THE DEVELOPMENT OF A NEW PERFORMANCE-BASED TEST FOR

MEASURING EMOTIONAL INTELLIGENCE: HUMILITY-EMPATHY-

ASSERTIVENESS-RESPECT TEST

by

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Liberty University

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Hitomi Makino

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Abstract

THE DEVELOPMENT OF A NEW PERFORMANCE-BASED-TEST FOR

MEASURING EMOTIONAL INTELLIGENCE: HUMILITY-EMPATHY-

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Doctor of Philosophy in Counseling

A critical review of literature revealed a lack of performance-based Emotional

Intelligence (EI) test which assesses core relationship abilities. The purpose of this study

was to attend to this need by developing a new measurement, the Humility-Empathy-

Assertiveness-Respect Test (HEART). As a preliminary investigation, this study explored

psychometric properties of the HEART. Support for the Discriminant validity was

obtained as it correlated with the IQ test as well as other EI tests that differ in various

aspects from the HEART. Support for the convergent validity was partially obtained as

the empathy subscale correlated with relationship satisfaction and attachment avoidance.

While revisions and further studies on the HEART are necessary, the HEART's potential

impact is significant both in research and clinical practice.

Dedication

This dissertation is dedicated to my parents, Hirokazu Makino and Yoshie Makino in

Japan. My dear dad and mom, I cannot express enough gratitude to you. You have

always loved me and supported me. Your love and encouragement have given me

tremendous strength throughout my life. I know it was not easy for all of us to be

separated by a great distance. However, you have been there for me and with me in all of

the circumstances. Without your support, this accomplishment would have been

impossible. I consider it a great honor to call you "Mom" and "Dad,".

my encouragers and great team members. Without your help, this project would not have been accomplished. Thank you for your hard work in helping me to develop this new measurement and rubrics.

Most importantly, I would like to thank my Lord, God, Savior, Counselor, Helper, and my Teacher, Jesus Christ. Thank you, Jesus, for loving me all of the time. I praise You for Your faithfulness and Your love. You have given me this topic. You have given me everything I need. You taught me that Humility, Empathy, Assertiveness, and Respect are the commandments for us to obey, and they are the demonstration of our love to You and to others. You said, "If you obey my commands, you will remain in my love, just as I have obeyed my Father's commands and remain in his love" (John 15:10). But we cannot love You without you first loving us.

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CHAPTER ONE: THE PROBLEM

Introduction

In recent years, the concept of emotional intelligence (EI) has received a great amount of interest both within and outside the field of psychology (e.g., Bar-On, 1997; Goleman 1995, 1998; Matthews, Zeidner, & Roberts, 2007). Researchers across various disciplines have expected that EI might predict one's life success over and above traditional cognitive intelligence (e.g. Goleman, 1995; Saarni, 1999, Schutte et al. 2001;). The recent growth of EI research is dramatic. Currently, there are several hundred peer-reviewed articles reporting EI tests and related studies (Matthews et al., 2007; Zeidner, Matthews, & Roberts, 2009).

Within psychology, various definitions of EI have been suggested (Matthews et al., 2007). These definitions can be largely divided into two theoretical models (Schulze, Wihelm, & Kyllonen, 2007). One is a trait model, which conceptualizes EI as a collection of emotion-related dispositions (e.g., Petrides & Furnham, 2003), including attitudes and beliefs about emotions and their expression (i.e., emotional schema; Leay, 2003). The other approach is the ability model, which formulates EI as a set of emotional abilities, such as being able to perceive, use, understand, and manage emotions in self and others (Mayer & Salovey, 1997).

Depending on the conceptualization, different measurement models and methods have been developed (Zeidner et al., 2009). The trait model tends to use the self-report

method, which consists of evaluating the respondent's attitudes and beliefs about how emotions in self and others should be handled. In contrast, an ability model tends to utilize the observational method and the performance-based method. The observational method is usually used for assessing relationship functions in marital or romantic relationships by observing how couples interact with each other in a conflict within a lab setting. Typically, couples' relational interactions are scored by trained coders using sophisticated coding systems. The performance-based method presents the respondents with situational scenarios and asks them how one might feel or how effective a given response would be in such a situation (Rivers, Brackett, Salovey, & Mayer, 2007). Performance-based tests are administered in either pencil-and-paper format or computer-based format (Mayer, Salovey, & Caruso, 2002).

One difficulty with the current measurement methods of EI is that they do not seem to measure certain core relationship skills, such as empathy and assertiveness skills as they are used in the context of interpersonal conflict (Matthews, Emo, & Roberts, 2006; Rivers et al., 2007; Schulze et al., 2007). This problem is encountered in all three methods. First, while the self-report method is appropriate for measuring one's subjective attitudes and beliefs about emotions, it does not directly assess skills for communicating emotions in both self and others. Secondly, the observational method is labor intensive and cost prohibited (Canary, Cupach, & Messman, 1995). In addition, the observed couple interactions do not accurately reflect the individual's skill level, for they are influenced by coexisting relationship-specific factors. Third, there are no existing

performance-based tests that assess empathy and assertiveness skills (Schulze et al., 2007; Matthews et al., 2006; Rivers et al., 2007).

Thus, there is a need for a practical performance-based EI measure of an individual's capacity to effectively manage interpersonal conflicts. Developing such a measurement, the Humility-Empathy-Assertiveness-Respect Test (HEART), is the goal of this study. The HEART is designed to measure two elements of EI: identifying emotions and communicating emotions. The psychometric properties of the HEART will be examined, including inter-rater reliability, inter-correlations, concurrent validity, discriminant validity, and convergent validity.

Problem Background and Theoretical Development

Numerous studies have been conducted in the field of Emotional Intelligence (EI). Various models and measurements of EI have been proposed. However, studies of EI suffer from a lack of appropriate measurement of EI. In this section, overview of EI studies, models, measurements of the EI are briefly discussed, followed by the statements of the specific problems emerged from the literature review.

Popularity of Emotional Intelligence

Goleman (1995) has usually been given credit for popularizing this term, Emotional Intelligence (EI), to the general public. A search for "emotional intelligence" in a Web engine produced more than 900,000 results (Matthews et al., 2007). EI has also received enormous interest among researchers (e.g., Bar-On, 1997; Goleman, 1995;

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Matthews et al., 2007; Mayer & Salovey, 1997; Petride, & Furnham, 2001; Zeidner, 2009). In professional literature, there are now several hundred peer-reviewed journal articles that deal with EI test development, and its correlations with various constructs such as social functioning and adaptation, personality, and cognitive abilities (Matthews et al., 2007).

EI is a topic that transcends disciplines and fields. The application of EI is seen in psychotherapy (e.g., Atkins, 2005; Greenberg, 2002), education (e.g., Salovey & Sluyter, 1997), leadership (e.g., Feldman, 1999), work and management (e.g., Cherniss & Goleman, 2001; Dulewicz & Higgs, 2000; Goleman, 1998;) and interpersonal relationship (e.g., Brackett, Warner, & Bosco, 2005; Fitness, 2001, 2006; Watson, Hubbard, & Wiese, 2000). Researchers have been interested especially in the existence of abilities that predict real-life success over and above conventional cognitive intelligence. EI is commonly expected to predict clinical, educational, social, interpersonal, and occupational criteria above and beyond those predicted by general intelligence (Matthews et al., 2007; Schulze, Roberts, Zeidner, & Matthews, 2005).

Models of Emotional Intelligence

Various conceptualizations and definitions of EI have been proposed (Matthews et al., 2007). While there is no agreed-upon definition among researchers, there is a general consensus that EI may be an inclusive concept and that different methods of measurement should be applied to measuring different constructs. Various definitions are

largely divided into two theoretical modes: a trait model and an ability model (Matthews et al., 2007; Perez, Petrides, & Furnham, 2005; Schulze et al., 2007).

A trait model suggests EI as a collection of personality traits that encompasses various emotion-related behavior dispositions and self-perceived abilities (Petrides & Furnham, 2001). While Bar-On (1997) defines EI as an "array of non-cognitive capacities, competencies, and skills that influence one's ability to succeed in coping with environmental demands and pressures" (p.14), his theory is commonly considered as a trait model (Mattehws et al., 2002; Petrides & Furnham). Petrides and Furnham discuss that the Bar-On Emotional Quotient inventory (EQ-I; Bar-On, 1997) clearly concerns dispositions and self-perceived abilities. The Bar-On's (1997) EI model is comprehensive, including intrapersonal skills, interpersonal skills, adaptability, stress-management, and general mood. A more narrowly defined version of trait EI model is Leahy's (2003) concept of emotional schemas, which are the individual's conceptions of emotions and strategies of responding to them. Leahy (2002, 2003) proposes that emotions such as fear, sadness, anxiety, and loneliness are universal experiences but people differ in their interpretations and beliefs about emotions and in their strategies of responding to them. Leahy proposes 14 different emotional schemas and has developed the Emotional Schema Questionnaire (Leahy, 2002). Examples of emotional schemas are a belief that one should not have a certain emotion, a view that one can have conflicting feelings about self and others, and a tendency to feel numb in response to intense feeling.

An ability model conceptualizes EI as a set of mental abilities (Mayer, Roberts, & Barsade, 2008). The most well-known and widely studied model is Mayer and Salovey's

(1997) four-branch model (Matthews et al., 2007). EI is defined as "the perception, use, understanding, and management of one's own and others' emotional states to solve problems and regulate behavior" (Rivers et al., 2007, p.230). The first branch, Perceiving Emotions, includes skills related to identifying and differentiating emotions in self and others. The second branch, Facilitating Thoughts, refers to using emotions to facilitate thought and language. The third branch, the Understanding Emotions, includes the ability to label emotions accurately, interpret their meanings, and understand transitions between emotions. The fourth branch, Managing Emotions, includes the ability to reduce, enhance, and modify emotional response, reflect on emotions, and experience a range of emotions.

Measurements of Emotional Intelligence

While researchers have not come to a consensus of conceptualizations and definitions of EI, they commonly agree that the trait model should be studied separately from ability-based EI (Matthews, Zeidner, & Roberts, 2002; 2007). The trait model should be measured through self-report method, while the ability model should be measured with performance-based method (Petrides & Furnham, 2001) or through the observational method (O'Sullivan, 2007). The importance of this methodological distinction is supported by the empirical results showing weak correlations between objective tests and self-reports (Brackett, Rivers, Shiffman, Lerner, & Salovey, 2006; Matthews et al., 2007).

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The self-report method consists of evaluating the respondents' perceived abilities, disposition, attitudes, and beliefs about how emotions in self and others are handled. The participants respond to the items according to whether they agree or disagree. An example of self-report EI measures is the Bar-On Emotional Quotient (EQ-i; 1997). EQ-i consists of 133 items, which are presented by five-point Likert scales raging from 1(very seldom true of me) to 5 (very often true of me). The Emotional Schema Questionnaire, which is used in this study, contains 50 items, such as "Some feelings are wrong to have" or "I feel that I can express my feelings openly." The participants respond to these items with six-point Likert scales.

The observational method typically requires participation in dyads to discuss topics designed to yield conflict-relevant interactions. Relational interactions are usually observed in a lab setting with audio or visual recording devices and scored by trained coders using sophisticated coding systems (Canary et al., 1995). Examples of observational procedures of measuring couple interactions are the Marital Interaction Coding System (Weiss & Summers, 1983) and the Couples Interaction Scoring System (Gottman, 1979).

The performance-based methods present pictures or scenarios, which are followed by questions with multiple-choice answers or statements with which respondents identify emotions or effectiveness of a certain course of action. For example, an item in the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Mayer, Salovey, & Caruso, 2002) presents a description of a scenario in which John was completely surprised by hearing a colleague, with whom John had developed close friendship, say

that he had taken another job and would be moving out of the area soon. Then participants rate the effectiveness of a course of action available to John - "John was very angry that his friend hadn't said anything. John showed his disapproval by deciding to ignore his friend until the friend said something about what he had done …"- with a five point Likert scale, ranging from 1 (extremely ineffective) to 5 (extremely effective).

The Problem in Current EI Measurement

The problem with the current measurement methods of EI is that there are no existing measurements that assess core relationship skills, such as empathy and assertiveness skills as they are used in the context of interpersonal conflict (Matthews et al., 2006; Rivers et al., 2007; Schulze et al., 2007). This problem is encountered in all three methods. First, while the self-report method is appropriate for measuring one's subjective attitudes and beliefs about emotions, it does not directly assess skills for communicating emotions in both self and others. Secondly, the observational method of assessing interpersonal abilities is labor intensive and cost prohibited (Canary et al., 1995). Furthermore, the observational method is limited as a means of measuring individual ability, since how each individual performs in the interaction is influenced by coexisting relationship-specific factors such as relationship satisfaction, motivation, and degree of distress in the relationship. Consequently, the type and quality of communication skills in the observation method may not be a true reflection of the participant's skill level, but may simply be a reflection of the quality of the relationship. In other words, an observational method cannot distinguish between motivation deficits

and skill deficits, as individuals with poor motivation to manage relationship conflict may very well under-utilize their skills. Thirdly, with the performance-based method, there are no existing tests that assess empathy and assertiveness skills (Matthews et al., 2006; Rivers et al., 2007; Schulze et al., 2007). One of the most well-known ability-based models of EI is Mayer and Salovey's (1997) four branch model, which differentiates among four core abilities: Identifying Emotions, Facilitating Thoughts, Understanding Emotions, and Managing Emotions. However, this model does not include several important interpersonal qualities commonly attributed to EI, most notably the abilities of empathy and assertiveness skills in the context of close relationship conflict (Matthews et al., 2006; Rivers et al., 2007). Because most of the ability-based tests are based on Mayer and Salovey's model, there are no effective tools to measure empathy and assertiveness skills.

Purpose of the Study

Review of current models of EI measures reveals a need for a practical performance-based EI measure that assesses core relationship skills. These skills include individuals' abilities to a) identify one's own and others' emotions and b) communicate these emotions in a context of interpersonal conflicts. Developing such a measurement, the Humility-Empathy-Assertiveness Respect Test (HEART), is the goal of this study. The HEART is designed to measure the abilities classified as *identifying emotions* and *communicating emotions* in a context of relationship conflict. In completing the HEART, participants are presented with written scenarios of interpersonal conflicts and asked to

produce written responses to specific questions about these scenarios. The written responses are scored based on the five key effective communication skills adopted from Burns' (1999) *Five secrets of intimate communication*. In this study, the psychometric properties of the HEART will be examined, including, inter-rater reliability, inter-correlations, discriminant validity (with IQ) concurrent validity (with self-report measure of EI and with existing performance-based EI), and convergent validity (with self-report measures of relationship satisfaction and of adult attachment).

The Research Questions

The following research questions are explored in this study.

RQ$_1$. What is the inter-rater reliability of the HEART?

RQ$_2$. What are patterns of inter-correlations among scores of the HEART?

RQ$_3$. To what extent does the HEART demonstrate evidence of discriminant validity when correlated with cognitive intelligence?

RQ$_4$. To what extent does the HEART demonstrate evidence of concurrent validity when correlated with other measures that theoretically reflect Emotional Intelligence?

RQ$_5$. To what extent does the HEART demonstrate evidence of convergent validity when correlated with relationship satisfaction?

RQ$_6$. To what extent does the HEART demonstrate evidence of convergent validity when correlated with adult attachment?

Significance of Study and its Implications

The HEART will serve as a new method of measuring the ability to identify emotions and communicate emotions. This new instrument may contribute to further advancement of studies of EI. The HEART is expected to be applied across the broad fields of study, including marriage and close relationship, emotion regulation, empathy, socio-emotional development, and therapeutic skill development.

This instrument can also be used as a clinical measure of interpersonal communication skills. The HEART can be used to examine clients' improvement in interpersonal communication skills as a therapeutic outcome. Since this measurement is expected to differentiate individuals with skill deficit from those with motivation deficit in maintaining close relationships, it can be used for interventions that specifically aim at skill building. By reviewing and modifying the responses that the clients produce in the HEART scale, the therapist can assist clients to learn the empathy and assertiveness skills that are important for close relationships.

Limitations and Delimitations

As mentioned earlier, the conceptualizations and definitions of EI vary. It is often viewed as an elusive concept (Matthews et al., 2007). However, in this study, it is conceptualized as a set of mental abilities. While all four branches may be important, the HEART only concerns two of these four branches. More specifically, the HEART only concerns *identifying emotions* and *communicating emotions* in this study, and it does not measure the second and the third branches of Mayer and Salovey's (1997) model (i.e.,

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Facilitating Thoughts and Understanding Emotions). *Identifying Emotion* conceptually corresponds with the first branch of Mayer and Salovey's model, the Perceiving Emotions. *Communicating Emotions* in this study conceptually involves the fourth branch of Mayer and Salovey, Managing Emotions.

The HEART only measures the empathy skill and assertiveness skill demonstrated on the written responses based on the four components (Humility, Empathy, Assertiveness, and Respect). In relationship conflict, nonverbal communication behaviors reveal much about peoples' affective responses to conflict, sometimes more than verbal communication (Gottman, 1994, 2000). In the HEART, both provided scenarios and participants' responses are in a written format that does not convey such non-verbal communication. In addition, observational measurements or conflict strategy scales often examine a wide range of communication patterns, including destructive strategies such as the use of sarcasm and blame on others. The HEART only measures empathy and assertiveness skills and does not measure other types of communication.

Even in measuring empathy and assertiveness skills, the HEART has some limitations. While the HEART is designed to measure one's ability in an interpersonal context by providing the scenarios, the results of the HEART still do not actually measure one's performance of those abilities in a real conflict, which is the case for an observational measurement procedure in a lab setting.

There were further limitations due to the pilot nature of the study. The sampling method was convenient sampling; participants were selected from graduate students who took counseling classes taught by various instructors. Thus, the demonstration of the

counseling skills may be influenced by various history factors (i.e., instructor's emphasis, content of the class, and timing or sequence of various counseling skills being introduced).

<center>Definitions</center>

The following definitions are used in this study.

Emotional intelligence is defined as a set of abilities to understand emotions of self and others and communicate them effectively in order to achieve interpersonal goals such as to establish and maintain close relationships. EI is considered to be composed of two major abilities: *identifying emotions* and *communicating emotions*.

Identifying Emotions is the ability to recognize emotions in self and others and to understand why one feels a certain way. There are two dimensions in identifying emotions: identifying emotions *in self* and identifying emotions *in others*.

Communicating Emotions refers to the ability to convey one's and others' internal states such as emotions and thoughts to the other persons for the purpose of establishing and maintaining the quality of interpersonal relationships. Communicating emotions includes following three abilities: *empathy*, *assertiveness*, and *respect* (Burns, 1999).

Empathy is defined as individuals' ability to understand and acknowledge others' emotions and why they feel that way (Burns, 1999). It involves using emotional

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words such as "angry" or "sad" to convey one's understanding of others' emotion (Burns, 1999). Empathy also includes skills of *humility*.

Humility is an advanced form of empathy. It requires individuals to have a certain amount of cognitive flexibility so they are able to take others' perspectives in the context of a relationship conflict. Humility is the ability to acknowledge one's own personal shortcomings and to communicate the validity in others' criticism. Even when the criticism is over-generalized or negatively charged, the individuals with this ability are able to acknowledge that the criticism is sometimes true or understand why the others think that way. Burns (1999) calls this ability the disarming technique.

Assertiveness is the ability to express one's own feelings and why they feel a certain way openly and in respectful manner (Burns, 1999). Assertiveness includes the ability to communicate in a non-judgmental way how the others' specific behaviors affect one's own emotion. This ability also includes the ability to communicate one's own needs and concerns in an appropriate interpersonal context.

Respect is the ability to acknowledge others' positive intention behind their behavior and to express positive feelings about others and the relationships with them (Burns, 1999). Thus, individuals with this ability do not question the intensions of the others or judge the others; rather, they convey respect in an attempt to bring out the best in others (Burns, 1999).

MSCEIT Total EI is an overall index of Salovey and Mayer's (1997) four branch model of EI measured by the MSCEIT. This includes ability to perceive accurately, to

access and/or generate feelings when they facilitate thought, to understand

emotion, and to modulate emotions to promote emotional and intellectual growth.

Perceiving Emotions is the first branch of Salovey and Mayer's (1997) model of EI. It is

defined as the ability to identify and differentiate emotions in both the self and

other.

Facilitating Thoughts (Using Emotions) is the second branch of Salovey and Mayer's

(1997) model of EI. It is defined as the ability to use or generate emotions to

facilitate cognitive activities.

Understanding Emotions is the third branch of Salovey and Mayer's (1997) mode of EI.

It is defined as the ability to label emotions, differentiate them, and understand the

relationships among these emotions.

Managing Emotions is the fourth branch of Salovey and Mayer's (1997) model of EI. It is

defined as the ability to modulate emotions in order to make better decisions in an

appropriate context.

Emotional Schemas are defined as the individual's conceptions of emotions and beliefs

about how emotions should be handled (Leahy, 2002; 2003).

Attachment is an intimate relationship that is characterized by behavioral control system,

in which an individual seeks and maintains proximity to the other in times of

distress (Bowlby, 1983). Adult Attachment is the attachment relationships

formed by an adult with another adult, especially in a romantic relationship.

Attachment theory suggests that attachment formed with one's caregiver in infancy serves

as life-long organizer of affect regulation, interpersonal strategies, and core-

beliefs (i.e., one's foundational beliefs about self worth and lovability, and about availability and trustworthiness of others; Lopez & Brennan, 2000).

Attachment Avoidance is a dimension or style of adult attachment characterized by discomfort in being close to the romantic partner. Individuals with high Attachment Avoidance tend to be emotionally withdrawn and rely on themselves in times of distress (Brennan, Clark, & Shaver, 1998; Lopez & Brennan, 2000).

Attachment Anxiety is another dimension of style of adult attachment, characterized by fear of rejection and abandonment from the romantic partner. Individuals with high Attachment Anxiety tend to worry whether their partner is available, responsive, and attentive to them and are easily angered when their emotional needs are unmet (Brennan et al., 1998; Lopez & Brennan, 2000).

Procedural knowledge is a type of knowledge demonstrated by skilled performance and often individuals cannot verbalize this knowledge (Anderson, 1996). It entails "knowing how" in contrast to "knowing that" (Wallin, 2007, p.118). It is also referred to as implicit memory/knowledge.

Declarative knowledge is a type of knowledge that entails facts that can be consciously recalled and discussed (Wallin, 2007). It is also referred to as explicit memory/knowledge.

Inter-rater reliability reflects the degree of agreement among raters who rate the same performance of an instrument (Portney & Watkins, 2000).

Face validity concerns whether a test appears to measure what it is supposed to measure (Portney & Watkins, 2000).

Criterion measure is an already established test that is designed to measure the same

      construct as the target test is intended to measure (Portney & Watkins, 2000).

Concurrent validity concerns whether the target instrument predicts the criterion measure

      administered at the same time (Portney & Watkins, 2000).

Convergent validity concerns whether the target instrument yields high correlations with

      other tests that are designed to measure the similar underlying phenomenon

      (Portney & Watkins, 2000).

Discriminant validity concerns whether the target instrument yields low correlations with

      other tests that are designed to measure different constructs (Portney & Watkins,

      2000).

Sensitivity means the test's ability to detect positive results when the target condition is

      actually present (Portney & Watkins, 2000).

Specificity means the test's ability to obtain a negative result when the condition is really

      absent, or a true negative (Portney & Watkins, 2000).

Ceiling effect is a limitation of the measure that decreases its ability to differentiate

      between scores in a higher ranger (Jackson, 2009).

Floor effect is a limitation of the measure that decreases its ability to differentiate

      between scores in a lower range (Jackson, 2009).

<div align="center">Organization of Remaining Chapters</div>

     In the second chapter, the review of literature on EI models, and EI

measurements, and critiques is provided. The development of HEART is also discussed.

In the third chapter, methods of testing the psychometrics of the HEART, including reliability and validity are discussed. In the fourth chapter, the results of the study are reported. Finally, in the fifth chapter, summary, conclusions and recommendations are discussed.

Summary

Despite the popularity of EI and the expectations that people have that EI will predict life success, there is no practical performance-based EI test that accurately measures important interpersonal skills. These skills include empathy skills and assertiveness skills that are essential for developing and maintaining satisfying intimate relationships. Thus this study attempts to develop an instrument to measure these skills based on Burns' (1999) five principles in good communication. In this study, the psychometric properties of this new EI test, the HEART, are explored.

CHAPTER TWO: REVIEW OF THE LITERATURE

Overview

Study of Emotional Intelligence (EI) has a long history and is still popular. The concept of EI was discussed as early as the 1920s among scholars. Hundreds of studies on EI have been conducted across various disciplines in recent years. However, EI studies lack consensus on definitions and appropriate measurement methods (Matthews et al., 2007; Zeidner, 2009). This chapter provides a brief review of the history of EI studies, a summary of existing EI models and measurement methods, a critical review of the current EI measurements, and discussion of the current study.

History of EI and its Popularity

Studies on EI date back to the early 1990s. Even though traditional theories of intelligence emphasized cognitive aspects (i.e., memory and problem solving), pioneers of the study of intelligence commonly recognized that cognitive intelligence does not explain all human abilities and is not the only factor that determines one's life success. For example, as early as the 1920s, Thorndike (1927) recognized that true intelligence consists of more than an academic component. Intelligence theorists Guilford (1967), Gardner (1983), and Sternberg (1985) all held a multi-dimensional view of human intelligence, in that intelligence includes social, emotional, cultural, and practical

dimensions. Sternberg (1985) also suggested that cognitive intelligence does not comprehensively explain success in everyday life.

The focus of this study, identifying emotions in self and others and communicating them effectively in order to achieve interpersonal goals, has long been discussed among these pioneers. For example, Thorndike (1927) defined social intelligence as the ability to understand and manage human relationships wisely. Guilford (1967) equated social intelligence to empathy (i.e., ability to perceive other individuals' thinking, feelings, and intentions) and included it in his 120 distinct factors of the model of human intelligence. Particularly stressing the importance of emotional experience, Gardner (1983) introduced the concepts of *intrapersonal* intelligence (i.e., the ability to know oneself) and *interpersonal* intelligence (i.e., the ability to know others). He argued that the core capacity of intrapersonal intelligence is being able to get in touch with one's own emotional life, which includes abilities to differentiate among emotions, label them, represent them symbolically, and use them to understand and guide one's own behavior. In contrast, the core capacity of interpersonal intelligence is being able to identify and distinguish among others' emotions, motivation, temperaments, motivations, and intentions (Gardner, 1983).

While the term *emotional intelligence* appeared several times earlier in the literature (e.g., Greenspan, 1981; Payne, 1986), Salovey and Mayer (1990) are usually credited for reviving interest in the study of EI with their refined model of EI and with their efforts in empirical studies (Burns, Bastian, & Nettelbeck, 2007; Mayer, DiPaolo, & Salovey, 1990). Later, the book by Daniel Goleman (1995), *Emotional Intelligence: Why*

it can matter more than IQ, further stirred interest both among scientific researchers and in the general public. Following the publication of this book, many models of EI emerged, including Bar-On's (1997) model and Goleman's (1995) model.

The recent growth of EI research is dramatic. Currently, there are several hundred peer reviewed journal articles reporting EI test development, correlational studies with EI, and validation of tests against measures of social functioning and adaptation (Matthews et al., 2007). The research of EI has been motivated by the expectation that EI might predict individual differences in successful real-life outcomes better than current models of cognitive intelligence (Burns et al., 2007; Gottfredson, 1997; Neisser et al., 1996; Schmidt & Hunter, 1998), since IQ has been shown to account for 25% of variance, at most, in educational achievement and work success with the most sophisticated IQ measurements (Goleman, 1995). Thus, as implied in Goleman's book title, whether EI predicts one's life success over and above IQ has continued to be the quest that inspires numerous researchers across various disciplines (Matthews et al., 2007). The application of EI is seen in psychotherapy (Atkins, 2005; Greenberg, 2002), academics (Salovey & Sluyter, 1997), leadership (Feldman, 1999), and work and management (Cherniss & Goleman, 2001; Dulewicz & Higgs, 2000). Matthews, Zeidner and Roberts (2007) state that studies on EI have become popular with the expectations that EI might predict outcomes in clinical, educational, and occupational criteria above and beyond than IQ does.

EI is expected to predict people's social life in particular. It is anticipated that people with high EI should be able to form and maintain satisfying interpersonal

relationships (Goleman, 1995; Lopes, Salovey, & Straus, 2003; Smith, Patrick, & Ciarochi, 2008). Brackett, Rivers, Shiffman, Learner, and Salovey (2006) propose that EI theory should provide an integrative framework to study the role of social functioning, specifically in forming better quality relationships. Moreover, Fitness (2001, 2006) suggests EI may be a major factor in determining adaptive interpersonal relationships. It is expected that individuals with high EI are likely to communicate more effectively, handle conflicts more effectively, regulate their emotions better, have more stable relationships (Fitness, 2001), and have higher relationship satisfaction than those with lower EI (Brackett, Warner, & Bosco, 2005; Fitness, 2001).

However, the claim that EI is superior to measures of cognitive intelligence (i.e., IQ) in predicting life success is still too early to be concluded and lacks scientific evidence (Matthews et al., 2006). Lack of consensus on definitions and on critical components of EI among researchers and lack of appropriate measurement methods continue to be the major problems in scientific studies of EI (Matthews et al., 2007). Without such foundational knowledge of EI and reliable measurements, applied studies that address the predictive validity of EI in life success are difficult to implement (Matthews et al., 2002). Thus, this section attempts to review the existing EI models and measurements and further clarify the problems in the current EI measurement methods.

Models of Emotional Intelligence

Various definitions and theoretical models of EI have been proposed over the past twenty years (Matthews et al., 2007). There are many controversies on conceptualization

of EI, such as whether it is cognitive or non-cognitive, whether it refers to explicit or implicit knowledge of emotion, and how it should be measured and so on (Matthews et al., 2006, 2007). While such controversies are difficult to resolve, there is a general consensus that EI may be an inclusive concept and that different methods of measurement should be applied to measuring different constructs (Matthews et al., 2007; Perez et al., 2005). Various EI models are often divided into two basic theoretical modes: the trait model and the ability model (Matthews et al., 2007; Perez et al., 2005; Schulze et al., 2007). In this section, the trait model and the ability model are reviewed.

Trait EI Model

A trait EI model conceptualizes emotional intelligence as a constellation of behavioral dispositions and self-perceived abilities (Petrides & Furnham, 2001, 2003). Petrides and Furnham (2001, 2003) argue that since trait EI is composed of behavioral tendency and self-perceived abilities, it should be measured by self-reports and investigated within a personality framework. Trait EI researchers (e.g., Bar-On, 2000; Goleman, 1997; Petrides & Furnham, 2001, 2003) emphasize the distinction between traits and abilities, where personality traits represent styles of behaviors and abilities are often referred to as the efficiency of performance output (Schulze et al., 2005). The most well-known trait EI is Bar-On's (1997, 2000) model of emotional and social intelligence. Goleman's (1995) EI model is also a widely recognized trait model. While Leahy's emotional schema, has not been identified as EI in the literature, it is conceptualized as a

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more narrowly focused trait EI model. In this section, Bar-On's model of emotional and social intelligence and Leahy's model of emotional schema are introduced.

Bar-On's Model

Bar-On (1997) defines EI as "an array of non-cognitive capabilities, competencies, and skills that influence one's ability to succeed in coping with environmental demands and pressures" (p.14). Bar-On (2000, 2004) also suggests that these emotional and social competencies should determine individuals' effectiveness in understanding and expressing themselves, as well as understanding and relating to others. While Bar-On uses terms such as "capabilities," "competencies," and even "abilities" in his manual (Bar-On, 1997), his model is commonly considered a trait model, because the model and its corresponding measurement (i.e., The Bar-On Emotional Quotient Inventory; EQ-i, 1997) are mainly concerned with self-perceived abilities and behavioral dispositions (Matthews et al., 2002; Petrides & Furnham, 2001). Bar-On suggested that there are five broad components of EI: intrapersonal skills (i.e., self-perceived ability to understand and express one's own feelings), interpersonal skills (i.e., self-perceived abilities to understand others' emotions and to establish and maintain satisfying relationships), adaptability (i.e., self-perceived abilities to manage immediate situation and to effectively solve problems), stress management (i.e., self-perceived abilities to manage and control emotions), and general mood (i.e., tendency to generate positive mood and be motivated). These five components are further subdivided into 15 sub-components. In 2000, Bar-On revised his model. In this new model, five sub-components

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(i.e., self-actualization, independence, social responsibility, happiness, and optimism) of

the original model are no longer actual components of EI but conceptualized as

facilitators of emotionally and socially intelligent behavior (Bar-On, 2000).

Leahy's Model

　　　　While Bar-On's model covers broad aspects of emotional and social

competencies, Leahy's (2003) concept of emotional schemas is more narrowly focused.

Emotional schemas are defined as the individual's conceptions of emotions and beliefs

about how emotions should be handled[1]. For example, one dimension of emotional

schema is called "Guilt", which is defined as a belief that some feelings are wrong to

have. Another emotional schema is called "Uncontrollability", which is a belief that

intense feelings such as anxiety will overwhelm one and be out of one's control. Leahy

(2002, 2003) identified a total of fourteen dimensions of emotional schemas and

developed a self-report, the Emotional Schema Questionnaire based on these fourteen

dimensions. See Appendix A for description of each dimension.

　　　　Conceptually, emotional schemas are tightly connected to emotional management,

a part of emotional processing. According to Leahy (2002, 2003) individuals' emotional

schemas shape the individuals' emotional processing, which includes recognizing

emotions, labeling emotion, identifying emotion, managing emotions, problem solving,

ventilating, relying on others for social support, distracting, and examining one's

cognitive distortions (Leahy, 2003). While emotions such as fear, sadness, anxiety, and

loneliness are universal experiences, people experience and react to these emotions

differently because individuals differ in emotional schemas (Leahy, 2002, 2003). For example, if anger is activated after a relationship break-up, some people may not be able to label and express their anger because they believe they should not be angry with someone they love. Leahy would characterize these individuals as low in Acceptance of Feelings. Others who are high in Acceptance of Feelings may become fully aware of their anger as well as other negative feelings and accept these feelings as neither right nor wrong but as part of being "human" (Leahy, 2003).

Ability EI Model

In 1990, Salovey and Mayer proposed the initial concept of emotional intelligence. From early on, these pioneers have conceptualized EI as a set of abilities, and they used terms such as "abilities," "skills," and "capacities" in describing their model (Mayer & Salovey 1993; Salovey & Mayer 1990). However, since their 1997's model revision, they started further distinguishing their model from the alternative view, the trait models. In their 1997 model, EI was conceptualized as mental abilities such as being able to understand emotions of self and others, and distinguished it from traits and talents; they defined traits as characteristics or preferred behavior patterns (e.g., extroversion, shyness) and talents as non-intellectual abilities such as skills required for sports. Currently, Mayer and Salovey's (1997) four branch model is the most well-known and the most influential EI model. In this section, Mayer and Salovey's (1997) model is introduced.

Mayer and Salovey (1997) define EI as "the ability to perceive accurately, appraise, and express emotion; the ability to access and/or generate feelings when they

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facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth" (p.10). In the most recent writing, Salovey, Mayer, and their colleagues state that this capacity to process emotional information (i.e., EI) enhances cognitive abilities and facilitates social functioning (Rivers et al., 2007). In their model, a collection of abilities is divided into four branches: Perceiving Emotions, Facilitating Thoughts (also called Using Emotions), Understanding Emotions, and Managing Emotions. These four branches are arranged from basic (i.e., Perceiving Emotions) to advanced (i.e., Managing Emotions) psychological processes, that are considered to be dependent upon the lower level abilities to some extent (Rivers et al., 2007). In this model, there are four levels of abilities in each branch. These levels of abilities within each branch are expected to be developed with age and experience.

Perceiving Emotions, the first branch, is considered as the most basic skill set. Perceiving Emotions involves the ability to identify and differentiate emotions in both the self and others (Grewal, Brackett, & Salovey, 2006; Mayer & Salovey, 1997; Rivers et al., 2007). The first level of this branch is identifying emotions in one's physical states, feelings, and thoughts. The second level involves the ability to identify emotions of others. The third level is to express one's own and others' emotions and needs. The most advanced level is the ability to discriminate between accurate and inaccurate or between honest and false expressions of feelings (Mayer & Salovey; Rivers et al.). Mayer and Salovey indicate that individuals obtain these skills in this developmental order from infancy to mature adulthood.

The second branch, Facilitating Thoughts, refers to the ability to use or generate emotions to facilitate cognitive activities (Grewal et al., 2006; Mayers & Salovey, 1997; Rivers et al., 2007). Mayer and Salovey point out that since infancy, emotions should serve as an alerting system by signaling important changes in self and in the environment. For example, the infant cries for milk, warmth, or others' care in his/her distress. As the individual matures, one's emotions begin to integrate with his/her cognition. The most basic level of this branch is the ability to use emotions to direct one's attention to important information about the environment or others (Rivers et al., 2007). For example, "a child worries about his homework while watching TV" (Mayer & Salovey, 1997, p.12). The second level of ability in this branch is one's capacity to generate emotions "on demand," to understand others' situations or to predict future events (Mayer & Salovey). The ability to produce emotional states to facilitate different thinking styles (i.e., multiple perspective taking, deductive vs. inductive reasoning) is considered as the highest level in this branch (Mayer & Salovey, 1997; Rivers et al., 2007).

The third branch, Understanding Emotions, refers to the ability to label emotions, differentiate them, and understand complex relationships among them. The most basic level in this branch includes labeling emotions accurately and recognizing similarities and differences among various emotional labels and emotions themselves. Interpreting meanings of emotions (e.g., anger means that one's goal is blocked) and understanding complexities of emotions such as simultaneous moods and blends of feelings are included in this branch. The advanced level of this domain includes the ability to

recognize transitions between emotions such as frustration, which leads to anger which then leads to rage (Grewal et al., 2006; Mayer & Salovey, 1997; Rivers et al. 2007).

The fourth branch, Managing Emotions, concerns the ability to regulate emotions in order to enhance emotional and intellectual growth. Mayer and Salovey (1997) argue that emotional regulation requires one's ability to tolerate and even welcome emotional reactions. The most basic level in this fourth branch is openness to feelings (e.g., attending and staying open to both pleasant and unpleasant feelings in self and others). The next level is the ability to appropriately engage or detach from an emotion at appropriate times and situations. For example, a mature individual draws back from the argument when he/she is too angry with another. The reflection or meta-experience of emotion and of emotional regulation (e.g., "this feeling is influencing my ability to think rationally") is considered as higher EI in this model (Mayer & Salovey, 1997). At the most advanced level, this branch includes the ability to manage emotions (i.e., moderate negative emotions and improve pleasant emotions) in self and others without compromising the information value of these emotion (Grewal et al., 2006; Mayer & Salovey, 1997; Rivers et al. 2007).

Summary of EI models

In this section, theoretical models of EI were reviewed. There are various definitions and models of EI. These models are generally categorized into either the trait model (e.g., Bar-On's EI model and Leahy's model) or the ability model (e.g., Mayer and Salovey's model). There are common components among different EI models (e.g.,

Identifying Emotions, Managing Emotions); yet, the apparent distinction between the trait model and the ability model has been made in their fundamental conceptualization (Ciarrochi, Chang, & Bajgar, 2001; Petrides & Furnham, 2001). While the trait model suggests EI is a self-perceived ability or subjective attitudes, the ability model conceptualizes it as actual abilities distinguished from self-perceptions. This fundamental difference is reflected in the measurement approaches as reviewed in the next section.

Measurement of Emotional Intelligence

Researchers commonly accept that the trait model (i.e., self-perceived ability or subjective attitudes) should be measured by the self-report method, while the ability model (objectively perceived ability) should be measured by the performance-based methods (Neubauer & Freudenthaler, 2005; Perez et al., 2005; Rivers et al., 2006) or observational method (O'Sullivan, 2007). In the following subsections, a typical procedure and the currently available EI tests of each method (i.e., self-report method, observational method, and performance-based method) are briefly reviewed.

Measurement of Trait EI: Self-Report Method

Typically, with the self-report method, participants are given a set of statements and corresponding answer options. The respondents are asked to choose the answer options according to what degree the statements describe themselves or to what degree they believe the statements are true about themselves. Sometimes respondents rate how often they perform stated behavior. Usually, self-report measurements utilize Likert

scales (e.g., ranging from 1 for strongly disagree or to 5 for strongly agree) as answer

options. Reviewing the EI self-reports, this researcher found three types of questions

(statement) that self-report items ask: self-perceived abilities, behavioral tendencies, and

attitudes or beliefs about emotions. For example, self-report items that measures self-

perceived abilities asks, "I can handle stress without getting too nervous" (Emotional

Quotient inventory, EQi, Bar-On, 1997), and "I can tell how other people are feeling by

listening to the tone of their voice" (The Self-Report EI Scale, SREIS, Schutte et al.,

1998). An example self-report item that taps behavioral tendency is, "I generally hope

for the best" (EQi, Bar-On, 1997). While many self-report items are categorized as

assessment of self-perceived abilities or behavioral tendency, the items in Emotional

Schema Questionnaires (Leahy, 2003) ask respondents' beliefs or attitudes toward

emotions and how emotions should be handled; for example, "I feel ashamed of my

feelings," and "You have to guard against having certain feelings." The self-report

measures are usually delivered either by pencil-paper tests or computerized tests.

Reviewing popular and scholarly sources, Tett, Fox, and Wang (2005) identified

hundreds of EI self-report measurements. However, most of these measurements do not

have strong empirical foundations (Perez et al., 2005; Tett et al., 2005). Tett, Fox, and

Wang (2005) identified only six peer-reviewed inventories that measure overall trait EI:

The Emotional Quotient Inventory (EQ-i, Bar-On, 1997), The Trait Meta-Mood Scale

(TMMS: Salovey, Mayer, Goldman, Turvey, & Palfai, 1995), The Self-Report EI Scale

(SREIS: Schutte et al., 1998), The Wong and Law Emotional Intelligence Scale

(WLEIS: Wong & Law, 2002), The Work-group Emotional Intelligence Profile (WEIP:

Jordan et al., 2002), and The Trait Emotional Intelligence Questionnaire (TEIQue: Petrides & Furnham, 2003). Conceptually, the ability model of EI should not be measured by self-reports. However, four out of these six measures (i.e., TMMS: Salovey et al., 1995; SREIS: Schutte et al., 1998; WLEIS: Wong & Law, 2002; WEIP: Jordan et al., 2002) which are supposedly designed to measure ability model are self-report measures. These self-report measures simply ask respondents' perceptions of their own abilities.

This researcher also acknowledges the existence of other peer-reviewed self-reports that do not correspond with comprehensive trait EI models (i.e., Bar-On model, Salovey and Mayer model), but measure at least one of the components included in these models. For example, self-reports such as The Interpersonal Reactivity Index (Davis, 1983) and Hogan's Scale of Empathy (Hogan, 1969) are often used in research as they are referred to as trait empathy scale or perspective taking scale, measuring recognition or understanding of emotions of others. The self-reports on coping, or emotional regulation such as Ways of Coping Scale (Lazurus & Folkman, 1984) and The Inventory of Cognitive Affect Regulation Strategies (Kamholz, Hayes, Carver, Gulliver, & Perlman, 2006) assess management of emotions of self. These self-report measures ask self-perceived tendencies. For example, an item in the Interpersonal Reactivity Index states, "I sometimes try to understand my friends better by imagining how things would look from their perspective." Similarly, the Inventory of Cognitive Affective Regulation Strategies instructs respondents to rate on a Likert Scale the frequency of using certain

strategy (e.g., "I blamed myself for what went wrong") to cope with difficult situations in the past.

Measurement of Ability Model: Observation Method

The observational method is not usually recognized as an EI measure by EI researchers. However, this researcher recognizes the existence of various observational measurements that assess the interpersonal abilities such as empathy and assertiveness. Typically, measurement of empathy and assertiveness are included as elements of comprehensive coding systems. These observational measurements usually require the dyads' participation in a lab setting. The pairs are generally intimate partners; however, there are some coding systems that assess communication among parent-child dyads (e.g., The Acceptance of Other Scale; Gurney, 1977). The typical protocol starts when couples are instructed to identify a relationship problem to discuss. The couple interactions are recorded with audio or visual recording devices and then transcribed. The written transcriptions are reviewed for accuracy before being scored by trained coders (Canary et al., 1995; Kerig & Baucom, 2004).

There are several observational coding systems that tap into communicating emotions (i.e., ability to convey one's and others' internal states such as emotions and thoughts to the other persons for the purpose of establishing and maintaining the quality of interpersonal relationships). The coding systems that include empathy or related codes are The Social Support Behavior Code (Cutrona & Suhr, 1992, 1994), Communication Skill Test (Floyd, 2004), Repair Attempts Observational Coding System (Tabares, Driver,

& Gottman, 2004), and Rapid Marital Interaction Coding System (RMICS: Heyman, 2004). The observational coding systems that include assertiveness or related codes are Repair Attempts Observational Coding Systems and RMICS.

The observational method is distinct from the self-report method in various ways. While a self-report method simply measures self-perceived behaviors or abilities, an observational method measures performed or observable behavior. Unlike self-report measures, the delivery of observational measures is complex. While self-reports are simply administered using paper-pencil tests or computerized tests, in an observational method, a dyad rather than one individual, is required for observation. Furthermore, while a self-report simply asks respondents to rate the agreement on the items based on their own memories or perspectives, an observational measure actually asks a pair to discuss a relationship problem in a lab, which can lead to an emotionally charged interpersonal conflict.

Measurement of Ability Model: Performance-based Method

The performance-based method has the best features of both the self-report method and the observational method. Similar to the self-report method, the performance-based method is delivered using convenient paper-pencil or computerized tests. Similar to the observational method, the performance-based method is designed to measure performed or observable behavior, rather than self-reported behaviors or abilities. Typically, in the performance-based methods, the respondents are presented with pictures or written scenarios, and a set of questions that follows each picture or scenario. Within

currently existing EI performance tests, questions are usually accompanied by the

multiple-choice options, with which the respondents are asked to rate the likelihood of

the presence of a certain emotion associated with a certain situation or to rate the

effectiveness of a course of action in a scenario. For example, in the most frequently used

measure, the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT, Mayer,

Salovey, Caruso, 2002), the first branch (i.e., Perceiving Emotions) is measured by

asking respondents to rate the degree of certain emotions (e.g., happiness, fear) presented

in the facial expressions or landscape pictures using the five levels of semantic

differentiential scales (1= No Happiness, 5= Extreme Happiness). On the second branch

(i.e., Facilitating Thoughts), respondents are asked to choose a mood that should be most

useful to achieve a certain task (e.g., meeting in-laws for the first time) from five choice

options of mood. The third branch (i.e., Understanding Emotions) is assessed by asking

responders to choose an emotion that one may be likely to feel when two other emotions

are combined (e.g., disgust and anger) or to choose one emotion out of five options that

one might be likely to feel after experiencing certain emotions already (e.g., ashamed and

worthless). The fourth branch (i.e., Managing Emotions) is measured by asking

respondents to rate the degree of effectiveness of given courses of action (1= very

ineffective to 5=very effective) to handle an interpersonal or intrapersonal problem in a

given scenario.

Not as many performance measures of EI have been developed. Except for the

MSCEIT, no other performance-based EI tests assess all branches of Mayer and

Salovey's (1997) model comprehensively. There are only a few other measures that tap

into at least the first branch (i.e., Perceiving Emotions) of Mayer and Salovey's 1997

model. They include the Communication Affect Receiving Ability test (Buck, 1976), the

Caucasian Brief Affect Recognition Test (JACBART: Matumoto et al., 2000), the Profile

of Nonverbal Sensitivity (PONS: Rosenthal, Hall, DiMatteo, Rogers, & Archer, 1979),

the Emotional Accuracy Research Scales (EARS, Geher, Warner, & Brown, 2001), and

the Levels of Emotional Awareness Scale (LEAS, Lane, Quinlan, Schwartz, Walker, &

Zeitlin, 1990). Most of these measurements assess the subjects' ability to identify

emotions in the targets' facial expressions or non-verbal gestures displayed in photos or

video-sequences. On the other hand, the EARS (Geher et al., 2001) and LEAS (Lane et

al., 2001) provide written scenarios, with which respondents are asked to identify the

anticipated feelings of self and others in the scenarios. There were some attempts made in

previous studies to use emotional tasks such as asking participants to sort cards with

emotion terms (Kang & Shaver, 2004) or asking participants to report the degree of

emotions they experience after viewing emotion-provoking video clips (Ciarrochi, Chan,

& Bajgar, 2001) to measure the third (i.e., differentiate emotions) or fourth (i. e., manage

emotions) branch of the Salovey and Mayer's model. Strictly speaking, however, these

tasks are not formalized as paper-pencil or computerized tests. Thus it can be concluded

that there are no other performance-based EI tests (i.e., defined as performance based

paper-pencil or computerized tests) - except the MSCEIT - that assess the second, third,

fourth, branches of the model.

Problems in Current EI Measurements

The problem with the current measurement methods of EI is that they lack

measurements that directly assess core interpersonal abilities, including the ability to

identify emotions in others and to communicate one's own emotions effectively (i.e.,

empathy and assertiveness, respectively), in the context of interpersonal conflict

(Matthews et al., 2006; Rivers et al., 2007; Schulze et al., 2007). This problem is

encountered in all three methods. This section provides a critique of each EI

measurement method.

Problems in Self-report Method

As reviewed earlier, three types of questions are typically asked in self-reports:

self-perceived abilities, self-perceived behavioral tendency, and attitudes/beliefs about

emotions. The most obvious critique of the self-report method is that the self-perceived

abilities and behavioral tendency resulting from self-reports can never be equated with

actual emotional abilities (Perez et al., 2005). The self-report method is appropriate as a

subjective assessment of one's own beliefs, attitudes, or degree of emotions as seen in the

Emotional Schema Questionnaire (Leahy, 2002, 2003). However, in terms of abilities,

only the subjective perception of emotional abilities is assessed with self-report; the

objective assessment of these abilities is not possible with this method (Ciarrochi, Chan,

Caputi, & Roberts, 2001; Shulze et al., 2007).

Due to its subjective nature, the data obtained from self-reports is less informative

than both the observational method and the performance-based method regarding the

individuals' effectiveness in achieving relational goals. Self-report items asking self-perceived abilities in identifying emotions, (i.e., "I always know exactly how I am feeling" [TMMS, Salovey et al., 1995, p.13] or "I'm good at understanding the way other people feel" [EQ-I, Bar-On, 1997]) do not inform whether these identified emotions are accurate in the interpersonal context. In the same way, items asking self-perceived abilities in communicating emotions (e.g., "When I'm angry with others, I can tell them about it" [EQ-I, Bar-On] or "I often communicate with others how and why I felt angry with others" [EQ-i; Bar-On]) do not assess how effective the individuals' interpersonal abilities are in communicating ones' or others' feelings in maintaining the meaningful relationships.

Skeptics have questioned people's capacity to provide accurate information about their own abilities on the self-report (Schulze et al., 2007). Shulze and colleagues illustrate this problem using the example that it is possible for people to report their own academic abilities since they are readily informed through objective measures such as GPA or SAT results; however, it is not the case for EI. People are not familiar with the concept of EI and have rarely taken EI measures before. Thus the respondents have to estimate their own EI on self-reports, which does not seem to be reliable (Schulze et al., 2007). According to a study by Brackett and associates (2006), participants' own estimates of their scores on the MSCEIT (Mayer et al., 2002) before and after taking the MSCEIT were not correlated with actual performance on the MSCEIT.

Even if one has knowledge about his/her own EI, it has been argued that self-reports are susceptible to the influence of social desirability (Paulhus, 1991; Shulze et al.,

2007). The EQ-i (Bar-on, 1997) includes validity scales (i.e., "Fake Good" and "Fake Bad") that are used to adjust EQ-i content scores. However, empirical studies reveal mixed findings about correlations between EI self-report measures and social desirability indicators. According to a study by Bar-On, Brown, Kirkcaldy, and Thome (2000), the correlation coefficients between each of the EQ-i subscales and Fake Good were low (the average correlation coefficients $r = .08$) except for *Social Responsibility* ($r = .28$). In contrast, with Fake Bad, all of the subscales of EQ-i were correlated negatively; the correlations range from -.72 (with *Reality Testing*) to -.26 (*Flexibility;* Bar-On et al., 2000). Using an offender sample, Hemmati, Mills, and Kroner (2004) reported a high correlation coefficient ($r = .50$) between total EQ-i and impression management. The SREI (Schutte et al., 1998) showed modest relationships with desirability indices; low correlations were reported with total score ($r = .12$, Saklofske, Austin, & Minski, 2003) and with subscales of SREI, ranging from $r = .08$ to $.r = .21$ (Austin, Saklofske, Huang, & McKenney, 2004).

The discrepancy between trait EI measured by self-report method and ability EI measured by the performance-based method or observational method has been supported by empirical studies. For example, various studies have shown non-significant to low correlations between EI scores on self-reports and the EI scores measured by a performance-based test (e.g., Brackett et al., 2006; Goldenbert, Matheson, & Mantler, 2006). This point was clearly evidenced by Brackett et al.'s (2006) study, which showed no significant correlations between the MSCEIT and an EI self-report that was developed specifically so that it paralleled the MSCEIT components. It is acknowledged that low

correlations between self-report measures and performance-based tests do not automatically make the self-report method less valid than the performance-based method, because it is still questionable whether the current performance tests (i.e., the MSCEIT) accurately measure ability EI (see discussion of the MSCEIT in the next section). However, a study by Brackett and colleagues (2006) further showed superiority of the performance-based test in predicting social competence (i.e., confederate evaluations of social engagement in a waiting room) over the self-report method. In this study, the performance-based EI test showed stronger predictive validity than self-reports in social competence (i.e., social engagement, comfort level, ability to work well with others, and overall impression in an initial meeting with a stranger) in a lab setting, where participants were asked to get to know the confederate (a stranger). This study used judges' and confederate's rating on the participant's performance as criterion.

While this study Brackett et al. (2006) showed that the MSCEIT predicted observed social competence better than the self-report measure, it is still too early to conclude that the performance-based EI test (i.e., MSCEIT) has a better predictive validity. This study did not examine its predictability in other social contexts, such as in close and/or long-term relationships or in interpersonal conflict, where more sophisticated interpersonal skills are required than in an initial meeting with people. Thus this study only shows that the MSCEIT may better predict a certain social competence (meeting with a stranger) than the self-report EI does. However, self-report measures, as well as performance-based tests need to be examined in such social contexts as interpersonal conflict.

To summarize, there are various problems in applying the self-report method in measuring EI, particularly in measuring interpersonal abilities. The abilities measured on self-reports are only measured as self-perceived abilities or self-perceived behavioral tendency and can never be equated with actual abilities objectively measured. Thus, the self-report method does not ensure the accuracy or effectiveness of these skills. The EI results from self-reports are not dependable, because respondents may not have a very accurate knowledge of their levels of emotional abilities and their reports are susceptible to the influence of social desirability. The empirical studies have supported the distinctiveness of self-reported EI from objectively measured EI and self-reports' weaker predictive validity. Thus, objective assessment of EI requires alternative methods such as the observational method and the performance-based method.

Problems in Observation Method

There are two major limitations in applying the observational method to measure EI. First, the observational method is not practical; it is both labor intensive and cost inhibited. Administration of observational measurements requires extensive training, transcribing, coding, and scoring. For example, it requires 28 hours for trained coders to both transcribe and score one hour of observation in the Couple Interaction Scoring System (Gottman, 1979). It further requires expensive equipment, such as audio or visual recording systems and laboratory for observation (Canary et al., 1995).

Secondly, in the observational method, an interaction is necessary, yet it is almost impossible to measure one's isolated individual skills in the interaction. The individual's

demonstration of communicating emotions (i.e., empathy and assertiveness) in the interaction is influenced by relationship-specific factors such as relationship satisfaction, degree of distress in the relationship, and partners' motivation. The uses of empathy and relationship satisfaction have been shown to be correlated (Long & Andrews, 1990; Long, Angera, Carter, Nakamoto, & Kalso, 1999). This may imply that people use empathy because they are satisfied in the relationship and motivated to understand the other in a conflict. On the other hand, in dissatisfying relationships, people may have the ability to acknowledge other's emotions and thoughts and take them seriously (i.e., empathy), but fail to empathize with others because they are not motivated to do so. Thus, the performance of communicating emotions (i.e., empathy and assertiveness) measured by the observational method may not be a true representation of the individuals' skill level. In other words, the current observational measurements cannot distinguish skill deficits from motivation deficits or from relationship functioning.

The observational method, therefore, is limited as an assessment tool of interpersonal abilities. It is not only labor intensive and cost inhibited, but is also an inappropriate method for assessing an individual's interpersonal abilities, distinguished from couples' relationship functioning, motivation, or relationship satisfaction. The limitations of the observational method lead to a discussion of performance-based method, which is less expensive and administered individually.

Problems in Performance-Based Method

The most significant problem with the current performance-based measurements is that there is a lack of appropriate measurements of core interpersonal abilities, which include identifying emotions and communicating emotions as defined in this study (Matthews et al., 2006; Rivers et al., 2007). Since the MSCEIT is the most well-known and the most frequently used performance-based test, this section focuses on the critical review of the MSCEIT. Close examinations of the first branch (Perceiving Emotions) and the fourth branch (Managing Emotions) of the MSCEIT are given, because these two branches are conceptually close to identifying emotions and communicating emotions as defined in this study.

First, the history of the development of the MSCEIT reveals that the assessment of one element (sub-branch) in the first branch, expressing emotions and related needs (Mayer & Salovey, 1990), which corresponds with Identifying Emotions in this study, had been dropped over the decades of test revisions. This ability has been discussed as essential for establishing and maintaining interpersonal relationships and has been recognized as a part of the first branch in Mayer and Salovey's 1990 model and was included in the original version of the MSCEIT. However, this element has been eliminated from their 1997 model and from the current MSCEIT. The developers of the MSCEIT, Mayer, Salovey, and Caruso (2002) acknowledge that they have to make pragmatic compromises and exclude this component from the MSCEIT because it is "technically expensive to measure" (p.37).

In the current MSCEIT, the first branch still contains other elements of Perceiving Emotions, such as identifying and differentiating emotions in self and others (which correspond with identifying emotions in this study). However, the assessment lacks interpersonal context, making it less appropriate for assessment of interpersonal abilities. In the first branch, the targets that respondents are asked to identify emotions in do not involve interpersonal context at all. For example, the respondents are only asked to identify and differentiate emotions expressed in photographs of people (face tasks), artistic designs and landscapes (picture tasks). The face task in the MSCEIT is designed to assess identifying emotion through non-verbal signals. However, it is also important for one to understand others' emotions and why they feel that way in an interpersonal context (i.e., interpersonal transactions). Identifying and reflecting how others feel and why they feel a certain way requires more advanced ability, such as integrating emotional information with cognitive process (i.e., perspective taking, and understanding why the other thinks and feels certain way), than just Perceiving one's feelings in a picture or design. As found in the other performance-based tests (e.g., LEAS, Lane et al., 1990; EARS, Geher et al., 2001), the scenarios of interpersonal interactions or interaction tasks are necessary for advancement of assessment in identifying emotions (Rivers et al., 2007)

The fourth branch of the MSCEIT, Managing Emotions, may conceptually come close to interpersonal abilities, especially to communicating emotions, as defined in this study. The second task of this branch in the MSCEIT, the emotional relations task (it is also called social management) is designed to measure individuals' abilities in managing emotions of self and others in order to achieve a specified interpersonal goal (i.e.,

maintaining a good relationship with a close friend; Mayer et al., 2002; Rivers et al.,

2007). However, there are mainly two following limitations with this task, which makes

it inappropriate for assessing these interpersonal skills.

The first limitation is that the structure of the MSCEIT only allows the assessment

of one's knowledge about interpersonal skills, not one's performance of these skills. The

test items ask respondents to evaluate the effectiveness of several different strategies in a

given scenario, rather than asking them to perform actual interpersonal tasks. For

example, one scenario from emotional relations task states,

> John developed a close friend at work over the last year. Today, that friend
>
> completely surprised him by saying he had taken a job at another company and
>
> would be moving out of the area. He had not mentioned he was looking for other
>
> jobs. How effective would John be in maintaining a good relationship, if he chose
>
> to respond in each of the following ways?

After this scenario is given, three responses follow.

> Response 1: John felt good for him and told his friend that he was glad he got the
>
> new job. Over the next few weeks, John made arrangements to ensure they stayed
>
> in touch.
>
> Response 2: John felt sad that his friend was leaving, but he considered what
>
> happened as an indication that the friend did not much care for him. After all, the
>
> friend said nothing about his job search. Given that his friend was leaving anyway,
>
> John did not mention it, but instead went looking for other friends at work.
>
> Response 3: John was very angry that his friend hadn't said anything. John

showed his disapproval by deciding to ignore his friend until the friend said

something about what he had done. John thought that if his friend didn't say

anything, it would confirm John's opinion that the friend was not worth talking to.

Respondents are asked to evaluate the effectiveness of each of these responses on a five

levels of semantic differentiation scale: a) very ineffective, b) somewhat ineffective, c)

neutral, d) somewhat effective, and e) very effective. These items (as well as all other

items in this sub-section of the MSCEIT) instruct respondents to rate the effectiveness of

the given response and do not directly ask respondents to interact with another person in

a scenario. Even if one knows a certain response (i.e., Response 1) is effective in

maintaining a good relationship, it does not mean that he/she can demonstrate the

effectiveness in the actual interaction. Furthermore, even if one knows ignoring this

friend is ineffective (i.e., Response 3), one may not have abilities to communicate his

feelings effectively (i.e., empathy and assertiveness skills). Again, these items only tap

into relational knowledge, not skills.

Equating the knowledge about effectiveness of a course of action to actual

performance on emotional skills is similar to equating one's knowledge of a sport to

one's ability to perform the sport. Matthews and associates (2006) state this problem

using a different phrase: the MSCEIT is considered as rather a measurement of an

academic knowledge about emotion, which makes it likely to predict respondents'

behavioral skills. Schulze and colleagues (2007) further adopt the differentiation of two

kinds of memories to highlight this problem. Declarative memory is a type of memory

that entails facts that can be consciously recalled and described (Wallin, 2007). On the

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other hand, procedural knowledge is a type of knowledge of which people have little conscious awareness and entails "knowing how" in contrast to "knowing that" (Wallin, p.118). Emotional tasks not only involve declarative memory (describe how one would deal with an emotionally charged situation) but also necessitate procedural memory (actually interact with others in an emotionally charged situation such as an interpersonal conflict; Zeidner et al., 2009). The MSCEIT, which instructs respondents to read and choose an effective course of action in an interpersonal situation, simply assesses one's declarative memory (i.e., knowledge of effective strategies) rather than assessing procedural memory about relationships (i.e., one's performance of interpersonal skills applied in a given situation). What is missing in the current EI measurement is an assessment that measures both declarative and procedural memory (Neubauer & Freudenthaler, 2005; Zeidner et al., 2009).

The second limitation with the fourth branch (i.e., relational tasks) of the MSCEIT is that the specific abilities of communicating emotions (empathy and assertiveness) are not addressed in the MSCEIT as seen in the example scenario and responses above. As in responses 2 and 3, when one has negative feelings toward another person, it is more challenging to behave by going toward the person (i.e., use empathy and assertiveness), than going away (i.e., ignore) or going against (i.e., argue). However, especially in these situations, empathy (i.e., ability to acknowledge the other's feeling) and assertiveness (i.e., ability to communicate one's own emotions in a non-judgmental way) are essential to draw a friend closer to oneself (Burns, 1999). These two abilities are also vital in managing one's and others' emotions since accepting, validating, and openly

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communicating emotions are effective strategies (Burns, 1999; Leahy, 2003), and thus, need to be included in assessment of managing emotions.

The MSCEIT is the most comprehensive test for ability EI. However, the essential abilities in achieving interpersonal goals such as establishing and maintaining close relationships are largely omitted. The problems in the performance based tests are that neither the structure nor items themselves in the MSCEIT allow appropriate assessment of the interpersonal abilities of identifying emotions and communicating emotions. This lack of interpersonal abilities in the current performance-based measures suggests a need for the development of a new performance-based emotional intelligence test.

The Current Study

Review of EI literature reveals a lack of performance-based EI measures that assess core relationship skills. The primary purpose of this study is designed to address this need by developing such a measurement, the Humility-Empathy-Assertiveness-Respect Test (HEART). The second purpose of this study is to provide some initial validity data by correlating the HEART with other important and conceptually related constructs. The HEART is designed to measure the abilities classified as identifying emotions and communicating emotions in a context of relationship conflict. Identifying emotions is the ability to recognize emotions in self and others and to understand why one feels a certain way. Communicating emotions is the ability to convey one's and others' emotions and thoughts to others for the purpose of establishing and maintaining the quality of interpersonal relationships.

The HEART is distinct from the existing EI measures in three areas. First, the respondents are asked to perform an emotional or relational task (i.e., identify emotions or respond to the other in a relational context), rather than merely report on one's self-evaluation of emotional abilities such as in the self-report method. Secondly, the HEART is designed as a measurement of individual skills, rather than measurements of a couple's (i.e., observational method), and thus should not be influenced by the presence of the significant other in a relationship or by relationship functioning. Thirdly, while the current performance-based test, namely, the MSCEIT, measures declarative knowledge of interpersonal skills by asking respondents to rate the effectiveness of various courses of actions, the HEART is designed to tap into skills associated with procedural knowledge by asking them to perform interpersonal tasks. In addition, the HEART, skills in identifying emotions and communicating emotions are examined in a context of interpersonal conflict, where these skills may be rather difficult to perform, yet essential for maintaining meaningful relationships.

In completing the HEART, the participants are presented with four written scenarios of interpersonal conflicts. The scenarios involve each participant as a second person, as "you," in a given conflict situation. The respondents are asked to respond to the five questions concerning each scenario. The first question asks how the respondents would handle the situation. They are asked to write down their response verbatim. The response is later scored by trained raters who will judge the respondents performance of both empathy and assertiveness skills. Four component scores will be assessed: Humility, Empathy, Assertiveness, and Respect. Humility is the ability to acknowledge one's

personal shortcomings and to validate the other person's criticism. Empathy is the ability to acknowledge the other person's feelings and thoughts accurately. Assertiveness is the ability to openly express one's own feelings about specific behavior of others in a non-judgmental way, in an attempt to bring out the best in the other person. Respect is the ability to be kind and sensitive even if the other person is being difficult and critical. Respect can also refer to the ability to express positive feelings about the other person and the relationship. These five components are adapted from Burns' (1999) work of *Five Secrets of Intimate Communication*.

After responding to the first question, the respondents will be further asked to respond to a set of four questions concerning the same scenario: a) how they would feel, b) why they feel a certain way, c) how the other in the scenario would feel, and d) why he or she would feel in a certain way. With questions a) and b), the respondents' ability in *identifying emotions in self* is measured. Identifying emotion in self is defined as the ability to identify one's own emotions accurately and understand why one feels a certain way. With questions c) and d), the respondents' ability in *identifying emotions in the other* is measured. Identifying emotions in the other is defined as one's ability to identify the others' emotions accurately and to understand why they feel a certain way from their perspective.

This study is a preliminary investigation of the HEART. In this study, the psychometric properties of the IHEAR scale will be examined, including inter-rater reliability, discriminant validity (with IQ), concurrent validity (with self-report measure

of EI, existing performance-based EI), and convergent validity (with self-report measures of relationship satisfaction and adult attachment).

The Research Questions and Research Hypothesis

The following research questions are explored in this study.

RQ_1. What is the inter-rater reliability of the HEART?

RQ_2. What are patterns of inter-correlations among scores of the HEART?

RQ_3. To what extent does the HEART demonstrate evidence of discriminant validity when correlated with cognitive intelligence?

RQ_4. To what extent does the HEART demonstrate evidence of concurrent validity when correlated with other measures that theoretically reflect Emotional Intelligence?

RQ_5. To what extent does the HEART demonstrate evidence of convergent validity when correlated with relationship satisfaction?

RQ_6. To what extent does the HEART demonstrate evidence of convergent validity when correlated with adult attachment?

These research questions were investigated with the following research hypotheses.

H_1. The HEART has acceptable inter-rater reliability.

H_2. There are statistically significant inter-correlations among HEART scores (item, subscale, total scores, total EI).

H_3. There are weak relationships between EI measured by the HEART and IQ.

H_4. There are statistically significant relationships between EI scores measured by the HEART and EI scores measured by existing EI tests.

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H_5. There are statistically significant relationships between EI measured by the

HEART and relationship satisfaction.

H_6. There are statistically significant relationships between EI measured by the

HEART and adult attachment.

Summary

The concept of EI has become popular both in the general public and in academic

research. Researchers expect that EI should predict life success better than cognitive

intelligence, especially in forming and maintaining satisfying relationships. However,

without appropriate EI measurements, such a claim is immature to conclude. In this

chapter, the current EI models and measurements are reviewed. Furthermore, problems

are identified in each of the measurement method of EI. Such critical review revealed a

need for a new performance-based EI test, which especially assesses interpersonal

abilities.

CHAPTER THREE: METHOD

Overview

This section explains the method of this study. As a preliminary study of the HEART, the inter-rater reliability, concurrent validity, discriminant validity, and convergent were examined using a sample of 109 graduate students at Liberty University's counseling program. This chapter discusses research design, subjects, procedures, instruments, and data analysis utilized in this study.

Method

Research Design

Since the purpose of the research was to validate an instrument that assesses Emotional Intelligence, quantitative methods were used. A cross-sectional non-experimental research design was employed. In order to explore the psychometric properties of the HEART, a correlational research design was used in this study.

Participants

A convenience sampling method was utilized in this study. The subjects for this study were recruited from students pursuing a masters' degree and students at the doctoral level in a counseling program at Liberty University. The master's level participants were those who took the counseling techniques course or the group

counseling class in the spring semester of 2009. These courses were mandatory for all master's level students in counseling. The doctoral level participants were those who took the cognitive therapy course in the spring semester of 2009. Participation in this study was voluntary. The total number of participants was 109 from various sections of these courses.

Table 1 below shows the demographic characteristics of the participants in this study. The age of the participants ranged from 21 to 59 (M= 36.46, SD= 11. 25). Three quarters of the participants were females (75.7%) and about one quarter of them was male students (24.3 %). The majority of students identified themselves as "White Americans" (79.2 %), while 14.2% identified themselves as "African Americans", and 4.7 % as "other". There were only one Hispanic participant and one Asian participant in this sample. Over half of the participants were married (55.7 %), while 7.5 % were divorced, and 36.8 % were those who had never been married. In terms of their clinical experience, 17.9 % of the participants had working experience as a mental health therapist, while 82.1 % had never worked as a mental health therapist. However, when asked about work experience in other types of helping professions (not as mental health therapist), 60% of the participants answered that they already had working experience. Less than half of the participants were in the first year of the program (44.3%).

Table 1

Demographic Characteristics of the Sample

Demographic	Type	N	%
Gender	Male	26	24.3
	Female	81	75.7
Age	20s	37	37.8
	30s	21	21.4
	40s	25	25.5
	50s	15	15.3
Ethnicity	African American	15	14.2
	White American	84	79.2
	Hispanic	1	0.9
	Asian Pacific Islanders	1	0.9
	Other	5	4.7
Relationship Status	Married	59	55.7
	Divorced	8	7.5
	Never been married but in a relationship	20	18.9
	Never been married and is single	19	17.9
Worked as therapist	Yes	19	17.9
	No	87	82.1
Worked as helping profession	Yes	63	60
	No	42	40

Procedures

Development of the Humility-Empathy-Assertiveness-Respect Test (HEART)

The author of this dissertation asked her colleagues to anonymously write up an interpersonal conflict situation where they felt criticized or angry. Reviewing these scenarios as well as other example situations used in various marital counseling text books, the author wrote several imaginary conflict scenarios. After consulting with her colleagues, she chose four scenarios. These four scenarios became the original form of the HEART. She then asked a class of 17 doctoral students to respond to "the other spouse" in the given scenario verbatim. She received feedbacks on the scenarios and instructions as well as their responses to the original HEART. Based on their feedbacks, this author revised the HEART and finally made the current test. Detail descriptions of the instruction and grading rubric of the HEART are discussed under the "Measures" section.

Procedures of the Study of Psychometrics of the HEART

The appropriate documentation was submitted to Liberty University Human Subjects Institutional Review Board (IRB). After obtaining approval, this author received access to the e-mail addresses of all the students who were enrolled in the targeted courses. The announcement was then made about participation in this research via e-mail (Appendix B). This announcement included the purpose of study, the rationale, the risks and benefits, the contact information of the investigator, the duration of study, the confidentiality information, and the voluntary participation. Those who agreed to

participate signed the informed consent form and sent it to the investigator via e-mail. After submitting the signed informed consent (see Appendix C), each participant completed a set of measurements in two phases. The first phase was administered individually online. The second phase was administered in a group setting on a pen-pencil test (i.e., Shipley Institute for Living Scale, SILS; Shipley, 1940) in a lab.

Phase One.

When the participants sent the signed informed consent to the investigator, they received an e-mail, which contained access to the online questionnaires listed below and access to an online test (i.e., the MSCEIT).

- The demographic questionnaire (developed for this study)

- The HEART (developed for this study)

- The Mayer-Salovery-Caruso Emotional Intelligence Test (MSCEIT; Mayer, Salovey, & Caruso, 2002)

- The Emotional Schema Questionnaire (Leahy, 2002)

- The Relationship Assessment Scale (RAS; Hendrick, 1988)

- The Burn's Relationship Satisfaction Scale (BRSS; Burns, 1997)

- The Experiences in Close Relationships-Revised Questionnaire (Fraley, Waller, & Brennan, 2000)

Phase Two.

The participants took the Shipley Institute for Living Scale (SILS; Shipley, 1940) in a class room setting. Following the instructions in the technical manual of the SILS,

the researcher allowed 20 minutes for participants to complete this test. The collected data was scored accordingly and analyzed for the purpose of this study.

Measures

Demographic Information

Participants completed the demographic questionnaire, which included descriptive information such as their age, gender, ethnicity, marriage/relationship status, length of the relationship, and length of enrollment in counseling program. The questionnaire also inquired whether participants have already had clinical experience and how long they have worked as therapists. The demographic questionnaire is attached in Appendix D.

The Humility-Empathy-Assertiveness Respect Test (HEART)

Overview of the HEART

This test was developed for the purpose of this study. The HEART is a performance-based measurement (see Appendix E). The purpose of this test is to measure two major abilities defined as Communicating Emotions (the ability to convey one's and others' internal states such as emotions and thoughts to the other people for the purpose of establishing and maintaining close interpersonal relationships) and Identifying Emotions (the ability to recognize emotions in self and others and to understand why one feels a certain way) in the context of a given interpersonal conflict.

Scoring of the HEART consists of two parts; Part I aims at measuring Communicating Emotions, and Part II concerns measuring Identifying Emotions. The

HEART presents four different written scenarios of relationship conflict, each followed by five questions (Question 1-5). Out of the four scenarios, this study analyzed only the responses to the first scenario due to the time constraint. Most participants took 10 minutes to complete the HEART.

Procedures of the HEART

The HEART first instructs respondents to read the scenarios that involve each respondent as a second person, as "you," in each scenario. The scenarios present interpersonal conflicts between two people in close relationships such as marriage, or close friendship. Each scenario is consistently gender-neutral so that each participant, whether male or female, can easily imagine taking the assigned role in the scenario. The scenario used in this study states,

> You come home after a busy day at work. You have at least several hours of work
> to prepare for an important meeting tomorrow. You know you have to check on
> your sick mother and your child also needs some help for his school project. Your
> spouse is already at home. As soon as you come into the room, your spouse
> launches into a story about how stressful his/her day was. Your spouse then starts
> complaining about his/her boss, a complaint you have heard about over and over
> again. You give him/her short replies such as "uh" and "that's bad." Your spouse
> continues talking to you, while you quickly pick up clutter from the floor and then
> go to another room to check on the children. Your spouse says, "I don't know if it
> is worth talking to you! You never listen to what I have to say."

Question 1 asks respondents how they would verbally respond to the spouse in this scenario. Respondents are instructed to write their response verbatim. Furthermore, if the respondents decide not to say anything to the spouse in this scenario, they are instructed to state "say nothing." This instruction is given in order that such responses as saying nothing should be differentiated from simple blank (no answer or missing data) on the items.

On the next page (after clicking "next" on the web-page), four more questions (Questions 2-5) are given. Question 2 asks, "In this situation, how does your spouse feel?" followed by the Question 3, "Why does he/she feel this way?" Question 4 asks, "In this situation, how do you feel?" followed by Question 5, "Why do you feel this way?" For each question, respondents are instructed to write (type in) freely their answers in the blanks.

Training of Raters

The raters were two doctoral level counseling students and one undergraduate student majoring in psychology. These students were chosen because they had earlier exposure to the materials of effective communication suggested by Burns (1999) through their educational and clinical experience. The author of this dissertation provided two hours of individual training on how to score the HEART based on the scoring rubrics (Appendix F & G) that had been developed for this study. After the training session, two raters were asked to score the first 10 items of the responses. This author examined the agreement between the grading on these 10 items, identified errors, explained rationale

for correct scoring, and gave corrective feedback. She then asked the raters to score 25

more items and examined the agreement. She concluded that there seemed to be no

conceptual misunderstanding among raters based on their scoring results and asked the

raters to score the rest of the items.

Scores of the HEART

Responses to the five questions were evaluated based on the scoring rubric Part I

(Question 1) and Part II (Question 2-4). Part I measures the major score of

Communicating Emotions and it consists of three subscales, Empathy, Assertiveness, and

Respect. Part II measures the major score of Identifying Emotions and it consists of two

subscales, Sum of Self and Sum of Other). See Table 2 below for the construction of

these scores.

Table 2

The structure of the HEART

Overall Scale	Major Scores	Subscales	Items
HEART Total EI	Part I Communicating Emotions	Empathy	Humility
			Feeling Empathy
			Thought Empathy
		Assertiveness	Feeling Assertiveness
			Thought Assertiveness
			Want Assertiveness
		Respect	Positive Regard
	Part II Identifying Emotions	Sum of Other	Feeling of Other
			Thought of Other
		Sum of Self	Feeling of Self
			Thought of Self

Scoring Part I.

The scoring rubric Part I (Appendix F) instructs trained raters how to score the seven items based on the response to Question 1. Each item is scored as either 0 or 1. The rubric provides the definition of each item, and the detailed descriptions of what types of phrases should be graded with 0 or 1. Responses were scored 0 when they did not include

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the necessary components of effective communication (e.g., Humility, Feeling Empathy) or included elements of blame or judgment of the other. The rubric further gives example phrases for meeting or not meeting the criteria of each item. This rubric was constructed based on the components of effective communication skills adopted from Burns' materials (1999). The Empathy subscale is obtained by adding the scores from the three items (Feeling Empathy, Thought Empathy, and Respect). The Assertiveness subscale is obtained by adding the scores of the three items (Feeling Assertiveness, Thought Assertiveness, and Want Assertiveness). The Respect subscale is determined by one item (called Positive Regard). Adding these subscales produces the major score, Communicating Emotions, which ranges from 0 to 7.

Scoring Part II.

The scoring rubric Part II (Appendix G) instructs raters how to score the four items, (i.e., Feeling of Other, Thought of Other, Feeling of Self, Thought of Self) based on the responses to Question 2, 3, 4, and 5. The rubric provides the definitions of each item, and the detailed description of what types of phrases should be graded with 0 or 1. The rubric also shows example phrases for meeting or not meeting the criteria of each item. Responses that included elements of blame (i.e., stating that the problem is the other's fault), judgment (i.e., labeling the other as "bad"), or diversion (i.e., stating something that is not directly asked or irrelevant to the scenario) were scored 0. Adding the first two item scores produces the first subscale, Sum of Other, and adding the latter two item scores produces the second subscale, Sum of Self. Sum of these four item scores produces the major score, Identifying Emotions, which ranges from 0 to 4.

Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT^{TM})

The MSCEIT, Version 2.0 (Mayer et al., 2002) is a performance-based measure of EI, which was designed to measure individuals' abilities to solve emotional problems across the four domains of Mayer and Salovey's (1997) EI model (i.e., Perceiving Emotions, Facilitating Thoughts, Understanding Emotions, Managing Emotions). The MSCEIT contains 141 items that are divided among eight tasks. Participants respond to each item using a Likert scale. Completion of this test takes 30-45 minutes.

The MSCEIT produces 15 scores: a total Emotional Intelligence score, two Area scores, four Branch Scores, and eight Task Scores (Mayer et al., 2002). Each Branch Score is measured by two tasks and calculated by adding the two Task Scores. The Perceiving Emotions measures individuals' ability to recognize emotions in others' facial expression (Face Task), and emotions expressed in landscapes and certain images (Picture Task). Facilitating Thoughts refers to the ability to use emotions to facilitate cognitive activities and measured by asking participants to compare different emotions to different sensations such as light or temperature (Sensation Task). This branch is also assessed by the participants' knowledge of how certain moods associate with certain kinds of thinking and reasoning (Facilitating Task). Understanding Emotions measures the ability to label emotions, differentiate them, and understand the relationships among these emotions. This branch is assessed by participants' knowledge of what emotions consist of certain blends of emotions (Blends Task) and of "chains" of emotions or how emotions changes from one to another (Change Task). Managing Emotions refers to the ability to modulate emotions in order to make better decisions in an appropriate context.

It is measured by asking the participants to rate the effectiveness of certain actions in achieving a certain result in non-interpersonal situations (Emotion Management Task) or in interpersonal context (Emotional Relations Task) where a person must regulate his or her own emotions. The total score, Emotional Intelligence (EQI) consists of these four branch scores (Mayer et al., 2002), representing the overall index of emotional intelligence. The area score, Experiential Emotional Intelligence, is the sum of two branch scores (Perceiving Emotions, Facilitating Thoughts). Another area score, the Strategic Emotional Intelligence is the sum of two other branch scores (Understanding Emotions and Managing Emotions). However, these area scores were not used for analysis of this study. All of the MSCEIT scores are computed and standardized to possess an average score of 100 and a standard deviation of 15.

There are two scoring methods for the MSCEIT, the consensus scoring method and the expert scoring method. In the consensus scoring, a respondent gains credit for correct answers to the extent that his/her answers match those provided by the normative sample (N >5000). This normative data is based on research conducted over 50 research sites, across seven different countries. All of the data collection sites administered the MSCEIT test in English to English-speaking people (Mayer et al., 2002). In the expert scoring method, a respondent's score is determined by the extent to which his/her answers match those provided by consensus of 21 international experts on emotion (Mayer et al., 2002). These two methods generally converge (r >.90: Mayer et al., 2003). In this study, the consensus scoring was used.

The MSCEIT has high internal consistency. The user's manual reports the split-half reliabilities of 0.91 for total Emotional Intelligence, 0.90 for Experiential Emotional Intelligence, and .85 for Strategic Emotional Intelligence (Mayer et al., 2002). Branch score reliabilities range from 0.74 to 0.89, according to the manual. These psychometric properties were examined using the normative sample (N>5000; Mayer et al., 2003). Compared to such highly reliability indexes of the Branch, Area, and Total scales, Task scores show lower internal reliability for example, the coefficient alpha for Sensations Task score is reported as 0.56. The test-retest reliability for the full-scale MSCEIT 2.0 is reported as r =0.86 with an N of 62 (Brackett & Mayer, 2003).

Concerning face validity, Pusey (2000 as cited in Mayer et al., 2002) concludes that the MSCEIT v 1.1 has good face validity by collecting participants' feedbacks (thoughts and reactions) on MSCEIT v 1.1. However, there is no report on face validity available for the MSCEIT V 2.0.

Mayer et al. (2003) conducted confirmatory factor analysis on MSCEIT V2.0, which produced a better fit of models when leading down from the one factor to the four factor solutions. The best fit was found to be the four factor solution. The goodness-of-fit indices were NFT=. 98, .97; TLI=.96, .97; RMSEA=.05, .04, using consensus method and expert method respectively.

Studies have shown that the MSCEIT has low to moderate correlations with other Emotional Intelligence measurements. For example, Brackett and Mayer (2003) report Pearson's correlation coefficients of $r = 0.21$ with a self-report measure, EQ-i (Bar-On, 1997), which was developed on Bar-On's trait-model. Brackett and Mayer also found

correlation coefficients of $r = .18$ with another self-report EI measure, Self-Report

Emotional Intelligence Test (SREIT; Schute et al., 1998), which was developed based on

Salovey and Mayer's ability EI model (1990). The test developers explain these lower

correlations as evidence for discriminant validity of the MSCEIT because the MSCEIT

differs from the other EI tests both in the models (trait model v.s. ability model) and

measuring methods (performance-based v.s. self-report). However, in the study by

Roberts et al. (2006), the MSCEIT showed no correlations even with more conceptually

similar measurements to the MSCEIT in theoretical model (i.e., ability model) and

measurement method (i.e., performance-based method). The first branch, Perceiving

Emotions, was neither correlated with the Japanese and Caucasian Brief Affect

Recognition Test (Matsumoto et al., 2000) nor with the Index of Vocal Emotion

Recognition (Scherer, Banse, & Walbott, 2001); these two measures are consistent in the

model (i.e., ability model, focus on the first branch) and the measuring method (i.e.,

performance-based test) with the MSCEIT.

Various studies on MSCEIT have demonstrated appropriate discriminant validity

from cognitive intelligence. The test developers expect minimal to low-moderate

correlation between MSCEIT and cognitive IQ, for they conceptualize EI as distinctly

different from cognitive IQ. As expected, the MSCEIT total score was only minimally

correlated with Verbal SAT scores ($rs = 0.23$ to 0.29: Brackett & Mayer, 2003). Verbal

IQ score, measured by the Wechsler Adult Intelligence Scale-III (Wechsler, 1997) was

correlated with only one branch, the Understanding Emotion, ($r = 0.39$) and not

correlated with other branch scores (Lopes, Salovey, & Straus, 2003). Understanding

Emotions is expected to have some positive correlation with verbal skills because abilities required to do tasks of Understanding Emotions rely on knowledge of emotional vocabulary.

The MSCEIT has shown low correlations with personality measures. Test developers recognize this pattern as a demonstration of discriminant validity of the MSCEIT. For example, with respect to Big Five traits, the MSCEIT scores were not significantly related to Neuroticism, Extraversion, and Consciousness. They were modestly correlated with Agreeableness ($r = 0.25$; N=140) and Openness ($r = 0.28$, N=140; Brackett & Mayer, 2003). Lopes, Salovey and Straus (2003) report similar correlations between the MSCEIT and Big Five traits, except that they found a modest correlation between the MSCEIT and Consciousness ($r = 0.23$, N=103). The scores on the MSCEIT were correlated with scores on Psychological Well-Being (Ryff, 1989, as cited in Brackett & Mayer, 2003), which includes self-acceptance, environmental mastery, purpose in life, positive relations with others, personal growth, and autonomy ($r =.28$; Brackett & Mayer, 2003). There are other reports on the MSCEIT that show non-significant correlations with personality-related measures, including social desirability measured by Crowne-Marlowe social desirability scale (as cited in Mayer et al., 2002), subjective well-being, self-esteem, private self-consciousness, public self-consciousness, and social anxiety (Lopes, Salovey, & Straus, 2003).

The scores on the MSCEIT have been compared with quality of interpersonal relations. Gomes's (2004) study showed significant correlation of $r = 0.23$ between the MSCEIT Total EI and the Personal Assessment of Intimate Relationship (PAIR: Schaefer,

& Olson, 1981). Zeidner, and Kaluda (2008) also found a significant correlation of $r =$ 0.28 between the MSCEIT Total EI and Triangular Love Scale (TLS; Sternberg, 1986) in husbands; but this correlation was not significant among wives ($r = 0.14$). Both the PAIR and the TLS are self-report measures of intimacy. In the study by Lopes, Salovey and Sttaus (2003), the Managing Emotions positively correlated with positive relations with others ($r = 0.27$), supportive relationships with parents ($r = 0.22$) and negatively correlated with antagonistic and conflicting relationships with a close friend (a non-romantic partner; $r = - 0.45$); the quality of relationship were measured by the self-report, the Network of Relationship Inventory (Furman & Buhrmester, 1985). In the same study, these correlations remained significant after statistically controlling traditional intelligence and personality.

The MSCEIT seems to have low correlations with adult attachment measures. Using Bartholomew and Horowitz's (1991) four-item Relationship Questionnaire, Kafetsios's (2004) study found significant correlations of the Secure attachment style with the Total EI ($rho = 0.28$), the Facilitating Thoughts ($rho = 0.20$), the Understanding Emotions ($rho = 0.23$), and the Managing Emotions ($rho = 0.19$). Kafetsios also found a significant correlation between the Dismissing attachment style with the Understanding Emotions ($rho = 0.28$). However, MSCEIT correlated neither with the fearful attachment nor with the preoccupied attachment. Boncher (2003) used Collin's (1996) 18-item Revised Adult Attachment Scale (1996 as cited in Boncher, 2003) to explore the relationship between the MSCEIT and adult attachment. She found a significant correlation between the Understanding Emotions with the average of the Close and

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Depend subscales (r =0.14, high scores on the Close and Depend subscales indicate

secure attachment style). However, no other branch scores of the MSCEIT significantly

correlated with the RAAS scales.

Leahy Emotional Schemas Questionnaire (LESQ)

The Emotional Schema Questionnaire (Leahy, 2002) is a 50-item self-report

questionnaire (see Appendix H for items). It attempts to measure 14 different dimensions

of emotional schemas that Leahy has suggested. These dimensions and descriptions are

shown in Table 2. The emotional schemas are defined as interpretations and beliefs about

emotions and strategies in responding to them (Leahy, 2002; 2003). There are no

available reports on reliability. Regarding construct validity, Leahy (2002) reports inter-

correlations among dimensions and correlations between each dimension and levels of

depression and anxiety based on the sample of 53 adult psychiatric patients. Depression

was measured by Beck Depression Inventory (Beck & Steer, 1993) and anxiety was

measured by Beck Anxiety Inventory (Beck & Steer, 1990). Depression was related to

greater guilt over emotion, greater rumination, and expectation that one's negative

emotion endures for a longer time. Depression was also related to a less comprehensible

and a less controllable view of emotions. Anxiety was related to greater guilt over

emotion, greater rumination, a more simplistic view of emotion, views of emotion as less

comprehensible, less controllable, and as different from the emotions others have.

Henricks Relationship Assessment Scale (RAS)

The seven-item self-report, the Relationship Assessment Scale (see Appendix I for items) was developed by Hendrick (1988). Participants responded to a five-point Likert format. The RAS is designed to measure satisfaction in romantic relationships in general. The total score can range from 7 to 35, with higher score reflecting greater relationship satisfaction.

In the first study by Hendricks (1998), the principle-components factor analysis yielded one factor, accounting for 46 % of the variance. Alpha coefficients for the RAS ranged from .73 to .93. The inter-correlations ranged from .573 to .760, with a mean of .49 (Hendrick, 1988). In the second study, 57 couples were assessed using the same scale; six out of seven items showed correlations between partners' scores (Hendrick, 1988). In this study, the RAS was shown to be positively correlated with Dyadic Adjustment Scale (r =.80: Spanier, 1976; Spanier & Thompson, 1982). Later, Hendrick, Dicke, and Hendrick (1998) reported a test-retest reliability of .85. In this study, participants were asked to report on their marriage or romantic relationships. Those who were not involved in an exclusive romantic relationship (19 participants) were asked to leave the RAS blank.

Burns Relationship Satisfaction Scale (BRSS)

The BRSS (Burns, 1995) is a seven-item self-report questionnaire (see Appendix J for items). The BRSS assesses individuals' degree of relationship satisfaction in the following seven aspects: communication and openness, conflict resolution, degree of

caring and affection, intimacy and closeness, satisfaction with roles in relationship, and overall relationship satisfaction. With the BRSS, respondents are asked to indicate their degree of satisfaction in each of these areas on a scale from 0 (very dissatisfied) to 6 (very satisfied). Total scores are the sum of items and range from 0–42, with higher scores reflecting greater satisfaction. Internal consistency for the scale is high (coefficient alpha = 0.94). The BRSS is strongly correlated with other measures of relationship satisfaction, including the Locke-Wallace MAT (r =.80: as cited in Steadman, Tremont, & Duncan, 2007). In this study, participants were instructed to rate their marriage or romantic relationship. Those who were not involved in an exclusive romantic relationship were asked to leave the questionnaire blank.

Experiences in Close Relationships-Revised (ECR-R)

The ECR-R questionnaire was developed by Fraley, Waller, and Brennan (2000). This is a revised version of Brennan, Clark, and Shaver's (1998) ECR. The ECR-R is developed to measure individual differences in attachment related anxiety (fear of rejection and abandonment) and in attachment related avoidance (discomfort being close to others) in adult romantic relationships (see Appendix K for items). The ECR-R contains 36 items, 18 items consists of Attachment Anxiety Subscale and the other 18 items consist of Attachment Avoidance Subscale. The respondents are instructed to indicate the agreement on a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). In this study, participants who were not involved in an exclusive romantic relationship (19 participants) were asked to leave this questionnaire blank.

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In two studies (Sibley, Fischer, & Liu, 2005; Fairchild & Finney 2006), confirmatory factor analyses supported the two-factor model. The test-retest reliability was found to be the low 0.90s during a 6-week interval (Sibley & Liu, 2004). Fairchild and Finney (2006) reported good internal consistency of the ECR-R, showing Cronbach's coefficient alpha estimates of internal consistency of 0.927 for Avoidance Subscale and .917 for Anxiety Subscale.

In terms of convergent validity, both Anxiety and Avoidance subscales were negatively correlated with perceived level of social support and with loneliness (Fairchild & Finney, 2006). Avoidance showed a positive relationship aversion to touch (Fairchild & Finney). Sibley, Fischer and Liu (2005) found that attachment related anxiety and avoidance measured by the ECR-R predicted three times more variance of the feelings of anxiety, avoidance, and enjoyment in social interaction with romantic partner than with platonic friend, by analyzing participants' diary entries.

Shipley Institute of Living Scale (SILS)

The SILS was developed by Walter Shipley (1940). The SILS consists of two subtests (i.e., Vocabulary subtest and Abstraction subtest). The SILS is a timed test and participants are given a maximum of 10 minutes per subtest. The Vocabulary subtests contains 40 items that require the respondents to choose which of four listed words "means the same or nearly the same" as a specified target word. There are 20 items in the Abstraction subtest. In Abstraction test, each item includes a logical sequence with a

blank. Respondents are asked to fill in either the numbers or letters that complete the sequences.

Zachary (1991) reports a split-half reliability of 0.92 for the Vocabulary subtests when administered to inpatient psychiatric populations. High correlation coefficients are reported with the WAIS-R ($r = 0.85$: Gregory, 1999), and with the Kaufman Brief Intelligence Test in forensic population ($r = 0.83$: Bowers & Pantle, 1998). In contrast, a modest correlation with WAIS-R is also reported ($r = 0.65$: Watson et al., 1992).

Research Questions and Hypothesis

As stated in the previous chapter, the research questions explored in this study are:

RQ$_1$. What is the inter-rater reliability of the HEART?

RQ$_2$. What are patterns of inter-correlations among scores of the HEART?

RQ$_3$. To what extent does the HEART demonstrate evidence of discriminant validity when correlated with cognitive intelligence?

RQ$_4$. To what extent does the HEART demonstrate evidence of concurrent validity when correlated with other measures that theoretically reflect Emotional Intelligence?

RQ$_5$. To what extent does the HEART demonstrate evidence of convergent validity when correlated with relationship satisfaction?

RQ$_6$. To what extent does the HEART demonstrate evidence of convergent validity when correlated with adult attachment?

These research questions were investigated with the following research hypotheses.

H_1. The HEART has acceptable inter-rater reliability.

H_2. There are statistically significant inter-correlations among HEART scores (item, subscale, total scores, total EI).

H_{2a}. There is a positive correlation between Part I major and Part II major score (major-to-major correlation).

H_{2b}. There are positive correlations among subscales of the HEART (subscale-to-subscale correlations for Part I and Part II).

H_3. There are weak relationships between EI measured by the HEART and IQ.

H_{3a}. There are minimal correlations between HEART scores and Total IQ.

H_{3b}. There are minimal correlations between HEART scores and Verbal IQ.

H_{3c}. There are no correlations between HEART scores and Abstraction IQ.

H_4. There are statistically significant relationships between EI scores measured by the HEART and EI scores measured by existing EI tests.

H_{4a}. There are positive correlations between HEART scores and EI scores measured by the MSCEIT.

H_{4b}. There are correlations between HEART scores and 14 different dimensions of emotional schemas.

H_5. There are statistically significant relationships between EI measured by HEART and relationship satisfaction.

H_{5a}. There are positive correlations between HEART scores and levels of

relationship satisfaction measured by the Relationship Assessment Scale (RAS).

H_{5b}. There are positive correlations between HEART scores and levels of

relationship satisfaction measured by the Burns Relationship Satisfaction Scale

(BRSS).

H_6. There are statistically significant relationships between EI measured by the

HEART and adult attachment.

H_{6a}. There are negative correlations between HEART scores and attachment-

related anxiety.

H_{6b}. There are negative correlations between HEART scores and attachment-

related avoidance.

Data Analysis

1. To assess inter-rater reliability of the HEART (to test H_1), a degree of agreement

    and Cohen's kappa, were computed based on the two raters' scoring the

    completed HEART.

2. To examine the evidence for construct validity, patterns of correlations among

    sub-scales were examined. Pearson's *r* correlation coefficients were produced

    between Part I major score and Part II major score and among subscales. Positive

    relationships were hypothesized among these scores.

3. To examine discriminant validity of the HEART (to test H_3), Pearson's *r*

    correlation coefficients were calculated to examine correlations between each of

the HEART total score, major scores, and subscales, and each of the IQ scores (i.e., Total, Verbal, Abstract) respectively. Point biserial correlations were calculated to explore correlations between each HEART item score (Respect, Feeling of Other, Thought of Other, Feeling of Self, Feeling of Self) and each IQ score. The statistical significance of these correlations as examined using two-tailed test.

4. To examine convergent validity of the HEART (to test H_4) with other EI measures, correlations of the HEART with other EI tests (the MSCEIT and the *LESS*) were examined. Pearson's *r* correlation coefficients were calculated to examine correlations between each of the HEART total score, major scores, and subscales, and each of the MSCEIT scores respectively. Point biserial correlations were calculated to explore correlations between each HEART item score (Respect, Feeling of Other, Thought of Other, Feeling of Self, Feeling of Self) and each MSCEIT score. Likewise, Pearson's *r* correlation coefficients were calculated to examine correlations between scores from each of the HEART total score, major score, and subscales, and each LESQ subscale. Point biserial coefficients were calculated to examine correlations between each HEART item score and each LESQ subscale. The statistical significance was examined using a one-tailed test for the correlations between the MSCEIT and the HEART. Since the directionality of correlations was not hypothesized with emotional schemas, the statistical significance of these correlations (with the LESQ) was examined using two-tailed tests.

5. To examine convergent validity with relationship satisfaction and relationship functioning (to test H_5), correlations of HEART scores with scores on relationship satisfaction self-reports were investigated. Pearson's r correlation coefficients and point biserial coefficients were produced between each of the scores from the HEART and the total score of the RAS (H_{5a}) and the total score of the BRSS (H_{5b}) respectively. The statistical significance of these correlations was examined using one-tailed tests.

6. To examine convergent validity with adult attachment, correlations of HEART scores with ECR-R scores were examined. Pearson's r correlation coefficients and point biserial coefficients were produced between each of the scores from the HEART and attachment-related anxiety subscale (Attachment Anxiety; H_{6a}), and attachment-related avoidance subscale (Attachment Avoidance; H_{6b}) respectively. The statistical significance was examined using one-tailed tests.

Summary

In this chapter, the method of this study is discussed. This includes study procedures, characteristics of participants, development of the HEART, psychometric information of the various measurements used in this study. Furthermore, research questions and hypotheses were stated. Finally, this chapter ended with describing procedures of the data analysis in order to test these hypotheses.

CHAPTER FOUR: FINDINGS

Introduction

As the preliminary investigation of the HEART, this study examined the psychometric properties of the HEART, including 1) inter-rater reliability, 2) inter-correlations (within the HEART), 3) discriminant validity (with the IQ test), 4) concurrent validity (with existing performance-based and self-report measures of EI), and 5) convergent validity (with self-report measures of relationship satisfaction, and adult attachment measures). In this chapter, the findings are summarized by reporting these five types of psychometric properties in this order. As mentioned in the previous chapter, the HEART produces the following scores that are used for analysis.

Part I

Major Score
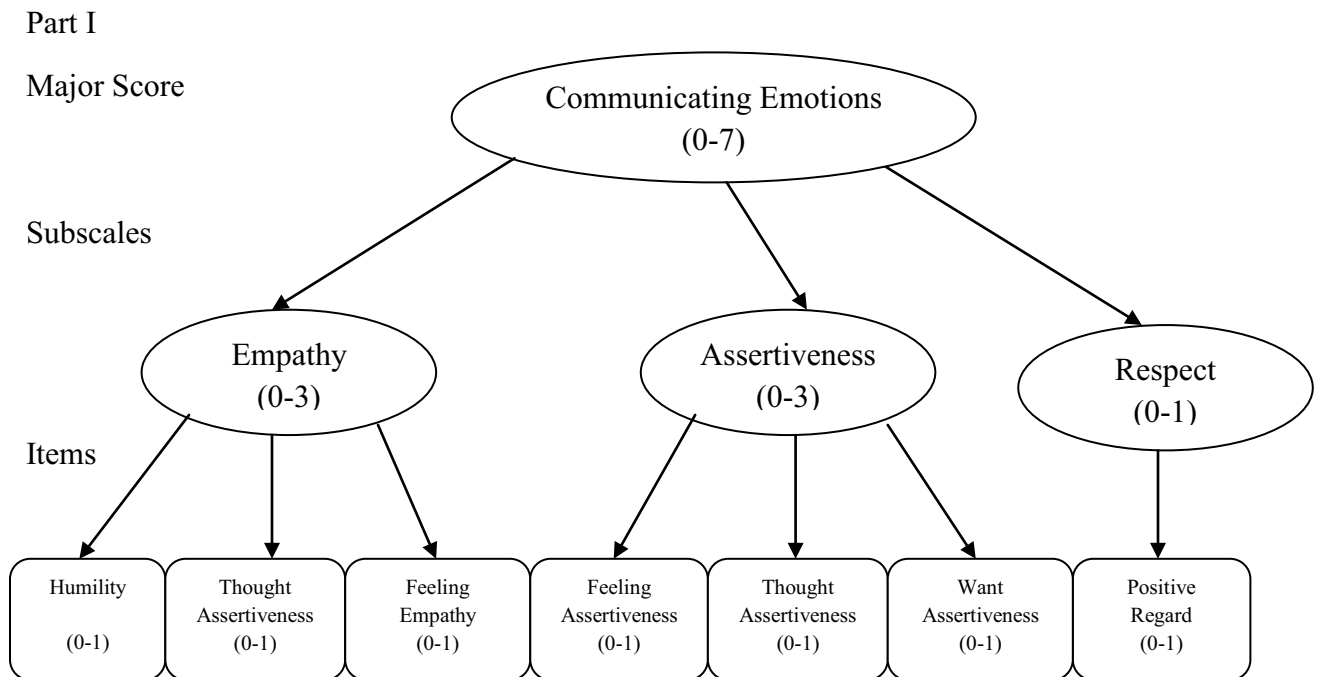
Subscales

Items

Figure 1. The Structure of Part I scores

Note. (Score range)

Part II

Major Score

Subscales

Items
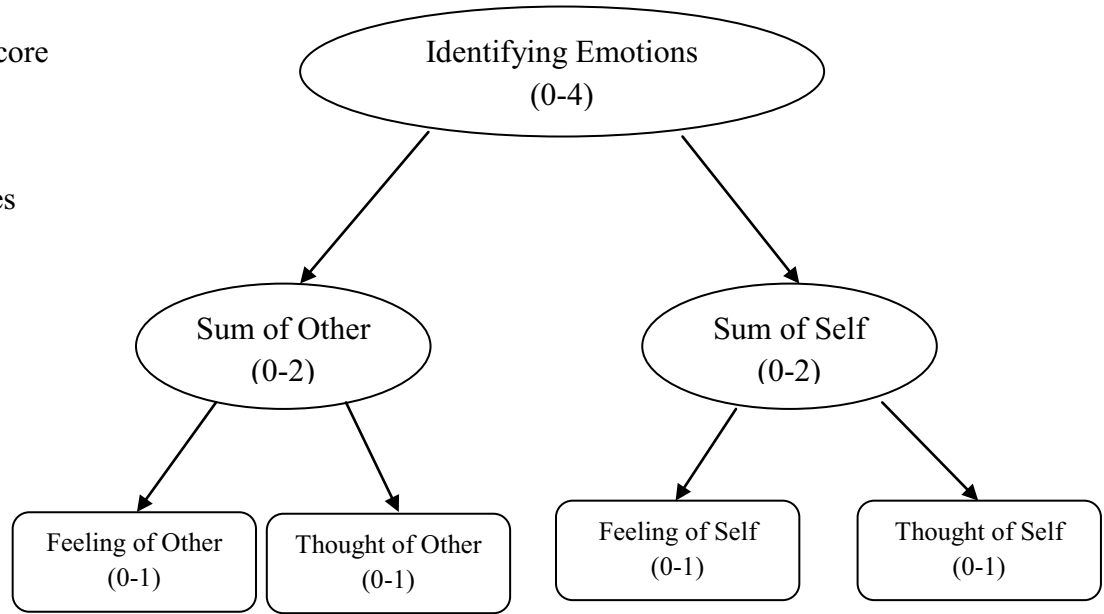
Figure 2. Structure of Part II Scores.

Note. (Score range)

Inter-rater Reliability

The first research question concerns the inter-rater reliability of the HEART scale. The Percent agreement and Cohen's kappa were obtained for Part I and Part II (i.e., Communicating Emotions).

Two raters rated seven items (Humility, Feeling Empathy, Thought Empathy, Feeling Assertiveness, Want Assertiveness, and Respect) of 104 participants on Part I. The percent agreement was 82.9 % and Cohen's kappa was 0.688. Cohen's kappa of 0.688 was considered to be in the substantial range (Portney & Watkins, 2000).

Two other raters scored four items (Feeling of Other, Thought of Other, Feeling of Self, and Thought of Self) of 104 participants on Part II (i.e., Identifying Emotions). The percent agreement was 88.0% and Cohen's kappa was 0.576. The value of Cohen's kappa of 0.576 was considered to be in the moderate range (Portney & Watkins, 2000).

Inter-correlations

The second research question asks, "What are the patterns of inter-correlations among scores of the HEART?" This question was tested with Hypothesis 2 and by obtaining inter-correlations within the HEART. The statistical significance of these correlations was examined using one-tailed tests because positive correlations were expected. Pearson's *r* correlation coefficients were obtained between major scores (H_{2a}) and among subscales (H_{2b}).

Hypothesis 2a states, *there are positive correlations between Part I major score and Part II major score of the HEART (major-to-major correlations).* This hypothesis

was not supported. The correlation between Part I major score (Communicating

Emotions) and Part II major score (Identifying Emotions) was not statistically significant

($r = -0.017$, $p > .05$).

Hypothesis 2c states, *there are positive correlations among subscales of the*

HEART (subscale-to-subscale correlations for Part I and Part II). Concerning Part I

scores, inter-correlations among subscales (Empathy, Assertiveness, Respect) were all

statistically significant as seen in Table 3, supporting the hypothesis. However, the

magnitude of these relationships was moderate, ranging from $r = 0.247$ (between

Empathy and Assertiveness) to $r = 0.494$ (between Empathy and Respect). Concerning

Part II subscales, the correlation between Sum of Other and Sum of Self was not

significant ($r = 0.060$, $p = 0.274$), not supporting this hypothesis.

Table 3

Part I- Inter-correlations of Subscales

	Empathy	Assertiveness	Respect
Empathy	-	.247**	.494**
Assertiveness		-	.462**
Respect			-

Note. **p ≤ .01

Discriminant Validity

The third research question asks, "To what extent does the HEART demonstrate evidence for discriminant validity when correlated with cognitive intelligence?" This question was tested with Hypothesis 3. Pearson's r correlation coefficients and point biserial correlation coefficients (for item scores) were produced between each of the scores from the HEART and Total IQ (H_{3a}), Verbal IQ (H_{3b}), and Abstraction IQ (H_{3c}) respectively. IQ scores were measured by the Shipley Institute of Living Scale (SILS). Since there were no predictions on the direction of these relationships, two-tailed tests were used. Correlations are reported in Table 4.

Hypothesis 3a states, *there are minimal correlations between HEART scores and Total IQ*. The result showed a statistically significant positive correlation between the ability to identify feeling of the other (Feeling of Other) and Total IQ ($r = 0.223$, $p = 0.028$). No other scores of the HEART showed significant correlations with Total IQ.

Hypothesis 3b states, *there are minimal correlations between HEART scores and Verbal IQ*. The result supported this hypothesis. Verbal IQ correlated with each of the following HEART scores: 1) the total EI measured by the HEART ($r = 0.315$, $p = 0.002$), 2) the ability to communicate feelings and thoughts of self and other effectively (Communicating Emotions, $r = 0.274$, $p = 0.007$), 3) the ability to convey one's own feeling, thoughts, concerns, and needs (Assertiveness, $r = 0.201$, $p = 0.048$), and 4) the ability to express positive regard for the other (Respect $r = 0.356$, $p < 0.001$). As expected, the magnitude of these correlations was small. In addition, none of the Part II scores were found to correlate with Verbal IQ.

Hypothesis 3c states, *there are no correlations between HEART scores and Abstraction IQ.* As expected, there were no statistically significant correlations between HEART scores and Abstraction IQ.

Table 4

Correlations of the HEART with IQ

	IQ scores		
	Total IQ	Verbal IQ	Abstraction IQ
Total EI	.159	.315**	.030
The HEART Part I			
Communicating Emotions	.113	.274**	.059
Empathy	.163	.132	.145
Assertiveness	-.026	.201*	-.086
Respect	.143	.356**	.091
The HEART Part II			
Identifying Emotions	.124	.155	-.046
Sum Other	.149	.106	-.043
Sum Self	.036	.112	-.024
Feeling of Other	.223*	.055	.069
Thought of Other	.032	.102	-.112
Feeling of Self	.040	.141	-.021
Thought of Self	.021	.050	-.020

Note. Point biserial correlation coefficients were used for correlations of item scores (Feeling of Other, Thought of Other, Feeling of

Self, Thought of Self) Person's r correlation coefficients were used for all other correlations *$p \leq .05$ **$p \leq .01$

<center>Concurrent Validity</center>

The fourth research question asks, "To what extent does the HEART demonstrate evidence of empirical validity when correlated with other measures that theoretically reflect Emotional Intelligence?" This question was investigated with Hypothesis 4. Relationships between the HEART and the MSCEIT (see Table 5 for correlation matrix) and between the HEART and Leahy Emotional Schema Questionnaire (LESQ) were examined (see Table 7 for correlation matrix).

In addition, since IQ, especially Verbal IQ, correlated with four of the HEART scores (as reported in the previous section), it was necessary to explore the influence of the Verbal IQ (third variable) in explaining the relationship between HEART and MSCEIT scores and between HEART and LESQ scores. In order to explore the influence of Verbal IQ, it was examined whether any of the MSCEIT scores or LESQ scores significantly correlates with Verbal IQ. When any of those EI test scores (MESCEIT or LESQ) that correlated with Verbal IQ also correlated with HEART scores, partial correlations between those EI test scores and HEART scores were obtained after controlling for Verbal IQ (see table 6 for correlation matrix).

<center>*Correlations with the MSCEIT*</center>

Hypothesis 4a states, *there are positive correlations between HEART scores and EI scores measured by the MSCEIT.* Since the directionality of the correlation was predicted, one-tailed tests were used to examine the statistical significance of the correlation coefficients.

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The majority of correlations between the HEART and the MSCEIT were not statistically significant. The HEART Total EI showed a statistically significant correlation only with Understanding Emotions (the knowledge about blends of emotions and chains of emotions) at $r = 0.312$ ($p = 0.002$).

Regarding Part I correlations, the major score, Communicating Emotions, showed a significant positive correlation with Understanding Emotions ($r = 0.233$, $p = 0.012$), indicating the association between the ability to communicate emotions and thoughts of self and of other effectively (Communicating Emotions) and knowledge of blends and chains of emotions (Understanding Emotions).

At the subscale level, the majority of Part I subscales did not correlate with MSCEIT scores. There were no correlations found between Empathy and MSCEIT scores. Assertiveness showed a significant positive correlation only with Understanding Emotions ($r = 0.247$, $p = 0.008$), indicating that those who can effectively communicate their own feelings, thoughts, concerns, and needs (Assertiveness) have better knowledge of blends and chains of emotions (Understanding Emotions). In addition, Respect showed a significant positive correlation only with Perceiving Emotions($r = 0.191$, $p = 0.033$), indicating the relationship between the ability to convey positive regard for the other (Respect) and the ability to identify emotions in facial expressions or other images (Perceiving Emotions).

Consistent with Part I score results, not all the Part II scores of the HEART correlated with MSCEIT scores. The major score, Identifying Emotions, showed statistically significant positive correlations with the following MSCEIT scores: Total EI

($r = 0.209$, $p = 0.022$), Facilitating Thoughts ($r = 0.216$, $p = 0.018$), and Understanding

Emotions ($r = 0.215$, $p = 0.019$). This result suggests three things about those who can

identify emotions and thoughts of self and others (Identifying Emotions). First they have

higher EI measured by the Total MSCEIT. Second, they can better associate different

emotions with different sensations or different kinds of thinking (Facilitating Thoughts).

Third, they possess more knowledge of blends of emotions and chains of emotions

(Understanding Emotions).

At the subscale level, Sum of Other correlated with Understanding Emotions of

the MSCEIT at $r = 0.196$ ($p = 0.029$), indicating that those who can identify the other's

feeling and why he/she feels a certain way (Sum of Other) also have knowledge about

blends and chains of emotions (Understanding Emotions). The other subscale, Sum of

Self, showed a significant positive correlation with Facilitating Thoughts of the MSCEIT

at $r = 0.188$ ($p = 0.034$), indicating the relationship between the ability to identify one's

own emotion and why one feels a certain way (Sum of Self) and the ability to associate

different emotions with different sensations and with different kinds of thinking

(Facilitating Thoughts).

At the item level, the ability to identify why the other feels a certain way

(Thought of Other) correlated with Understanding Emotions at $r_{pb}=0.183$ ($p = 0.039$).

Another item score, the ability to identify why one feels a certain way (Thought of Self),

showed significant correlation with Total EI measured by the MSCEIT at $r_{pb} = 0.217$ ($p = 0.018$) and with Facilitating Thoughts at $r_{pb} =0.215$, ($p =0.019$).

Exploring the Possibility of the Influence of Verbal IQ

It is necessary to explore the possibility of the existence of the third factor, Verbal IQ, in explaining the significant relationships between HEART scores and MSCEIT. Examining correlations between Verbal IQ and each of the MSCEIT scores, only Understanding Emotions was found to correlate with Verbal IQ ($r = 0.361$, p<.001).There were four HEART scores (HEART Total EI, Communicating Emotions, Assertiveness, Respect) found to correlate with Verbal IQ as reported in the previous section. Among these four, three HEART scores (HEART Total EI, Communicating Emotions, Respect) were also found to correlate with Understanding Emotions. Thus, significant correlations found between these three HEART scores and Understanding Emotions could be explained by the third variable, Verbal IQ. In order to explore this possibility, partial correlation was obtained after controlling for Verbal IQ (see Table 6).

After controlling for Verbal IQ, only Assertiveness significantly correlated with Understanding Emotions. The partial correlation was $r = 0.231$ ($p = 0.015$). This means that the relationship between Assertiveness (the ability to effectively communicate one's own feelings, thoughts, concerns, and needs) and Understanding Emotions (knowledge of blends of and chains of emotions) is not explained by Verbal IQ. The other two scores (HEART Total EI and Communicating Emotions) no longer correlated with Understanding Emotions as seen in Table 5b after controlling for Verbal IQ. Therefore, the relationships 1) between the abilities to understand emotions and thoughts of self and others and to communicate them effectively (HEART Total EI), and knowledge of blends and chains of emotions (Understanding Emotions) and 2) between ability to communicate

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emotions and thoughts effectively (Communicating Emotions) and Understanding

Emotions are explained by the third factor, Verbal IQ.

Table 5

Zero-order Correlations of HEART with MSCEIT

	MSCEIT				
	Total EI	B1	B2	B3	B4
HEART Total EI	.155	.083	.090	.312**	-.002
The HEART Scores Part I					
Communicating Emotions	.046	.055	-.038	.233*	-.047
Empathy	.055	.035	-.034	.145	.018
Assertiveness	-.027	-.057	-.071	.247**	-.090
Respect	.097	.191*	.042	.104	-.026
The HEART Scores Part II					
Identifying Emotions	.209*	.068	.216*	.215*	.065
Sum Other	.149	-.016	.126	.196*	.057
Sum Self	.159	.107	.188*	.127	.041
Feeling of Other	.053	-.099	.016	.122	.029
Thought of Other	.170	.058	.169	.183*	.058
Feeling of Self	.071	.058	.122	.086	-.043
Thought of Self	.217*	.134	.215*	.141	.124

Note. Total EI= MSCEIT Total EIQ, B1= Perceiving Emotions, B2= Facilitating Thoughts, B3= Understanding Emotions, B4= Managing Emotions *$p \leq .05$ **$p \leq .01$

Table 6

Partial Correlations of HEART with MSCEIT Controlling for Verbal IQ

	MSCEIT
	Understanding Emotions
HEART Total EI	.175
Communicating Emotions	0.164
Assertiveness	0.231*

Note. Control Variable- Verbal IQ, *p* ≤ .05

Correlations with Emotional Schema

Hypothesis 4b states, *there are positive correlations between HEART scores and 14 different dimensions of emotional schemas.* To test this hypothesis, correlations between each of the HEART scores and 14 different emotional schema subscales (in the LESQ) were examined (See Table 7 for correlation matrix). Since there were no predictions on the direction of these relationships, two-tailed tests were used with an alpha level of 0.05.

The result largely did not support this hypothesis (H$_{3b}$). HEART total EI showed statistically significant correlation with only one emotional schema, the tendency to use emotions to clarify one's underlying needs and personal values (Higher Values) at *r* = 0.286 (*p* =0.005).

 Regarding Part I correlations, the major score, Communicating Emotions, also showed a significant positive correlation with Higher Values (*r* =.209, *p* = .044). This

result indicates that those who can communicate feelings and thoughts of self and other effectively (Communicating Emotions) tend to use emotions to clarify their underlying needs and personal values more (Higher Values).

Regarding Part I subscales, there were significant correlations between the ability to acknowledge others' emotions and why they feel that way (Empathy) and the belief that one's emotion is validated and accepted by others (Validation) at $r = 0.265$ ($p = 0.011$) and between Empathy and the tendency to use emotions to clarify one's underlying needs and personal values (Higher Values) at $r = 0.279$ ($p = 0.007$). The Two other subscales did not show significant correlations with any of the Emotional Schemas.

Concerning Part II scores, the subscale that measures the ability to identify the other's feeling and why he/she feels a certain way (Sum of Other) showed a statistically significant positive correlation with the tendency to ruminate and be preoccupied by one's feelings or thought (Rumination) at $r = 0.240$ ($p = 0.021$). On the other subscale, the ability to identify one's own feelings and why one feels a certain way (Sum of Self) showed a significant negative correlation with a belief that one should not have a certain emotion along with accompanied shameful feelings about an emotion (Guilt) at $r = -0.207$ ($p = 0.045$).

At the item level, the ability to identify feeling of the other (Feeling of Other) showed positive correlations with the tendency to use emotions to clarify personal needs and values (Higher Values) at $r_{pb} = 0.207$ ($p = 0.047$) and with the tendency to ruminate and be preoccupied by one's feeling or thought (Rumination) at $r_{pb} = 0.224$ ($p = 0.032$). Another item, the ability to identify one's own feeling (Feeling of Self) showed a positive

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correlation with the willingness to experience and express feelings openly (expression) at

$r_{pb} = 0.211$ ($p = 0.043$).

Exploring the Possibility of the Influence of Verbal IQ

In order to explore the possibility of the third factor, Verbal IQ, in explaining the

significant relationships between HEART scores (four scores) and Emotional Schema

subscales, the correlations between Verbal IQ and each subscale of the LESQ were

examined. The result showed only one significant correlation. Duration correlated with

Verbal IQ ($r = -.337$, $p = .001$). However, Duration did not correlate with any of the

HEART subscales. Thus, any significant correlations found between HEART and

Emotional Schema subscales were not explained by Verbal IQ. Partial correlations were

not obtained.

Table 7

Correlations of the HEART with Emotional Schemas

Emotional Schema	HEART Total	HEART Part I				HEART Part II						
		CE	EM	AS	RE	IE	SO	SS	FO	TO	FS	TS
Validation	0.168	0.196	.265*	0.083	0.079	-0.013	-0.082	0.047	0.000	-0.111	0.128	-0.051
Comprehensibility	0.002	0.001	0.078	-0.074	-0.007	0.003	-0.062	0.054	-0.055	-0.041	0.031	0.062
Guilt	-0.091	-0.032	-0.081	0.041	-0.036	-0.126	0.057	-.207*	-0.055	0.119	-0.199	-0.156
Simplistic	-0.026	-0.094	-0.164	-0.054	0.041	0.119	0.134	0.046	0.115	0.093	-0.02	0.102
Higher Values	.286**	.209*	.279**	0.059	0.134	0.203	0.163	0.129	.207*	0.06	0.105	0.117
Control	0.059	0.089	0.14	0.003	0.059	-0.041	-0.096	0.023	-0.04	-0.097	0.09	-0.053
Numbness	0.00	-0.012	0.055	-0.096	0.02	0.021	0.014	0.016	0.03	-0.005	-0.005	0.032
Rational	-0.11	-0.14	-0.115	-0.125	-0.073	0.027	-0.13	0.138	-0.057	-0.132	0.099	0.139
Duration	-0.168	-0.135	-0.187	-0.031	-0.084	-0.098	-0.015	-0.114	0.041	-0.051	-0.108	-0.088
Consensus	-0.011	-0.061	0.045	-0.122	-0.073	0.086	-0.015	0.122	0.022	-0.037	0.06	0.152
Acceptance	0.065	0.029	0.108	-0.076	0.034	0.081	-0.101	0.183	-0.136	-0.029	0.174	0.142
Rumination	-0.029	-0.066	-0.067	-0.034	-0.053	0.06	.240*	-0.12	.224*	0.149	-0.083	-0.123
Expression	0.129	0.048	0.012	0.046	0.062	0.175	0.047	0.186	0.083	0.00	.211*	0.106
Blame	-0.061	-0.125	-0.187	-0.034	-0.047	0.102	0.063	0.08	0.005	0.08	-0.001	0.141

Note. Acceptance= Acceptance of Feeling , Simplistic= Simplistic View of Emotion, CE= Communicating Emotions, EM=Empathy, AS=Assertiveness, RE=Respect,

IE=Identifying Emotions, SO=Sum of Other, SS= Sum of Self, FO=Feeling of Other, FS=Feeling of Self, TS= Thought of Self *p<.05, **p<.01

Convergent Validity I- Relationship Satisfaction

The fifth research question asks, "To what extent does the HEART demonstrate evidence of convergent validity when correlated with measures of satisfaction?" This question was investigated with Hypothesis 5. Pearson's r and point biserial correlation coefficients were produced between HEART scores with the Henricks Relationship Assessment Scale (RAS, H_{5a}), and the Burns Relationship Satisfaction Scale (BRSS, H_{5b}). In order to explore the influence of the Verbal IQ in explaining the relationship between the HEART and relationship satisfaction measures (RAS, BRSS), it was examined whether either RAS or BRSS total score correlates with Verbal IQ. If it was the case, partial correlations (after controlling for Verbal IQ) would be obtained. One-tailed tests with an alpha level of 0.05 were used to examine the statistical significance of the correlation coefficients (see Table 8 for correlation matrix).

Correlations with Relationship Satisfaction

Hypothesis 5a states, *there are positive correlations between HEART scores and levels of relationship satisfaction measured by the Relationship Assessment Scale (RAS).* Hypothesis 5b states, *there are positive correlations between HEART scores and levels of relationship satisfaction measured by the Burns Relationship Satisfaction Scale (BRSS).* The results partially supported this hypotheses.

Regarding Part I scores, there were statistically significant correlations between Communicating Emotions and levels of relationship satisfaction measured by the RAS ($r = 0.218$, $p = 0.034$) and BRSS($r = 0.209$, $p = 0.040$). This means that those who can

communicate their own and the other's feelings and thoughts effectively (measured by the HEART) have higher relationship satisfaction.

At the subscale level, the ability to acknowledge the other's emotions and why he/she feels a certain way (Empathy) showed significant correlation with relationship satisfaction, measured by the RAS ($r = 0.246$, $p = 0.019$) and BRSS ($r = 0.228$, $p = 0.028$). Other subscales did not show significant correlation with relationship satisfaction measures.

Examining Hypothesis 5 on correlations of Part II scores with the two relationship satisfaction scales (the RAS and BRSS), the result did not support this hypothesis. Only one item, the ability to identify why the other feels a certain way (Thought of Other) showed significant positive correlation with the BRSS ($r_{pb} = 0.198$, $p = 0.04$).

There were other significant correlations but they were in the opposite direction from the hypothesis. At the subscale level, there was a negative correlation between Sum of Self and the BRSS ($r = -0.296$, $p = 0.006$), indicating that those who can identify emotions in self and understand why one feels a certain way (Sum of Self) have less satisfaction in their relationship. Consistently, each of its two items (Feeling of Self, Thought of Self) showed also significant negative correlations with the RAS and BRSS ($r = -0.229$, $p = 0.027$; $r = -0.292$, $p = 0.007$ respectively). However, these results were only found when the HEART was correlated with the BRSS, but not with the RAS.

Exploring the Possibility of the Influence of Verbal IQ

The possibility of the third factor, Verbal IQ, in explaining the relationship between the HEART and relationship satisfaction measures was examined. While four of the HEART scores correlated with Verbal IQ, neither RAS nor BRSS total scores correlated with Verbal

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IQ (r = -.076, p = .542; r =.-.017, p =.893). Therefore, the possibility of the third factor,

Verbal IQ, in explaining the relationship between HEART and relationship satisfaction

measures (RAS and BRSS) was eliminated. Partial correlations were not obtained.

Table 8

Correlations of the HEART with Relationship Satisfaction

	Relationship Satisfaction	
	RAS	BRSS
HEART Total EI	.156	.128
The HEART Part I		
Communicating Emotions	.218[*]	.209[*]
Empathy	.246[*]	.228[*]
Assertiveness	.098	.049
Respect	.139	.089
The HEART Part II		
Identifying Emotions	-.095	-.136
Sum Other	.054	.177
Sum Self	-.155	-.296[**]
Feeling of Other	.109	.031
Thought of Other	.005	.198[*]
Feeling of Self	-.114	-.229[*]
Thought of Self	-.163	-.292[**]

Note. RAS= Hendricks Relations Assessment Scale, BRSS= Burns Relationship Satisfaction Scale

Point biserial correlation coefficients were used for correlations of item scores (Feeling of Other, Thought of Other, Feeling of Self, Thought

of Self)   Pearson's r correlation coefficients were used for all other correlations. *$p \leq$ .05 **$p \leq$ .01

Convergent Validity II- Adult Attachment

The sixth research question asks, "To what extent does the HEART demonstrate evidence of convergent validity when correlated with a measure of adult attachment?" This question was investigated with Hypothesis 6. To examine the HEART's correlation with adult attachment, Experiences in Close Relationships-Revised (ECR-R) was used. Pearson's r correlation coefficients and point biserial correlation coefficients were produced between HEART scores and the ECR-R Attachment Anxiety subscale (Attachment Anxiety) and between HEART scores and ECR-R Attachment Avoidance subscale (Attachment Avoidance; see Table 9 for correlation matrix). Since it was hypothesized that there would be negative correlations between HEART scores and Attachment Anxiety (H_{6a}) and HEART scores and Attachment Avoidance (H_{6b}), one-tailed tests were utilized for examining statistical significance of these correlations. In order to explore the influence of Verbal IQ in explaining the relationship between the HEART and ECR-R, it was examined whether either of the ECR-R subscales correlates with Verbal IQ. If it was the case, partial correlations between the HEART and ECR-R after controlling for Verbal IQ would be obtained.

Hypothesis 6a states, *there are negative correlations between HEART scores and attachment-related anxiety*. As shown in Table 9, the result did not support this hypothesis. There was only one statistically significant correlation (between Thought of Other and Attachment Anxiety, $r_{pb} = 0.256$, $p = 0.018$), indicating that those who demonstrated the ability of identifying why the other feels a certain way have more attachment-related anxiety. The direction of this correlation was opposite from the hypothesis.

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Hypothesis 6b states, *there are negative correlations between HEART scores and attachment-related avoidance.* This hypothesis was partially supported. There were two HEART Part I scores that significantly correlated with Attachment Avoidance. These scores were Communicating Emotions ($r = -0.270$, $p = 0.011$), and Empathy ($r = -0.248$, $p = 0.018$). Those who demonstrated abilities to effectively convey one's and others' emotions and thoughts to the other have less attachment-related avoidance.

Among Part II scores, only one item score, the ability to identify why one feels a certain way (Thought of Other) showed statistically significant correlation with Attachment Avoidance ($r = 0.217$, $p=0.033$). Other scores did not show significant correlation with Attachment Avoidance.

Exploring the Possibility of the Influence of Verbal IQ

The possibility of the third factor, Verbal IQ, in explaining the relationship between the HEART and adult attachment measures was examined. While four of the HEART scores correlated with Verbal IQ, neither subscales (Attachment Anxiety, Attachment Avoidance) correlated with Verbal IQ ($r = - 0.159$, $p = 0.216$; $r = 0.078$, $p = 0.530$). The possibility of the third factor, Verbal IQ, in explaining the relationship between the HEART performance and Adult Attachment was eliminated. Partial correlations were not obtained.

Table 9

Correlations of the HEART with Adult Attachment

	Adult Attachment	
	Attachment Anxiety	Attachment Avoidance
HEAR Total EI	-.025	-.181
The HEART Part I		
Communicating Emotions	-.095	-.270[*]
Empathy	-.083	-.248[*]
Assertiveness	-.007	-.182
Respect	-.152	-.177
The HEART Part II		
Identifying Emotions	.126	.143
Sum Other	.165	.161
Sum Self	.028	.050
Feeling of Other	-.094	-.039
Thought of Other	.256[*]	.217[*]
Feeling of Self	-.008	.000
Thought of Self	.054	.086

Note. Point biserial correlation coefficients were used for correlations of item scores (Feeling of Other, Thought of Other, Feeling of Self, Thought of Self). Pearson's r correlation coefficients were used for all other correlations. $*p \leq .05$

Summary

This chapter reported the psychometric properties of the HEART. The inter-rater reliability was of a moderate to substantial level. The inter-correlations were low between the two major scores and between subscales in Part I, while inter-correlations among subscales of Part I were within a moderate range. Discriminant validity of the HEART from cognitive intelligence was supported. Largely, the result did not support the HEART's concurrent validity with two other EI measures. The support for convergent validity was partially obtained when the HEART was correlated with relationship satisfaction measures and attachment measure. Discussion of these findings is provided in the next chapter.

CHAPTER FIVE: SUMMARY OF FINDINGS, DISCUSSION, AND

RECOMMENDATIONS

Overview

Critical review revealed a need for a new performance-based EI test, which assesses

core relationship abilities such as communicating emotions and identifying emotions. The

purpose of this study was to attend to this need by developing a new measurement, the

Humility-Empathy-Assertiveness-Respect Test (HEART). As a preliminary investigation, this

study explored the psychometric properties of the HEART. Six research questions were

addressed regarding 1) inter-rater reliability, 2) inter-correlations within the HEART, 3)

discriminant validity with the IQ test, 4) concurrent validity with existing performance-based

and self-report measures of EI, 5) convergent validity with self-report measures of relationship

satisfaction, and 6) convergent validity with adult attachment measures. In this chapter, the

major findings are summarized first. Second, these findings are discussed along with specific

recommendations for future studies. Third, limitations of the study are summarized. The

HEART is in the first stage of its development; further development will require various

researchers' accumulative efforts in revising and gathering evidence for its reliability and

validity. However, due to its uniqueness, the HEART has the potential to be used in both

research and clinical practice. Thus, this chapter ends with exploring the HEART's possible

implications for research as well as implications for practice.

Summary of Findings

In order to explore the psychometric properties of the HEART, this study explored six research questions. In this section, the major findings are briefly summarized for each research question.

Inter-rater Reliability

The first research question concerned the inter-rater reliability of the HEART scale. The percent agreement and Cohen's kappa were obtained for Part I and Part II. The inter-rater reliability of the HEART obtained in this study was in moderate to substantial range.

Inter-correlations

The second research question addressed the patterns of inter-correlations among scores of the HEART. It was hypothesized that there would be positive correlations among HEART scores. Correlations among the Part I subscales were significant but in moderate range. Correlations between the two major scales (Communicating Emotions and Identifying Emotions) and between the two Part II subscales (Sum of Other and Sum of Self) were not statistically significant.

Discriminant Validity

The third question addressed discriminant validity of the HEART with IQ tests. Zero to minimal correlations between HEART scores and IQ total and between HEART scores and Verbal IQ were expected. The HEART was expected not to correlate with Abstract IQ. Consistent with the hypothesis, HEART scores neither correlated with Total IQ nor with Abstract IQ. There were small correlations found between each of the four of HEART scores

(HEART Total EI, Communicating Emotions, Assertiveness, and Respect) and Verbal IQ respectively, while most correlations between HEART Part II scores and IQ scores were not statistically significant, supporting the hypothesis.

Concurrent Validity

The fourth research question concerned the concurrent validity of the HEART. It was hypothesized that there would be significant relationships between EI scores measured by the HEART and EI scores measured by existing EI tests. Support for empirical evidence of the validity was partially obtained between the HEART and the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Mayer et al., 2002) and between the HEART and the Leahy Emotional Schema Questionnaire (LESQ; Leahy, 2002) in this study. However, Pearson's *r* correlation and point biserial coefficients were small in all the relationships examined; the magnitude of the correlations was less than 0.30.

Convergent Validity with Relationship Satisfaction

The fifth question addressed the convergent validity of the HEART with relationship satisfaction measured by two self-reports: Relationship Assessment Scale (RAS; Hendrick, 1988), and Burns Relationship Satisfaction Scale (BRSS; Burns, 1995). The evidence for convergent validity was partially obtained. Part I main score, the ability to communicate one's and others' emotions and thoughts to the other persons for the purpose of establishing and maintaining the quality of interpersonal relationships (Communicating Emotions) and one of its subscales, the ability to acknowledge the other's emotions and why he/she feels a certain way (Empathy), significantly correlated with both the RAS and BRSS. There was one

significant correlation found between a Part II item score (Thought of Other) and BRSS total score. Directions of some of the correlations of Part II scores with relationship self-reports were opposite from the hypothesis. For example, the ability to identify feelings of self and why one feels a certain way (Sum of Self) and its items (Feeling of Self, Thought of Self) negatively correlated with the BRSS. In sum, the hypothesis was supported for Part I scores, and not supported for Part II scores.

<center>Convergent Validity with Adult Attachment</center>

The sixth question addressed convergent validity of the HEART with the adult attachment self-report (Experience in Close Relationships-Revised, ECR-R; Fraley, Waller, & Brennan, 2000). Negative correlations between HEART scores and ECR-R scores were expected. There were no statistically significant negative correlations found between Attachment Anxiety and HEART scores. On the other hand, negative correlations were found between Attachment Avoidance and each of the two Part I HEART scores, the ability to communicate one's and others' emotions and thoughts to the other persons effectively (Communicating Emotions) and its subscale, the ability to acknowledge the other's emotions and why he/she feels a certain way (Empathy). The correlations of Thought of Other with Attachment Anxiety and with Attachment Avoidance were significant, but in the opposite direction from the hypothesis. In sum, support for convergent validity with adult attachment was partially obtained (between Communicating Emotions and Attachment Avoidance, and between Empathy and Attachment Avoidance).

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Discussion and Recommendations

In this section, the findings in regards to each research question are discussed in light of literature. Since this study was the preliminary study of the HEART, the revisions and further psychometric examinations of this test are necessary in the future. Thus, along with the discussion of the findings, recommendations for future studies are presented.

Inter-rater Reliability

In this study, inter-rater reliability was found in substantial and moderate ranges. Since Cohen's kappa represents the average rate of agreement for an entire set of scores, it is necessary to subjectively examine where the major disagreements lie (Portney & Watkins, 2000) in order to improve the inter-rater reliability. Examining Part I data, the lowest agreement among the seven items was found in Want Assertiveness (67.92% agreement) followed by Respect (71.15% agreement). On the other hand, agreement between the two raters on Humility, Feeling Empathy, and Thought Empathy was excellent; there was only one response (observation) in which a pair of raters disagreed on the ratings (99.0 % agreement) on each of these subscales. Percent agreement was not as low among Part II scores: the lowest percent agreement was found in Thought of Other (85.6 % agreement). The pair of raters achieved 90 % or above agreement on the rest of three items.

This result suggests the necessity of further clarification of the scoring criteria on Want Assertiveness and Respect for Part I, and on Thought of Other for Part II in the scoring rubrics in the revised HEART. The scoring criteria should be clearly communicated to the raters with this revision. The low inter-rater reliability could be due to the fact that only one out of four

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scenarios was used in this study. There were not enough items to obtain high inter-rater reliabilities. In the future, the other three scenarios should be analyzed.

Inter-correlations

The result on inter-correlations of the HEART showed both significant and non-significant results. As expected, Part I subscales significantly correlated. However, correlations between the two major scales from Part I and from Part II and correlations between Part II subscales were not significant. These non-significant correlations were contrary to the hypotheses.

Significant Correlations

Consistent with hypothesis, correlations among Part I subscales were significant but in moderate range. This result indicates that three abilities (Empathy, Assertiveness, & Respect) are related to each other but are distinct abilities. Another performance-based test, the MSCEIT similarly has moderate correlations among its subscales ($r = 0.27$ to 0.45: Mayer et al., 2002).

Non-Significant Correlations

Non-Significant Correlations between Major Scores.

The correlation between the two major scales from Part I and from Part II (Communicating Emotions and Identifying Emotions) being close to zero was surprising. This finding was unexpected because it is logical to assume those who can internally identify the

feeling and thoughts of self and others (Identifying Emotions) can verbally communicate them with others (Communicating Emotions).

There are two possible interpretations for this result. First, this result may simply suggest that these abilities are distinct. Those who can understand feelings and thoughts of self and others do not necessarily communicate them verbally to the other. In other words, these two abilities may be orthogonal (independent). Generally, multiple dimensionality of intelligence is widely known. Furthermore, orthogonal structures of cognitive intelligence have been commonly found in the field of cognitive intelligence. For example, principal factor analyses revealed two-factor solution (verbal comprehension, perceptual organization) or three-factor solution (verbal comprehension, perceptual organization, and memory/freedom from distractibility) using orthogonal rotation (Leckliter, Matarazzo, & Silberstein, 1986). Further studies need to explore the factor structures of the HEART.

Second, this result can be considered in light of the limitation of the HEART scoring system. Examining the frequency distribution, while the majority of participants received lower scores on Part I, most of the participants received higher scores on Part II (see Table 10 for cross-tabulation). The lack of correlation between Part I and Part II could be due to the fact that HEART scores (both Part I and Part II major scores) did not differentiate those who are high level from those who are low level on Communicating Emotions and Identifying Emotions. This produced clustered distribution, leading to a small correlation.

More specifically, Part I scores did not quantify EI levels, especially in lower range. The HEART is designed to score types of communication that are considered to be effective in interpersonal relationship, and it does not quantify various types of ineffective communication (e.g., sarcasm, blame, contempt). Responses that included ineffective

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communication were all scored 0 in the current study, without finely differentiating the degree of EI level. In other words, the current HEART has no sensitivity (i.e., the test's ability to detect positive results when the target condition is actually present), to ineffective communication (Portney, & Watkins, 2000). Thus, the performance of the majority of participants was scored lower (clustered between 0-2).

Part II score did not quantify EI levels in fine increments either. Due to the use of one scenario (out of four), the range of scores of the HEART became small; this was especially true for Part II scales. Part II items were scored either 1 or 2, and Part II major score was calculated as the sum of all item scores, ranging from 0-4. In addition to this small range (and resulting in broad increment), Part II scoring criteria was so liberal that various types of responses (including less healthy response as long as it did not include elements of blame or judgment, see the scoring rubric in Appendix G) were all scored high (3 or 4). Thus, Part II scores lacked specificity (i.e., the test's ability to obtain a negative result when the condition is really absent, or a true negative) (Portney & Watkins, 2000). Thus, the majority of responses were scored 3 or 4 on Identifying Emotions.

Because both major scores did not quantify the variation of the EI levels among participants, the performance of the participants became clustered in only a few coordinates in a scattered plot, resulting in small correlation. In addition, because of the narrow range of the HEART, the result might have become not significant due to ceiling effect and floor effect (Kazdin, 2003; Jackson, 2009).

Table 10

Cross Tabulation between Major Scores

Identifying Emotions	Communicating Emotions							
	0	1	2	3	4	5	7	Total
0	1	1	0	0	0	0	0	2
1	0	1	1	0	0	0	0	2
2	3	4	0	3	1	0	0	11
3	9	7	7	3	3	2	0	31
4	24	11	12	5	5	0	1	58
Total	37	24	20	11	9	2	1	104

Non- Significant Correlations between Part II Subscales.

Part II subscales (Sum of Other, Sum of Self) did not significantly correlate with each other. This result was somewhat unexpected, since it is logical that if one can identify one's own feeling and why one feels a certain way, that individual can also identify the other's feelings and perspective or vice versa.

This result can be explained by the limitation of Part II scoring system similar to the discussion in the previous sub-section. Examining the frequency distribution, most of the participants received higher scores on Part II (see Table 11 for cross tabulation). As mentioned above, the Part II subscales are scored in a small range (0-2), and lack specificity in scoring criteria. Thus the majority of the responses were scored as 2 in this study. Because both subscales did not quantify the variation of the EI levels among participants, the performance of the participants became clustered in only a few coordinates in a scattered plot, resulting in a small correlation.

Table 11

Cross Tabulation between Part II Subscales

	Sum of Self			
Sum of Other	0	1	2	Total
0	2	0	3	5
1	2	1	18	21
2	7	13	58	78
Total	11	14	79	104

Recommendations Concerning the HEART Scoring System

Low sensitivity and specificity as well as a narrow range of a scale are problematic in detecting variations in a sample (Kazdin, 2003). There are several ways to increase the HEART's ability to detect different levels of EI and they should be implemented in the revision process of the HEART. First, while the current HEART was investigated based on one out of the four scenarios, the revised HEART should utilize more scenarios to produce scores. In this way, the range of these scores can be enlarged, which may better differentiate the levels of the EI abilities. Second, a revised HEART should have more levels of scoring for each item. For example, currently a Part II item is scored either 0 (absence) or 1 (presence) of essential element (e.g., whether participants identified feelings that are in accurate range). In the future, each item should be scored using multiple levels (0, 1, 2, 3, etc.) depending on the quality of responses (i.e., accuracy of the response to the scenario). Third, it may be worth developing scoring criteria of what is considered as ineffective communication so that the sensitivity of the HEART will be increased in assessing lower EI level, which would increase the floor of the HEART. Fourth, along with such revision, the new HEART should have a clearer scoring rubric that classifies various types of responses into different levels. Fifth, internal consistency and factor structure of these scores need to be examined and ensured, along with such revisions. Sixth, future studies must use a larger population so that a larger range of EI levels can be measured.

Discriminant Validity with Cognitive Intelligence

The majority of correlations between HEART scores and IQ scores were small, and not statistically significant. This result implies that the HEART measures different constructs than cognitive intelligence, supporting discriminant validity. Consistent with the hypothesis, there were some significant correlations found between Part I scores and Verbal IQ score. This result indicates that those who can articulate feelings and thoughts of self and of others have higher Verbal IQ. Low correlations with Verbal IQ are also found in another performance-based test, the MSCEIT. The MSCEIT has shown small to modest correlations with Verbal SAT score; correlation coefficients ranged from .20s to .30s (Bracket & Mayer 2003; Brackett, Mayer, & Warner, 2004). A study by Lopes, Salovey, and Straus (2003) showed correlation between vocabulary score of the WAIS-III and the MSCEIT's Understanding Emotions branch, but not with any of the other branches or total scores.

Concurrent Validity

The concurrent validity of the HEART was examined using two existing EI tests; the MSCEIT and the LESQ. Overall, the HEART showed small and non-significant correlations with these tests. However, some HEART scores showed significant correlations with some of the MSCEIT scores, as well as the LESQ subscales. In this section, possible interpretations of these results are provided along with recommendations for future studies.

Overall Small Correlations with Other EI measures

Overall, small correlations and lack of significant correlations between the HEART and the MSCEIT (Mayer et al., 2002) and between the HEART and the LESQ (Leahy, 2002) only partially supported the evidence for the concurrent validity of the HEART. The small correlations can be explained by several possibilities. First, as discussed in Chapter 2, the HEART, which was developed based on the ability model, is distinct from measurements of a trait model (i.e., LESQ). Secondly, the HEART is a performance-based test, using a measuring method distinct from self-reports (i.e., LESQ). When using such different methods, the correlations between constructs can be statistically significant and meaningful, but relatively small in magnitude (Kazdin, 2003). Thirdly, there are differences in constructs of EI (i.e, what EI means and what is consists of) between the HEART and MSCEIT. While HEART major scores (Identifying Emotions, Communicating Emotions) conceptually only tap into two out of four branches of the MSCEIT (i.e., Perceiving Emotions, & Managing Emotions), two branches of the MSCEIT are still different from their counterpart of the HEART (Part I scores, Part II scores) in how they are operationalized. For example, Perceiving Emotions of the MSCEIT is considered conceptually similar to the HEART's Identifying Emotions. However, the former is measured by asking participants to identify emotions in photographs of facial expressions or in other images, while the latter is measured by asking participants to identify emotions in a written narrative of an interpersonal scenario. Also, Managing Emotions of the MSCEIT is conceptually similar to Communicating Emotions of the HEART. However, Managing Emotions is measured by asking participants to rate the effectiveness of a course of action, while Communicating Emotions is measured by asking participants to respond to the other in a scenario (what they would actually say).

Fourth, in the HEART, EI is measured in the context of an interpersonal conflict, while it is not the case for most of the MSCEIT scores. In sum, the low correlations of the HEART with other EI measures are explained by the difference in constructs (i.e., trait variance) and difference in methods (method variance; Kazdin, 2003). With these speculations, the low correlations with these measures, in turn, can be considered as evidence of discriminant validity of the HEART, distinct from existing EI measures.

To avoid method variance in future studies, it is worthwhile to explore the relationship between the HEART and the observational measures of EI in a similar interpersonal context (e.g., observe a couple's interactions while they discuss relationship problems in a lab setting). In addition, the HEART's concurrent validity should be examined by using other EI measures that assess similar constructs as the HEART, although they may be difficult to find. Another potential for testing concurrent validity will be to use the HEART in experimental design, in which participants in one group will be taught and trained in core relationship skills (empathy, assertiveness, and respect) and their performance will be compared with performance participants in a control group.

Significant Correlations with the MSCEIT

The HEART Part I major score (Communicating Emotions) did not correlate with any of the MSCEIT scores, except for one score. Communicating Emotions correlated with Understanding Emotions. However, this correlation was no longer significant after controlling for Verbal IQ. This means that the correlation between these scores is explained by the third factor (Verbal IQ).

Two significant correlations were found between HEART Part I subscales and

MSCEIT scores: 1) between Assertiveness and Understanding Emotions, 2) between Respect

and Perceiving Emotions. The former correlation may indicate that those who can express

their own emotions are those who have better understanding of how emotions change or how

some emotions are mixed in a complex way. The latter correlation can be interpreted to mean

that those who can express positive regard for others and are willing to meet the other's needs

(Respect), can carefully attend to and identify emotions in others' facial expressions, a skill

measured by one of the tasks (Face task) in the MSCEIT.

Part II major score (Identifying Emotions) showed correlations with three MSCEIT

scores: 1) the MSCEIT total EI, 2) Facilitating Thoughts, 3) Understanding Emotions. Not

only this major score but also some of the subscales and item scores of Part II showed

significant correlations with these three MSCEIT scores. It is noteworthy that Identifying

Emotions (or Part II scores) better correlates with the MSCETI than Communicating

Emotions (or Part I scores) does. This result may reflect the fact that in the MSCEIT,

participants are asked how they feel by providing their thoughts in a scenario (Facilitating

Thoughts), or how they feel next as a chain of emotions in a given scenario, a similar format

to the Identifying Emotions (Part II scores), in which participants are asked how they feel and

why they feel a certain way in a given scenario. The format of Communicating Emotions is

rather different from the MSCEIT or the Identifying Emotions, asking participants what they

may actually say to the other in a scenario.

Significant Correlations with the LESQ

There were five Emotional Schemas (Validation, Guilt, Higher Values, Expression, Rumination) that significantly correlated with HEART scores. First, Validation correlated with Empathy, which reflects the tendency that those who believe that their emotions are acceptable can also acknowledge other's feelings and perspectives. Second, Guilt correlated negatively with Sum of Self, indicating that those who believe that they should not have a certain emotion and feel shameful, guilty, and embarrassed about the emotion are less likely to accurately identify their own feeling and why they feel a certain way. Third, Higher Values correlated with HEART Total EI, Communicating Emotions, Empathy, and Feeling of Other. This result suggests the association that those who tend to use emotions to clarify their underlying needs and personal values are those who can understand emotions and thoughts of self and others and communicate them effectively in order to achieve interpersonal goals (i.e., maintaining close relationships). Fourth, Expression correlated with Feeling of Self, which indicates the tendency that those who are willing to experience and express feelings openly are likely to identify their own feelings.

Finally, Rumination correlated with Sum of Other and with Feeling of Other. The direction of these correlations is illogical on the surface, suggesting that those who lack cognitive flexibility and tend to ruminate on one feeling or one thought (Rumination) are likely to understand how the other feels and why the other feels a certain way (Sum of Other). Studies have shown that those who are high in cognitive flexibility have trait (self-reported) empathy (Grattan & Eslinger,1989) and are likely to be forgiving of others (Katovsich, 2008). Thus, it is more logical to consider that those high in cognitive flexibility can identify how the other feels and flexibly understand why the other feels a certain way. The current study's

unexpected result is rather considered as reflecting the association that those who are low in cognitive flexibility are those who are overly concerned with how the other feels (i.e., angry) and trapped with the thought that one made the other angry. Those who are high in cognitive flexibility should be better able to embrace the other's feeling flexibly yet also accept one's own feeling and needs. In the future, it will be beneficial to explore how combinations or balance between Thought of Other and Thought of Self relate to cognitive flexibility. In addition, the HEART should be revised to have higher specificity in detecting different kinds of thoughts.

Convergent Validity with Relationship Satisfaction

The HEART's convergent validity with relationship satisfaction was explored using the RAS and BRSS. While some of the HEART scores correlated significantly with these scales in expected directions, other scores did not. Furthermore, there were some other scores that correlated significantly with the BRSS but in the opposite direction from the hypothesis. In this section, possible interpretations of these results are provided along with recommendations for future studies.

Significant Correlation in Expected Directions

Despite the overall small correlations of the HEART with relationship satisfaction self-reports (the RAS, BRSS), correlations of Part I main score (Communicating Emotions) and of Empathy subscale with these measurements seem to provide some empirical evidence for convergent validity of the HEART. This result indicates that those who report higher satisfaction in their intimate relationships are those who can acknowledge the other's feelings

and thoughts (Empathy). For several decades, many authors (e.g., Greif & Hogan, 1973; Long, 1993; Fitness, 2001) have discussed the association between empathy and relationship satisfaction. However, in previous studies, empathy had been measured through self-report method (e.g., Cramer, 2003; Angera, & Long, 2006; Sannito, 2010) or by observational method (e.g., Guerney, 1977, Sullivan, Pasch, Johnson, & Bradbury, 2010). The significance of the current study's finding is that empathy, measured by the performance-based method, associated positively with relationship satisfaction.

Among Part II scores, only one item score, Thought of Other, showed significant correlation with the BRSS, in an expected direction. While the magnitude of the correlation was small, this finding suggests that those who can accurately identify the perspective of the other in an interpersonal conflict seem to have higher levels of satisfaction. Nevertheless, such a conclusion is still too early to make since this result was found only on one item with a dichotomous scale. As mentioned earlier, the HEART needs to be revised in that the scores should be calculated based on multiple items (multiple scenarios).

Small Correlations and Non Significant Correlations

The small correlations found in this study (showing correlations of $r = 0.20$s between with satisfaction self-reports) are comparable with previous study results that investigated the relationship between the performance EI (i.e., the MSCEIT) and relationship satisfaction self-reports. For example, Gomes's (2004) study showed correlation of $r = 0.23$ between the MSCEIT Total EI and the Personal Assessment of Intimate Relationship (PAIR). Zeidner and Kaluda (2008) showed $r = 0.28$ between the MSCEIT Total EI and Triangular Love Scale (TLS) among husbands but $r = 0.14$ (not statistically significant) among wives. Both the PAIR

and TLS are self-report measures of intimacy. Therefore, as compared to the MSCEIT, HEART scores demonstrated similar results to the previous studies that showed MSCEIT's lower correlations with self-report intimacy. Furthermore, in this study, none of the MSCEIT scores correlated with either RAS or BRSS total score (Table 12). Thus, HEART scores (especially the Empathy subscale) showed higher correlations with the RAS and BRSS than the MSCEIT did, suggesting that the HEART may be a better test in predicting relationship satisfaction.

It is also necessary to investigate HEART scores that did not show statistically significant correlations with relationship satisfaction (e.g., Assertiveness and Respect, other Part II scores) in the future. The result being close to $r = 0$ in this study could mean that these skills truly are not associated with relationship satisfaction. However, it is likely that this can be explained by method variance between the two types of measurements (Kazdin, 2003). Low correlations can be also explained by the lack of sensitivity of Part I lower scores, lack of specificity of Part II scores, and small range of the scores of Part I and Part II. When EI levels are not differentiated or when only a small range of performance is examined, a linear relationship cannot be established, resulting in small correlation coefficients.

In future studies, the convergent validity should be re-examined using the revised HEART, which can better differentiate the various EI levels in fine increment and have a broader scoring range (to increase sensitivity and specificity). The HEART should incorporate various types of interpersonal context (such as parent-child relationship). Several ways to approach this issue are discussed in the previous section. It is also beneficial to investigate the convergent validity of the HEART, using different types of interpersonal relationship scales, for example, measurements of marital communication and conflict resolution (e.g., The

Marital Communication Inventory, Bienvenu, 1990; The Conflict Resolution Style Inventory, Gottman, & Krokoff, 1989).

Table 12

Relationship between MSCEIT and Relationship Satisfaction Scales

	RAS	BRSS
MSCEIT Total EI	-0.077	-0.199
Perceiving Emotions	-0.105	-0.168
Facilitating Thoughts	-0.106	-0.156
Understanding Emotions	0.07	-0.059
Managing Emotions	-0.021	-0.144

Significant Correlations in Unexpected Directions

It was puzzling that Sum of Self and its items (Feeling of Self and Thought of Self) correlated negatively with relationship satisfaction self-reports. On a surface level, this result implies that those who can internally identify how they feel and why they feel a certain way in a conflict have lower satisfaction in their relationships than those who do not identify these feelings and thoughts.

This result needs to be considered in light of the fact that Part II item scores lacked specificity. Part II item scores were rated either 0 or 1. The majority of the participants' responses were rated as 1 (85 % were scored 1 for Feeling of Self, 80% were scored 1 for

Thought of Self). Thus, the item Thought of Self inclusively scored 1 on those responses that had negative connotations (e. g., "I am frustrated because my day may have been just as bad but I have too much to do, so griping about it is not an option") were also scored as 1 as long as the response did not explicitly include the elements of blame or judgment of the other. Taking these factors into consideration, this result simply means that those who have negative thoughts about the other are likely to have dissatisfying relationships.

Again, revising the HEART is necessary to further examine such puzzling correlations between Part II scores and relationship-related measurements. The revised HEART should differentiate complaints or other negative thoughts from healthy thoughts. It may be helpful to design a new measurement that openly asks respondents to write down what they would be thinking in a given conflict situation (instead of instructing them to identify emotions first and then asking why they feel a certain way) and to explore what types of thoughts may be associated with quality of interpersonal relationships.

Convergent Validity with Adult Attachment

The HEART convergent validity was also examined by exploring its correlations with using adult attachment scale (ECR-R). Similar to the result with relationship satisfaction scales, some of the HEART scores correlated significantly with the ECR-R scores in expected direction, while some others did not. Furthermore, one of the HEART's score (Thought of Other) correlated with ECR-R scales in the opposite direction from the hypothesis. This section provides possible interpretation of these results.

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Significant Correlation in an Expected Direction

Negative correlations between Communicating Emotions and attachment-related avoidance (measured by Attachment Avoidance) and between Empathy and attachment-related avoidance suggest that those who do not communicate feelings and perspectives of the other have higher levels of attachment-related avoidance. This makes sense with the attachment theory in that those who are afraid of intimacy (high in avoidance) do not approach the other, or especially, do not embrace others' feelings; rather, they depend on themselves in distress (Lopez & Brennan, 2000).

Small Correlations and Non Significant Results

Some correlations were not significant. Two subscales of Part I (Assertiveness and Respect) did not show significant correlations with the ECR-R (Fraley, Waller, & Brennan, 2000). Part II scores did not associate with the ECR-R, except for one item. It is also acknowledged that even among significant correlations, the magnitude of these correlations was small.

Small correlations between performance-based EI tests and adult attachment self-reports have been found in previous studies. For example, in a study by Kafetsios (2004), exploring MSCEIT branch scores and attachment styles measured by Bartholomew and Horowitz's (1991) Relationship Questionnaire, not all branches were found to correlate with attachment style subscales. In this study, significant correlations found between MSCEIT branch scores and secure attachment styles were mostly in $r = .20$s. The small correlations between the performance-based EI (such as the HEART and the MSCEIT) and adult attachment self-report (such as ECR-R or Relationship Questionnaire) can be explained by

method variance (Kazdin, 2003). In future studies, it is important to explore the relationship between the HEART and adult attachment measures that utilize a performance-based method such as seen in Collins' (1996) study, where participants were asked to provide open-ended explanation to attachment relevant (or irrelevant) events. It is also beneficial to explore the HEART's result in light of observational methods of attachment-related behaviors such as Secure Base Scoring System developed by Crowell, Treboux, Pan, and Waters (2002), since use of empathy is considered as an indication of providing comfort, while use of assertiveness may be considered as an indication of seeking the partner as a secure base.

Significant Correlation in Unexpected Directions

Surprisingly, correlations between Thought of Other and Attachment Anxiety and between Thought of Other and Attachment Avoidance were in the opposite direction than expected. The positive relationship between Thought of Other and Attachment Anxiety could be reflecting that those who identify why the other is angry and what he/she needs ("he is angry because I didn't listen to him") also focus on their own flaw in attributing to the conflict (one was not able to meet the other's needs). According to Collins (1996), because of the activation of attachment-related negative self-model, individuals with preoccupied attachment style (those who are high in attachment-related anxiety) tend to see themselves as the cause of their partner's behavior, reflecting their lack of self-worth and self-reliance. There may be a difference between those who can simply acknowledge the other's needs without doubting self (low in attachment-related anxiety) and those who overly focus on the other's needs and anger due to incompetence of self and underlying fear of rejection (high in attachment-related anxiety). However, it seems that the current HEART did not make such distinction, and thus

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might have scored 1 on various responses, including responses that are based on individuals'

poor self-worth, resulting in the positive correlation with attachment-related anxiety.

While the magnitude was small ($r = .217$), the positive relationship between Thought

of Other and Attachment Avoidance was contrary to the attachment theory. In this study,

Thought of Other was scored 1 when the participants identified 1) the spouse's need to be

heard or 2) that the subject (you) did not listen to the spouse (causing the spouse to be angry).

This finding was contrary to previous study findings that showed negative relationship

between attachment-related avoidance and sensitivity to the other's needs (Collins & Ford,

2010). However, Collins and Ford also discussed that care-giving may be impaired if

caregivers' own feelings of security are threatened. This notion is consistent with Bowlby's

(1982) theory that individuals can turn their attention to others only when their own

attachment needs are met. The specific scenario used in this study might not have accurately

represented a care-giving situation (or a situation where subject's attachment system would be

activated) because the subject's own security might have been threatened (the spouse does not

offer help in the subject's distress). A revised HEART should utilize various other

interpersonal contexts, where not only the subject's own or the other's attachment system is

activated, but also where the subject is ready to attend the other's attachment needs.

On the other hand, the positive correlation between Attachment Avoidance and

Thought of Other could be explained in that some of the responses that scored 1 could have

emerged out of negative view of the other. For example, some responses scored 1 included

negative connotation, or contempt about the other (such as "my spouse is very sensitive", or

"her work is an ongoing issue") because of the liberal scoring criteria (lacking specificity).

Negative view of the partner is one of the characteristics among individuals with high

attachment avoidance. Mikulincer and Goodman (1992) explained the negative appraisal of the other is guided in part, by a defensive preference for distance and a desire to view oneself as better than other people. Again, it is necessary to improve the specificity of the HEART to explore this positive correlation of Thought of Other with adult attachment.

Summary of Discussion and Recommendations

The inter-rater reliability was in moderate to substantial range. Evaluations of disagreement on each item revealed that scoring criteria on the items Want Assertiveness, Respect, and Thought of Other need to be clarified.

Inter-correlations between Part I major score and Part II major score as well as between two subscales of the Part II were not significant. This result could suggest that these abilities are distinct from each other. However, this result could be due to the lack of sensitivity, lack of specificity, small scoring range, and/or lack in ability to quantify different levels of EI in fine increments.

Small correlations and lack of significant correlations between the HEART and other EI measurements (i.e., the MSCEIT, LESQ) did not support largely concurrent validity of the HEART. This result reflects the HEART's distinctiveness in the construct (ability model vs. trait model) and in the measuring method (performance-based method vs. self-report method; open-ended question vs. multiple choice format). Therefore, this result was better considered as supporting evidence of discriminant validity. This study's results also supported the HEART's discriminant validity with IQ tests.

The HEART's convergent validity with relationship satisfaction and adult attachment (attachment related-avoidance) was supported for the Part I scores, Communicating Emotions

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and Empathy. On the other hand, for the remaining HEART scores, support for convergent validity was not obtained due to small and non-significant correlations. Small correlations could be explained by possibility of method variance and the HEART's limitation in differentiating among various EI levels. The small Part II scores correlated significantly with relationship satisfaction and attachment measures, but in opposite directions from the hypotheses. These results could be explained by the lack of specificity of the HEART.

Future studies require a revised HEART, which has increased ability in differentiating different EI levels (increased sensitivity, specificity, scoring range). Various ways of improvement are suggested, including enlarging scoring ranges, using multiple scenarios to score, setting multiple levels of scoring (0, 1, 2, or more), clarifying scoring rubrics, and ensuring internal consistency. It is also necessary to use a larger population to clarify this problem. Increased sensitivity and specificity may illuminate some of the unexpected results found in this study. Another proposal for future studies is to use different measuring methods (i.e., observational method, other performance-based test) rather than self-report methods in exploring concurrent and convergent validity of the HEART.

Limitations

There were various limitations both in the HEART itself and in the study method. First, this study was only a preliminary investigation of the HEART and was exploratory in nature. Only a few aspects of psychometric properties were addressed in this study. Development of a new measurement requires an accumulative effort of various studies exploring different types of reliability and validity (e.g., internal consistency, test-retest reliability, and factorial validity), along with necessary revisions (e.g., adding and deleting

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items, clarifying the wording of the test itself and scoring criteria) in this process. In reviewing the findings, this study needs to be considered as a small portion of a comprehensive process of the development of a measurement, a large part of which is yet to come. While concurrent validity and convergent validity were addressed in this study, they were examined only with a handful of the measurements as an initial investigation. Other measures that tap into various other constructs that were not addressed in this study and those that are different in measuring method (i.e., observational method) should be utilized in future studies. In addition, both significant results and non-significant results should be re-examined in future studies with revised HEART(s).

Second, there are limitations in measurements used in this study. The majority of measures used to investigate the validity of the HEART were self-reports that differ in measuring method; the HEART was developed as a performance-based test. Thus, in the future, it is important to explore the HEART's validity using other performance-based tests and also observational measures.

Thirdly, another limitation in measurement used in this study was that one of the scales used in this study, the LESQ, is relatively new or has not been often utilized in research. The psychometric properties of the LESQ are not well known. Therefore, it is still questionable whether this measurement itself reliably assesses what it is intended to measure.

Fourth, there are limitations in the HEART itself. The HEART, especially Part I scores, is designed to score types of communication that are considered to be effective in interpersonal relationship (i.e., empathy, assertiveness, and respect), while it does not quantify various types of ineffective communication (e.g., sarcasm, blame, contempt) in maintaining close relationships. Therefore, the HEART does not differentiate variation of EI levels in its

lower range. Responses that included ineffective communication were all scored 0 in the current study, lacking sensitivity on lower levels of EI.

Fifth, out of four scenarios developed for the HEART, only one scenario was used for this study. The participants' performance on the HEART in this study is limited to one specific interpersonal context (interpersonal conflict in marriage). Abilities of communicating emotions and identifying emotions in different settings and in different relationships (e.g., close friends, work relationship, parent-child relationship) were not measured. In addition, because of the use of one scenario, the HEART scores were calculated based on only one scenario, which produced a small scoring range. This issue was especially true concerning Part II item scores (item score ranged from 0 to 1 and subscale ranged from 0 to 2). Therefore, the HEART could not quantify levels of EI in fine intervals.

Sixth, the scoring criteria of the HEART were liberal. For example, in Thought of Self item, various types of thoughts, including healthy thoughts in relationship (e.g., identifying own needs as well as identifying others' needs) and less healthy thoughts (e.g., only focusing on oneself) were inclusively scored as 1. In other words, the current HEART became restricted in specificity.

Seventh, this study utilized a convenient sampling. Participants were restricted to graduate students in counseling who were taking certain classes. As mentioned in Chapter 1, the demonstration of the empathy skills might be influenced by various history factors (i.e., instructor's emphasis, content of the class, and timing or sequence of various counseling skills being introduced). Because of this, the result cannot be generalized to a larger population. As compared to random sampling with a larger population (not restricted to university settings), performance on various measures used in this study might be clustered together, resulting in

small ranges of distributions. If the performance is only observed in a restricted range out of

potentially broader range, the result of a correlational study is limited in detecting the

relationship, thus, resulting in a small correlation, even if there is truly a relationship (Jackson,

2009).

Implications

While the revisions and further psychometric validations of the HEART are necessary,

this test has a potential to be used both in research and clinical practice. Furthermore, since the

effective communication styles defined by the HEART correspond with Biblical principles,

the HEART can be used as a tool for spiritual growth. In this section, the HEART's

implications in these three areas are briefly discussed.

Implications of Research

As discussed in Chapter 2, the review of EI literature revealed a lack of performance-

based EI tests that allow appropriate assessment of essential interpersonal abilities. The

majority of the existing EI tests are self-reports. The most used performance-based test, the

MSCEIT, does not address these interpersonal abilities appropriately. The HEART will serve

as a unique method of measuring interpersonal abilities (i.e., identifying emotions and

communicating emotions in an interpersonal conflict). This preliminary study supported the

HEART's uniqueness as compared to the existing EI tests. This study's findings on the

correlations of the empathy scale with relationship satisfaction and attachment-related

avoidance were noteworthy, since there are no other empathy scales that use a performance-

based method. This new EI test may be used across broad fields of study, including marriage

and close relationships, adult attachment, emotion regulation, empathy, communication, conflict resolution, socio-emotional development, leadership skills, counseling skill development and so on.

Implications of Practice

The HEART may also be used as a clinical measure of interpersonal communication skills to measure clients' improvement of these skills as a therapeutic outcome. As discussed in Chapter 1 and Chapter 2, the benefit of the performance-based test is that it can differentiate individuals with skill deficit from those with motivation deficit in maintaining close relationships. Therefore, the HEART can be used as an initial assessment tool in psychotherapy.

In the case of skill deficits, the HEART can be used as an intervention tool that assists clients' skill development. In cognitive-interpersonal therapy, developed by Burns (1995, 1999), five effective communication skills (e.g., empathy and assertiveness) are taught by letting a client take a look at his/her verbatim response to a criticism. The client and his/her therapist together then identify how they can improve the client's responses according to five effective communication skills. In a similar manner, the HEART can be used by letting the client take the HEART to first become aware of his/her skill levels. The client and his/her therapist should review and modify the responses in order for the client to learn the empathy and assertiveness skills. Unlike self-report tests, the results of the HEART do not report self-perceived skills or behavioral or emotional tendencies. The HEART rather shows the clients and therapists what specific skills the clients are equipped with, as well as which areas of the skills they need to be trained in. In addition, the standardized tests like the HEART can be

utilized as measures of treatment/training outcomes. Needless to say, the HEART needs to be revised to have more scenarios and can be tested with larger populations before the HEART can be used as such a tool.

The HEART can be used for training of therapists. Empathy training has been an essential element in counselor education (Davis et al., 1985; Redfern, Dancey, & Dryden, 1993; Bohart & Greenberg, 1997; Greenberg, Watson, Elliot, Bohart, 2001). Studies have shown that the therapists' empathy is an essential component of successful therapeutic outcomes (Burns & Nolen-Hoeksema, 1992; Lambert & Bergin1994; Orlinsky, Grawe, & Parks, 1994). Burns (1995, 1999) states the critical component for successful therapy is the therapists' skills in responding to criticism from clients. A study by Anderson, Ogles, Patterson, Lambert, and Vermeersch (2009) showed therapists' interpersonal skills in handling challenging therapist-client interaction (measured by a performance-based method) as a significant predictor for therapeutic outcome. Not only psychotherapists but also other health professionals have recognized the importance of interpersonal skill training, especially skills in handling conflicts. Researchers and educators in various disciplines such as medical doctors, nurses, as well as occupational or physical therapists have recognized the necessity of skill training in empathy (Dickson, 1989; Juping & Kirk, 2008; Hojat, 2007; Smith, Molineux, Rowe, & Larkinson, 2006; Wilkinson, Bailey, Aldridge, & Roberts, 1999). Testing one's ability to handle conflicts or ability to handle criticisms, the HEART, therefore, can be an important assessment tool for training these health professionals.

Biblical Implication of the Heart

The effective communication styles defined by the HEART correspond with Biblical

principles. Most importantly, the intention of the HEART is to help people to establish and

maintain the quality of interpersonal relationships. This intention corresponds with

commandments such as "love our neighbor as yourself" (Leviticus 19:18, Matthew 23:39, I

John 3:1, New International Version), and "live in harmony with one another" (Romans

12:16). To understand each other, be united together, and build each other up are God's

purposes for the body of believers (Ephesians 4 & 5).

Secondly, each of the elements the HEART (Humility, Empathy, Assertiveness, and

Respect) is consistent with Biblical teachings. Concerning Empathy, the importance of

listening is commanded in James 1:19-20, which says, "Everyone should be quick to listen,

slow to speak and slow to become angry, for man's anger does not bring about the righteous

life that God desires". The premise of empathy is to be willing to understand the other, instead

of demanding one's own right. Willingness to understand the other, rather than pursuing only

one's own desire is also commanded in Philippians 3:2-3 as it says, "Do nothing out of selfish

ambition or vain conceit, but in humility consider others better than yourselves. Each of you

should look not only to your own interests, but also to the interest of others". Everyone wants

to be heard and be understood, especially in conflict. Instead of demanding one's own right to

be understood, being willing to treat the other the way one wants be treated (i.e., to be

understood, or to be heard) is also the golden rule that Jesus talked about (Matthew 7:12) that

supports the principle examined by Empathy.

Humility is considered as a part of Empathy in the HEART. Especially in the

interpersonal conflict, controlling one's own anger and validating the other's criticism by

admitting one's own shortcomings is difficult. When one is criticized, as seen in the HEART scenario, it is a natural tendency for anyone to respond to the criticism with defensive responses such as denying the criticism, defending that one is right, criticizing the other in return, and so on (Burns, 1999). Instead, the Bible exhorts individuals to receive corrections by listening to the other. For example, Proverbs 12:15-16 teaches that a fool is quick-tempered and thinks his own way is right, but a wise man stays calm when insulted and listens to others. This is the spirit of Humility (i.e., the ability to acknowledge one's own shortcoming and communicate the validity in others' criticism) identified by the HEART.

Concerning expressing oneself (which is a part of Assertiveness and Respect) again, in an interpersonal conflict, one may be tempted to judge the other, complain about the other, or demand one's own way. The Bible commands not to judge the other (Matthew, 7:1-3), not to complain, but to be patient with one another and be forgiving of each other (Colossians, 4:13). When insulted with unkind remarks, believers are taught not to retaliate but to respond with blessings (I Peter 3:9). Instead of being angry at the other in defensive responses, the Bible urges the believers to give gentle responses. For example, Proverbs 15:1 states, "A gentle answer turns away wrath, but a harsh word stirs up anger." Ephesians 4:2 also states, "Be completely humble and gentle; be patient, bearing with one another in love." This is the underlying principle of the Assertiveness and Respect of the HEART. The goal of the Assertiveness is to stay away from judging or blaming the other, but to communicate genuinely and kindly how and why one feels a certain way without being judgmental.

Furthermore, Respect is defined as the ability to acknowledge the other's positive intention behind his/her behavior and to express positive feelings about the other and the relationship with him/her. With this skill, individuals convey respect in an attempt to bring out

the best of the other. This principle is also consistent with Biblical teachings: "Do not let any unwholesome talk come out of your mouths, but only what is helpful for building others up according to their needs, that it may benefit those who listen" (Ephesians 4:29) and "Therefore encourage one another and build each other up, just as in fact you are doing" (I Thessalonians 5:11).

Conflicts are inevitable. People with the skills that the HEART tests for can turn something as bad as conflict into opportunities to establish even a closer relationship, as Proverbs 12:18 says, "Reckless words pierce like a sword, but the tongue of the wise brings healing." Ephesians 5:15- 16 further states, "Be very careful, then, how you live—not as unwise but as wise, making the most of every opportunity, because the days are evil." It is this author's hope and desire that individuals be equipped to be ready to love others and to be united with one another for God's glory even in difficult relationships, as Scripture says, "No one has ever seen God; but if we love one another, God lives in us and his love is made complete in us" (I John 4:12).

Lastly, this author believes that the underlying foundation of the effective communication is the love of God that has been demonstrated for us, mankind. God loved us so much that He gave His Son to give us eternal life (John 3:16). His son, Christ Jesus gave up His own life for us and for our sins (Romans 5:8). Being so loved by God, believers ought to love each other (I John 4:12) and to follow God's example (Ephesians 5:1). Humility, kindness, gentleness, willingness to give up his own life, confident Truth-telling with kindness and compassion are shown in Christ's character and His actions. The skills the HEART examines give people practical ways to obey Jesus' commandment, "love each other as I have

loved you" (John 15:12). Thus, the HEART can be used as potential tool for spiritual growth or spiritual formation.

Conclusion

This study explored psychometric properties of the HEART, including inter-rater reliability, discriminant validity with IQ, concurrent validity with other EI tests, and convergent validity with relationship satisfaction and with adult attachment. Discriminant validity was obtained as correlated with the other EI tests as well as IQ tests. Concerning convergent validity, the Empathy subscale was found to correlate with relationship satisfaction and attachment-related avoidance, while the majority of the remaining scores did not significantly correlate with other measures. The small correlations may be explained by the HEART's unique measuring method and the current HEART's limitation in the scoring system. While revisions and further studies on its psychometric properties are necessary as a part of development of new scale, the HEART's potential impact is significant both in research and clinical practice.

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APPENDIX A: Meaning of Scores

Definitions of the HEART scores

Name of Scores	Definition
The HEART Total EI	Abilities to understand emotions and thoughts of self and others and communicate them effectively in order to achieve interpersonal goals such as to establish and maintain close relationships.
Communicating Emotions (Major score)	Ability to communicate one's and others' emotions and thoughts to the other persons for the purpose of establishing and maintaining the quality of interpersonal relationships.
Empathy (Subscale)	Ability to acknowledge the other's emotions and why he/she feels a certain way.
Humility (Item)	Ability to acknowledge one's own personal shortcomings and to communicate the validity in others' criticism.
Feeling Empathy (Item)	Ability to acknowledge the other person's emotion. The feeling should be accurate reflection of context.
Thought Empathy (Item)	Ability to acknowledge the other person's reason for emotion or perspective and thinking, without judging him/her. It is important that the reason to be accurately tied to the context.
Assertiveness (Subscale)	Ability to communicate in a non-judgmental way how the others' specific behaviors affect one's own emotion. This ability also includes the ability to communicate one's own needs and concerns in an appropriate interpersonal context.
Feeling Assertiveness (Item)	Ability to communicate one's own feeling. It is important to use actual feeling words like anger, anxiety, worried, concerned, upset etc.
Thought Assertiveness (Item)	Ability to express why the subject feels a certain way or when he/she feel a certain way. This ability also includes ability to share a concern with the other.
Respect (Subscale/Item)	Ability to express positive regards of the other, including express positive feelings and thoughts about other and the relationships with him/her.
Identifying Emotions (Major score)	Ability to identify emotions in self and others and to understand why they feel a certain way.
Sum of Other (Subscale)	Ability to identify the other's feeling and why he/she feels a certain way in a given situation. This scale is a sum of Feeling of Other and Thought of Other.
Feeling of Other (Item)	Ability to identify feelings of the other in a given situation.
Thought of Other (Item)	Ability to identify why the other feels a certain way in a given situation.
Sum of Self (Subscale)	Ability to identify one's own feelings and why one feels a certain way in a given situation. This scale is a sum of Feeling of Self and Thought of Self.
Feeling of Self (Item)	Ability to identify feelings of self in a given situation.
Thought of Self (Item)	Ability to identify why one feels a certain way in a given situation.

Definition of the MSCEIT scores

Name of Scores	Definition
MSCEIT Total EI	Overall index of Salovey and Mayer's (1997) four branch model of EI measured by the MSCEIT. This includes ability to perceive accurately, to access and/or generate feelings when they facilitate thought, to understand emotion, and to modulate emotions to promote emotional and intellectual growth.
Perceiving Emotion (MSCEIT branch1)	In Salovey and Mayer's (1997) model, it is defined as the ability to identify and differentiate emotions in both the self and other. In the MSCEIT, it is measured as the ability to identify emotions in photographs of facial expressions, landscapes, or in other images.
Facilitating Thoughts (MSCEIT branch 2)	In Salovey and Mayer's (1997) model, it is defined as the ability to use or generate emotions to facilitate cognitive activities. In the MSCEIT, it is measured as the ability to associate different emotions to different sensations such as light or temperature and to different kinds of thinking and reasoning.
Understanding Emotions (MSCEIT branch 3)	In Salovey and Mayer's (1997) model, it is defined as the ability to label emotions, differentiate them, and understand the relationships among these emotions. In the MSCEIT, it is measured as the knowledge of blends of emotions (what emotions consist of certain mixture of emotions) and of "chains" of emotions (how emotions changes from one to another).
Managing Emotions (MSCEIT branch 4)	In Salovey and Mayer's (1997) model, it is defined as the ability to modulate emotions in order to make better decisions in an appropriate context. In the MSCEIT it is measured as ability to accurately rate effectiveness of certain actions in achieving a certain result in both non-interpersonal and interpersonal situation, where a person must regulate his/her own emotions.

Definitions of the Emotional Schema Questionnaire Scores (Emotional Schema)

Name of Scores	Definition
Validation	The belief that there is a receptive audience for his/her emotions.
Comprehensibility	Belief that one's own feelings are comprehensible and make sense to him/her. The other extreme would be the catastrophic interpretation of one's feeling.
Guilt	The belief that one should not have certain emotion, accompanied with shame, guilt, and embarrassment about an emotion.
Simplistic view of emotion	The perception that one's and others' emotions may be contradictory. One's ability to accept the contradiction.
Higher values	The tendency to use emotions to clarify one's underlying needs and personal values.
Uncontrollability	Perception that intense negative emotions are out of one's control.
Numbness	Tendency to isolate oneself from one's intense emotions.
Demands for rationality	Tendency to overemphasis on rationality and logic. Anti-emotionality.
Duration	Belief that a strong feeling will last a long period of time.
Consensus	Recognition that many others have similar feelings to those that one experiences.
Acceptance of feelings	Tendency to accept own feelings and expend much energy to inhibit feelings.
Rumination	Tendency to ruminate and focus on one feeling and one thought. Lack cognitive flexibility.
Expression	Willingness to experience and express feelings openly.
Blame	Belief that others cause one's negative feelings.

Definitions of Other Scores

Name of Scores	Definition
Henricks Relationship Satisfaction Scale (RAS)	Relationship satisfaction in romantic relationship in general.
Burns Relationship Satisfaction Scale (BRSS)	Relationship satisfaction in the following seven aspects: communication and openness, conflict resolution, degree of caring and affection, intimacy and closeness, satisfaction with roles in relationship, and overall relationship satisfaction.
Attachment Anxiety	Fear of rejection and abandonment from the romantic partner.
Attachment Avoidance	Discomfort being close to the romantic partner.

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INVITATION LETTER

Dear COUN ____students,

Would you help a doctoral counseling student in her dissertation project on Emotional Intelligence (EI)? In the process, you'll learn about how to improve your Empathy Skill (a part of EI).

Dr._____ has given me permission to invite her students to participate in this study. My name is Hitomi Makino. In my study, I am developing a new EI test, called the IHEAR scale. It is designed to measure individuals' core relationship skills. Although the participation is voluntary, I believe that this will be of great benefit to your education and future career in the field. I hope that you will prayerfully consider the possibility of participating.

What you will be asked to do
When you agree to participate, you are going to complete various surveys and tests in the following three phases.
> Phase 1: An online survey including EI tests (Prior to Intensive)
> Phase 2: IQ test (The 1st day of Intensive after class hour in a classroom)
> Phase 3: A brief audio recording of counseling skill (Individual appointment sometime during lunch break or after class hour during the intensive)*

After the completion phase 3, you are invited to attend the debriefing/workshop on the 4th day of the intensive. This is an optional yet I believe this session will benefit you in many ways.

I look forward to the possibility of working and learning with each of you. Thank you for your consideration in participating in this educational opportunity!

Please email me back if you are interested in participating, and I will give you more details.

Thank you,

Hitomi Makino

Hitomi Makino, MA
Teaching Assistant
Adjunct Professor for COUN 503
Primary Content Manager Assistant COUN 503
Center for Counseling and Family Studies
Liberty University

*Note. The result from Phase III was not analyzed in the current study.

Consent Form

The Psychometric Examination of the IHEAR Scale

The Development of the IHEAR Scale

Hitomi Makino

Liberty University

Department of Counseling and Family Studies

You are invited to participate in a research study that aims to develop a new emotional intelligence test, the Inquiry-Humility-Empathy-Assertiveness (IHEAR) scale. The IHEAR scale is designed to measure individuals' core relationship skills. You were selected as a possible participant because this study involves counseling students and you are enrolled in Counseling Techniques and Helping Relationships (COUN 505). Please read this form and ask any questions you may have before agreeing to participate in this study.

This study is being conducted by Hitomi Makino, Center for Counseling and Family Studies at Liberty University. She is a Ph.D. candidate, who is writing a dissertation that requires a study of this nature.

Background Information

The purpose of this study is to develop a new emotional intelligence test, the IHEAR scale. In this study, the following questions will be examined.

Does the IHEAR scale measure what it is designed to measure?

Is the IHEAR scale consistent across the items?

How do these relationship skills measured by the IHEAR relate to the scores on other emotional intelligence tests, IQ, levels of relationship satisfaction, and attitudes in close relationships?

Procedures:

If you agree to participate in this study, you are asked to do the following things:

You are asked to review carefully this informed consent. It explains the purpose of study, rationale, risks and benefits, contact information of the investigator, duration/time of study, confidentiality, and voluntary nature of study. When you agree to participate in this study, you are asked to sign this informed consent and send it back to the researcher (hmakino@liberty.edu), prior to the one-week residency of your section of COUN 505.

You are asked to complete a battery of questionnaires/tests in the following three phases. The first phase is individual online administration. The second phase is group administration of an IQ test during the one-week residency. The third phase is observational measure of the counseling skills (audio-recording), which will be held individually during the one-week residency.

Phase I

If you reply to the first e-mail with your signed informed consent, you will receive the second e-mail from this researcher. This e-mail contains your assigned code number, an access to the online test (MSCEIT), and an attached set of questionnaires. You will be asked to complete the following questionnaires any time prior to your one-week intensive residency.

The IHEAR scale (developed for this study)

The demographic questionnaire (developed for this study)

Mayer-Salovery-Caruso Emotional Intelligence Test (MSCEIT; Mayer, Salovey, & Caruso, 2002)

Emotional Schema Questionnaire (Leahy, 2002)

Relationship Assessment Scale (RAS; Hendrick, 1988)

Relationship Satisfaction Scale (RSS; Burns, 1997)

The Four Horsemen (Gottman, 2000)*

Negative perspective (Gottman, 2000)*

Accepting influence (Gottman, 2000)*

The Experiences in Close Relationships-Revised (ECR-R) Questionnaire (Fraley, Waller, & Brennan, 2000)

*Note. The results from these questionnaires were not analyzed in the current study.

Phase II

You will be asked to take the Shipley Institute for Living Scale (SILS; Shipley, 1940) during the one-week residency. After the class hour (after 4:30pm), you will come to one classroom and take this test. The completion of this test will take 20 minutes. After the administration of the SILS, the appointments will be confirmed for the Phase III participation. The researcher will give you a piece of paper that states the individually appointed time of observation for Phase III (see the Time Table below). The researcher will simply confirm whether or not you are available at this appointed time. If not, she will ask if you can come at another time. Free refreshments will be served to show her appreciation to you.

Phase III*

Sometime on the 2nd, 3rd or 4th day of the intensive week (see the Time Table below), you will come to one of the classrooms individually to complete counseling skill recording. In this recording, you will review three video (DVD) clips demonstrating interactions between a counselor and a client. The moment the video clip is stopped, you will be asked what you will say next, as a response to the client in each clip. The recording will be less than one minute each time.

Times when the recording sessions will be held

(Each participant will make appointment at Phase II)

2nd day	Lunch break or after class (4:30-6:30)
3rd day	Lunch break or after class (4:30-6:30)
4th day	Lunch break

*Note. Result from observational recording (from Phase III) was not analyzed in the current study.

On the 4th day after class (4:30 pm), there will be an optional debriefing session/workshop. This will take about 45 minutes. In this session, the researcher will introduce Dr. David Burns' materials on Interpersonal Cognitive Therapy and his five principles of effective communication, from which the IHEAR scale is adopted. If you don't attend this session, you will receive follow-up e-mail from the researcher and be informed of the material shared in the session.

Risks and Benefits of being in the Study

Risk

Some of the items in the questionnaire/tests that you will complete deal with relationship conflicts. This may remind you of some memories of your own relationship conflicts in past or present close relationships such as memories of fights or experiences of being ignored. Some items may evoke your own uncomfortable emotions such as anger associated with the relationship conflict or grief over a loss of relationship.

If you experience such intense feelings and if you don't want to finish all the materials, you are free to withdraw from this study anytime. If you feel uncomfortable during and after this study, you are encouraged to seek psychotherapy or counseling. Locally, you are encouraged to seek counseling at *The Light Counseling Center* in Lynchburg. It is located at 2811 Linkhorne Drive. The phone number is 434 -384-1594. When you go back home after the intensive, you are encouraged to seek counseling/psychotherapy if you become aware of such emotional distress.

Benefits

You will hear about the five principles of effective communication (Inquiry, Humility, Empathy, and Respect) adapted from Burns' (1999) Cognitive Interpersonal Therapy. The researcher will introduce these skills and related materials at the debriefing session/workshop. Dr. Burns states that these skills enhance intimacy and relationship satisfaction in close relationships such as marriage, family, and dating relationships. Dr. Burns also encourages therapists using these skills to build therapeutic relationships with their clients, which contribute to therapeutic success. Thus, these skills are important for you to learn 1) to improve your relationships with your family members and 2) to enhance your professional skills as future counselors. This may indirectly help you achieve in this class by gaining additional insights about counseling skills. This is not to say that you will gain these skills by simply participating in this study or attending the workshop. To obtain these skills, you need to practice. The researcher will introduce the materials that show how to practice these skills. Thus participation of this study may enhance your awareness of these skills and provide materials to improve these skills in the future. Additional benefit is that free refreshments (sweets & drinks) will be served upon your phase II completion.

Additional benefit and risk upon your request for test results

If you indicate your request to receive your test results, you will receive test scores on some of the tests/questionnaires, including EQ (MSCEIT; Mayer, Salovey, & Caruso, 2002), three types of Gottman's questionnaires (Gottman, 2000), and attachment styles (ECR-R; Fraley,

Waller, & Brennan, 2000). Purchasing and receiving some of these test results are usually expensive (especially the EQ test). However, you will receive free test administration and results in this study. While you will not receive full reports from the test publisher, you will receive your scores and handouts on interpretation of test scores. Receiving test results may benefit your self-awareness. At the same time, receiving test results may be a risk, for it may raise some concerns or emotional disturbances. In that case, you are encouraged to seek psychotherapy and counseling. If you have any questions and concerns about the test results, please contact the researcher via e-mail at hmakino@liberty.edu.

Confidentiality:

The records of this study will be kept private. In any sort of report the researcher might publish, she will not include any information that will make it possible to identify you. Research records will be stored securely, and only researchers will have access to the records.

Electronic Files (in Phase I)

You will complete a battery of questionnaires on the computer in Phase I. After completion of questionnaires, you are asked to save all the files using your code number. Please do not use your name when you take or save these questionnaires. Then you are asked to e-mail these files to the researcher.

The researcher will receive and download all these electronic files from your e-mail. She will save them in her computer with password protection. Then she will delete all the e-mails from you. At this point, there will be no e-mail address or names attached to the test results. Each electronic file from you will be saved only with your code number.

MSCEIT (In Phase I)

Upon taking the MSCEIT test, you will be asked to provide your code number. The results of the MSCEIT will be password protected. In this way, when creating the database, the researcher will not have any information that identifies you.

The Paper-Pencil IQ Test (in Phase II)

You will complete the IQ test (SILS) with pencils. You will be instructed to provide your code number. They will submit the SILS to the researcher in the classroom.

Audio Recording of Counseling Skill

The researcher will make sure that no one can hear the recording outside of the classroom. After the recording, you will be given an opportunity to review the recording if you desire to. The researcher will also re-confirm your voluntary consent for the usage of the recording for research. This recording will be heard by only this researcher and raters of this study. Thus, the recording will not be shared with anyone else, including the instructor of your class. The recording of your performance will not affect your grade. The recording will be identified with only your code number.

Organization/Storage

The tests and questionnaires will be identified by only the code number in order to protect your privacy and confidentiality. This anonymous data will be stored in a computer file with access only through a password. This password will be shared only among the raters and the adviser in this study. All hard copies of forms will be stored in a locked file. After the dissertation project is complete, the data will be deleted and shredded.

Voluntary Nature of the Study:

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with the Liberty University. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

Contacts and Questions:

The researcher conducting this study is Hitomi Makino. You may ask any questions you have now. If you have questions later, you are encouraged to contact her at the Department of Counseling and Family Studies, Liberty University, (434)-592-391, hmakino@liberty.edu The faculty sponsor for this study is Dr. Gary Sibcy. You may contact him at the Department of Counseling and Family Studies, Liberty University. (434)-592-4049, gsibcy@liberty.edu.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher(s), you are encouraged to contact the Human Subject Office, 1971 University Blvd, Suite 2400, Lynchburg, VA 24502 or email at irb@liberty.edu.

You will be given a copy of this information to keep for your records.

Statement of Consent:

I have read the above information. I have asked questions and have received answers. I consent to participate in the study.

Signature:_____   Date: _____

Signature of Investigator:_____   Date: _____

1. Your Age: _____ (fill In)

2. Your gender: _____ (indicate a or b)

      a. Male
      b. Female

3. Ethnicity: Choose one from the following _____ (indicate following options)
      a. African American
      b. White American
      c. Hispanic
      d. Asian and Pacific Islanders
      e. The other : (   )

4. I am currently: Choose from the following _____

      a. Married
      b. Divorced
      c. Never been married and have a dating relationship
      d. not have a dating relationship

5. For how long have you been in this current close (marriage/dating)

   relationship? _____ years or _____ months

6. a. I have worked as a mental health counselor/therapist _____ (Y=Yes or N=No)

     How long have you worked? _____ years or _____ months

   b. I have worked in other types (other than counselor/therapist) of helping profession _____ (Y=Yes or N=No)

       Please specify the occupation :_____
       How long have you worked ?: _____ years or _____ months

7. The length you are enrolled in counseling program:_____ year

You come home after a busy day at work. You have at least several hours of work to prepare for an important meeting tomorrow. You know you have to check on your sick mother and your child also needs some help for his school project. Your spouse is already at home. As soon as you come into the room, your spouse launches into a story about how stressful his/her day was. Your spouse then starts complaining about his/her boss, a complaint you have heard about over and over again. You give him/her short replies such as "uh" and "that's bad." Your spouse continues talking to you, while you quickly pick up clutter from the floor and then go to another room to check on the children. Your spouse says, "I don't know if it is worth talking to you! You never listen to what I have to say."

1. How would you respond to your spouse verbally? What would you say? Write your response verbatim.

2. In this situation, how is your spouse feeling?

3. Why is he/she feeling this way?

4. In this situation, how are you feeling?

5. Why are you feeling this way?

Scenario B: You come home after a busy day at work. You have at least several hours of work to prepare for an important meeting tomorrow. You know you have to check on your sick mother and your child also needs some help for his school project. Your spouse is already at home. As soon as you come into the room, your spouse launches into a story about how stressful his/her day was. Your spouse then starts complaining about his/her boss, a complaint you have heard about over and over again. You give him/her short replies such as "uh" and "that's bad." Your spouse continues talking to you, while you quickly pick-up clutter from the floor and then go to another room to check on the children. Your spouse says, "I don't know if it is worth talking to you! You never listen to what I have to say."

Empathy Points	Elements	Examples
0 point: The response that does not include any elements of Empathy (FE, TE, H). The response that includes bad communications in an attempt of Empathy. Score 0 in E and score 1 or more in Bad Communication (BC). The response that does not respond to the other in the scenario verbatim. For example, "I would not say such" or "I would apologize and … " **Subscale 1 point** **FE: 0 or 1** **TE: 0 or 1** **H: 0 or 1** **Total Empathy (total of subscale points)** **0, 1, 2, 3**	**Humility (H) 1pt** Acknowledges the truth in the other person's perspective. The subject (you) should be open and accepting responsibility for his/her behavior. The effect of "I get too busy with things and don't really give attention." Humility is not same as a simple apology. Thus apology (i.e., "I'm sorry" or "I apologize") without acknowledging the specific offense (not listening) should be given 0 pt.	**Humility (1pt)** • *I am sorry, I should have listened more* • *You are right, I am not giving you attention* **Not Humility (0pt)** • *No, I am listening* • *I am sorry*
	Feeling Empathy (FE) 1 pt Acknowledge the other person's emotion. The feeling should be accurate reflection of context. In scenario B, feelings of angry, annoyed, frustrated, upset or any other word that implies anger should be given 1 pt.	**Feeling Empathy (1pt)** • I know you are frustrated **Not Feeling Empathy (0pt)** • *I am listening. I just have a lot to do.*
	Thought Empathy (TE) 1 pt Acknowledge the other person's reason for emotion or perspective and thinking, without judging him/her. The responses that acknowledge that the other person thinks it is not worth trying to express his/her concerns because the subject (you) does not listen should be given 1 pt. Other responses that implies that the other person believes the subject (you) is not listening, preoccupied, ignoring, or don't care should be given 1 pt.	**Thought Empathy (1pt)** • *I'm sorry that you feel like I don't listen.* • *I really don't mean to sound like I do care about you or your day today.* • *I am sorry I am not giving much attention right now* **Not Thought Empathy (0pt)** • *That's not true. I am listening*

Part I Scoring Rubric Cont. (Assertiveness)

Assertiveness Point	Elements	Examples
0 point: The response that does not include any elements of Assertiveness (FA, TA, WA). The response includes bad communications in an attempt of assertiveness. Response does not respond to the other in the scenario verbatim. "say nothing" "I would apologize" **1 point :** The response includes at least one out of three elements of Assertiveness (FA, TA, WA). **Subscale 1 point** **FA: 0 or 1** **TA: 0 or 1** **WA: 0 or 1** **Total Assertiveness (total of sub-scale points)** **0, 1, 2, 3**	**Feeling Assertiveness** Identify and communicate the subject's (your) feeling. It is important to use actual feeling words. Responses that include feeling words such as overwhelmed, tired, stressed, rushed, and any other words that imply such feelings should be given 1 pt.	**Feeling Assertiveness (1pt)** • I'm feeling overwhelmed right now • I am distracted by all the things that need to be done **Not Assertiveness (0pt)** • You are not the only one who had a bad day.
	Thought Assertiveness Express why you feel a certain way or when you feel a certain way. Point out the specific event or specific behavior that affect how the subject (you) feels. In this scenario, the subject perceives a lot of tasks and responsibilities to take care of. Thought Assertiveness should not be judgment of the other's motives or excuse of your behavior.	**Thought Assertiveness (1pt)** • *I have big meeting tomorrow.* • ***I have a lot of work to do tonight*** • *I am distracted by all the things that need to be done* • *It's hard for me to feel like I can really give you the best conversation and understanding when I am overwhelmed* • *I have to take care of mom* **Not Thought Assertiveness (0pt)** • *I have heard this story so many times* • *You are just repeating yourself*
	Wants Assertiveness Express your needs and wants specifically, openly, and directly. In this scenario, the subject (you) needs the spouse's help to complete all the tasks. He/she also needs some time to calm down Such desires and needs must be communicated respectfully.	**Wants Assertiveness (1pt)** • *Can you give me few minutes and then I can sit down with you* • *I appreciate if you can help me cleaning up this room* • *I need some help with all I have to do* **Not Wants Assertiveness (0pt)** • *Can you help instead of complaining? (counter-criticism)*

Part I Scoring Rubric Cont. (Respect)

Respects Point	Elements	Examples
0 point: The response does not include any elements of respects (i.e., PR, PI). Or the response includes disrespectful remarks (i.e., any types of Bad Communication). Score 1 or more in BC. Response does not respond to the other in the scenario verbatim. "say nothing" "I would apologize" **1 point :** The response does not include Bad Communication and has at least one elements of Respect (PR, PI). **There is no subscales in Respect** **Total Assertiveness** **0, or 1**	**Positive Regard** Convey positive regard for the person. There are several ways of doing this. 1. Express a willingness to hear the person's concerns. If not at the present time, in the near future. 2. Express at least implicit value for the other person and or for the relationship. 3. Express valuing the other's feelings.	**Positive Regard (1pt)** • *I do care about you or your day today* • *I would really like to hear what you have to say* (WA/PR). • *I'm sorry I'm really busy... can we talk about this later?* **Not Positive Regard (0pt)** • *Oh love ... I am sorry ... i did not realize what I was doing. Please continue ... I am all yours .. !* (no element) • *sorry honey, keep going as I am still listening, I am just multi tasking due to short time and many demands* (no element)

Scoring Rubric Part I Cont. (Bad Communication)

Bad Communication	Elements (1)
When responses include any elements of the BC, score 0 for each item above and score 1 for BC.	**Bad communication**: Communication style is defined as responses that include no open and direct sharing of thoughts and feelings with the other. The response neither attends the other person's mind nor admits your true feelings and concerns directly. If the response includes any elements of the BC, score 1 for BC. 1. Passive aggressive (PA) & "Say nothing"- You pout or withdraw or say nothing. You may storm out of the room or slam doors. 2. Truth (T)- You insist that you are "right" and the other person is "wrong." 3. Blame (B)- You say that the problem is the other person's fault. 4. Defensiveness (DF)- You refuse to admit any wrong-doing or imperfection. 5. Counterattack (CA)- Instead of acknowledging how the other person feels, you respond to their criticism by criticizing them. 6. Diversion (DV)- Instead of dealing with how you both feel in the here-and-now, you list grievance about past injustices. 7. Put-Down (PD)- You imply that the other person is a loser because he or she "always" or "never" do certain things. 8. Hopelessness (Ho)- You give up and insist there's no point in trying. 9. Demandingness (DM)- You say you're entitled to better treatment but you refuse to ask for what you want in a direct, straightforward way. 10. Denial (DN)- you insist that you don't feel angry, hut, or sad when you really do. 11. Martyrdom (M)- You claim that you're innocent victim. 12. Self-blame (SB)- instead of dealing with the problem, you act as if (state) you're an awful, terrible person. 13. Helping (HP)- Instead of hearing how depressed, hurt, or angry the other person feels, you try to "solve the problem: or "help: him or her 14. Sarcasm (SA)- Your words or tone of voice convey tension or hostility which you aren't openly acknowledging (cannot be measured) 15. Scapegoating (SC)- You suggest that the other person has "a problem" and that you're sane, happy, and uninvolved in the conflict. List is direct quote from Burns (1996). Feeling good handbook p.365

APPENDIX G: The HEART Scoring Rubric Part II

Scenario B: You come home after a busy day at work. You have at least several hours of work to prepare for an important meeting tomorrow. You know you have to check on your sick mother and your child also needs some help for his school project. Your spouse is already at home. As soon as you come into the room, your spouse launches into a story about how stressful his/her day was. Your spouse then starts complaining about his/her boss, a complaint you have heard about over and over again. You give him/her short replies such as "uh" and "that's bad." Your spouse continues talking to you, while you quickly pick-up clutter from the floor and then go to another room to check on the children. Your spouse says, "I don't know if it is worth talking to you! You never listen to what I have to say."			
OHTER	1 pt / 2pt		0 pt
Feeling of the Other (FO) In this situation, how is your spouse feeling?	2 point: Responses should include feelings that are in accurate range: *angry, frustrated, annoyed, upset aggravated*	1 point: Response should include feelings that are in appropriate range: *stressed, ignored, unloved, ignored, worthless, unappreciated, hurt*	Responses that do not include feeling. Or Responses that include Feeling words that are not accurate in this context or responses that merely state one's thoughts should be given 0 pt. • *Relaxed* • *He wasn't heart*
Thought of the other (TO) Why is he/she feeling this way?	It is reasonable to understand the spouse's frustration with job situation; however, he/she just made the statement "you never listen…," thus		All other responses. Statements that include *Blame* and *Diversion* should be given 0 pt. See below.
	2 pt: Responses that include the understanding that your behavior of not listening made him/her angry • *Because I am not giving him my full attention.* • *My one or two words answers made him feel ignored or rejected* • *Because I am multi-tasking and not listening to him*	1pt: Responses that state the spouse had a bad day or stressful day, or mention about the spouse's difficulty at the job • *Bad day at work, hasn't see you all day* • *Has been treated poorly at work* • *Because my spouse has issues with the boss*	• *Because he cannot control the situation* • *Because he is VERY sensitive and needs to know how much I care for him…*

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Part II Scoring Rubric Cont.

Blame (B) If the response includes Blame, give 0 pt for each item (FO & TO) and score 1 pt for Blame.	If the responses in FO or TO include any judgment, blame or criticism, score 1 for Blame (B). ***Judgment*** is defined as labeling the other person (i.e., "he is a jerk") or stating wrong motivation (i.e., "he neglects me"). ***Blame*** is defined as stating the problem is the other person's fault (i.e., "he does not realize that my responsibilities are just as important as he is". Or the statement includes "should,""must," "never," or "always" • *Because my spouse has always issues with the boss* • *Because he is VERY sensitive and needs to know how much I care for him…*
Diversion (D) If the response includes any other information than that is given in the scenario B give 0 pt for each item (FO & TO) and score 1 pt for Diversion.	The responses that are not directly corresponding the feeling in the scenario should be scored 1 for Diversion (D). Or the responses that include (or confused with) the thought of the self should be given 1 for (D). • *She has too much on her plate! She wants me to help her wind down from her stressful day at her job but I want the same, that's why there is too much going on in this situation.* • *Because he is use to getting all my attention and this time he doesn't have 100% of me.* • *Feels trapped in a job that he doesn't like but provides for his family and is trying to let off some of the frustration.*

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SELF	1 pt	0 pt
Feeling of Self (FS) In this situation, how are you feeling?	Responses need to include either one of the three kinds of feelings below 1) overwhelmed and tired • *Overwhelmed… (with a lot of things to do and the spouse needs me), worried with mom, stretched, rushed, tired from work, hurried* 2) frustrated or not appreciated (with your spouse) • *Angry, frustrated, misunderstood, unimportant, unappreciated … with spouse* 3) guilty (about how the subject responded to the spouse)	All other responses. If a response state thought rather than feeling, give a 0 pt. • *Relieved that he is willing to wait.(inaccurate feeling)* • *I feel that I have so much to do and I will have no time to finish it if I listen to my spouse drone on about work.(this is a thought)*
Thought of Self (TS) Why are you feeling this way?	Responses must include one of the four kinds of thoughts listed below. 1) You (subject) have many responsibilities and needing to complete more tasks. 2) Your (the subject's) desire/goal (i.e., I want to take care of family members including your spouse also complete a lot of tasks) is blocked, not understood, or misunderstood. Or just that your needs were not acknowledged by your spouse. (i.e., he does not understand that I also had a bad day too) 3) Your spouse is not giving you a hand to help you or not understanding that you are also overwhelmed. 4) You (the subject) regret that you did not give attention or gave the spouse the impression of not listening to him/her • *It seems like everyone needs me at the same time (overwhelmed, stretched).* • *I have enough on my plate (overwhelmed).*	All other responses. • *Because I am terrible* • *Because I am not being a good wife*

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Blame (B) If the response includes Blame, give 0 pt to each item (FS & TS).	If the responses in FS or TS include any judgment, blame or criticism then score 0 pt to FS and TS. **Judgment** is defined as labeling the other person (i.e., "he is a jerk") or stating wrong motivation • *he neglects me* • *Because my spouse is lazy* **Blame** is defined as stating the problem is the other person's fault • *he does not realize that my responsibilities are just as important as he is* • *He should know I need help*	
Diversion (D) If the response includes diversion, give 0 pt to each item (FS & TS).	If the responses in FO or TO include any other information than that are given in the scenario B, then score 1 pt for Diversion. The responses that are not directly corresponding the feeling in the scenario or that do not follow direction should be given 1 pt for D. • *We have had this conversation several times before. I've tried to explain to him that one does not need a pulpit to do ministry. It's all about leading others to Christ. It can mean just writing a letter to the people in the neighborhood, tell them who you are and inviting them to cal him if they need prayer and invite them to a family bible study in our home or their home if have a need for it. Jesus didn't have a pulpit but he had many disciples.* • *There is too much going on in this situation. With so many domestic responsibilities, it is too much to ask my wife to carry the burden of an outside job on top of that. In this situation …* • *I have so much to do, and feel it is all important, but I don't want him to feel like he isn't important to me. It would have taken less time to listen from the start.*	

APPENDIX H: Leahy Emotional Schema Questionnaire

We are interested in how you deal with your feelings or emotions--for example, how you deal with feelings of anger, sadness, anxiety, or sexual feelings. We all differ in how we deal with these feelings, so there are no right or wrong answers. Please read each sentence carefully and answer each sentence, using the scale below, as to how you deal with your feelings during the past month.

1 = very untrue of me
2 = somewhat untrue of me
3 = slightly untrue of me
4 = slightly true of me
5 = somewhat true of me
6 = very true of me

Item	Rating (1-6)
1. When I feel down, I try to think about a different way to view things.	
2. When I have a feeling that bothers me, I try to think of why it is not important.	
3. I often think that I respond with feelings that others would not have.	
4. Some feelings are wrong to have.	
5. There are things about myself that I just don't understand.	
6. I believe that it is important to let myself cry in order to get my feelings "out."	
7. If I let myself have some of these feelings, I fear I will lose control.	
8. Others understand and accept slay feelings.	
9. You can't allow yourself to have certain kinds of feelings---- like feelings about sex or violence.	
10. My feelings don't make sense to me.	
11. If other people changed, I would feel a lot better.	
12. I think that there are feelings that I have that I am not really aware of.	
13. I sometimes fear that if I allowed myself to have a strong feeling, it would not go away.	
14. I feel ashamed of my feelings.	
15. Things that bother other people don't bother me.	
16. No one really cares about my feelings.	
17. It is important for me to be reasonable and practical rather than sensitive and open to nay feelings.	
18. I can't stand it when I have contradictory feelings --- like liking and disliking the same person.	
19. I am much more sensitive than other people.	
20. I try to get rid of an unpleasant feeling immediately.	
21. When I feel down, I try to think of the more important things in life--what I value.	
22. When I feel down or sad, I question my values.	

23. I feel that I can express my feelings openly.	
24. I often say to myself, "What's wrong with me?"	
25. I think of myself as a shallow person.	
26. I want people to believe that I am different from the way I truly feel.	
27. I worry that I won't be able to control my feelings.	
28. You have to guard against having certain feelings.	
29. Strong feelings only last a short period of time.	
30. You can't rely on your feelings to tell you what is good for you.	
31. I shouldn't have some of the feelings that I have.	
32. I often feel "numb" emotionally--like I have no feelings.	
33. I think that my feelings are strange or weird.	
34. Other people cause me to have unpleasant feelings.	
35. When I have conflicting feelings about someone, I get upset or confused.	
36. When I have a feeling that bothers me I try to think of something else to think about or to do.	
37. When I feel down, I sit by myself and think a lot about how bad I feel.	
38. I like being absolutely definite about the way I feel about someone else.	
39. Everyone has feelings like mine.	
40. I accept my feelings.	
41. I think that I have the same feelings that other people have.	
42. There are higher values that I aspire to.	
43. I think that my feelings now have nothing to do with how I was brought up.	
44. I worry that if I have certain feelings I might go crazy.	
45. My feelings seem to come out of nowhere.	
46. I think it is important to be rational and logical in almost everything.	
47. I like being absolutely definite about the way I feel about myself.	
48. I focus a lot on my feelings or my physical sensations.	
49. I don't want anyone to know about some of my feelings.	
50. I don't want to admit to having certain feelings--but I know that I have them.	

Leahy R. (2002). A model of Emotional Schemas. *Cognitive and Behavioral Practice, 9*, 177-190.

APPENDIX I: Hendrick Relationship Assessment Scale (RAS)

Respond to each statement by typing the number to indicate your satisfaction you feel in your intimate relationship (marriage or dating). If you are not involved in an exclusive romantic relationship, leave this questionnaire blank.

Item	Rating (A-E)
1. How well does your partner meet your needs? A B C D E Poorly Average Extremely well	
1. In general, how satisfied are you with your relationship? A B C D E Unsatisfied Average Extremely satisfied	
3. How good is your relationship compared to most? A B C D E Poor Average Excellent	
4. How often do you wish you hadn't gotten in this relationship? A B C D E Never Average Very often	
5. To what extent has your relationship met your original expectations: A B C D E Hardly at all Average Completely	
6. How much do you love your partner? A B C D E Not much Average Very much	
7. How many problems are there in your relationship? A B C D E Very few Average Very many	

Permission to use obtained from Dr. Hendrick.

Hendrick, S. S. (1988). A generic measure of relationship satisfaction. *Journal of Marriage and the Family, 50,* 93–98.

APPENDIX J: Burns Relationship Satisfaction Scale (BRSS)

Respond to each statement by typing the number to indicate your satisfaction you feel in your intimate relationship (marriage or dating). If you are not involved in an exclusive romantic relationship, leave this questionnaire blank.

Item	Ratings (0-6)
1. Communication and openness	
2. Resolving conflicts and arguments	
3. Degree of affection and caring	
4. Intimacy and closeness	
5. Satisfaction with your role in the relationship	
6. Satisfaction with the other person's role	
7. Overall Satisfaction on with your relationship	

APPENDIX K: Experiences in Close Relationships-Revised (ECR-R)

The statements below concern how you feel in emotionally intimate relationships. We are interested in how you generally experience relationships, not just in what is happening in a current relationship. If you are not in an exclusive relationship, please leave this questionnaire blank.

    1= strongly disagree
    2=moderately disagree
    3= slightly agree
    4=neutral
    5= slightly agree
    6=moderately agree
    7=strongly agree

Item	Rating (1-7)
1. I worry that I won't measure up to other people.	
2. I get uncomfortable when a romantic partner wants to be very close.	
3. I rarely worry about my partner leaving me.	
4. My partner really understands me and my needs.	
5. When I show my feelings for romantic partners, I'm afraid they will not feel the same about me.	
6. I worry that romantic partners won't care about me as much as I care about them.	
7. I find it easy to depend on romantic partners.	
8. I don't feel comfortable opening up to romantic partners.	
9. I talk things over with my partner.	
10. I find it difficult to allow myself to depend on romantic partners.	
11. I worry a lot about my relationships.	
12. I'm afraid that once a romantic partner gets to know me, he or she won't like who I really am.	
13. I prefer not to be too close to romantic partners.	
14. I tell my partner just about everything.	
15. I often worry that my partner doesn't really love me.	
16. It helps to turn to my romantic partner in times of need.	
17. It's easy for me to be affectionate with my partner.	
18. I feel comfortable sharing my private thoughts and feelings with my partner.	
19. I am nervous when partners get too close to me.	

20. It makes me mad that I don't get the affection and support I need from my partner.	
21. I usually discuss my problems and concerns with my partner.	
22. I find it relatively easy to get close to my partner.	
23. When my partner is out of sight, I worry that he or she might become interested in someone else.	
24. I do not often worry about being abandoned.	
25. It's not difficult for me to get close to my partner.	
26. My desire to be very close sometimes scares people away.	
27. I am very comfortable being close to romantic partners.	
28. I often worry that my partner will not want to stay with me.	
29. I prefer not to show a partner how I feel deep down.	
30. My partner only seems to notice me when I'm angry.	
31. Sometimes romantic partners change their feelings about me for no apparent reason.	
32. I often wish that my partner's feelings for me were as strong as my feelings for him or her.	
33. I feel comfortable depending on romantic partners.	
34. I find that my partner(s) don't want to get as close as I would like.	
35. My romantic partner makes me doubt myself.	
36. I'm afraid that I will lose my partner's love.	

APPENDIX L: Approval Letter from Association for Behavioral and Cognitive Therapies

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Authors   LEAHY
Title: EMOTIONAL SCHEMA QUESTIONNAIRE
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APPENDIX M: Approval Letter (E-mail) from Dr. Burns

Yes, that's fine. I'd like to learn about the findings. david

David D. Burns, M.D.
Adjunct Clinical Professor Emeritus,
Department of Psychiatry and Behavioral Sciences,
Stanford University School of Medicine

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From: Makino, Hitomi [mailto:hmakino@liberty.edu]
Sent: Tuesday, December 02, 2008 12:09 PM
To: david@feelinggood.com
Subject: Thank you for update and request to use Relationship Satisfaction Scale for research

Dear Dr. Burns,

Thank you Dr. Burns for sending us Toolkits updates and other goodies. I appreciate all you do. The toolkit will be tremendously helpful to my clinical practice. I am sure it will bless my future patients too.

I have another request. I have send you e-mails several times and have asked a permission to use your relationship satisfaction scale for my dissertation research. I am glad to share study findings with you after the completion of the study. I understand that you are busy. But I do need to hear from you. If you don't allow me to use this scale for research, please let me know soon. The data collection process starts very soon. I am still planning to use this scale for my dissertation research.

Sincerely,

Hitomi Makino, M. A.
Liberty University, Center for Counseling and Family Studies
Teaching Assistant & Instructor (COUN 503)
Office Phone: 434-592-3910 (Office in Liberty University)
E-mail: hmakino@libertry.edu