hot intelligence is to achieve recognition within the realm of established human abilities, it will have to be submitted to the same application of psychometric principles and validation techniques that are applied to other tests.

8.9 ORIGINS AND MEASUREMENT PROBLEMS OF EQ

The distant foundations of EQ can be attributed to Thorndike's (1920) social intelligence (see sections 8.3 and 8.3.1), whereas more recently Gardner (1983) has identified *intrapersonal* and *interpersonal* intelligences as part of his "multiple intelligence" framework. In essence, the constructs of Thorndike and Gardner refer to people's ability to relate to others, an ability that traditional conceptions of intelligence seemed to have overlooked. When Salovey and Mayer (1990) first defined and conceptualized EQ, they attempted to account for similar interpersonal and intrapersonal skills. Specifically, interpersonal and intrapersonal skills would be facilitated by the ability to recognize and control one's own emotions.

As shown by the initial example of this chapter (Paolo the physics nerd), the assumptions of EQ are that (1) people who are extremely "bright" in the IQ sense of the word may often be unable to relate to others, (2) people who do poorly at school or university may often succeed in the "real world" if they have great interpersonal skills, and (3) success in the workplace may not be related to intellectual ability as measured by psychometric tests. The difference between social and emotional intelligences is that the latter emphasizes the role of emotion identification and management in determining everyday life success. Indeed, this is the only novelty introduced by EQ theories.

Like social intelligence, EQ can be broken down into various dimensions, all of which are considered relatively independent of IQ but nonetheless essential for performance and real-life success in general. Thus emotionally intelligent individuals are *adaptable*, *flexible*, and able to *perceive*, *regulate*, and *express* emotions in efficient ways. They are composed rather than impulsive and able to relate to others. They have high self-esteem and self-motivation; they are socially competent and able to manage stress. In addition, emotionally intelligent people tend to be *happier*, more *empathic*, and more *optimistic* than others.

The problem with most EQ models is that they ignore the fundamental psychometric distinction (Cronbach, 1949) between maximal and typical performance measures that applies to ability and personality constructs, respectively. As a consequence, emotional intelligence seems to represent a "no man's land" between personality and intelligence. Conceptually, it refers – or at least attempts to refer – to individual differences in *ability*. Methodologically and psychometrically, however, it assesses this ability in the same way we assess personality traits or dispositions.

Just as we do not measure cognitive ability by asking someone whether he/she is intelligent, we should not measure emotional intelligence by asking people whether they are able to identify and manage their emotions. In that sense, emotional intelligence as assessed by self-report inventories is, at best, a self-report measure of individuals' ability. This limitation, however, should not stop us from (1) trying to develop actual tests of emotional intelligence and (2) examining the validity or usefulness of self-report measures of emotional intelligence. It is this latter approach that inspired Petrides and Furnham (2001) to redefine the concept in terms of *trait* emotional intelligence or emotional self-efficacy, a construct they assessed through a self-report questionnaire (TEIQ).

8.10 TRAIT EMOTIONAL INTELLIGENCE: EMOTIONAL SELF-EFFICACY

Unlike other models of emotional intelligence, Petrides and Furnham's (2001) theory of **trait emotional intelligence** conceptualizes the construct as a personality trait. Thus they assess it through self-report inventories rather than performance tests and interpret it as a "self-perceived" construct. Whereas this approach may at first seem less appealing than the ambitious enterprise of developing an actual EQ test (of maximal performance and objectively scored), it represents a more realistic way of dealing with the concept and assessment of individual differences in emotional intelligence.

trait emotional intelligence the theory of emotional intelligence as a personality trait, assessed by self-report inventories rather than performance tests and considered as a self-perceived construct rather than an ability

Crucially, then, trait emotional intelligence and emotional intelligence are two different constructs, just as self-perceived and "actual" or psychometric intelligence are two different variables (see Figure 8.5). Measures of tested (psychometric) and self-assessed intelligence correlate in the region of $r = .30$, meaning an overlap of less than 10 percent (see Chamorro-Premuzic & Furnham, 2005, for a review). Likewise, studies reported low correlations between objective measures and self-reported measures of emotional intelligence (O'Connor & Little, 2003), and even this comparison may be flawed because there are no reliable objective measures of emotional intelligence since the scoring criteria differ substantially from those for cognitive ability tests. In fact, when there are objective measures of emotional individual differences, such as electrodermal activity, these are only meaningful if contrasted with self-report criteria (Watson, 2000).

Another advantage of trait emotional intelligence is that it is consistent with the *subjective* nature of emotional experience and does not attempt to challenge the psychometric importance of established cognitive ability measures. One cannot overestimate

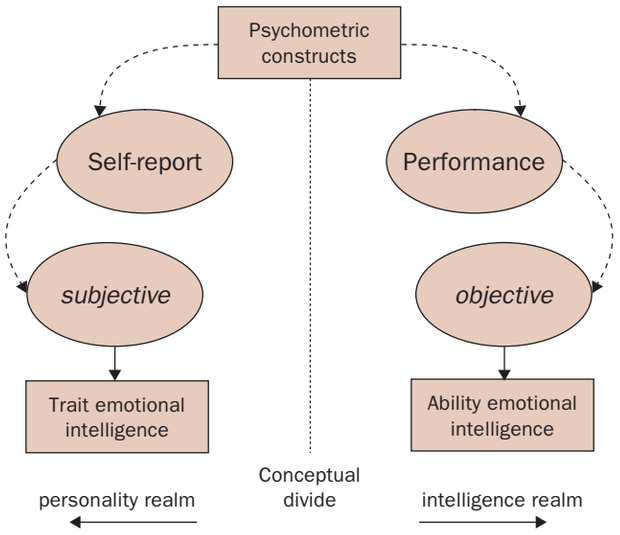

Figure 8.5 Petrides and Furnham's (2001) distinction between ability and trait emotional intelligence.

the importance of this advantage, and the fact that it is only when we have managed to measure or assess individual differences in emotional intelligence that we can start examining such differences with regard to other constructs or behavioral outcomes, which means validating the construct of emotional intelligence (just as we do with personality and cognitive ability, as shown in chapters 3 and 6, respectively).

Thus, "ability" approaches to emotional intelligence may be as appealing as they are implausible and seem to have rediscovered the psychometric limitations that have undermined the development of social intelligence tests for so many decades. Roberts, Zeidner, and Matthews (2001) have summarized the limitations concerning attempts to conceptualize emotional intelligence as an ability. As they concluded, the validity of performance measures of EQ seems elusive.

On the other hand, measures of self-report of trait emotional intelligence are sufficiently reliable to enable the exploration of the correlates and outcomes of this construct. Indeed, most studies looking at EQ in the context of clinical, educational, and occupational domains have used self-reports.

Arguably, the greatest progress has been achieved in academic settings, with increasing evidence for the idea that trait emotional intelligence is related to a number of positive behaviors at school. Specifically, Reiff, Hatzes, Bramel, and Gibbon (2001) found that college students with learning disabilities had significantly lower trait emotional intelligence. Petrides, Frederickson, and Furnham (2004), on the other hand, reported an interaction between IQ and trait emotional intelligence such that, among low IQ pupils, those with high trait emotional intelligence scores performed considerably better at school. Furthermore, their study showed that low trait emotional intelligence pupils had more unauthorized absences and exhibited more antisocial behavior.

Occupational research on trait emotional intelligence has been less robust. In fact, experts note that the amount of empirical data available is inversely proportional to the barrage of unsubstantiated claims. In one of the rare sound studies, however, Wong and Law (2002) provided evidence that trait emotional intelligence is related to job performance and job satisfaction. Furthermore, Jordan, Ashkanasy, Härtel, and Hooper (2002) reported that work teams comprising high trait emotional intelligence employees generally perform better than those comprising low trait emotional intelligence employees.

Petrides and colleagues also identified several components or facets of trait emotional intelligence (see Table 8.3). This means that trait emotional intelligence represents a constellation of different dispositions. However, research has yet to examine the

Table 8.3 Components of trait emotional intelligence

Facets	*High scorers perceive themselves as . . .*
Adaptability	. . . flexible and willing to adapt to new conditions.
Assertiveness	. . . forthright, frank, and willing to stand up for their rights.
Emotion perception (self and others)	. . . clear about their own and other people's feelings.
Emotion expression	. . . capable of communicating their feelings to others.
Emotion management (others)	. . . capable of influencing other people's feelings.
Emotion regulation	. . . capable of controlling their emotions.
Impulsiveness (low)	. . . reflective and less likely to give in to their urges.
Relationship skills	. . . capable of having fulfilling personal relationships.
Self-esteem	. . . successful and self-confident.
Self-motivation	. . . driven and unlikely to give up in the face of adversity.
Social competence	. . . accomplished networkers with excellent 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.

validity of each of these components as predictors of educational, occupational, and clinical outcomes.

8.11 PRACTICAL INTELLIGENCE

Another salient exponent of hot intelligences, namely **practical intelligence**, can be found in Sternberg's (1985) triarchic theory of intelligence, which also includes *analytical/academic* and *creative* intelligences (see also Sternberg & O'Hara, 2000). Practical intelligence refers to one's ability to find effective solutions, solve problems, and apply ideas to real-life contexts. Thus it refers to tacit, practical, and everyday knowledge. Sternberg (1985) argued that practical intelligence is independent from academic or traditional cognitive ability.

practical intelligence a component of Sternberg's theory of intelligence (also comprising analytical/academic and creative intelligence), referring to the ability to solve problems and apply ideas to real-life contexts independent of academic or traditional cognitive ability

Sternberg and Wagner (1993) provided a detailed comparative distinction between academic/analytical and practical tasks, which would refer to the need to conceptualize an independent, more applied type of ability different from that defined in terms of traditional cognitive ability. As they argue, academic problems tend to be well defined, possess a single correct answer, and are of little intrinsic interest, whereas practical problems tend to be ill defined, have multiple correct responses, and require personal motivation to be solved.

Most evidence for practical intelligence has derived from lay beliefs about intelligence rather than objective psychometric measures. To some extent these theories are important on their own, as "subjective" beliefs about one's ability and performance need not be accurate to have a significant *impact* on one's intellectual performance. Thus differential psychologists have tended to focus on the academic aspects of intellectual ability, such as the prediction of school and university performance by psychometric tests requiring participants to solve mental problems, whereas laypeople seem to solely highlight the importance of practical abilities.

In one of the first sets of studies to examine implicit theories of intelligence, Sternberg, Conway, Ketron, and Bernstein (1981) (see also Sternberg, 1985) found that lay beliefs about intelligence could be classified according to three major clusters, namely *verbal ability* (which coincides with one of the abilities identified by most IQ researchers), *practical problem-solving*, and *social competence*. This pattern of results was also replicated when teachers were asked to identify and evaluate the most important aspects of their students' abilities, in both primary and high school. There are also marked *cultural* differences in conceptions of intelligence, with Eastern cultures emphasizing spiritual, practical, and interpersonal skills more than their Western counterparts and those aspects of intelligence related to academic performance (typically measured through IQ tests). This probably illustrates the impact of Eastern philosophies and religions such as Hinduism and Buddhism, which value not only individual capacity, such as fluid intelligence, but also level of determination and effort as well as subjective beliefs such as confidence and moral strength.

Although these different aspects of ability were well mapped (factor analyzed) onto lay conceptions of intelligence (Sternberg et al., 1981), there is little empirical evidence for the existence of testable individual differences in practical intelligence, particularly in terms of psychometric instruments. Furthermore, claims that individual differences in practical problem-solving can be better explained in terms of practical rather than academic or general intelligence have yet to be supported empirically (see Gottfredson, 2002, for a close examination of this topic).

8.12 SUMMARY AND CONCLUSIONS

This chapter looked at alternative theories of intelligence, such as social, multiple, emotional, and practical intelligence, which are often referred to as hot intelligences. As seen:

1. Hot intelligences attempt to explain individual differences in real-life achievement beyond IQ. They emphasize interpersonal, emotional, and practical aspects of individual differences in order to broaden the traditional concept of intellectual ability, postulating that there is more to human performance than psychometric *g*. Whilst theoretically appealing, there is more enthusiasm than evidence for the existence and usefulness of hot intelligences within the realm of human abilities.
2. Psychometric tests of hot intelligences tend to lack sufficient reliability and validity. This is largely due to the difficulties associated with designing objective tests (including items with correct responses) for emotional, social, and practical abilities, and to ensure that such tests are modestly correlated with general intelligence measures.
3. Although the use of self-report inventories to assess hot intelligences has proven less problematic and generally achieves higher reliability, self-reports are often substantially correlated with established personality traits, suggesting hot intelligences are neither novel nor have the characteristics of abilities, but are simply new names for known personality dimensions.
4. Considering the vast amount of psychometric evidence in support of the *g* factor of cognitive ability, and the fact that it accounts for a substantial amount of variance across a wide range of real-life outcomes (as shown in chapter 6), it has almost been de rigueur for IQ critics to turn a blind eye to the IQ literature. Hence, efforts to validate hot intelligences have often seemed to be prompted by commercial rather than academic interests.

It is, however, clear that our emotions play an important part in determining behavior. Affect is a powerful force that can often moderate the influence of cognitive abilities and impair performance. Theories of mood and motivation will be examined in chapter 9.

KEY READINGS

Chamorro-Premuzic, T., & Furnham, A. (2005). *Personality and intellectual competence*. Mahwah, NJ: Lawrence Erlbaum.

Gardner, H. (1983). *Frames of mind: The theory of multiple intelligences*. New York: Basic Books.

Goleman, D. (1995). *Emotional intelligence: Why it can matter more than IQ*. London: Bloomsbury.

Gottfredson, L. S. (2003). Dissecting practical intelligence theory: Its claims and evidence. *Intelligence*, *31*, 343–397.

Matthews, G., Zeidner, M., & Roberts, R. D. (2002). *Emotional intelligence: Science and myth*. Cambridge, MA: MIT Press.

Petrides, K. V. & Furnham, A. (2001). Trait emotional intelligence: Psychometric investigation with reference to established trait taxonomies. *European Journal of Personality*, *15*, 425–448.

Sternberg, R. J., & Kaufman, J. C. (1998). Human abilities. *Annual Review of Psychology*, *49*, 479–502.