

Assessing Emotional Intelligence Competencies

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The assessment of emotional intelligence competencies began as a search for early identification of talent (McClelland, Baldwin, Bronfenbrenner, & Strodbeck, 1958). These were framed as abilities and thought to be part of the concept of personality (Baldwin, in McClelland et. al., 1958). In the early 1970's, this line of research focused on competencies (McClelland, 1973). By the late 1970's, as the research was quickly adapted as creating useful insight within practitioner communities, the "competency" label spread. Competencies, in this line of research, were defined as "underlying characteristics of the person that led to or caused effective or superior performance" (Boyatzis, 1982). In this chapter, the development of a measure of *emotional intelligence* competencies, called the Emotional Competence Inventory (ECI) and its later revisions, the ECI-2 and ECI-U (ECI University version), are described and documented with an emphasis on the ECI and ECI-2.

Emotional Intelligence as a Set of Competencies

Emotional intelligence (i.e., EI) is a convenient phrase with which to focus attention on the underlying emotional components of human talent. While the earliest psychologist to explore the related concept of "social intelligence" (Thorndike in the 20's and 30's, cf. Goleman, 1995) offered the idea as a single concept, more recent psychologists have appreciated its complexity and described it in terms of multiple capabilities (Bar-On, 1992, 1997; Goleman, 1998; Saarni, 1988). Gardner (1983) conceptualized this arena as constituting intrapersonal and interpersonal intelligence- two of the seven intelligences. Salovey and Mayer (1990) first used the expression "emotional intelligence" and described it in terms of four domains: knowing and handling one's own

and others' emotions. Other conceptualizations have used labels such as "practical intelligence" and "successful intelligence" (Sternberg, 1996), which often blend the capabilities described by other psychologists with cognitive abilities and anchor the concepts around the consequence of the person's behavior, notably success or effectiveness.

While other interpretations of an "intelligence" are offered in the literature, we offer our model of the criteria for labeling something as an intelligence versus just some constituent ability or personality component. We believe that to be classified as an intelligence, the concept should be:

- 1) Related to neural-endocrine functioning;
- 2) Differentiated as to the type of neural circuitry and endocrine system involved;
- 3) Related to life and job outcomes;
- 4) Sufficiently different from other personality constructs that the concept adds value to understanding the human personality and behavior.

Meanwhile, the measures of the concept, as a psychological construct, should satisfy the basic criteria for a sound measure, that is show convergent and discriminant validity (Campbell & Fiske, 1968).

This set of criteria is different than the Mayer, Caruso, and Salovey (1999) three standards for an intelligence. In their view, relevant criteria regarding components of a capacity that is indeed a specific kind of intelligence are: (1) it should reflect a "mental performance rather than preferred ways of behaving" (p. 269-270); (2) tests of it should show positive correlation with other forms of intelligence; and (3) the measures should increase with experience and age.

As a theory of emotional intelligence, we believe that there should be a link to neural (or possibly neuro-endocrine) functioning. If the theory claims that there are multiple components of this emotional intelligence, then these different components should have different neuro-endocrine pathways. Our first and second criteria are more specific than the Mayer et al. (1999) first and second criteria. We claim that a construct should actually be able to predict neural and endocrine (i.e., hormonal) patterns within the individual. Regarding our rationale for including criterion #3 (i.e., job and life outcomes), the American Psychological Association's Task Force on Intelligence (APA Public Affairs Office, 1997) reported that predicting real life outcomes is an important part of the standard against which we should judge an intelligence. It then went on to add that there should be a consensus within a field as to the definition. Although the latter is lacking in the field regarding emotional intelligence at this point in time, the link between EI and real life outcomes is in fact testable. While Mayer, Caruso, and Salovey (1999) seem to discard patterns of behavior as irrelevant to their concept of EI, we contend that EI should predict behavioral patterns in life and work, as well as the consequences of these patterns in the form of life and work outcomes. This seems a more relevant test of the concept than merely showing a link to experience and age (i.e., as Mayer, Caruso, & Salovey's (1999) third criterion).

A related stream of research has emerged focusing on explaining and predicting effectiveness in various occupations, often with a primary emphasis on managers and leaders (McClelland et al., 1958; McClelland, 1973; Bray, Campbell, and Grant, 1974; Boyatzis, 1982; Luthans et al., 1988; Kotter, 1982; Thornton & Byham, 1982; Spencer and Spencer, 1993). In this "competency" approach, specific capabilities were identified

and validated against effectiveness measures, or, often, inductively discovered and then articulated as competencies.

An integrated concept of emotional intelligence offers more than a convenient framework for describing human dispositions-- it offers a theoretical structure for the organization of personality and linking it to a theory of action and job performance. Goleman (1998) defined an “emotional competence” as a “learned capability based on emotional intelligence that results in outstanding performance at work.” In other words, if a competency is an “underlying characteristic of the person that leads to or causes effective or superior performance” (Boyatzis, 1982), then an *emotional intelligence competency is an ability to recognize, understand, and use emotional information about oneself or others that leads to or causes effective or superior performance.*

A simpler definition of emotional intelligence may be that *emotional intelligence is the intelligent use of one’s emotions.* This definition can be elaborated to be, “How people handle themselves and their relationships” (Goleman et. al., 2002). The definition can be further expanded to say that emotional intelligence is a set of competencies, or abilities, in how a person: (a) is aware of himself/herself; (b) manages him/herself; (c) is aware of others; and (d) manages his/her relationships with others.

If defined as a single construct, the tendency to believe that more effective people have the vital ingredients for success invites the attribution of a halo effect. For example, person A is effective, therefore she has all of the right stuff, such as brains, savvy, and style. Like the issue of finding the best “focal point” with which to look at something, the dilemma of finding the best level of detail in defining constructs with which to build a personality theory may ultimately be an issue of which focal point is chosen. With regard

to emotional intelligence, we believe the most helpful focal point allows for the description and study of a variety specific competencies, or abilities, that can be empirically, causally related to effectiveness *and* describe the *clusters* within which these competencies are organized. But we must start with the competencies. The articulation of one overall emotional intelligence might be deceptive and suggest a close association with cognitive capability (i.e., traditionally defined “intelligence” or what psychologists often call “g” referring to general cognitive ability) (Davies & Stankov, 1998; Ackerman & Heggestad, 1997). The latter would not only be confusing, but would additionally raise the question as to what one is calling emotional intelligence and whether it is nothing more than an element of previously defined intelligence or cognitive ability.

Competencies and a Theory of Performance

A competency is defined as a capability or ability. It is a set of related but different sets of behavior organized around an underlying construct, which we call the “intent.” The behaviors are alternate manifestations of the intent, as appropriate in various situations or times. For example, listening to someone and asking him or her questions are several behaviors. A person can demonstrate these behaviors for multiple reasons or to various intended ends. A person can ask questions and listen to someone to ingratiate him or herself or to appear interested, thereby gaining standing in the other person’s view. Or a person can ask questions and listen to someone because he or she is interested in understanding this other person, his or her priorities, or thoughts in a situation. The latter we would call a demonstration of *empathy*. The underlying intent is to understand the person. Meanwhile, the former underlying reason for the questions is to

gain standing or impact in the person's view, elements of what we may call demonstration of *influence*. Similarly, the underlying intent of a more subtle competency like Emotional Self-Awareness is self-insight and self-understanding.

This construction of competencies as requiring both action (i.e., a set of alternate behaviors) and intent called for measurement methods that allowed for assessment of both the presence of the behavior and inference of the intent. A modification of the critical incident interview (Flanagan, 1954) was adapted using the inquiry sequence from the Thematic Apperception Test and the focus on specific events in one's life from the biodata method (Dailey, 1975). The method, called the Behavioral Event Interview (BEI), is a semi-structured interview in which the respondent is asked to recall recent, specific events in which he or she felt effective (Boyatzis, 1982; Spencer & Spencer, 1993). Once the person recalls an event, he or she is guided through telling the story of the event with a basic set of four questions: (1) What led up to the situation? (2) Who said or did what to whom? (3) What did you say or do next? What were you thinking and feeling? and (4) What was the outcome or result of the event? Autobiographical research (Rubin, 1986) has shown the accuracy of recall of events is increased dramatically when the events are: (1) recent; (2) have a high valence or saliency to the person; and (3) the recall involves specific actions. All of these conditions were incorporated into the BEI.

The responses are audiotaped and transcribed and interpreted using a thematic analysis process (Boyatzis, 1998). Thematic analysis is a process for "coding" raw qualitative information, whether in written, video or audio form. Through the use of a "codebook" articulating specific themes and how to identify them, the researcher is able to convert open-ended responses or unstructured responses and behavior into a set of

quantified variables for analysis. The method has been used in numerous studies showing predictive validity of the competencies demonstrated by the person during the events as coded from the interviews (Boyatzis, 1982; Spencer & Spencer, 1993; McClelland, 1998).

The anchor for understanding which behaviors and which intent are relevant in a situation emerges from predicting effectiveness. The construction of the specific competency is a matter of relating different behaviors that are considered alternate manifestations of the same underlying construct. But they are organized primarily or more accurately initially, by the similarity of the consequence of the use of these behaviors in social or work settings. For example, the competency called Empathy can be observed by watching someone listen to others or asking questions about his or her feelings and thoughts. If one is demonstrating Empathy, the person would be undertaking these acts with the intent of trying to understand another person. On the other hand, someone could show these acts while cross-examining a witness in a criminal trial where the intent is to catch them in a lie—which is likely also to be the demonstration of another competency, Influence.

A theory of performance is the basis for the concept of competency. The theory used in this approach is a basic contingency theory, as shown in Figure 1. Maximum performance is believed to occur when the person's capability or talent is consistent with the needs of the job demands and the organizational environment (Boyatzis, 1982). The person's talent is described by his or her: values, vision, and personal philosophy; knowledge; competencies; life and career stage; interests; and style. Job demands can be described by the role responsibilities and tasks needed to be performed. Aspects of the organizational environment that are predicted to have important impact on the

demonstration of competencies and/or the design of the jobs and roles include: culture and climate; structure and systems; maturity of the industry and strategic positioning within it; and aspects of the economic, political, social, environmental, and religious milieu surrounding the organization.

Competencies and an Integrated Theory of Personality

The specification of a competency comes from the personality theory on which this approach is based. McClelland (1951) originally described a theory of personality as comprised of the relationships among a person's unconscious motives, self-schema, and observed behavioral patterns. Boyatzis (1982) offered this scheme as an integrated system diagram that showed concentric circles, with the person's *unconscious motives* and *trait dispositions* at the center. These affected, and were affected by, the next expanding circle of the person's *values* and *self-image*. The surrounding circle was labeled the *skill* level. The circle surrounding it included *observed, specific behaviors*.

The synthesis of Goleman (1995) in developing the concept of emotional intelligence provided yet another layer to this integrated system view of personality. In particular, Goleman's synthesis introduced the *physiological* level to this model by relating findings from neuroscience, biology, and medical studies to psychological states and resulting behavior. The result is a personality theory, as shown in Figure 2, that incorporates and predicts the relationship among a person's: (a) neural circuits and endocrine (i.e., hormonal) processes; (b) unconscious dispositions called motives and traits; (c) values and operating philosophy; (d) observed separate competencies; and (e) competency clusters.

insert Figure 2 about here

This conceptualization of personality requires a more holistic perspective than is often taken. When integrating the physiological level with the psychological and behavioral levels, a more comprehensive view of the human emerges. The evidence of the causal sequence predicted in this personality theory is emerging but is slow due to the disparate nature of the different fields studying parts of the model. For example, arousal of a person's power motive both causes *and is affected by* arousal of his or her sympathetic nervous system (i.e., SNS) (McClelland, 1985; Boyatzis, Smith, and Tresser, in press). When a person's power motive is aroused, he or she is more likely to show behavior associated with a group of competencies called Influence, Inspirational Leadership, or Change Catalyst (Winter, 1973; McClelland, 1975). These competencies are shown more frequently when a person is operating from a Humanistic versus a Pragmatic Operating Philosophy (Boyatzis, Murphy, & Wheeler, 2000). When the power motive is aroused along with a person's self-control at the trait level (McClelland & Boyatzis, 1982; McClelland, 1975; McClelland, 1985; Jacobs & McClelland, 1994; McClelland, Floor, Davidson, & Saron, 1980; McClelland & Jemmott, 1980; McClelland, Locke, Williams, & Hurst, 1982; McClelland, Ross, & Patel, 1985), the stressful effects of inhibiting one's urges adds to the arousal of the SNS. The result is elevated blood pressure and decreased levels of both immunoglobulin A and natural killer cells (i.e., basic indicators of the immune system). Relatively recent research has shown

that arousal of the SNS is associated with neural circuits passing predominantly through the Right Prefrontal Cortex (Davidson, 2000).

In contrast, engaging a person's behavior associated with the Empathy and other social awareness competencies is also related to an underlying Humanistic Operating Philosophy (in contrast to an Intellectual Operating Philosophy). A Pragmatic Operating Philosophy is an approach to life based on looking for utility or comparison of costs and benefits (Boyatzis et al., 2000). In contrast, with the Intellectual Operating Philosophy a person determines the value through the degree to which the activity, person, or idea helps to conceptualize and understand the phenomenon, work, or life. A third basic approach, called the Humanistic Operating Philosophy approaches value by determining the impact of things on those people with whom the person has a close relationship.

Demonstrating this pattern of behavior is associated with arousal of the affiliation motive, which in turn is associated with arousal of the person's parasympathetic nervous system (i.e., PSNS) (Schultheiss, 1999a & b; Boyatzis, Smith, & Tresser, in press). The arousal of the PSNS results in decreased levels of blood pressure and healthy functioning of the immune system (McClelland & Kirshnit, 1982).

Further, it is now the contention of leading researchers in affective neuroscience and genetic expression that experience overtakes genetic dispositions in determining the biological basis of behavior once in adulthood (Williams, 2003; Davidson, 2003). This would suggest that a person's experience, and his or her arousal effect, rewire neural circuits and tendencies to invoke certain neuro-endocrine pathways. Offering support for the observation, or prediction is the proposed personality theory, that use of one's

competencies (i.e., behavior in specific settings in life) becomes an arousal that over time creates different dispositions, even at the biological level.

The Emotional Intelligence Competencies

Building upon and integrating a great deal of competency research, Goleman, Boyatzis, and McKee (2002) presented a model of emotional intelligence with eighteen competencies arrayed in four clusters (Boyatzis, 1982; Spencer & Spencer, 1993; Rosier, 1994-1997; Jacobs, 1997; Goleman, 1998). They are, as shown in Table 1:

a) The Self-awareness Cluster included Emotional Self-Awareness, Accurate Self-assessment, and Self-confidence;

b) The Self-Management Cluster included Emotional Self-control, Achievement, Initiative, Transparency, Adaptability, and Optimism;

c) The Social Awareness Cluster included Empathy, Service Orientation, and Organizational Awareness;

e) The Relationship Management Cluster included Inspirational Leadership, Influence, Conflict Management, Change Catalyst, Developing Others, Teamwork and Collaboration.

insert Table 1 about here

In contrast, the model of EI offered through the MSCEIT (Mayer et. al., 2003) has a total score of a person's EI, two area scores of Experiential and Strategic, and branches within each area of: (a) Perceiving (with sub-tests of Faces and Pictures) and Facilitating

(with sub-tests of Facilitation and Sensations); and (b) Understanding (with subtests of Changes and Blends) and Managing (with subtests of Emotional Management and Emotional relationships). Although data from studies comparing these tests are underway, conceptually we would expect small correlations between these two different measures. The MSCEIT assesses a person's direct handling of emotions, while the ECI which is intended to assess the EI competencies described earlier assesses how the person expresses his or her handling of emotions in life and work settings. Nonetheless, there may be correlation between: (1) Self-awareness competencies from the ECI and the Experiential area, in particular the Facilitating branch from the MSCEIT; (2) Social Awareness competencies from the ECI and the Understanding branch of the Strategic area; and (3) Relationship Management competencies from the ECI and the Managing branch from the Strategic area of the MSCEIT.

Similarly, although the data bearing on this issue are presently being collecting, currently there is no documented relationship among the ECI competencies and the subscales of the Bar-On's EQ-I (Bar-On, 1992, 1997). Although we believe there will be little correlation between the self-report version of the EQ-i and the Others' views of a person's competencies through the ECI, there may be substantial correlation among the EQ-i subscales and ECI when 360 measures of both are compared. In particular, the following positive correlations are predicted:

<u>ECI Competency</u>	<u>EQ-I Subscale</u>
Accurate Self-Assessment	Self-Regard
Emotional Self-Awareness	Emotional Self-Awareness
Influence	Assertiveness

Empathy	Empathy
Relationship Management Cluster	Interpersonal Relationship
Adaptability	Flexibility
Emotional Self-Control	Impulse Control
Optimism	Optimism

There are seven subscales in the EQ-i that are not expected to associate with ECI competencies. Similarly, there are ten ECI competencies that are not expected to associate with EQ-i subscales. Therefore, we believe the ECI generally measures different aspects of EI than the MSCEIT or the EQ-i.

The Emotional Competence Inventory Version 2 (ECI-2)

Although numerous methods were available to assess these competencies through behavioral event interviews (Boyatzis, 1982; Spencer & Spencer, 1993), simulations and assessment centers (Thornton & Byham, 1982), a questionnaire form was desirable for: (1) ease of use (i.e., amenable to a 360⁰ applications in which people who work or live with a person are asked to assess the frequency of their use of various behaviors. Often those asked include their Boss, Peers and Subordinates at work, but increasingly spouses, friends, and clients are also asked for their input); (2) comprehensiveness (i.e., to ensure that all of the competencies in this theory could be measured within one instrument); and (3) validity (i.e., capturing others' views of a person's behavior easily). A questionnaire used in the 360⁰ format was clearly the most consistent with the definition of competency and the method used to create the competency concepts. Starting with a competency assessment questionnaire developed by Boyatzis in 1991 (Boyatzis, 1994; Boyatzis,

Cowen, & Kolb, 1995; Boyatzis et. al., 1996; Boyatzis, Stubbs, & Taylor, 2002) called the Self-Assessment Questionnaire, Boyatzis and Goleman rewrote items for the non-cognitive competencies and created additional items for the competencies not addressed in Boyatzis' model. The original questionnaire had been validated against performance for a variety of job families in dozens of industrial organizations in Italy and one large financial institution in Brazil (Boyatzis & Berlinger, 1992; Valenca, 1996; Vitale, 1998).

In 1998, data were collected with this early form of the ECI from almost 600 people included in samples of managers and salespeople from several industrial corporations, and graduate students in various programs. Based on analysis of these data, the scales of the ECI were revised in late 1998. In early 1999, the ECI was rewritten again with Boyatzis, Goleman, and Ruth Jacobs, Ron Garonzik, Patricia Marshall, and Signe Spencer (i.e., several of the research staff of McClelland Center for Research and Innovation, formerly known as McBer and Company, a unit of The Hay Group) using their database of competency assessment information from hundreds of companies worldwide. At this time, the items were arranged and constructed to reflect the developmental scaling characteristic of the current Hay instruments (see Spencer & Spencer (1993) and McClelland (1998) for a description of the developmental scaling and some of its implications).

Data from a preliminary sample were collected with the revised ECI from about 4,000 managers and professionals and the many people assessing them in the 360⁰ format from a number of industrial and professional service companies. These data and subsequent validation studies were used to revise the instrument in Summer, 2001 to formulate the ECI-2 (ECI version 2) by Boyatzis, Fabio Sala (Senior Researcher at the

McClelland Center for Research and Innovation), and Goleman. There were four reasons driving the revision. First, the ECI-1 was reliable, but the competency scales showed inter-correlations that were too high to reflect a multi-dimensional model, as we predicted. This resulted in a loss of factor differentiation and threatened the concept of EI having various components rather than being one construct or score. Second, there was a desire to reduce the number of items. Feedback from test takers included the point that the test, at 110 items, was too long and the associated fatigue caused some people to not complete it. Third, we wanted to increase the validity, which was also threatened if the scales were too highly inter-correlated. Fourth, in making changes, we wanted to ensure that we maintained the high scale reliability. At the same time, a related version was developed for use with college and university undergraduate and graduate students called the ECI-U (ECI-University version). This chapter will focus on the ECI and ECI-2.

The resulting ECI-2 has four items per scale, resulting a total of 72 items thought to comprise the eighteen competency scales. Some of the items were reverse scored to minimize the effect of response set bias. The items selected represented the diversity of behavior expected to be shown when a person was using the competency. In this sense, the items reflect alternate manifestations, not variations on the same behavior or expression of the competency. For sake of comparison to earlier publications, we should point out that the names of a few scales were changed: Leadership became Inspirational Leadership; Trustworthiness became Transparency; Achievement Orientation became Achievement; and Self-Control became Emotional Self-Control. For ease of use and brevity, Conscientiousness and Communication were dropped. It has been clear from users of the ECI and recent research that these competencies did not differentiate

outstanding performance for many managers or professional samples. Also, due to high inter-correlation and conceptual closeness, Building Bonds was integrated into Teamwork. The Optimism competency scale was added back into the ECI. It had been dropped from the original when creating the current ECI.

Another modification was to change the response set from a 1–7 scale calling for the degree to which one felt the item was characteristic of the person being assessed, plus a “don’t know” response. The new response set asks the respondent about his or her observation of the frequency with which the person being assessed demonstrates the behavior in the item. The 1-5 scale has the following five behavioral anchors are: 1 = Never; 2 = Rarely; 3 = Sometimes; 4 = Often; 5 = Consistently; and 6 = Don't Know.

Scale reliabilities are shown in Table 2 for both versions of the ECI with the average item score method of composing the scales.

insert Table 2 about here

Structure of Scales

To explore the structure of the competency scales, a confirmatory factor analysis was conducted. We expected this analysis would be problematic for two reasons. First, almost every such factor analysis run on comparable measures of EI or 360 measures of skills or competencies reveals one major factor, according to the eigenvalues or two such factors and then a minor contribution from others (Mayer, Salovey, Caruso, & Sitarenios, 2003). Second, our development and selection of questionnaire items were not typical of

the usual method of constructing items as variations of the same theme. Our items are alternate manifestations of the same underlying “intent” or competency construct. Therefore, the items will show more than the typical variance and not cluster on factors as neatly as desired. But lacking any other way to explore this grouping, a principal axis factor analysis was chosen because it was assumed that variance between scales was of more relevance than variance within scales. Since it is theoretically expected that scales would show high intercorrelation with some showing more than others, an oblique rotation was used for the rotation of factors, (specifically in SPSS, Promax). The result showed one factor with an eigenvalue of 31.09, a second with 5.5 and so forth to 9 factors with eigenvalues greater than 1. Nine factors were rotated with the results shown in Table 3.

The first factor is loaded with items exclusively or primarily from (three of the four items in a scale): Emotional Self-Awareness; Accurate Self-Assessment; Transparency; Empathy; Developing Others, and Teamwork and Collaboration. Conflict Management had two items loading on the first factor (and two items loading on Factor 7). The second factor is loaded exclusively or primarily from: Self-Confidence; Achievement; Optimism; Inspirational Leadership; and Change Catalyst. Adaptability and Initiative both had two items loading more on second factor than others. Items for Emotional Self Control loaded exclusively on Factor 3. Items for Service Orientation loaded exclusively on Factor 4. Items for Organizational Awareness loaded exclusively on Factor 5; also, two items from Influence loaded more strongly onto Factor 5 than any other.

While the items did not show the desired pattern of loading on a separate factor for each competency scale, the pattern revealed something more typical of previous research (Boyatzis, 1982; Boyatzis et. al., 2000). Factor 1 consists of self-awareness competencies and those involved with working *with* others, like Teamwork and Developing Others. Even the Social Awareness competency loaded onto this factor, Empathy, is a direct interpersonal one- you use the competency with another individual. Although untested directly as yet, we predict that this cluster would be highly associated with activity in one's Parasympathetic Nervous System (Boyatzis, et. al., in press), more left prefrontal cortex activity than right (Davidson et. al., 2000), the experience of compassion (Goleman, 2003), and greater immune system functioning (Boyatzis et. al., in press). Even the items for Conflict management loading onto this factor involve including others in openly discussing conflicts and airing everyone's positions.

Factor 2, on the other hand, reveals a pattern of competencies in stimulating change for a positive future. It has competencies such as Self-Confidence and Optimism regarding a positive outlook for the future. It also has others such as Achievement, Inspirational Leadership, and Change Catalyst that are provocative competencies involved in moving others forward toward some vision, goal, or strategy. In a parallel manner to the first cluster, we predict that this cluster would be more highly correlated with instrumental activity and related endocrine functions, arousal of the Sympathetic Nervous System (Boyatzis et. al., in press), and predominant right prefrontal cortex activity (Davidson et. al., 2000). The items from Adaptability and Initiative address adaptation to new ideas and demands, as well as whether one acts quickly and initiates action.

Factor 5 involved understanding the organization and its coalitions and networks. The Organizational Awareness competency loaded completely into this factor. Also, items from Influence that loaded onto it pertained to gaining support from *key* people and building behind-the-scenes support for an idea. This conception presupposes that one individuals scoring high on this factor know who the *right people* are with whom to build support.

The pattern of clusters shown in the first and second factor is just the type of clustering explained and predicted by Boyatzis, Goleman, and Rhee (2000). In contrast to theoretical clusters that would have been Self-Awareness, Self-Management, Social Awareness, and Relationship Management in the model underlying the ECI and ECI-2, the competencies empirically clustered together in a more organic or even functional way. For research, this suggests that the empirical clusters can be more helpful in understanding how a person uses their EI competencies than the conceptual clusters offered in earlier books and papers. In practice, the feedback is often discussed and interpreted regarding each specific competency, so the nature of the clusters is less important. But if a person were to examine patterns of their behavior with a coach, then the empirical clusters, we contend offer a better description of the pattern of a person's behavior.

Predicting Work and Leadership Performance: Criterion Validity

Sevinc (2001) conducted a study utilizing the ECI with a sample of Turkish managers and professionals working in the finance sector (banks, insurance, securities). Since participants were obtained from alumni records of those that graduated in 1980, all

participants were between the ages of 31 and 36. Ninety-one graduates were contacted and 71 returned ECIs, but only 40 participants had ECIs completed by a boss or peers. Participants were 58% (41) male and 42% (30) female. Salary was significantly correlated with all four ECI clusters as rated by others, as shown in Table 4. Participants perceived by others to be frequently showing emotional intelligence reported greater job and life satisfaction.

insert Table 4 about here

Nel (2001) conducted a study to examine the relationship between emotional intelligence and job performance of call center agents working at the head office of a major life insurance agency located in the Western Cape, South Africa. Participants were selected based on a stratified random selection procedure from the following call center roles: client services, sales, and administration. One hundred fifty-three questionnaires were administered and 135 were returned completed (response rate = 88.2%). The call center agents were divided as follows: 33% (n=44) client services, 34% (n=47) sales, and 33% (n=44) administration. Agents were rated on the ECI by their team leaders.

Job performance was an overall rating based, in part, on objective, computer-assessed indexes of performance such as productivity on systems, closing rate, lapse index, and amount of calls handled—and subjectively on quality of conversation. Several EI competencies were correlated with performance, primarily in Client Services and Administrative roles, as shown in Table 5.

insert Table 5 about here

Humphrey, Kellett, and Sleeth (2001) conducted research on employees at an assessment center with organizational behavior students (both undergraduate and MBA students) at Virginia Commonwealth University. The purpose of their study was to determine whether both empathy and cognitive ability are associated with perceptions of leadership. The assessment exercises involve two parts: (1) an in-basket exercise in which participants select tasks from a variety of complex and simple tasks; and (2) group decision-making tasks. After completing the group decision-making tasks, participants were asked to rate themselves and each other on a variety of leadership skills and personality measures. Using structural equation modeling, results showed that both emotional intelligence, in this study assessed as only the Empathy scale and cognitive ability (e.g., ability to perform complex tasks and GPA) influenced perceptions of leadership in small groups.

Cavallo and Brienza (2002) conducted a study with 358 managers across the Johnson & Johnson Consumer & Personal Care Group to determine whether leadership competencies distinguished high- from average-performance and also high- and average-potential. Based on peer, subordinate, and supervisor ratings on the ECI, results showed that high-performance managers were rated significantly higher than average-performing managers by all three rater groups on Self-confidence and Achievement. Supervisors and Direct Reports assessed the high performing managers as greater than others on Trustworthiness, Adaptability, and Initiative. Peers and Direct Reports assessed the high performing groups higher than others on Organizational Awareness, Developing Others,

Leadership, Influence, Change Catalyst and Communication. Direct Reports rated high performers as greater than others in Empathy, Service Orientation, Conflict Management, Building Bonds, and Teamwork.

Only Supervisor and Peer ECI ratings were found to be associated with management potential, as determined by supervisors following annual reviews. Both supervisors and peers saw high potentials as greater than other personnel on Self-confidence, Achievement, Initiative, Leadership, and Change Catalyst. In addition, Supervisors saw high potentials as greater than others in Accurate Self-Assessment, Adaptability, Service Orientation, Influence, Communication, Conflict Management, and Building Bonds.

Sergio (2001) conducted research to explore the relationship between emotional intelligence and mental ability as predictors of job performance among first-line Filipino plant supervisors in manufacturing organizations. One hundred thirty-four plant supervisors from two multinational manufacturing firms were assessed on the ECI and a standard mental ability test (i.e., Watson-Glaser Critical Thinking Appraisal (WGCTA – Form S)); supervisor performance appraisals were also obtained. It was found that both mental ability ($\chi^2 = 28.57, p < .05$) and emotional intelligence ($\chi^2 = 34.27, p < .05$) were associated with job performance ratings. Emotional intelligence and mental ability were not significantly correlated ($r = .18, p > .05$). Sergio (2001) concluded that both cognitive and emotional ability/intelligence were independent and important contributors to performance at work.

A study of 92 College Principals in the United Kingdom was completed by Sala (2002b) to examine the relationship among EI competencies, managerial style, organizational climate, and student measures of performance (e.g., retention rate, student

academic achievement). While considering the influence of various background factors (e.g., size of college, student funding, years of experience), principals' Self-Awareness and Social Awareness cluster ratings were significantly associated with college retention rates, as shown in Table 6.

insert Table 6 about here

In the most comprehensive and sophisticated competency model of public elementary, middle, and high school principals in the US, Williams (2003) assessed EI with the ECI. She collected data on the principals' organizational climate from a teachers' survey, nominations for outstanding principals from teachers, nominations from principals themselves, and nominations from the Superintendents' offices. The competencies in the Self-management and Social Skills clusters differentiated the outstanding from the average principals significantly in regression analyses.

Using the ECI-2, a study was conducted to determine whether EI competencies were associated with sales performance at Bass Brewers in the U.K. (Lloyd, 2001). The sample consisted of 33 Area Development Managers (ADM). These managers are responsible for building volume and profit, implementing national promotional activity, and resolving customer service issues. Lloyd (2001) developed an "overall performance measure" (OPM), which consisted of hard, soft, and personal development indicators. The OPM included : 1) a "ready for promotion" rating, 2) the average number of new brand installations, 3) the average number of new accounts gained, 4) a customer service audit, 5) an annual performance rating based on mutually agreed-on targets, and 6) the

number of job band changes. Lloyd (2001) reported a strong positive relationship between EI scores and performance of the managers.

Sixty seven fire fighters and officers from the United Kingdom were assessed with the ECI-2 (Stagg & Gunter, 2002). The participants were rated on the ECI-2 by manager, peer, and direct reports. Participants were also rated on a series of statements that reflects the following performance criteria: interpersonal ability, management effectiveness, personal style, and problem solving. EI competencies showed significant correlation with these assessments of their performance, as shown in Table 7.

insert Table 7 about here

Accurate Self-Assessment: Content Validity

Burckle (2000a) hypothesized that those who were rated low by others on Accurate Self-Assessment would show less self-awareness on other competencies. With a sample of 427 individuals from a variety of organizations, those who scored in the top 25 percent were considered high in Accurate Self-Assessment whereas those who scored in the bottom 25 percent were categorized as low. To determine discrepancies between self- and total others-assessments, differences between others' and self-scores for each competency were computed.

Results showed that those who were low in Accurate Self-Assessment showed a significantly larger mean gap between self and others' scores on each competency as compared to those who were high in this competency. Those who were low in Accurate

Self-Assessment rated themselves higher on every competency than others rated them. Conversely, those who were high in Accurate Self-Assessment underrated themselves.

Construct Validity: Other Personality Measures

Diamantopoulou (2001) conducted a study with a sample of bank employees in Greece to determine whether a relationship exists between personality (Types A and B) and Emotional Intelligence. Eighty participants were assessed on the ECI and a measure of Type A/B personality. Type A personalities have emotions and behaviors characterized by ambition, hostility, impatience, and a sense of constant time pressure. They are more likely to suffer stress-related disorders and physical illnesses (e.g., coronary disease). Type B personalities are characteristically relaxed, calm, not preoccupied with achievement, and able to enjoy leisure time. They enjoy better health, including decreased likelihood for coronary disease. Contrary to what was hypothesized, it was found that people with a mixture of both Type A and B were higher in Emotional Intelligence. Furthermore, it was found that Type B was positively correlated with social skills competencies.

To examine construct validity of the ECI to the Myers-Briggs Type Indicator (MBTI), Burckle (2000b) conducted an analysis with 18 paramedics from an organization that provides medical care and transportation to the greater Denver/Boulder area. Participants ranged in age from 19–46; 15 were male and 3 were female. Multi-rater assessments (e.g., manager, peer, direct report) were obtained on the ECI and participants self-rated the MBTI Long Form (i.e., Form G). The MBTI determines preferences on

four scales: Introversion/Extraversion; Sensing/Intuiting; Thinking/Feeling; Judging/Perceiving (http://www.capt.org/The_MBTI_Instrument/Overview.cfm).

To create a continuum of data for each scale, participants' scores were given either a positive or negative value, depending on their scale preference. For example, someone who received a 24 on the Introvert/Extrovert scale, and was an *Introvert*, received a positive 24 for this scale. Conversely, a participant who received a 24 on the Introvert/Extrovert scale, and was an *Extrovert*, received a negative 24 to indicate his/her score was on the opposite side of the continuum. All Introversion, Sensing, Thinking, and Judging scores were given positive values, whereas Extraversion, Intuition, Feeling, and Perceiving were given negative values.

As shown in Table 8, significant correlations between fifteen of the EI competencies and the Intuiting and Feeling dimensions emerged.

 insert Table 8 about here

Murensky (2000) sampled 90 executives (13 female and 77 male) from the 100 highest leadership positions in an international oil corporation. Executives completed self-assessment versions of the NEO Personality Inventory – Revised (NEO-PI-R), the Watson-Glaser Critical Thinking Appraisal (WGCTA – Form S) as a measure of cognitive ability, and the ECI. The NEO-PI-R (Costa & McCrae, 1992) measures five personality domains. Neuroticism concerns emotional instability or maladjustment. Extroversion is the enjoyment of social situations, interacting with others, or attending large gatherings. Openness concerns awareness and sensitivity to inner feelings with a

preference for variety and intellectual curiosity about the inner and outer worlds.

Agreeableness relates to sympathy and helpfulness toward others with a belief that people are, in return, helpful. Conscientiousness concerns planning, organization, achievement striving, self-discipline, and competence.

Extroversion was significantly correlated with all four ECI clusters, as shown in Table 9. Openness and conscientiousness also tended to correlate with ECI scores while neuroticism and agreeableness were not.

 insert Table 9 about here

Construct Validity: Perceptions of Leadership and Managerial Styles

Carulli and Com (2003) conducted a study of Emotional Intelligence and organizational leadership in Asia Pacific with 160 managers of a multinational company, Quest. Of those studied, 91 managers submitted the MLQ (i.e., a test designed to assess transformational versus transactional leadership styles) questionnaires, and 89 completed the ECI. Overall, it was found that there is a positively significant correlation between EI factors and transformational leadership style and effective leadership outcome.

A group of accountants from the heads of finance at an International Broadcasting Organization participated in an Emotional Intelligence leadership development program. Participants went through a 3.5 day training program in EI. A one-day, follow-up workshop was conducted nine to 12 months later along with a reassessment of the ECI and MSI.

The Managerial Style Inventory (MSI) is a 68-item multi-rater survey (McBer, 1980; Kelner, 1991) designed to assess six managerial styles: Coercive, Authoritative,

Affiliative, Democratic, Pacesetting, and Coaching. The styles were clinically derived (Kelner, 1991). The MSI has shown high levels of test-retest reliability (McBer, 1980), high levels of internal consistency (Bakhtari, 1995), and construct and criterion validity (Chusmir, Koberg, & Mills, 1989; McClelland & Burnham, 1976).

Table 10 presents correlations between ECI competency as seen by others and managerial style as also seen by others. Coaching and Affiliative styles show strong relationships with EI. Significant positive relationships were found between the Democratic style and several of the Self-Management and Relationship Management EI competencies. Several significant negative relationships were found between the Pace Setting style and Relationship Management EI competencies.

Further analyses were conducted with ECI Time 1 scores and Managerial Style ratings. A “gap” score was computed for each participant by subtracting his or her total others score from his or her self-score. This is considered a measure of ECI self-inflation: the higher the gap score, the higher the participants rated themselves in comparison to how they were rated by others. Correlations between ECI gap scores and Managerial Style ratings showed that participants who were higher in self-inflation of ECI Accurate Self-Assessment scores tended to have lower Authoritative, Affiliative, and Coaching Styles, and higher Pace Setting style ratings as seen by their subordinates. This suggests that when people have inflated views of their use of competencies (as compared to what others see), they are less likely to use managerial styles that are often helpful to others. They are more likely to be individualistic in their style and expect that others follow their lead.

insert Table 10 about here

Construct Validation: Organizational Climate

The Organizational Climate Survey (OCS) is a 47-item multi-rater survey (Hay/McBer, 1995) designed to assess six climate dimensions: Flexibility, Responsibility, Standards, Rewards, Clarity, and Team Commitment. The OCS is based on the theoretical framework outlined by Litwin and Stringer (1968) in their original study of organizational climate. Organizational climate is the perception of how it feels to work in a particular environment. It encompasses the norms, values, expectations, policies, and procedures of a work environment (Hay/McBer, 1995). The climate dimensions have been factor analytically confirmed and have shown to have high levels of internal consistency (Sala, 2001). The OCS has also demonstrated criterion validity (Becklean & Kinkead, 1968; McClelland & Burnham, 1976; Leshner, et. al., 1994) in a variety of organizations from several industries.

In the study of United Kingdom College Principals mentioned earlier, Sala (2002) examined the relationship between EI competencies with managerial style, organizational climate, and student outcome. Pearson correlations between U.K. Principals' ECI and Organizational Climate scores (total others' ratings) revealed significant relationships. ECI competencies and clusters were strongly associated with all six climate dimensions. For example, principals showing more self awareness and social awareness competencies create climates their subordinates see as higher in flexibility and rewards than those who do show demonstrate these competencies as often. Effect sizes were small, moderate, and large—all were statistically significant due partly to a sufficient sample size (N=92).

Because of a concern for potential common-source bias, a multiple regression was performed to better understand the relationship between EI and climate.

Results from the multiple regression analysis show that 57% of the variance in climate could be explained by Principals' Emotional Intelligence competency scores, as shown in Table 11. Examination of the beta weights shows that the ECI Social Skills cluster carries the majority of that effect. These results show that when the multicollinearity of the four ECI clusters is held constant, Principals' social skills are the most important predictor of Organizational Climate.

insert Table 11 about here

Construct Validation: Measures of Analytical Thinking

Murensky (2000) sampled 90 executives (13 female and 77 male) from the 100 highest leadership positions in an international oil corporation. Executives completed self-assessments of the Watson-Glaser Critical Thinking Appraisal (WGCTA – Form S) as a measure of cognitive ability, and the ECI. The Watson-Glaser (Watson & Glaser, 1994) is a widely used measure of critical thinking ability and analytical reasoning.

Murensky (2000) found that, overall, most ECI competencies were not correlated with critical thinking ability, and that the two are independent constructs tapping different dispositions, as shown in Table 12. She argued that the findings supported Goleman's claim regarding the independence of these two types of intelligence. The significant, negative correlations with the Watson-Glaser and three competencies within the social

skills cluster suggest that leaders who are particularly effective in critical thinking may be less effective in reading and orchestrating influence situations (Murensky, 2000). Results of this study provide evidence for the discriminant validity of the ECI.

insert Table 12 about here

Criterion Validity: Do Changes in EI Reveal Other Changes

Research was conducted on a meditation class offered to employees and managers of all levels at a large U.S.-based apparel manufacturer. Jolly (2001) hypothesized that participants who complied with the meditation program would significantly reduce their stress and increase their empathy and self-awareness when compared with a control sample. The experimental participants took an eight-week mindfulness meditation class. The research design provided for pre- and post-tests to both groups to measure any changes resulting from the intervention.

Results showed that participants who completed the program significantly increased their self-reported empathy and self-awareness scores and significantly reduced stress as compared with the control sample. While both groups showed positive changes, the change for the experimental group was more than three times larger than the change for the control group. All statistically significant findings were based on self-reported ECI ratings; no significant findings emerged from ratings by others (Jolly, 2001). So we do not know if the results are a function of expectation effects or reduction of cognitive dissonance or the participants were sensing changes in themselves prior to others being

able to see evidence, or more likely consistent behavioral evidence of a change in their use of these competencies.

Relationship Between EI Competencies and Demographic Characteristics

EI competencies as measured with the ECI were related to a variety of demographic characteristics with the Hay Group North American database in 2002 (Sala, 2002). The total sample included 34,377 raters (self and total others). ECI self rating cases numbered 3,992 (12%) and ECI other-rating cases numbered 30,385 (88%).

Ratings on ECI clusters by both participants and total others were positively correlated with age; older participants rated themselves and were rated by total others as higher in ECI competencies than younger participants. These results are consistent with previous research; also other research presented in this chapter shows that particular life experiences are associated with higher ECI scores.

Educational level was not related to ECI self-rating scores; however those that report higher levels of education are rated higher on the ECI by total others.

Gender differences were found on both self and others ratings on the ECI, as shown in Table 13. Females rated themselves, and were rated by total others (males and females), higher on the ECI than males rated themselves or were rated by total others. The literature is mixed here; some have found no differences between men and women while others have found differences on particular competencies.

insert Table 13 about here

Cavallo and Brienza (2002) conducted a study with 358 managers across the Johnson & Johnson Consumer & Personal Care Group and found some gender differences. Using the ECI, females were rated higher than males by peers on: Emotional Self-Awareness, Conscientiousness, Developing Others, Service Orientation, and Communication. Females were rated higher than males only on Adaptability and Service Orientation by supervisors; and no differences were found between men and women by direct reports.

A study using the ECI-U of Puerto Rican men and women working full or part time and attending college part time by Rivera (2003) found that in others' views, participants used seven competencies more often at home than at work, and only one competency more often at work than at home. But there was an important difference when the sample was separated by gender. Working men showed eight of the competencies more at work than at home (Emotional Self-Awareness, Accurate Self-Assessment, Emotional Self-Control, Trustworthiness, Conscientiousness, Service Orientation, Change Catalyst, and Building Bonds). Meanwhile, women showed nine competencies more at home than at work (Self-confidence, Trustworthiness, Adaptability, Service Orientation, Organizational Awareness, Inspirational Leadership, Communications, Conflict Management, and Teamwork).

Although more data are needed for conclusive findings to be more fully gleaned, it does seem that females tend to score higher than males on the ECI. More research is needed to determine whether this reflects true differences in emotional intelligence rather than an artifact of the assessment method (survey ratings may be biased by gender role expectations and assumptions).

Summary and Conclusions

Emotional intelligence is a set of competencies, or abilities to recognize, understand, and use emotional information about oneself or others that leads to or causes effective or superior performance. We believe it is a form of intelligence because the expression of these competencies is related to specific neural-endocrine functioning, life and job outcomes, and is sufficiently different from other personality constructs that the concept adds value to understanding the human personality and behavior. From research on job effectiveness in a wide variety of occupations in countries around the world, the set of competencies proposed as being EI include those of Self-Awareness, Self-Management, Social Awareness, and Relationship Management.

The Emotional Competence Inventory (i.e., the ECI and ECI-2) was developed as a multi-source questionnaire; that is, a 360^o format assessment of a person's expressed competencies, or competencies in use. It was based on a contingency theory of effective performance and a holistic personality theory.

The competency scales are reliable. Although some of the competencies show separate factor loadings in confirmatory factor analysis, such as Emotional Self-Control and Service Orientation, most of the competencies loaded onto two factors. These clusters reflect a distribution of the competencies from previously conceptualized clusters, but these functional, or organic clusters reflect two primary ways in which people interact with their social environment. The first factor, composed of Emotional Self-Awareness, Accurate Self-Assessment, Transparency, Empathy, Developing Others, Teamwork and Collaboration, and Conflict Management describes a person's use of his or her emotions and talent in being sensitive to and *working with others*. In contrast the

second factor composed of Self-Confidence, Achievement, Initiative, Adaptability, Optimism, Inspirational Leadership, and Change Catalyst describes a person's use of his or her emotions to *lead others* in change or adaptation toward a different future. It is hypothesized that these factors will be shown to relate to distinctly different neural circuits and endocrine processes when aroused separately. Research is needed to establish these psychological, physiological, and behavioral links.

The early years of working with the ECI and ECI-2 have shown this measure of EI to predict life and job outcomes and to have construct validity commensurate with the definitions and theory. To summarize, these findings show that the EI competencies as measured in the ECI or ECI-2 predicted salary increases, job/life success, performance in client services and administrative roles, predicted success as a leader, worldwide management performance and potential, job performance of first-line supervisors, student retention in colleges, outstanding performance of public school principals, performance of firefighters, and leadership in multi-nationals.

In comparing the expression of EI competencies with other abilities and psychological constructs, it has been shown to relate to selected other personality measures, but not to mental capability. The various findings are: a) Accurate Self-Assessment predicts self-other gap; b) Relationship Management competencies showed particular association with Type B personality; c) Myers Briggs measures of Intuiting and Feeling were related to EI competencies; d) NEO-PR measures of Extroversion was related to all clusters, while Openness was related to Self and Social Awareness and Relationship Management and Conscientiousness was related to Self Awareness and Management, and Relationship Management; e) Transformational leadership style was

related to the EI competencies in general and managerial styles of coaching, affiliative, and democratic but negatively related to pace setting; and f) a positive Organizational Climate.

In terms of demographics, EI competencies were related to age but not educational level. Females appear to use EI competencies more than males. A Puerto Rican sample showed that the men showed more EI competencies at work than at home and the women showed more at home than at work.

Although much more research must be done to understand these relationships and discover more precisely how expression and use of the EI competencies affects life and work, the early studies show promise. We need to understand how these concepts relate to other constructs to avoid multi-collinearity of measures and to ensure that this conceptualization of EI is adding value by assessing something different from other measures of personality and EI.

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Table 1. The Scales and Clusters of the Emotional Competence Inventory Version 2 (ECI-2)

Self-Awareness cluster concerns knowing one's internal states, preferences, resources, and intuitions. The Self-Awareness cluster contains three competencies:

Emotional Self-Awareness: Recognizing one's emotions and their effects

Accurate Self-Assessment: Knowing one's strengths and limits

Self-Confidence: A strong sense of one's self-worth and capabilities

Self-Management cluster refers to managing ones' internal states, impulses, and resources. The Self-Management cluster contains six competencies:

Emotional Self-Control: Keeping disruptive emotions and impulses in check

Transparency: Maintaining standards of honesty and integrity

Adaptability: Flexibility in handling change

Achievement Orientation: Striving to improve or meeting a standard of excellence

Initiative: Readiness to act on opportunities

Optimism: Seeing the positive aspects of things and the future

Social Awareness cluster refers to how people handle relationships and awareness of others' feelings, needs, and concerns. The Social Awareness cluster contains six competencies:

Empathy: Sensing others' feelings and perspectives, and taking an active interest in their concerns

Organizational Awareness: Reading a group's emotional currents and power relationships

Service Orientation: Anticipating, recognizing, and meeting customers' needs

Relationship Management or Social Skills cluster concerns the skill or adeptness at inducing desirable responses in others. The Social Skills cluster contains six competencies:

Developing Others: Sensing others' development needs and bolstering their abilities

Inspirational Leadership: Inspiring and guiding individuals and groups

Influence: Wielding effective tactics for persuasion

Change Catalyst: Initiating or managing change

Conflict Management: Negotiating and resolving disagreements

Teamwork & Collaboration: Working with others toward shared goals. Creating group synergy in pursuing collective goals.

Table 2. Scale Reliabilities in Terms of Cronbach's alphas for Average Item Scores

<u>Competency</u>	<u>ECI: Self Assessment n=4,001</u>	<u>ECI: Others' Assessment n=3,931</u>	<u>ECI-2: Self- Assessment n=6,056-6,365</u>	<u>ECI-2: Others' Assessment n=6,542-6,601</u>
Self-Awareness Cluster				
Emotional Self-Awareness	.61	.74	.71	.87
Accurate Self-Assessment	.68	.83	.52	.82
Self-Confidence	.80	.88	.72	.81
Self-Management Cluster				
Self-Control	.78	.89	.71	.86
Transparency	.74	.73	.52	.74
Optimism			.68	.86
Adaptability	.60	.77	.56	.81
Achievement	.78	.87	.62	.80
Initiative	.72	.83	.51	.71
Social Awareness Cluster				
Empathy	.81	.92	.68	.89
Organizational Awareness	.75	.84	.69	.81
Service Orientation	.85	.91	.74	.89
Relationship Management Cluster				
Inspirational Leadership	.69	.80	.77	.90
Influence	.73	.83	.63	.81
Developing Others	.77	.88	.73	.89
Change Catalyst	.84	.91	.71	.83
Conflict Management	.75	.86	.45	.54
Teamwork & Collaboration	.81	.91	.56	.83

Table 3. Confirmatory Factor Analysis of ECI-2 Other Item Scores (Items are listed according the question sequence for each competency scale.)

<u>Item</u>	Rotated Factor Loadings*			
	<u>Working with Others</u>	<u>Influencing Change</u>	<u>Emotional Self-Control</u>	<u>Service Orientation</u>
Emotional Self Awareness 1	.81			
Emotional Self Awareness 2	.62			
Emotional Self Awareness 3	.75			
Emotional Self Awareness 4	.97			
Accurate Self Assessment 1	.76			
Accurate Self Assessment 2	.48	.34		
Accurate Self Assessment 3	.74			
Accurate Self Assessment 4	.80			
Transparency 1				.47
Transparency 2	.44			
Transparency 3	.67			.33
Transparency 4	.34			
Empathy 1	.62		.33	
Empathy 2	.91			
Empathy 3	.67			
Empathy 4	.78			
Developing Others 1	.64			
Developing Others 2	.62	.33		
Developing Others 3	.74			
Developing Others 4	.65	.32		
Teamwork 1	.46			
Teamwork 2	.75			
Teamwork 3	.82			
Teamwork 4	.66			
Self-Confidence 1	-.31	.68		
Self-Confidence 2	-.55	.79	.32	
Self-Confidence 3		.81		
Self-Confidence 4		.81		
Achievement Orientation 1		.46		
Achievement Orientation 2		.56		
Achievement Orientation 3				
Achievement Orientation 4		.46		
Optimism 1		.57		
Optimism 2		.60		
Optimism 3		.47	.44	
Optimism 4	.40			

Table 3 continued

	Rotated Factor Loadings*				
	<u>Organizational Awareness</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>
Emotional Self Awareness 1					
Emotional Self Awareness 2					
Emotional Self Awareness 3					
Emotional Self Awareness 4					
Accurate Self Assessment 1					
Accurate Self Assessment 2				.38	
Accurate Self Assessment 3					-.54
Accurate Self Assessment 4					
Transparency 1					
Transparency 2					
Transparency 3					
Transparency 4					
Empathy 1					
Empathy 2					
Empathy 3					
Empathy 4					
Developing Others 1					
Developing Others 2					
Developing Others 3					
Developing Others 4					
Teamwork 1				.39	
Teamwork 2					
Teamwork 3					
Teamwork 4					
Self-Confidence 1					
Self-Confidence 2					
Self-Confidence 3					
Self-Confidence 4					
Achievement Orientation 1					
Achievement Orientation 2					.30
Achievement Orientation 3	.30				
Achievement Orientation 4		.38			
Optimism 1					
Optimism 2					
Optimism 3					
Optimism 4					

Table 3 continued

<u>Item</u>	Rotated Factor Loadings*			
	<u>Working with Others</u>	<u>Influencing Change</u>	<u>Emotional Self-Control</u>	<u>Service Orientation</u>
Change Catalyst 1		.43		
Change Catalyst 2				
Change Catalyst 3		.67		
Change Catalyst 4		.42		
Inspirational Leadership 1		.46		
Inspirational Leadership 2	.42	.59		
Inspirational Leadership 3	.46	.63		
Inspirational Leadership 4		.78		
Emotional Self-Control 1			.51	
Emotional Self-Control 2			.66	
Emotional Self-Control 3			.77	
Emotional Self-Control 4			.74	
Service Orientation 1				.80
Service Orientation 2				.69
Service Orientation 3				.92
Service Orientation 4				.70
Organizational Awareness 1				
Organizational Awareness 2				
Organizational Awareness 3				
Organizational Awareness 4				
Conflict Management 1				
Conflict Management 2	.44			
Conflict Management 3		.30		
Conflict Management 4	.53			
Adaptability 1		.32		
Adaptability 2				
Adaptability 3		.41	.30	
Adaptability 4				
Initiative 1		.73		
Initiative 2				
Initiative 3				
Initiative 4		.65		
Influence 1	.41	.64		
Influence 2	.33			
Influence 3		.36		
Influence 4				

Table 3 continued

	Rotated Factor Loadings*				
	<u>Organizational Awareness</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>
Change Catalyst 1			.40		
Change Catalyst 2				.55	
Change Catalyst 3					
Change Catalyst 4			.47		
Inspirational Leadership 1					
Inspirational Leadership 2					
Inspirational Leadership 3					
Inspirational Leadership 4					
Emotional self-Control 1		-.35			
Emotional self-Control 2			-.34		
Emotional self-Control 3					
Emotional self-Control 4					
Service Orientation 1					
Service Orientation 2					
Service Orientation 3					
Service Orientation 4					
Organizational Awareness 1	.75				
Organizational Awareness 2	.92				
Organizational Awareness 3	.34				
Organizational Awareness 4	.81				
Conflict Management 1			.51		
Conflict Management 2					
Conflict Management 3			.65		
Conflict Management 4					
Adaptability 1					
Adaptability 2		.35			
Adaptability 3					
Adaptability 4		.47			
Initiative 1				.31	
Initiative 2		.53			
Initiative 3		.68			
Initiative 4					
Influence 1					
Influence 2		.33			
Influence 3	.40				
Influence 4	.32				

* Only rotated factor loadings greater than .300 (+ or -) or shown.

Table 4. Correlations between ECI Others' ratings and career success with a sample of Turkish financial sector managers (Sevinc, 2001).

Self-Rating		Emotional Intelligence (Total Others Ratings)			
		Self-Awareness	Self-Management	Social Awareness	Social Skills
Objective Career Success	Salary (N=38)	.30†	.37*	.43*	.40*
	Position Level (N=40)	.09	.10	.19	.29†
	Number of Promotions (N=29)	.03	-.06	-.17	-.10
Subjective Career Success	Job Success (N=40)	.12	.33*	.26†	.34*
	Financial Success (N=40)	-.21	-.07	-.16	-.15
	Hierarchical Success (N=40)	-.02	.16	.05	.01
	Interpersonal Success (N=40)	.00	.17	.01	.10
	Life Success (N=40)	.29†	.46*	.38*	.46*

† $p < .10$; * $p < .05$;

Table 5. Correlations between ECI scores and performance for call center agents.

ECI Cluster	Emotional Intelligence (ECI) Competencies	Correlations with performance for agents within each department		
		Client Services (n=44)	Sales (n=47)	Administration (n=44)
Self-Awareness	Emotional Self-Awareness	.23	.33	.46
	Accurate Self-Assessment	.38	.33	.46
	Self-Confidence	.61	.47	.73*
Self-Management	Self-Control	.17	.26	.48
	Trustworthiness	.66*	.53*	.45
	Conscientiousness	.49*	.45	.57*
	Adaptability	.37	.31	.58*
	Achievement Orientation	.64*	.35	.63*
	Initiative	.58*	.42	.72*
Social Awareness	Empathy	.22	.42	.45
	Organizational Awareness	.49*	.25	.48
	Service Orientation	.27	.39	.46
Social Skills	Developing Others	.30	.30	.68*
	Leadership	.49*	.26	.62*
	Communication	.41	.32	.46
	Influence	.53*	.37	.63*
	Change Catalyst	.57*	.43	.58*
	Conflict Management	.45	.26	.59*
	Building Bonds	.35	.48	.55*
	Teamwork & Collaboration	.44	.41	.57*

* $p < .05$

Table 6. Pearson correlations between Emotional Intelligence and two measures of performance for U.K. College Principals (N=92).

ECI Cluster	Retention Rate ($n = 90$)	Academic Achievement ($n = 25$)
Self-Awareness	.20*	.23
Self-Management	.16	.17
Social Awareness	.18*	.15
Social Skills	.16	.25

* $p < .05$

Table 7. Overall correlations between ECI 2.0 total other ratings and performance ratings with U.K. Fire Fighters and Fire Officers (N=67).

ECI Cluster	Competency	Performance Measure			
		Inter-personal Ability	Management Effectiveness	Personal Style	Problem Solving
Self-Awareness	Emotional Self-Awareness	.31*	.41**	.46**	.27*
	Accurate Self-Assessment	.50**	.19	.28*	.30*
	Self-Confidence	.39**	.41**	.35**	.45**
Self-Management	Emotional Self-Control	.18	.24*	.43**	.17
	Transparency	.39**	.33**	.38**	.37**
	Adaptability	.36**	.38**	.38**	.48**
	Achievement	.28**	.45**	.54**	.55**
	Initiative	.09	.05	.17	.42**
Social Awareness	Optimism	.38**	.32**	.46**	.39**
	Empathy	.49**	.29*	.54**	.39**
	Organizational Awareness	-.03	.54**	.06	.37**
Relationship Management	Service Orientation	.38**	.36**	.43**	.30*
	Developing Others	.45**	.45**	.46**	.39**
	Inspirational Leadership	.53**	.54**	.54**	.49**
	Change Catalyst	.46**	.37**	.51**	.53**
	Influence	.52**	.39**	.48**	.48**
	Conflict Management	.45**	.47**	.51**	.43**
Teamwork & Collaboration	.61**	.27**	.47**	.37**	

* $p < .05$; ** $p < .01$

Table 8. (Burckle, 2000b). Pearson correlations between ECI competencies and Myers-Briggs dimensions with a sample of medical response paramedics (N=18).^a

ECI Cluster	Competency	Introversion/ Extraversion	Sensing/ Intuiting	Thinking/ Feeling	Judging/ Perceiving
Self-Awareness	Emotional Self-Awareness	-.26	-.62**	-.57*	.05
	Accurate Self-Assessment	-.44	-.53*	-.64**	-.14
	Self-Confidence	-.40	-.16	-.21	-.03
Self-Management	Self-Control	.01	-.57*	-.40	.06
	Trustworthiness	-.29	-.38	-.35	.10
	Conscientiousness	-.08	-.01	-.20	.36
	Adaptability	-.29	-.66**	-.53*	.07
	Achievement Orientation	-.16	-.22	-.19	.14
	Initiative	-.31	-.40	-.47*	.01
Social Awareness	Empathy	-.17	-.68**	-.65**	.09
	Organizational Awareness	-.14	-.37	-.44	.21
	Service Orientation	-.23	-.40	-.50*	.11
Social Skills	Developing Others	-.32	-.46	-.57*	.11
	Leadership	-.33	-.33	-.56*	.04
	Influence	-.20	-.41	-.48*	.06
	Communication	-.24	-.52*	-.53*	-.01
	Change Catalyst	-.32	-.39	-.50*	-.04
	Conflict Management	-.23	-.45	-.45*	.18
	Building Bonds	-.36	-.51*	-.60**	-.06
	Teamwork & Collaboration	-.30	-.60**	-.61**	.06

*p < .05; ** p < .01

^a The first dimension listed for each variable of the Myers Briggs, such as Introversion, would show a positive correlation to the EI competency. Whereas the other aspect shown of each dimension, such as Extroversion, would show a negative correlation is significantly related to the EI competency.

Table 9. Correlations (N=90) between self-ratings on four ECI clusters and self-reported NEO-PI domains (Murensky, 2000).

ECI Cluster	Neuroticism	Extroversion	Openness	Agreeableness	Conscientiousness
Self-Awareness	-.07	.47**	.28**	.00	.30**
Self-Management	-.20	.24*	.20	-.02	.33**
Social Awareness	-.10	.24*	.23*	.03	.21
Social Skills	-.11	.49**	.22*	.08	.39**

*p < .05; ** p < .01

Table 10. Time 1 Emotional Intelligence and Managerial Style total others ratings (N=25) for Time 1 assessments (International Broadcasting Organization).

ECI Cluster	Competency	Managerial Styles (MSI)					
		Coercive	Authoritative	Affiliative	Democratic	Pace-setting	Coaching
Self-Awareness	Emotional Self-Awareness	-.08	.19	.52**	.37†	.04	.40*
	Accurate Self-Assessment	-.08	.15	.30	.23	-.07	.29
	Self-Confidence	-.06	.11	.11	.02	-.13	.00
Self Management	Self-Control	-.30	.25	.21	.28	-.13	.01
	Trustworthiness	.13	.26	.31	.31	-.09	.27
	Conscientiousness	.09	.28	.11	.13	-.15	.41*
	Adaptability	-.26	.38†	.44*	.38*	-.08	.32*
	Achievement Orientation	-.14	.21	.13	.06	.05	.27
	Initiative	-.14	.28	.43*	.41*	-.12	.47*
Social Awareness	Empathy	-.05	.29	.55**	.34†	-.08	.44*
	Organizational Awareness	-.31	.22	.29	.08	-.07	.17
	Service Orientation	-.02	.25	.56**	.30	-.20	.51*
Social Skills	Developing Others	-.01	.37†	.59**	.32	-.23*	.53**
	Leadership	-.14	.31	.44*	.23	-.21*	.47*
	Influence	-.15	.20	.50*	.28	-.14	.34†
	Communication	-.00	.17	.40*	.21	-.13	.36†
	Change Catalyst	-.00	.31	.51**	.18	-.07	.43**
	Conflict Management	.03	.29	.43*	.28	-.14	.39*
	Building Bonds	-.06	.06	.42*	.19	-.24*	.40*
	Teamwork & Collaboration	-.20	.49*	.75**	.52**	-.19	.52**

†p < .10; *p < .05; ** p < .01

Table 11. U.K. Principal's (Sala, 2002) Emotional Intelligence cluster scores and total Organizational Climate scores (N=92). Summary of Multiple Regression analysis for all ECI cluster dimensions predicting total Organizational Climate.

	Standardized Coefficients	t	Sig.
	Beta		
Self Awareness	-.09	-.45	.65
Social Awareness	-.13	-.88	.38
Self Management	.24	1.41	.16
Relationship Management	.73	2.72	.01

R = .76; R² = .57; Adj. R² = .56; Standard Error = 17.10

Note: Dependent Variable = Total Climate

Table 12. Pearson correlations (N=90) between Watson-Glaser Critical Thinking and Analytical Reasoning scores and ECI competency scores (Murensky, 2000).

ECI Cluster	Competency	Watson-Glaser
Self-Awareness	Emotional Self-Awareness	.04
	Accurate Self-Assessment	-.07
	Self-Confidence	-.13
Self-Management	Self-Control	-.13
	Trustworthiness	-.09
	Conscientiousness	-.15
	Adaptability	-.08
	Achievement Orientation	.05
	Initiative	-.12
Social Awareness	Empathy	-.08
	Organizational Awareness	-.07
	Service Orientation	-.20
Social Skills	Developing Others	-.23*
	Leadership	-.21*
	Influence	-.14
	Communication	-.13
	Change Catalyst	-.07
	Conflict Management	-.14
	Building Bonds	-.24*
	Teamwork & Collaboration	-.19

* $p < .05$

Table 13. Data from the Hay EI database.^a Differences between male and female self and total others ratings on four EI clusters.

Competency	Males (N=1,015)		Females (N=496)		ANOVA
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	F
Self-Awareness (Self)	5.50	.65	5.61	.64	11.44***
Self-Management (Self)	5.50	.61	5.50	.64	.000
Social Awareness (Self)	5.52	.71	5.60	.71	5.84**
Social Skills (Self)	5.31	.70	5.29	.74	.221
Self-Awareness (Total Others)	5.18	.56	5.43	.53	68.90***
Self-Management (Total Others)	5.22	.54	5.35	.53	21.50***
Social Awareness (Total Others)	5.30	.62	5.54	.57	48.60***
Social Skills (Total Others)	5.06	.62	5.22	.59	22.61***

Note: ** $p < .01$; *** $p < .001$

^a On average, approximately 80% of gender-report data were missing from the demographic surveys.

Figure 1.

CONTINGENCY THEORY OF ACTION & JOB PERFORMANCE (Boyatzis, 1982)

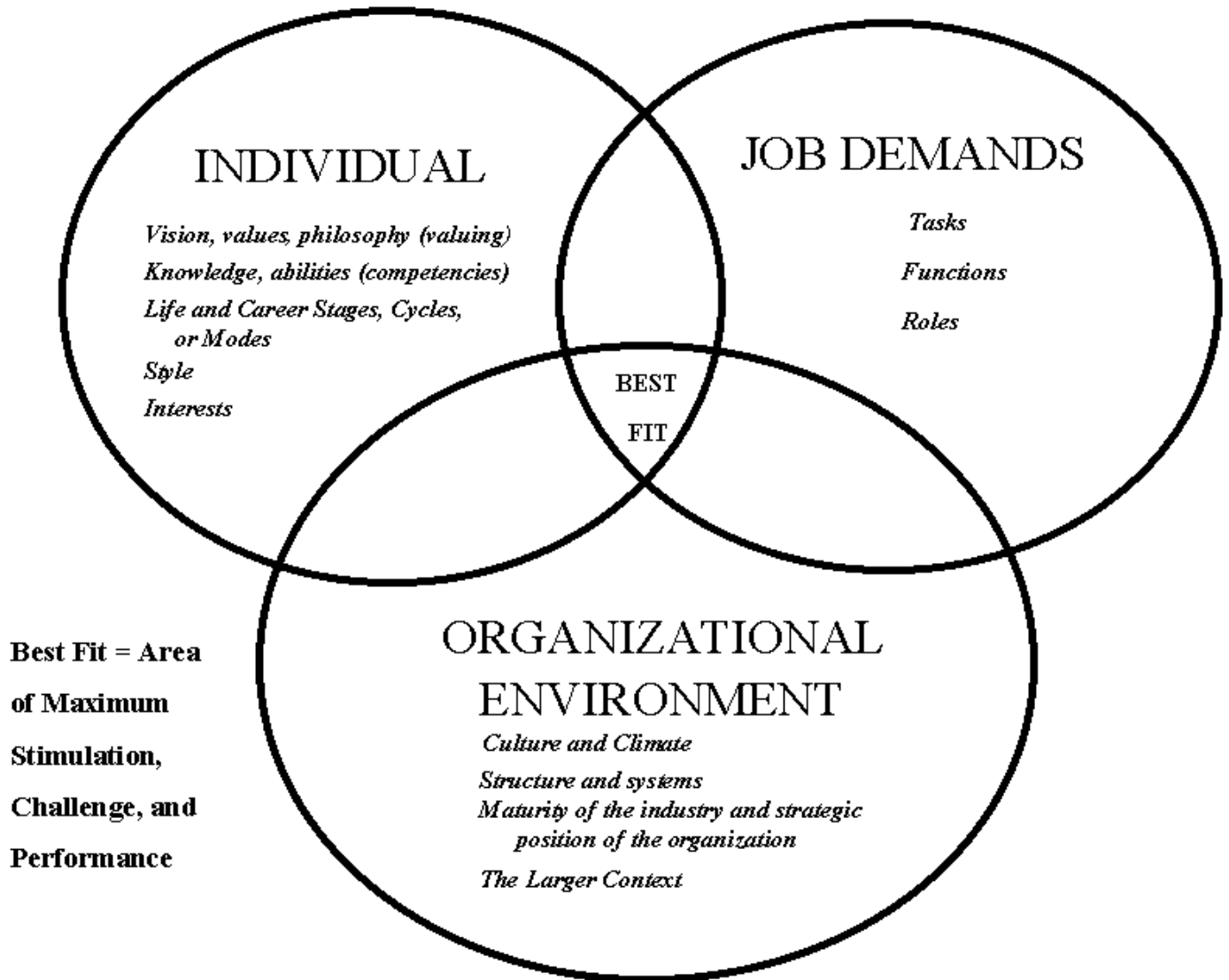


Figure 2. Levels Within the Personality Structure Structure

