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EMOTIONAL INTELLIGENCE:
The Three Major Theories in the Field

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Emotional Intelligence: The Three Major Theories in the Field

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I hereby certify that all material in this final year project which is not my own work has been identified and that no work is included for which a degree has already been conferred on me.

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Abstract

Emotional intelligence (EI) is a term that has several definitions and theories. Three major views in the field of EI will be presented and discussed in this thesis, furthermore some practical implications for the research. There will also be a brief overview of the two fields of emotion and intelligence research, from where the concept of EI has emerged. The first view presented is Mayer and Salovey's four-branch model of EI, measured with the Mayer-Salovey-Caruso Emotional Intelligence Test (the MSCEIT). The second view is the Bar-On model of emotional-social intelligence, closely related to the Emotional Quotient Inventory (the EQ-i). The third view is Goleman and colleagues' model of EI, which is measured with the Emotional Competence Inventory (the ECI). These different views of EI will be discussed in terms of ability-models and mixed-models, where the first model presented is referred to as an ability-model of EI and the following two models are seen as mixed-models of EI.

Keywords: Emotion, intelligence, emotional intelligence, MSCEIT, Emotional Competence Inventory (ECI), Emotional Quotient Inventory (EQ-i)

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Introduction

There are different views of what emotional intelligence (EI) is and how it should be defined. According to Fernández-Berrocal and Extremera (2006) there are especially three theories in the field of EI that are accepted in the scientific community. This work focuses on these three major views and the aim of this thesis is to explain these different views of EI. Furthermore, present some of the strengths and weaknesses of the three views of EI. Emotional intelligence is a growing field of research and since the term 'emotional intelligence' has become very popular for the public it is important to point out that there is not just one clear definition. All three views have their different definitions, theoretical models and different ways to measure emotional intelligence and this work will go through them one by one. In addition it will also look at some of the practical implications for the research of EI, from the perspectives of the three views. Furthermore, this work also focuses on studies, reviews and meta-analyses in the field in order to compare the different views of EI. Lastly there will be a discussion, which includes the strengths and weaknesses of the three views. Since emotional intelligence relates to the more established research fields of *emotion* and *intelligence*, this work starts with a brief overview around some of the theories in these fields. This overview also provides readers without deeper knowledge in these fields with some background and historical understanding for the areas that the concept of EI has emerged from.

The different views of EI are often divided into ability-models and mixed-models, based on what they believe are included in the concept of EI. The first approach presented defines emotional intelligence as consisting of mental abilities and it falls under the ability-models approach. The predecessors of this view are Peter Salovey and John Mayer with colleagues. They presented the first definition of emotional intelligence (Mayer & Salovey, 1990) and based on this definition, a model of emotional intelligence was created. Their

model is often referred to as the four-branch model of EI. Following this model a performance test (i.e., an ability test) was developed for measuring the four branches in their model. The latest version of this test is called the Mayer-Salovey-Caruso Emotional Intelligence Test Version 2.0 (MSCEIT V2.0) (Mayer, Salovey, Caruso, & Sitarenios, 2003).

The second view that will be addressed is the one from Reuven Bar-On. This view falls under the mixed-models approach, because it is said to use a wider definition of EI, mixing mental abilities with personality constructs and competencies (Mayer, Salovey, & Caruso, 2000). Bar-On uses a self-report measure, called the Emotional Quotient Inventory (the EQ-i), to measure emotionally and socially intelligent behavior. From using this test he has come up with a model, which he refers to as the Bar-On Model of Emotional-Social Intelligence (ESI) (Bar-On, 2000).

The third view is from Daniel Goleman. Goleman wrote a book, *Emotional Intelligence*, in 1995, where he popularized the concept of emotional intelligence. This book was a bestseller and Goleman's ideas of how to define EI became the most known for the public. This model is based on the first definition of EI that Mayer and Salovey made 1990. In Goleman's popular book, he changed Mayer and Salovey's definition somewhat and added different skills and characteristics into his own concept, and this became a new and different model of EI. Goleman's model of EI is also known as a mixed-model (Goleman, 1995). For measuring Goleman's model a multirater measure was developed. This measure passes under the name of the Emotional Competence Inventory (ECI) (Sala, 2002).

Intelligence

"Individuals differ from one another in their ability to understand complex ideas, to adapt effectively to the environment, to learn from experience, to engage in various forms of reasoning, to overcome obstacles by taking thought." (Neisser et al., 1996, p. 77). Different concepts of intelligence try to explain and organize this complex set of phenomena.

Intelligence is one of the most researched areas in psychology, but there is not one unified view of how it should be defined and measured. There are as many definitions as there are experts who will define it (Neisser et al., 1996).

There are two things that experts seem to agree upon to be present in intelligence. Intelligence has to do with the capacity to learn from experience, and the capacity to adapt to one's environment. When asking laypersons to define intelligence and to present what types of behaviors are typical for an intelligent person, the answers are pretty similar to those we get from experts. The common view is that verbal ability and problem-solving are important parts of intelligence (Gregory, 2007). When looking at traditional intelligence tests they often include measures for these two types of abilities (Williams, McIntosh, Dixon, Newton, & Youman, 2010; Canivez & Watkins, 2010). There are also some differences in laypersons' and experts' views of intelligence. Laypersons believe that social competence is important for an intelligent person, whereas experts points at practical intelligence. Practical intelligence means how the person can determine how to achieve goals, if the person displays awareness of the world and shows interest in the world. The social competence is more about relations with others, how well the person accepts others for what they are, how punctual they are and if they can admit mistakes. These two parts of intelligence are generally not measured in intelligence tests, partly because it is difficult to make tests for measuring these abilities, but also because many test developers have accepted the incomplete conceptions of intelligence from history and just followed in those tracks, not taking into account these two parts of intelligence. Now new tests start to evolve that measure practical intelligence (Gregory, 2007), and the concept of social competence relates to the development of theories about emotional intelligence.

Different concepts of intelligence

It is important to look at the history of intelligence theories, if we want to understand the structure and content of intelligence tests (IQ tests), and the import of intelligence. Also if we want to be able to judge the validity of different IQ tests the theories are important. Therefore, some of the most important ones, among all the numerous intelligence theories, will be addressed.

The dominant approach in intelligence research is the so called *Psychometric approach.* It means that intelligence is something that can be measured using different psychometric tests. The use of psychometric instruments for measuring different things is widely used in Europe and America, for example to make diagnoses and evaluations. From the beginning, many of the tests that exist are not intended to measure intelligence itself, but other related abilities, like scholastic aptitude and school achievement. These tests are often used for selection purposes, for example the Scholastic Aptitude Test (SAT) is much used in the US to be admitted to college (Neisser et al., 1996).

The first three theories presented below fall under the notion of the psychometric approaches, and the two last ones have different views of how intelligence could be measured.

Spearman's two-factor theory. Maltby, Day, and Macaskill (2010) summarize Charles Spearman's contribution in the intelligence research. They mean that Spearman believed it to be two types of factors that constitute intelligence and thereby determined performance. The first factor of intelligence consists of specific abilities (s), there exist several specific abilities s1, s2, s3…sn. For example vocabulary intelligence is a specific ability, and mathematical and spatial intelligence are two other specific abilities. These specific abilities are thought to be measured in different amounts in different tests for measuring intellectual ability. This is shown by low correlations between different tests. The second factor is general intelligence (g), which is seen as a mental energy underlying all the

other specific abilities. When comparing different tests and high correlations are found this indicate that the tests measure large amounts of general intelligence. Spearman among others developed methods of factor analysis for studying these factors (Maltby et al., 2010).

Thurstone and the primary mental abilities. When Thurstone saw strong correlations between tests, he meant that these could be best explained by several broad group factors and not just one single general factor. He proposed seven factors that have been supported several times. They are called the primary mental abilities (PMAs) and they include: verbal comprehension, word fluency, number, space, associative memory, perceptual speed and inductive reasoning. He designed tests that were supposed to measure the different PMAs separately, but his tests had moderate correlations with each other and he recognized that there could be a general factor existing as a higher-order factor (Gregory, 2007).

The Cattel-Horn-Carroll (CHC) theory. McGrew (2009) referred to the Cattel-Horn-Carroll theory (CHC) as an umbrella term, which included two closely related well-known models of intelligence. This theory includes different abilities organized in a hierarchical order. There are three levels, called stratum levels, in this theory. At the highest level stratum III, there is a general factor g that is above all cognitive abilities. The next level is called stratum II, which includes several broad abilities. Exactly how many abilities should be included in this level seems to change, but according to McGrew (2009) there are sixteen broad abilities (e.g., fluid reasoning, visual processing, quantitative knowledge, and tactile abilities). Under this comes stratum I, which includes many narrower abilities, and the number of narrow abilities are also changing, but there are over 8o narrow abilities described by McGrew (2009). Under for example the broad ability of *fluid reasoning* comes the five narrow abilities of: general deductive reasoning, induction, quantitative reasoning, Piagetian reasoning, and speed of reasoning. For further description of the broad and narrow abilities see e.g., McGrew (2009), which are not being further defined in this thesis.

An intelligence test used today is called the Stanford–Binet Intelligence Scale, Fifth Edition (SB5). This test is based on the CHC-theory of intelligence, and it is claimed to measure different cognitive abilities. It gives an overall IQ-score, which indicates it is measuring general intelligence. It also gives several sub-scores, which indicates to conform to the hierarchical order in the CHC-theory (Williams et al., 2010). Furthermore, the Wechsler Adult Intelligence Scale–Fourth Edition (WAIS-IV) is a widely used intelligence test claimed to measure general intelligence, which also conforms to the CHC-theory (e.g., Anastasi, 1990; Benson, Hulac, & Kranzler, 2010; Canivez & Watkins, 2010).

Gardner and the theory of multiple intelligences. Howard Gardner is critical to the psychometric approach, and that intelligence is seen as one general intelligence g as many other theorists agree upon. He approves that the scores on many intelligence tests are stable, and show some kind of achievement quite good, they are good for measuring scholastic potential and school grades, but tell not much of whether the person will succeed in life. Gardner means that if intelligence is just based on these scores we are ignoring other important aspects of mental abilities, which these tests do not measure. Gardner argues that if we want to analyze the cognition, we must consider all human problem-solving and product-fashioning skills and not just the ones that can be measured by standardized tests (Gardner, 1985).

In the book *Frames of Mind* from 1985, Gardner proposes the idea that there exists "several relatively autonomous human intellectual competences" (Gardner, 1985, p. 8), which he refers to as human intelligences. He considers that the exact number of these intelligences is not yet definite, but the important thing is that there are several intelligences that are equally important for understanding the cognition. He proposes it to be seven intelligences so far and they are: linguistic, logical-mathematical, musical, spatial, bodily-kinesthetic and two kinds of personal intelligences: interpersonal and intrapersonal intelligences (Gardner, 1985).

Interpersonal intelligence is about understanding other people: How they work, what motivates them and how to cooperate with them. Intrapersonal intelligence is the capacity to understand yourself, to make a true model of who you are and to be able to use that model to function well in life (Gardner, 1993).

Gardner says that in our society we have put the two first intelligences, namely linguistic and logical-mathematical, as the most important intelligences. Many IQ tests are based on the verbal and mathematical skills, therefore if you are high in those two intelligences you will probably do well in IQ tests and SATs, and therefore succeed in school and be able to study at prestigious colleges. He wants to put emphasis on the other intelligences as well, which he considers are equally important in predicting success outside of school (Gardner, 1993).

Sternberg and the triarchic theory of intelligence. Sternberg is also in favor of the view that intelligence is more than one general ability and that traditional intelligence tests fail to measure all components of intelligence (Gregory, 2007). According to Sternberg's theory, there are three basic forms of intelligence namely: analytical intelligence, creative intelligence and practical intelligence. He has created a test supposed to measure these three intelligences, which he claims do not measure general intelligence. This test is called the Sternberg Triarchic Abilities Test (STAT) (Sternberg, 1993, as described in Koke & Vernon, 2003). However, there is research indicating this test is related to general intelligence (Koke & Vernon, 2003).

A reflection in order to summarize this brief overview of different theories in relation to emotional intelligence is that some of them clearly open up for a broader perspective of intelligence i.e., Gardner (1985) and Sternberg, whereas others have a more narrow perspective.

Factor analysis

Many intelligence researchers use factor analysis to validate their theories, and the use of factor analysis has also been an important tool in the field of EI-research. The goal of factor analysis is to get a simplified description of large and complex data sets (Anastasi, 1990). There are two types of factor analysis: confirmatory and exploratory. The confirmatory factor analysis is important when researchers want to confirm a theory. The researchers start with a prediction that something is in a certain way, and then they use the test scores and data trying to confirm their predictions to be right. With exploratory factor analysis researchers want to summarize interrelationships between different variables, to explain them in a correct way thus to make a conceptualization (Gregory, 2007). For example, one can build a test that measures many different abilities, and the goal is to find out if there are a smaller set of common underlying abilities, so called factors, behind all these abilities. Factor analysis looks at the correlations of the different abilities, and when there are strong correlations the abilities can be said to have something in common, an underlying ability or factor. Hence from the beginning there may have been 20 different abilities that now can be explained by four underlying factors (Anastasi, 1990).

Emotions

Defining emotion

Researchers have for a long time tried to find a good definition for emotion, but it seems almost impossible to find one general definition. In a study by Izard (2010) around 30 researchers were asked six questions concerning emotion. They were asked about the definition, activation and the functions of emotion. The results were analyzed to see consistency and disagreements between these researchers' views of different aspects of emotion. The conclusion was that no general definition was agreed upon but there was a

better agreement on the structure, functions and activation of emotion. The researchers were also quite in agreement with the processes or techniques for emotion regulation (Izard, 2010).

Different concepts of emotion

Basic emotions. In 1872 Darwin published the article, *the expression of the emotions in man and animals*, and with this article started the research on facial expressions of human emotions. Darwin had collected data from different cultures and he proposed that human emotions are universal and are being expressed in similar ways across cultures. He meant that there were evolutionary reasons for these emotions and therefore they were the same and not culturally dependent (Keltner & Ekman, 2000).

Since the time of Darwin several researchers have continued this line of research and several studies have been made confirming that some human emotions seem to be universal and can be recognized with facial expressions across cultures. In these studies people from different cultures are asked to report which emotions they believe are being shown in pictures of different facial expressions. There seems to be six emotional facial expressions, which people recognize and display similar in many cultures. Ekman refers to these emotions as basic human emotions and they are: anger, disgust, fear, happiness, sadness and surprise. These basic emotions are seen as discrete emotions (Ekman, Sorenson, & Friesen, 1969; Ekman & Friesen, 1971; Izard, 1994).

The circumplex model of affect. In contrast to the basic emotions, Russell (1980) proposes that there are different dimensions of affect for example pleasure, distress, depression and excitement. According to Russell these dimensions can be described as being interrelated and not independent of each other. In his circumplex model of affect he displays the different affective states as a circle in a two-dimensional bipolar space (Russell, 1980). On the horizontal axis there is a continuum going from unpleasant to pleasant. The vertical axis represents level of arousal, going from activation to deactivation (Russell & Feldman Barrett,

1999). This is a dimensional approach of emotion, trying to put the emotions on scales instead of calling them discrete units (Smith & Kosslyn, 2007).

The approach-withdrawal distinction. This is another dimensional approach putting emotions on a dimension of motivation. Researchers suggest it to be two categories of emotions guiding different behaviors: approach and withdrawal. Approach emotions make the person want to approach a stimulus and they are suggested to be connected with positive affect (PA) (e.g., happiness, and surprise) but there are not only positive affect that are connected with approach emotions, anger for example is also seen as an approach emotion since it also makes a person want to approach a stimuli. The opposite emotions are called withdrawal emotions, because they evoke the wish to withdraw from a stimulus or situation. These emotions are suggested to be related to negative affect (NA), example of these emotions are fear, sadness and guilt (Smith & Kosslyn, 2007).

Davidson, Jackson, and Kalin (2000) proposed there to be an asymmetry in left and right cerebral activity connected with these approach and withdrawal emotions, which according to them could be seen by measuring PA and NA. They point to several studies indicating approach-related positive emotions to be connected with higher left cerebral activity, and the withdrawal-related negative emotions to be connected with more right cerebral activity (Davidson et al., 2000).

In a study by Tomarken, Davidson, Wheeler, and Doss (1992) the general version of the Positive and Negative Affect Schedule (the PANAS-GEN) was used to find out the amount of positive and negative affect the participants felt in general, and EEG to measure brain activity in their resting state. It was indicated to be an asymmetry in the anterior frontal part of the brain. People who rated themselves as having more approach emotions, such as attentiveness and enthusiasm, which were showed by more positive affect (PA) in the PANAS, were correlated with a higher activity in the left anterior part of the brain when they

were at rest. The opposite correlation were found for people who rated themselves as having more withdrawal emotions such as guilt and fear, as seen by more negative affect (NA) in the PANAS. They showed a higher activity in the right anterior frontal region of the brain. To summarize, this study indicates relations between positive affect and activity in the left parts of the brain, as well as relations between negative affect and activity in the right parts of the brain (Tomarken et al., 1992).

History of emotion research

Smith and Kosslyn (2007) suggest that for a long time researchers believed that emotion and cognition were separate and worked independently of each other. This idea originally came from the ancient Greek where Plato, a philosopher, believed humans had three souls; the intellect, the will, and the emotions. These thoughts started debates about the relations between emotion and cognition. Today researchers cannot deny emotion and cognition being interdependent. The greatest impact, for the understanding of the relations between emotion and cognition, came from the understanding of the neural systems underlying emotion. An example of an important finding is the amygdala, which is a structure in the brain important for the processing of emotional stimuli. There are different neural systems specialized for emotions but these systems are both influenced by and influences systems for cognition. Researchers mean that there is not a good idea to just study one of them without bearing in mind the other since they influence each other (Smith & Kosslyn, 2007). This actually suggests that emotions and different cognitive functions (such as memory and problem-solving) are entwined also on a much more basic level than the concepts that can be related to emotional intelligence.

Mayer and Salovey's view of emotional intelligence

A review article from 1990 by Salovey and Mayer first talks about emotions and the debate on whether emotions are adaptive or maladaptive. Then the article reviews the area of

intelligence research and focus on social intelligence, which was found interesting for the concept of emotional intelligence. It was in this article the first well known definition of emotional intelligence was made (Salovey & Mayer, 1990).

Salovey and Mayer declare that many researchers have seen emotions to be something disrupting thought and something having to be controlled for to think clearly. The other view on emotions talks about them as being an organizing response, which helps to direct attention to important things, and also to motivate action. Salovey and Mayer state that they view emotions as organized responses, which typically arise in connection with an internal or an external event, and which are being judged to be positive or negative for the individual. They also state that they view emotions as adaptive for the individual and these can help to change the personal and social interactions into enriching experience (Salovey & Mayer, 1990).

Salovey and Mayer want to distinguish between *intelligence* per se and *models of intelligence*. They indicate intelligence per se being seen as a broad set of *mental abilities,* which can be defined in different ways, for example Wechsler's definition, which is a broad one: "intelligence is the aggregate or global capacity of the individual to act purposefully, to think rationally, and to deal effectively with his environment" (Wechsler, 1958, as cited in Salovey & Mayer, 1990, p. 186). However, as previously presented there are also different models of intelligence which are seen as more limiting organizations of the field. Mayer and Salovey view for example Spearman's g model as a model of intelligence, stating all mental abilities being intercorrelated. According to Salovey and Mayer's statements, in this review, EI may be correlated with other intelligences and conform to the g model or it may not. The important thing they want to assert is that EI could be seen as an intelligence, since it falls under the broad definition of intelligence that for example Wechsler had made (Salovey & Mayer, 1990).

The view's definition of emotional intelligence

Salovey and Mayer (1990) state the concept of social intelligence having a long history among intelligence researchers and that Thorndike distinguished social intelligence from other intelligences. Already 1920, Thorndike defined social intelligence as being: "the ability to perceive one's own and others' internal states, motives, and behaviors, and to act toward them optimally on the basis of that information" (Salovey & Mayer, 1990, p. 187). According to Salovey and Mayer (1990) the concept of social intelligence was difficult to measure and some researchers meant that there was no use to consider it, at least not before someone could find better ways measuring it. Salovey and Mayer liked the idea of a social intelligence and they see the term EI as a subset of social intelligence. They also state their concept of EI being part of Gardner's view of social intelligence (Salovey & Mayer, 1990), which Gardner refers to as personal intelligences (i.e., inter- and intrapersonal intelligences) (Gardner, 1985). Salovey and Mayer's first definition of emotional intelligence includes both interpersonal- and intrapersonal skills: "The ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions"(Salovey & Mayer, 1990, p. 189).

In later works Salovey and Mayer have refined their definition and made it more specific, this is a later one:

> Emotional intelligence involves the ability to perceive accurately, appraise, and express emotion; the ability to access and / or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth (Mayer & Salovey, 1997, p. 10).

From this definition Mayer and Salovey developed a model to further explain and continue to explore the term emotional intelligence. This is the model that will be presented next and it is called the four-branch model of emotional intelligence.

The four-branch model

This model of emotional intelligence consists of four branches of different abilities. By looking at the definition of EI made by Mayer and Salovey (1997) one can clearly see the four parts that the model is based on. These four branches are: (1) perceive emotion, (2) use emotion to facilitate thought, (3) understand emotions, and (4) manage emotions. To get a better picture of the different abilities in their model, this can be seen in (Figure 1). The four branches are arranged from more basic psychological processes to higher or more complex processes, where the first branch, perceive emotion, includes more simple processes than the fourth branch, manage emotions, which includes reflective regulation of emotions. The four branches are also divided into 'boxes', which represent developing stages. Every branch includes abilities that develop from childhood into adulthood, and goes from left to right. (Mayer & Salovey, 1997).

The first branch, perceive emotion, has to do with how well people can identify emotions and emotional content. According to Mayer and Salovey (1997), as children we first learn to recognize different emotional states and feelings in ourselves. We learn that by observing facial expressions of our parents and then respond to those expressions. Further on we learn to identify emotions in other people and also other objects. The child uses imagination and attributes feelings to animate and inanimate objects. The next thing we learn is to express our feelings and needs correctly. The most developed thing an emotionally intelligent person learns in this branch, according to the authors, is to discriminate between honest and dishonest expressions of feelings i.e., they can detect false or manipulative expressions (Mayer & Salovey, 1997).

The second branch, use emotion to facilitate thought, has to do with how emotions can help thinking (i.e., intellectual processing). Emotions help us already from childhood and "serves as an alerting system" (Mayer & Salovey, 1997, p. 12) to call for attention when there are changes in our environment. When we mature our emotions start to shape the thinking and we learn to use emotions to direct attention to important changes. As we continue to mature we get the ability to imagine how different feelings feel, we can play the feelings in our minds, which can help us to anticipate how different decisions would make us feel and after that decide what to do in different situations. The next 'box' in this branch has to do with the abilities of mood swings; when we are in a good mood we usually have optimistic thoughts and in a bad mood pessimistic thoughts. These mood swings can be an advantage for us to have multiple perspectives on things. Further on different moods can facilitate different kinds of reasoning, for example happiness can facilitate creativity (Mayer & Salovey, 1997). There have been contradictory findings about whether positive mood facilitate creativity or whether negative mood facilitate creativity, however in a recent meta-analytic study Davis (2009) found support for the claims that positive mood can facilitate different kinds of creativity.

The third branch, understand emotions, is about labeling and understanding the meanings of different emotions as well as understanding their relationships to each other. When the child starts to recognize emotions he starts to label them and he also sees that different emotions are related to each other. Different feelings belong to each other but have different intensity along a continuum. He learns the differences and similarities between the feelings of 'liking' and 'loving' for example. At the same time parents teach the child the connections between emotions and situations, in other words the meanings of different emotions. An example is the feeling of 'sadness' often accompanied with some kind of loss. Later on the child learns that there exist more complex or blended feelings such as 'awe', which is seen as a combination of 'fear' and 'surprise'. Another experience is that one can

have contradictory feelings; one can feel both ‘love’ and ‘hate’ towards the same person in certain situations. The most developed ability in this branch is that the person can reason about possible transitions among emotions. An emotionally intelligent person reasons about how different emotions may progress and change to other emotions depending on the situation. “Reasoning about the progression of feelings in interpersonal relationships is central to emotional intelligence” (Mayer & Salovey, 1997, p. 14).

The fourth branch, manage emotions, covers the most complex processes in their model and it has to do with abilities around consciously regulate emotions. First, the person has to be open towards every feeling that comes whether it is pleasant or unpleasant; he has to accept they are there. The next thing is to be able to detach or engage in those feelings; children learn to control themselves by not always expressing the feelings they experience, if it is not appropriate to the situation. In this way the child learns to separate emotions from behavior and to engage or disengage in emotions. When the individual matures he also starts to consciously reflect more on mood and emotional responses. He makes what Mayer and Salovey refer to as meta-evaluations and meta-regulations of mood. The meta-evaluations come first, where the individual reflects on and makes evaluations about how clear, reasonable and influential different moods are for him. Lastly the individual do meta-regulations, reflecting on how to regulate or manage his or others mood; how to enhance positive emotions and how to be moderate with negative ones, without exaggerating or suppressing important information the emotions may convey (Mayer & Salovey, 1997).

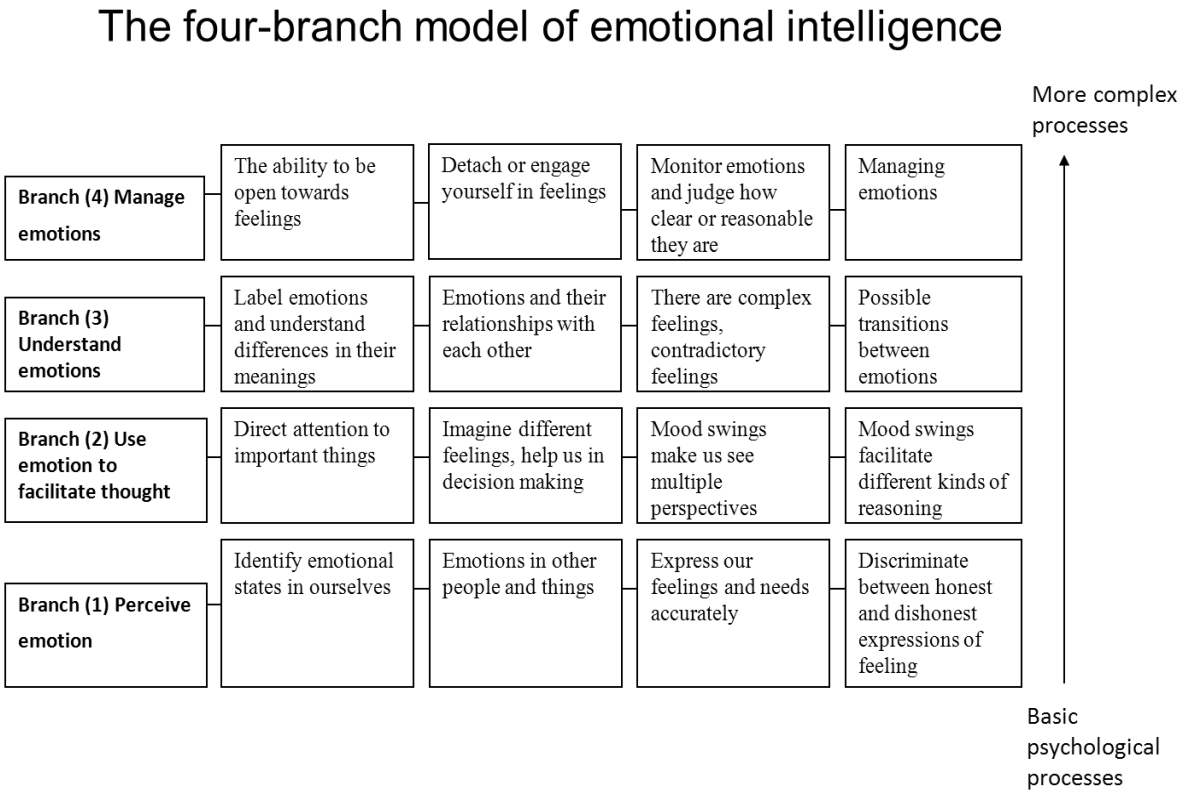

Figure 1. Modified model of the four-branch model of EI. Adapted from Mayer and Salovey (1997).

Measuring emotional intelligence

To be able to test if the four-branch model of emotional intelligence is a good model, a test was developed set out to measure the four branches separately. The first version of this test was called the Multi-Factor Emotional Intelligence Scale (MEIS). It was an ability test measuring the four branches of (1) emotional identification, (2) assimilating emotions, (3) understanding emotions, (4) managing emotions, using 12 subscales to these four branches (Mayer, Caruso, & Salovey, 1999). This was Mayer and colleagues' first real attempt to empirically show that EI met the traditional standards for an intelligence. These traditional standards for an intelligence had certain criteria, according to Mayer and colleagues (1999), which EI had to fulfill to be scientifically legitimate as an intelligence. Those criteria can be

divided into three distinct groups: conceptual, correlational and developmental criteria. Conceptual criteria, meaning intelligence must reflect mental performance and not just preferred ways of behavior; it also has to measure the abilities in question, which in this case are emotion-related abilities. The second criterion is correlational. Intelligence is seen as mental abilities, closely related, but still distinct from each other. The mental abilities tested must therefore measure other things than already known intelligences, but they still need to have some correlation. The third group of criteria is called developmental, meaning intelligence develops with age and experience (Mayer et al., 1999).

Mayer and colleagues (1999) describe two studies using this new 12-subscale ability test of emotional intelligence, the MEIS, one testing 503 adults and the other testing 229 adolescents. In order to test whether EI was correlated with other intelligences (i.e., if it met the second criteria) a test for measuring verbal intelligence was used. The verbal IQ test used is called the Army Alpha test of intelligence and according to Mayer and colleagues (1999) the test has good validity for measuring verbal IQ. The study indicated moderate correlations between EI and verbal IQ. The results further indicated the other criteria for an intelligence to be met by the MEIS, making the authors suggest EI to be a new intelligence related to other intelligences, but still measuring something new. However, the study could not support that there were four branches like their model hypothesized; they only found three branches being separate but still moderately correlated. The second branch of assimilation and the third branch of understanding correlated highly and could therefore not be separated. The authors suggested that by creating better ways for measuring the two branches they may be able to find a difference between them (Mayer et al., 1999).

A development of the MEIS was made and resulted in the ability test used today called the Mayer-Salovey-Caruso Emotional Intelligence Test, Version 2.0 (MSCEIT V2.0). This test is also intended to measure the four branches of Mayer and Salovey's theoretical

model. It is a 141-item scale where each branch is measured by two tasks. The individual gets five EI scores, which includes one score for each of the four branches as well as a total EI score (Mayer et al., 2003).

The first branch, perceive emotion, is measured by tasks concerning faces and pictures, where the participants are supposed to indicate to what degree a certain emotion is shown in first faces and then in pictures. The second branch, use emotion to facilitate thought, is measured by sensations and facilitation tasks; the participants judge the mood best accompanying a specific task and they also generate an emotion and match what sensations best accompanies that emotion. The third branch, understand emotions, is tested by a blends and changes tasks; the participants are to decide what emotions can be put together to create blends of more complicated emotions. It also includes a task where respondents choose an emotion they believe comes from the intensification of another feeling. The fourth branch, manage emotions, is measured by emotion management tasks and relationship tasks. The participants indicate what actions would be best for a person to take if they want to obtain a specific feeling. In the emotional relationship tasks the participants should indicate what actions are best to use when managing another person's feelings (Mayer et al., 2003).

To be able to identify what is a correct answer and to score the MSCEIT, two methods are being used: *expert consensus scoring* and *general consensus scoring*. Mayer and colleagues (2003) collected data from 2112 adults who had done the MSCEIT V2.0 in different academic settings during a period of time. This group represented the general consensus scoring group. Additionally they used a sample of 21 volunteers from the International Society for Research on Emotions as the expert consensus scoring group. To get the individual scores for each participant their answers are scored against the proportion of the whole sample of participants. This is done in each of the two groups separately. The study showed that the experts had lower variance in their answers, thus they were more in

agreement with what was the correct answer to the different questions, than was the general group, who had more variance in their answers. Based on these findings, Mayer and colleagues (2003) suggested it to be preferable using the experts' answers as the correct ones. Findings from this study further indicated a reliable overall EI score, in the MSCEIT V2.0, when putting the different subtests together. The four branch level scores also showed to be reliable. A confirmatory factor analysis was made, indicating the four branches to be a good fit for describing the different skills in EI. The reliabilities were better for this test than the MEIS (Mayer et al., 2003). The factor structure of the MSCEIT, consisting of four branches, was supported by Livingstone and Day (2005) who examined the MSCEIT and found support for a four-factor model of EI in their study.

Practical implications for this model

According to Mayer, Roberts, and Barsade (2008) a number of studies showed EI, as measured with the MEIS and the MSCEIT, having relations to important aspects of life. They mention published studies relating EI to social relationships, academic- and work performance, psychological and physical well-being. Some studies showed EI to play a role when personality traits and general intelligence have been accounted for; whereas other studies showed no significant relationships for EI, when personality and general intelligence were held constant (Mayer et al., 2008). Below some studies will be presented that have shown relations with ability EI, as measured with the MSCEIT, in different settings.

Lopes, Brackett, Nezlek, Schütz, Sellin, and Salovey (2004) present two sub-studies showing relations between the MSCEIT and the quality of social interactions. The first study consisted of a sample of 118 American college students who did the MSCEIT. Measures of the Big Five personality traits and the quality of interpersonal relationships were also made. In the test, supposed to measure the quality of interpersonal relationships, the participants answered questions about their positive and negative interactions with two friends. The two

friends answered the same questions about the participants. The results showed that participants with a higher score, on the manage emotions subscale from the MSCEIT (i.e., the fourth branch), correlated positively with the self-reports of positive interaction with friends. The higher scores were also positively correlated with the friends' ratings of positive interaction, and with the friends' ratings that the participant provided emotional support. The higher scores were negatively correlated with the friends' ratings of negative interactions. Even after controlling for the Big Five personality traits, these findings remained significant. The study further indicated the manage emotions subscale being unrelated to the Big Five personality traits, which according to Lopes and colleagues supports that managing emotions is an ability distinct from personality traits (Lopes et al., 2004).

In the second study reported by Lopes and colleagues (2004) they wanted to expand the previous findings from study one, by looking at more everyday interactions with more people. This study was made using 106 German undergraduate students, accounting for cultural differences as well. All the tests administered were translated into German. Participants completed the MSCEIT, measures of the Big Five personality traits, and some other measures. Then they were to report their social interactions with people using a social interaction diary, this was done to get the self-perceived qualities of social interactions from the participants. This study confirmed there to be positive correlations between the fourth branch, manage emotions, and the participants perceived quality of interactions with people from the opposite sex. The study further indicated there to be positive correlations with the second branch, use emotions to facilitate thought, and the perceived qualities of daily social interactions. The findings were also still significant after controlling for the Big Five personality traits (Lopes et al. 2004).

In Spain, a study was made also dealing with EI and social relations, moreover related to academic performance. Mestre, Guil, Lopes, Salovey, and Gil-Olarte (2006)

conducted this study by looking at EI and its relations to academic achievement and adaptation to school. A sample of 127 male and female high school students participated and completed the MSCEIT. Four teachers, who knew the participants well, were chosen to rate the participants' achievement and adaptation to school. Also peer-ratings to social adaptation were collected by letting the participants choose their three best friends in school. By counting the number of times each participant was rated as a best friend they got an indication on how well the person had socially adapted to school. After controlling for the Big Five personality traits and IQ, significant correlations were found for the third branch, understand emotions, and the fourth branch, manage emotions, to the teachers' ratings of adaptation to school for the boys only. For the girls, higher scores on these two branches were related to the peer-ratings of adaptation to school. The researchers suggest these findings to be interesting in saying that EI abilities are relevant when looking at how well adolescents may socially adapt to school (Mestre et al., 2006).

Brackett, Mayer, and Warner (2004) conducted a study investigating if EI were related to many different aspects of persons' lives. By using a so called life space scale, they tried to get a grip on the everyday behavior of the participants. This scale measures for example: healthy versus unhealthy behaviors (including drug and alcohol use), academic activities, general leisure, and different aspects of interpersonal relations. The study included 330 subjects enrolled from a psychology course. EI was measured with the MSCEIT, the Big Five personality traits was measured, and they obtained academic abilities from collecting participants verbal SAT-scores and college grade points from university records. According to the findings, the women scored significantly higher on the MSCEIT than did the men. The men's lower scores on the MSCEIT were more related to negative outcomes in life space measures than for the women. For example the men with low EI was related to the engagement in more deviant behavior, the use of illegal drugs and a higher alcohol

consumption than was the women with lower scores. These men also showed poorer relations with friends. After controlling for the Big Five personality traits and academic achievement, these findings still remained significant (Brackett et al., 2004).

Bar On's view of emotional intelligence

Reuven Bar-On talks about a concept that he terms *emotional and social intelligence (ESI)*, which he believes is a better name for the construct of emotional intelligence. Bar-On refers to his model as the Bar-On model of emotional-social intelligence (Bar-On, 2000, 2006). He developed a test called the Emotional Quotient Inventory (EQ-i), which from the beginning was an experimental instrument, to test emotional and social functioning in different individuals to find out what was an emotionally and socially competent behavior. His ideas came from a concept of emotional and social functioning he started to develop in the early 1980s in an unpublished doctoral dissertation. The EQ-i was first published in 1997. It is described as a: "self-report measure of emotionally and socially competent behavior that provides an estimate of one's emotional and social intelligence."(Bar-On, 2000, p.364). Since Bar-On used the EQ-i to develop his model, the EQ-i will be described before the Bar-On model in this thesis.

The view's definition of emotional intelligence

This is how Bar-On defines emotionally and socially intelligent behavior: "Emotional-social intelligence is a cross-section of interrelated emotional and social competencies, skills and facilitators that determine how effectively we understand and express ourselves, understand others and relate with them, and cope with daily demands."(Bar-On, 2006, p. 14).

The Emotional Quotient Inventory (EQ-i)

This test was developed to measure the underlying factors Bar-On believed were present in people with high emotional and social intelligence; he was interested in pinpointing

the factors leading to psychological well-being. Bar-On divided the process in six phases which included: 1) He identified key factors related to effective emotional and social functioning by the help of his experience as a clinical psychologist and by reviewing literature. 2) He defined the factors found as clearly as possible. (3) He found around 1000 items, when doing the review of the literature and asking practitioners in healthcare that were guided by his definitions of emotional and social intelligence. (4) He constructed a psychometric instrument which included 15 primary scales and 133 items to measure the factors he thought to be included. (5) He began to norm and to validate the instrument, beginning in North America, using a sample of 3831 adults. (6) Further on he continued to norm and to validate the instrument across different cultures (Bar-On, 2006).

The EQ-i has been translated into more than 30 languages (Bar-On, 2006) and normative data have been collected in 15 countries. The EQ-i is an adult version, but based on Bar-On's model of emotional and social intelligence different forms of this test exist. There is a youth version (EQ-i:YV), a semistructured interview (the EQ-Interview) and a multirater instrument (the EQ-360) (Bar-On, 2000).

The EQ-i is built up by 133 brief items, and the respondents use a five-point Likert scale for answering the questions. This scale uses phrases as: 'very seldom or not true of me' to 'very often true of me or true of me'. The test is suitable for people from 17-years old and up, and it takes around forty minutes to complete. The EQ-i is said to be composed of a 1-5-15 structure, because it gives the person a total EQ-score, five composite scale scores, which includes fifteen subscale scores. The scoring structure is like many cognitive intelligence measures (i.e., IQ tests), where the score is based on a mean of 100 with a standard deviation of 15, and it is therefore Bar-On refers to it as Emotional Quotient (EQ) (Bar-On, 2000).

The five composite scales as well as the fifteen subscales of the EQ-i are presented in (Table 1), which is adapted from Bar-On (2000).

Table 1. *The EQ-i scales*

The five composite scales:	**The fifteen subscales:**
Intrapersonal EQ	self-regard (SR) emotional self-awareness (ES) assertiveness (AS) independence (IN) self-actualization (SA)
Interpersonal EQ	empathy (EM) social responsibility (RE) interpersonal relationship (IR)
Stress Management EQ	stress tolerance (ST) impulse control (IC)
Adaptability EQ	reality-testing (RT) flexibility (FL) problem-solving (PS)
General Mood EQ	optimism (OP) happiness (HA)

Source: Adapted from Bar-On (2000).

The fifteen subscales from the EQ-i are being defined by Bar-On (2000) in the following way:

> self-regard (SR) is the ability to be aware of, understand, accept, and respect oneself; emotional self-awareness (ES) is the ability to recognize and understand one's emotions; assertiveness (AS) is the ability to express feelings, beliefs, and thoughts, and to defend one's rights in a nondestructive manner; independence (IN) is the ability to be self-directed and self-controlled in one's thinking and actions and to be free of emotional dependency; self-actualization (SA) is the ability to realize one's potential and to do what one wants to do, enjoys doing, and can do; empathy (EM) is the ability to be aware of, understand, and appreciate the feelings of others; social responsibility (RE) is the ability to demonstrate oneself as a cooperative, contributing, and constructive member of one's social group; interpersonal

> relationship (IR) is the ability to establish and maintain mutually satisfying relationships that are characterized by emotional closeness, intimacy, and by giving and receiving affection; stress-tolerance (ST) is the ability to withstand adverse events, stressful situations, and strong emotions without "falling apart" by actively and positively coping with stress; impulse control (IC) is the ability to resist or delay an impulse, drive or temptation to act, and to control one's emotions; reality testing (RT) is the ability to assess the correspondence between what is internally and subjectively experienced and what externally and objectively exists; flexibility (FL) is the ability to adjust one's feelings, thoughts, and behavior to changing situations and conditions; problem solving (PS) is the ability to identify and define personal and social problems as well as to generate and implement potentially effective solutions; optimism (OP) is the ability "to look at the brighter side of life" and to maintain a positive attitude, even in the face of adversity; happiness (HA) is the ability to feel satisfied with one's life, to enjoy oneself and others, and to have fun and express positive emotions. (Bar-On, 2000, pp. 365-366).

If a person obtains average or above average scores on the EQ-i this indicates the person to be effective in emotional and social functions and is thereby seen as emotionally and socially intelligent. When a person obtains low scores, under average, this can indicate problems in emotional and social functions and by that problems coping with the environment. Low scores on certain subscales are supposed to be a higher indication of problematic functioning, the important subscales are: stress tolerance, impulse control, reality testing and problem-solving (Bar-On, 2000).

The EQ-i has been normed on a large sample of the North American population. This sample was representative with many people from different ages, ethnic groups,

socioeconomic status and education. Earlier versions of the test have also been done by almost 3000 individuals in six countries (Bar-On, 2000).

Based on the sample of the 3831 participants, there seems to be some age difference in emotional and social intelligence, measured by the EQ-i. Generally the older participants scored higher on the EQ-i, where the peak was people in the late forties and early fifties who had the highest mean scores. According to Bar-On this is an indication that emotional and social intelligence increases up to the fifth decade of life. From the normative sample, no gender differences were found on the overall scores of the EQ-i, but small significant gender differences were found on certain subscales. The women had higher scores on the interpersonal skills, whereas men had higher scores on the intrapersonal skills (Bar-On, 2000).

The Bar-On model of emotional-social intelligence

To see whether the supposed factors from the EQ-i could be confirmed as factors for emotional and social intelligence, Bar-On (2000) first did an exploratory factor analysis and then two confirmatory factor analyses using the data from the North American sample of 3831 persons. When doing the exploratory factor analysis there where thirteen empirical factors that emerged. Some of the subscales from the EQ-i had so high correlations they could not be said to measure different things, which rather speaks for a thirteen-factor structure. To continue the work a couple of confirmatory factor analyses were conducted. With these, some factors that seemed to measure similar constructs were excluded. According to Bar-On (2000) instead a ten-factor structure emerged as a good model working both empirically and theoretically. The five subscales excluded were seen as facilitators and important correlates for emotional and social intelligence.

The ten factors seen as key components of emotional and social intelligence are: “(1) self-regard, (2) interpersonal relationship, (3) impulse control, (4) problem solving, (5)

emotional self-awareness, (6) flexibility, (7) reality testing, (8) stress tolerance, (9) assertiveness, and (10) empathy.” (Bar-On, 2000, p. 372)

The five facilitators are (1) independence, (2) self-actualization, (3) social responsibility, (4) optimism, and (5) happiness (Bar-On, 2000).

Bar-On and colleagues have conducted more studies to validate the EQ-i, except from the factor analyses, where the ten factors and the five facilitators are being compared to other tests measuring similar constructs, to see if the EQ-i is really measuring what it is supposed to measure. According to Bar-On (2000), the EQ-i seems to measure the abilities to be aware of, understand, control, and express emotions, because it correlates with other tests that measure similar constructs (Bar-On, 2000).

Practical implications for this model

Bar-On (2004) refers to several studies showing EI as measured by the EQ-i being relevant and predictive of several outcomes in the areas of: performance in school, performance in the workplace, in predicting physical wellness and emotional wellbeing (Bar-On, 2004). A couple of published studies connecting the EQ-i with work performance will be described next.

Bar-On, Brown, Kirkcaldy, and Thome (2000) conducted a study on 167 persons from three different occupational groups in Germany. There were police officers, child care workers and educators in mental health care. Bar-On and colleagues wanted to see if there were any differences between the groups in their EI as measured with the EQ-i, and also if they could find any age and gender differences related to EI within and between the occupational groups. The groups were given an earlier version of the EQ-i in German, this version measures 12 subscales of EI instead of the 15 subscales from the published version of the EQ-i (Bar-On et al., 2000).

The results indicated some age differences in some of the subscales of EI. It appeared as if the older participants were somewhat better at stress tolerance (ST), impulse control (IC), and reality testing (RT), it also seemed that they had a higher social responsibility (RE), than the younger participants. When looking at the overall EI they found no significant differences between men and women, but on a subscale level there were some significant differences. The women showed better interpersonal relationship skills (IR), and the men had better stress tolerance (ST) and impulse control (IC) (Bar-On et al., 2000). These gender differences found at the subscale level are consistent with what Bar-On found in the North American sample of 3831 persons when he validated the EQ-i (Bar-On, 2000).

When looking at the two occupational groups of child care workers and educators in mental health care, no differences in EI were found. These two occupational groups were therefore combined into a 'social-workers group' and compared with the police officers group. When looking at the 12 subscales of EI, the police officers group showed significantly higher values on several of the subscales compared to the social workers group. The police officers showed better at reality testing (RT), problem-solving (PS), stress tolerance (ST), assertiveness (AS), and self-regard (SR) than did the social workers. It also seemed as if the police officers felt more social responsibility (RE) and were more satisfied with their work showed by a higher self-actualization (SA) (Bar-On et al., 2000). Bar-On and colleagues thought these findings were interesting when looking at differences between people related to their occupations.

In a study by Bachman, Stein, Campbell, and Sitarenios (2000) EI, as measured by the EQ-i, was measured in 34 account officers (i.e., debt collectors). The account officers were divided into two groups; 'more' and 'less successful' account officers, based on their performance in conducting collections negotiations. The group of 'more successful' debt collectors had a significantly higher overall EI, compared to the mean of the North American

population from the EQ-i. The ‘less successful’ group did not differ significantly from the mean in the population. These results indicate there to be a difference in overall EI between these two groups of debt collectors. When observing the differences at a subscale level, the ‘more successful’ debt collectors had significantly higher scores on seven of the fifteen subscales at the EQ-i. These significant differences were found in the subscales of independence (IN), emotional self-awareness (ES), self-actualization (SA), assertiveness (AS), problem-solving (PS), happiness (HA), and optimism (OP). Following this study the same debt collectors were divided into two new groups, based on how well they attained their monthly cash goals. One group called the ‘low cash collectors’ and the other group called the ‘high cash collectors’. The results from this study also indicated the debt collectors with the higher EI as being better at attaining their cash goals, and on a subscale level, the ‘high cash collectors’ showed significantly higher scores on the subscales of independence (IN), self-actualization (SA), and optimism (OP) (Bachman et al., 2000).

Goleman’s view of emotional intelligence

Daniel Goleman is known as the man who popularized the concept of emotional intelligence. With his bestselling book *Emotional Intelligence: Why it can matter more than IQ* (Goleman, 1995) he brought much attention and interest to this new way of measuring people’s capacities. Goleman even claimed EI to be more important for success in life than general intelligence (IQ). In his book, Goleman talks about the connections between emotions and thought, and that the best way is to harmonize these two in order to function well. That is where emotional intelligence comes into the picture, Goleman refers to humans as having ‘two brains’ one dealing with the rational and the other dealing with emotions (i.e., IQ and emotional intelligence), and that both of them matters for succeeding in life. However, he claims IQ having little to do with emotional life, if a person has high IQ he can still be ‘dumb’ and just follow emotional impulses and do poorly in life. Therefore, it is important to have

high EI, which he refers to as a set of characteristics, to be able to use and manage the emotions in an intelligent way (Goleman, 1995).

Goleman was influenced by the work of Gardner who brought the concept of multiple intelligences to the surface. Goleman thought Gardner's personal intelligences were very interesting for EI, but according to Goleman, Gardner did not look into the role of feeling when he talked about personal intelligences, Gardner was more focused on cognitions about feeling. As just described above, Goleman believed the area of emotions was also important to look into to get a better understanding of whether "there is intelligence *in* the emotions and the sense in which intelligence can be brought *to* emotions."(Goleman, 1995, p. 40). According to Goleman, it was Salovey who brought intelligence and emotions together instead of seeing them as contradiction in terms and that he started to explore the area of emotional intelligence. Goleman (1995) stated that Salovey was inspired by Gardner's personal intelligences and that "Salovey subsumes Gardner's personal intelligences in his basic definition of emotional intelligence, expanding these abilities into five main domains:"(Goleman, 1995, p. 43). It is here Goleman presents, what he claims are five domains of EI, based on the first definition of EI from Salovey and Mayer (1990).

(1) Knowing one's emotions; this means to have self-awareness and to be able to recognize feelings when they happen. (2) Managing emotions; to regulate one's emotions so they are appropriate. (3) Motivating oneself. (4) Recognizing emotions in others; which includes empathy. (5) Handling relationships; which includes skills in managing emotions in others.

These five domains are included in the first model of emotional intelligence from Goleman (1995). Goleman continued his work and started to focus on leadership and what makes a good leader. He explained EI decided the potential we have to learn practical skills, which builds on these five domains. Goleman started to talk about *emotional competencies*

and said they showed us how much of that potential we have transformed into competencies, which we can use in our work life (Goleman, 1998). According to Boyatzis, Goleman, and Rhee (2000) an emotional competence is a learned capability based on EI, which results in good performance at work. The emotional competencies can be collected in clusters, which build upon the underlying EI abilities. In the book *Working with Emotional Intelligence* from 1998, Goleman presented a model of EI included 25 competencies divided into five clusters. The five clusters were called almost the same names as the domains in Goleman's book from 1995 (Goleman, 1998).

The view's definition of emotional intelligence

This is a descriptive definition Goleman and colleagues use for emotional intelligence. "emotional intelligence is observed when a person demonstrates the competencies that constitute self-awareness, self-management, social awareness, and social skills at appropriate times and ways in sufficient frequency to be effective in the situation." (Boyatzis et al., 2000, p. 344). They believe the best way to study EI is by looking at the different specific competencies, or as they are also called capabilities, which then can be empirically examined to see how effective they are for succeeding in life (Boyatzis et al., 2000). Another definition of EI Goleman and colleagues use is: "emotional intelligence is a set of competencies, or abilities, in how a person: (a) is aware of himself/herself; (b) manages him/herself; (c) is aware of others; and (d) manages his/her relationships with others." (Boyatzis & Sala, 2004, p. 149). As one can see, these two definitions of EI used by Goleman and colleagues are very similar.

The Emotional Competence Inventory (ECI)

Goleman and colleagues designed a tool for measuring the 25 competencies; this is a multirater instrument, sometimes referred to as a 360-degree tool, called the Emotional Competence Inventory (ECI). This multirater instrument consists of *self-ratings* and *total*

others ratings. This means that in one part of the test the persons rate themselves in the different competencies, and it also consists of a part where others, e.g. peers and supervisors rate the person's competencies. These two ways of measuring the competencies correlate moderately, but there is a tendency that the self-ratings are higher (Sala, 2002).

The ECI originated from earlier work by Boyatzis, where he had done a questionnaire to assess competence focusing on leaders, managers and executives. Around 40 percent of the ECI came from the earlier questionnaire, which is known as the Self-Assessment Questionnaire (SAQ) (Boyatzis et al., 2000). After some testing of the ECI the clusters were changed and became four clusters, and the 25 items had become 20 competencies that seemed more correct. The four clusters are: *self-awareness*, *self-management, social awareness* and *social skills* (also called relationship management).

The two first clusters are about recognizing and managing emotions in the self, whereas the two last clusters more focus on knowing and managing the emotions in others (Goleman, 2001).

According to the ECI technical manual (Sala, 2002) the ECI, with its 20 competencies, has good reliability and validity as measured through several studies in organizational contexts worldwide, however there was a problem with the factorial structure to get factorial validity. Some of the 20 competencies correlated so highly they could not be said to be different competencies, therefore the ECI was revised into the Emotional Competence Inventory Version 2 (ECI 2.0). The 20 competencies were changed into 18 competencies and some of the names of the competencies were changed. Sala (2002) claimed this gave the test higher factorial validity, however more research and refinements needs to be done for further improving the test. In the ECI 2.0 the number of items was reduced compared to the ECI, because complaints were made that the ECI was too long. The ECI contained 110 items, and the ECI 2.0 contains 72 items, which is four items per competence. The

respondents use a 1-5 scale for answering how much of the behavior in the item, they observe in the person being assessed. The scale consists of: 1 = never; 2 = rarely; 3 = sometimes; 4 = often; 5 = consistently; and 6 = don't know (Sala, 2002; Boyatzis & Sala, 2004).

In (Table 2) the 18 competencies from the ECI 2.0 are presented, and here comes a description of the 18 competencies as they are described in the technical manual for the ECI 2.0 (Wolff, 2005).

The first cluster of self-awareness is about knowing one's internal states, resources and preferences. It contains the three competencies of: *emotional self-awareness,* to recognize one's emotions and their effects; *accurate self-assessment,* knowing about one's strengths and limits; and *self-confidence,* to have a strong sense of self-worth and trusting one's capabilities.

The second cluster of self-management is about managing one's internal impulses, states and resources. It contains the six competencies of: *emotional self-control,* to keep disturbing impulses and emotions under control; *transparency,* to be honest and maintain standards of integrity; *adaptability,* to be flexible towards changes; *achievement,* to strive for a brilliant standard and continuously improving; *initiative,* to be ready and act when one sees an opportunity; and *optimism,* to see the positive side in things and to keep pursuing goals even when faced with setbacks.

The third cluster is social awareness, which involves competencies around how to be aware of other people's needs and feelings and how to handle relationships. In this cluster there are three competencies: *empathy,* to take interest in other people's concerns and to be able to sense their feelings and perspectives; *organizational awareness,* to read the emotional currents and power relationships in a group; and *service orientation,* to anticipate, recognize and meet the needs of the customers.

The fourth cluster contains six competencies. It is the social skills cluster, and concerns skills in how to induce desirable responses in other people, it contains: *developing*

others, to sense the needs of others and encouraging them to develop their abilities; *inspirational leadership,* to have an ability to inspire and guide individuals and groups; *influence,* to have good tactics for persuading people; *change catalyst,* to manage or initiate change; *conflict management,* to negotiate and resolve disagreements; and *teamwork & collaboration,* to work with others toward common goals and to be able to create group synergy when pursuing these goals (Wolff, 2005).

Table 2. *The ECI 2.0 scales*

The four clusters of competencies:	**The 18 competencies:**
Self-awareness cluster	emotional self-awareness accurate self-assessment self-confidence
Self-management cluster	emotional self-control transparency adaptability achievement initiative optimism
Social awareness cluster	empathy organizational awareness service orientation
Social skills cluster (relationship management)	developing others inspirational leadership influence change catalyst conflict management teamwork & collaboration

Source: Adapted from Wolff (2005).

Goleman's model of emotional intelligence

According to Goleman, Boyatzis, and McKee (2002) there are four EI domains that include several EI competencies. In the latest model from Goleman and colleagues (2002) there are 18 competencies included in these four EI domains or clusters, as they are also called. This model is based on the ECI 2.0 and the 18 competencies in this measure, which

have been described above. In the book *Primal leadership* (Goleman et al., 2002) the model with the 18 competencies are described on one page, but in the same book on a different page there is the model again but somewhat different, this one suggesting 19 competencies, this model includes the competence of building bonds, which is defined as: "cultivating and maintaining a web of relationships" (Goleman et al., 2002, p. 39). This competence was included in the original ECI where there were 20 competencies, but in the ECI 2.0 building bonds was included in the competence of teamwork & collaboration, because they were highly intercorrelated (Sala, 2002). One can assume that this is just an error in the book, and that it is the 18 competencies forming the ECI 2.0, which are supposed to be included in their current model.

Practical implications for this model

Goleman and colleagues have focused on leadership and the workplace for the implications of their research. In the book *Primal leadership* from 2002, they connect their four EI domains to leadership and show how important it is for someone to be emotionally intelligent to be a good leader. They also claim that the different EI skills can be learned and improved thus it is therefore important to teach people about EI and how to improve their EI and consequently succeed as leaders (Goleman et al., 2002).

Boyatzis and Sala (2004) summarize some findings claiming EI competencies, as measured by the ECI, to predict several different job outcomes for example: salary increases, job/life success, success as leaders, worldwide management performance and outstanding performance of public school principals (Boyatzis & Sala, 2004). Most of the studies referred to are not published material, and are therefore difficult to assess. However, there are some published studies, and one of them will be explained below.

In an exploratory study, Rapisarda (2002) investigated how 13 different EI competencies, as measured with the ECI and the SAQ, was related to team cohesiveness and

team performance in 18 different teams in an executive Master of Business Administration program (MBA). The study used participants that had graduated from an MBA program during the three years of 1999, 2000 and 2001. In the MBA program, the students formed working teams in which they worked for the two years at the MBA. For the study the participants were asked about their perceived team cohesiveness and team performance from their working teams during the program. Ratings from the faculty for the different groups were also collected. The students had, during their time at the MBA, done the ECI and some of them did the SAQ for measuring their EI competencies. The graduates gave their consent that these data could be collected for this study (Rapisarda, 2002).

The results indicated three EI competencies to be related with team cohesiveness and team performance. The EI competencies of influence, empathy and achievement showed to correlate with both the students and the faculty's ratings of team cohesiveness, there were also positive relations found between the competence of empathy and team performance as rated by the students and the faculty. The competence of achievement was positively related with team performance when it was rated by the students only. Rapisarda implies that these findings are good and could be beneficial for organizations to acknowledge EI competencies, especially the competencies of empathy and achievement for creating good working teams within their organizations (Rapisarda, 2002).

A comparison of the three views

There are studies presenting comparisons of the three major views in different variations. Especially interesting studies are meta-analyses comparing not only the three major views addressed in this thesis but also other views and measures of emotional intelligence. There also exist numerous review articles and studies critically evaluating the concept of EI.

Conte (2005) did a review of the four measures of EI, including the ECI, the EQ-i, the MEIS, and the MSCEIT. He directs critique towards all of the measures of EI, claiming their overall reliabilities being acceptable, but the different validities of the measures requiring more research. He concludes the ability measures of EI being the most promising for future research (Conte, 2005).

Cherniss (2010) states many researchers being concerned over the fact that there are so many different definitions and models in the field of EI. He compares the research in the field of EI with the research of intelligence, claiming that after 100 years of research they are still not in agreement about how to define general intelligence. The fact there being different EI definitions is not a good reason claiming EI to be useless, as some critics do. Instead of trying to decide which model of EI is the best or most correct one, it could be better trying to agree upon a single definition of EI. Then it is possible to look at which of the different abilities and traits best fits this definition and could be called *true models of EI*. This suggests there could be several models of EI as long as they fit into the single definition of EI. Cherniss makes the connection with this idea to the one Mayer and Salovey did in 1990 (Mayer & Salovey, 1990), where they separated between *intelligence* and *models of intelligence*, concluding that EI fits within the broader definition of intelligence made by Wechsler and therefore could be called a type of intelligence. Cherniss (2010) states that by reviewing the literature in the field of EI, a definition of EI most researchers seems to agree upon is the one made by Mayer and Salovey (1997); since both Bar-On and Goleman includes this definition in their work. According to Cherniss, the model that best fits this single definition is Mayer and Salovey's four-branch model. However, this does not mean their model being better than other models; it just indicates it to be a true model of EI. Bar-On and Goleman's models include wider things than the single definition (e.g., traits and personal qualities) and therefore not to fit into the definition of EI and not be qualified as true models of EI. Cherniss instead

suggests they should be seen as broader models, and a better name for them could be models of Emotional and Social Competence (ESC). ESC is referred to as those competences being closely linked with EI, which then is a broader concept. By making a distinction between models of EI and models of ESC, Cherniss believes the field could be much clearer and consistent (Cherniss, 2010). It could be a good suggestion to follow Cherniss' ideas about separating the models into true EI models and models of ESC, since Goleman refers to emotional competencies in his model and Bar-On often refers to his model as: "the Bar-On model of emotional-social intelligence (ESI)" (Bar-On, 2006, p. 14).

Brackett and Mayer (2003) conducted a study investigating the ability measure for EI, the MSCEIT, and two types of self-report measures of EI, the EQ-i and another type of self-report measure, which they refer to as the self-report EI test (the SREIT) (Brackett & Mayer, 2003). The SREIT is based on the conceptualization of EI made by Mayer and Salovey in 1990, and it consists of 33 self-report questions (see the study from Schutte et al., 1998 for further explanation of the SREIT, which is outside the scope of this thesis).

Brackett and Mayer (2003) looked at these types of EI measures to see different types of validity for them and how they are related to each other. They had a sample of 207 American college students. The students completed the MSCEIT V2.0, the EQ-i and the SREIT to measure their EI. Other tests were also used to measure their Big Five personality traits, psychological well-being, subjective well-being, and to collect data about their daily smoking behavior, illegal drug use, alcohol consumption and social deviance. In addition, the researchers collected data about the student's academic performance. The results indicated the MSCEIT being for the most part only weakly correlated with the EQ-i. The researchers' explanations for this finding, was that the MSCEIT and the EQ-i use different definitions of the construct of EI, and also that earlier studies on self-report measures and ability tests have just shown moderate correlations. Furthermore, the results indicated the MSCEIT to be

mostly different from personality and well-being measures; however the EQ-i was highly correlated with the Big Five personality traits. A lower score on the MSCEIT also predicted social deviance, and lower scores on the EQ-i predicted higher alcohol consumption. From these findings Brackett and Mayer (2003) suggest EI to be best measured as an ability with an ability measure, since the mixed-models with their self-report measures are too close to personality constructs and may not measure anything other than personality traits (Brackett & Mayer, 2003).

A study by Brackett, Rivers, Shiffman, Lerner, and Salovey (2006) indicated that people are not good at giving self-reports or judging their performance on ability measures of EI, when EI is defined as mental abilities (Mayer & Salovey, 1997). Brackett and colleagues composed a self-report measure of EI supposed to tap onto the four branches of EI from Mayer and Salovey's definition (Mayer & Salovey, 1997). In creating this self-report measure of EI they also looked at other related scales (e.g., the SREIT, see Schutte et al., 1998). 291 undergraduates from a state university first completed the newly made self-report measure of ability EI. Then they were asked to estimate how well they would perform on the MSCEIT. After this they completed the MSCEIT, and then they were lastly asked about how well they estimated their performances had been on the MSCEIT. The correlations between the self-report measure and the participants' estimates were high. When Brackett and colleagues compared the self-report measure and the participants' estimates on their performances, with the MSCEIT the correlations between them were low, indicating self-rated EI is not a good representation of ability EI. Thus also this study supports, as did Brackett and Mayer's study (2003), that self-report measures and ability measures measure different things (Brackett & Mayer, 2003; Brackett et al., 2006).

Reported in the same article was a second study where Brackett and colleagues wanted to see the relationships between the two measures of EI from the first study (i.e., the

self-report measure and the MSCEIT), with the perceived social competence with friends. In this study, 355 undergraduates from a private research university participated. Additionally to the EI measures, the participants completed a measure for their Big Five personality traits. Their perceived social competence with friends was measured using scales asking the participants about what strategies they used in their relationships with friends, when faced with positive and negative emotions. The results from this study replicate the findings in the first study in that the MSCEIT and the self-report measure of EI are not significantly correlated. The MSCEIT was not significantly correlated with the Big Five personality traits, while the self-report measure of EI was more highly correlated with personality traits. It was only the MSCEIT predicting perceived social competence, but only for men in this study. The researchers could not explain why it was just for men they found these significant correlations but claimed other studies having previously found gender differences in similar ways (Brackett et al., 2006).

Van Rooy and Viswesvaran (2004) conducted an interesting meta-analysis regarding EI and performance outcomes. They compared overall EI, as well as EI divided into different categories, with its influence on performance outcomes. The different EI measures were divided into six subcategories, one for MEIS studies, another for EQ-i studies, a third for ECI studies, two different categories for other measures not addressed in this thesis, and a sixth category for some smaller mixed measures of EI. Performance outcomes were divided into three categories: work, academic and other variables (e.g. life-success). In this study comparisons were also made with the Big Five personality traits and general mental ability (GMA), to see if EI had incremental validity (i.e., contributed) in predicting the different performance outcomes above personality traits and general mental ability. The results indicated overall EI to correlate positively with performance outcomes, and therefore a construct to take into account. EI and personality traits also correlated positively, and

according to Van Rooy and Viswesvaran this correlation was higher than some researchers would have liked it to be. The authors still claimed EI having some incremental validity over personality traits in predicting performance outcomes. Further on correlations between EI and GMA was found; the subcategory of ability test (i.e., the MEIS) correlated to a higher degree with GMA than did the other measures of EI, which showed almost no correlation with GMA. EI failed to show incremental validity over GMA to predict performance outcomes (Van Rooy & Viswesvaran, 2004).

Ashkanasy and Daus (2005) asserted the existence of three different streams within the field of EI research. They defined these three streams as follows: "(1) a four-branch abilities test based on the model of emotional intelligence defined in Mayer and Salovey (1997); (2) self-report instruments based on the Mayer–Salovey model; and (3) commercially available tests that go beyond the Mayer–Salovey definition."(Ashkanasy & Daus, 2005, p. 441). According to the definition of the three streams Mayer and Salovey's four-branch model, with its ability measure the MSCEIT, belongs to the first stream. The second stream of EI research has not really been addressed in this thesis, but one example of a self-report measure of EI, the SREIT based on Mayer and Salovey's model, has been mentioned (see e.g., Schutte et al., 1998, for an explanation of that measure). Into the third stream of EI research, are placed Goleman's model and the ECI, as well as Bar-On's model and the EQ-i (Ashkanasy & Daus, 2005).

Van Rooy, Viswesvaran, and Pluta (2005) conducted a meta-analysis following a division of the EI research into the two fields of ability-models and mixed-models. The results indicated the two models not to be highly correlated, implying they are not the same; they could be measuring different constructs even if they share some characteristics. High correlations were found between the different mixed-models, meaning they seemed to measure similar constructs. The division into ability-models and mixed-models seems

therefore relevant especially when comparing them with other constructs such as personality traits and cognitive ability. Van Rooy and colleagues (2005) still mean the small overlap existing between the two types of EI models should be further investigated to find exactly where they relate. The findings further indicated the mixed-models to correlate more highly with personality traits than did the ability-models, while the ability-models correlated more with cognitive ability than did the mixed-models, which support earlier findings (Mayer et al., 1999; Brackett & Mayer, 2003; Van Rooy & Viswesvaran, 2004).

O'Boyle, Humphrey, Pollack, Hawver, and Story (2011) have recently conducted a meta-analysis to investigate the relationships between EI and job performance. They wanted to see if EI could predict job performance after controlling for personality traits, as measured with the Five Factor Model (FFM), and cognitive ability; since both personality traits and cognitive ability separately have shown to predict and be related to different job variables in several earlier studies (O'Boyle et al., 2011). There are also many studies showing EI to be related to job variables (see e.g., Van Rooy & Viswesvaran, 2004, for a recent meta-analysis; and Boyatzis & Sala, 2004; Mayer et al., 2008, for reviews) and with this study their aim was to extend those prior studies. Since there are many different ways to both define and measure EI, O'Boyle and colleagues (2011) divided the different measures according to the three streams of EI research, defined by Ashkanasy and Daus (2005). This made it possible to see if there was a difference in how well the three streams could predict job performance separately as well as together. Their results indicated a positive correlation between job performance and overall EI. Separately, the three stream of EI also correlated with job performance. Even when controlling for personality traits and cognitive ability, the study suggested EI to be related to job performance. As seen in other studies (Van Rooy & Viswesvaran, 2004; Van Rooy et al., 2005) this study also confirmed that measuring EI with an ability test (i.e., stream 1) had higher correlations with cognitive ability (O'Boyle et al., 2011).

Discussion

Short and clear cut explanations in the field of EI, with a historical background from two fields like intelligence and emotions with a lot of conflicting findings and theories on their own, will probably not exist. However, as Cherniss (2010) stated, even though there are different definitions and theories in the field of EI it does not make the field of EI research useless. When looking at findings from the different views of EI, they all seem to imply that EI is, in some way, related to different outcomes e.g., work- and academic performance, social relations, and wellbeing even when controlling for other constructs such as personality traits and IQ.

The important thing to remember is that there are different views of what should be included in the term 'emotional intelligence', and that different EI tests seem to tap on somewhat different constructs, depending on the construction of the tests (i.e., self-reports, multirater tools, or ability tests). Therefore it is good to be aware of what type of EI test is being used, and on what theory is it based, when one looks at EI research or come across the term 'emotional intelligence' in different settings.

Ability-models versus mixed-models of emotional intelligence

Brackett, Rivers, and Salovey (2011) claim that there are two scientific approaches to the concept of EI, the ability-model and the mixed-models. The ability-model describing EI as being a standard intelligence, which they claim have been supported by research (Mayer, Caruso, & Salovey, 1999). They describe EI as being mental abilities and to measure EI they use performance tests, the Multi-Factor Emotional Intelligence Scale (MEIS) and the newer Mayer-Salovey-Caruso Emotional Intelligence Test, Version 2.0 (MSCEIT V2.0.) are example of performance tests. These tests are more like traditional intelligence tests in that they measure the performance of the individuals and they have correct answers (Brackett et al., 2011).

The mixed-models, as Brackett and colleagues (2011) refers to, are being said to mix the mental abilities with personality constructs and competencies. They use self-report instruments for measuring EI. According to Mayer and colleagues (2000) both Goleman's model and Bar-On's model falls under the mixed-models of EI. According to Brackett and Mayer (2003) the division of ability-models and mixed-models seems appropriate, as the different models showed very low correlation with each other, implying the may be measuring different constructs, which also have been indicated in other studies (Brackett et al., 2006; Livingstone & Day, 2005; Van Rooy et al., 2005).

Bar-On (2006) does not like the term mixed- and ability-models for separating their models, since he believes all models are in some sense mixed because they overlap to some degree with personality traits and cognitive ability. Even Mayer and Salovey's model, which is claimed to be a pure ability-model, is also mixed in that sense, since it also overlaps to some degree with personality traits and cognitive abilities (Bar-On, 2006).

Strengths and weaknesses in the three major views of emotional intelligence

Mayer and Salovey's view of emotional intelligence. Mayer and Salovey claim having a good theoretical model and measure of EI according to their definition of EI. The factor structure of EI, consisting of four branches, has been claimed to be supported by several studies (Mayer et al., 2003; Livingstone & Day, 2005), which is a strength for their model and the MSCEIT as a reliable and valid measure.

A problem often discussed concerns the scoring of the MSCEIT, and whether one could say that there are correct answers to the MSCEIT. In comparison with traditional intelligence tests, which more clearly have correct answers, the methods used for approximating correct answers in the MSCEIT are based on expert consensus scoring and general consensus scoring. Criticism has been made regarding these two methods for approximating correct answers (Conte, 2005).

Mayer and Salovey claim there is support for their ability-model of EI as being an intelligence, and having moderate correlations with other intelligences, like cognitive ability (Mayer et al., 1999). The correlations between an ability measure of EI and cognitive ability has been supported by several studies (Brackett & Mayer, 2003; Van Rooy & Viswesvaran, 2004; Van Rooy et al., 2005), which is a strength when claiming EI to be an intelligence. There are however other studies not supporting these moderate correlations e.g., Livingstone & Day (2005) who only found one small correlation between one of the subscales of the MSCEIT and cognitive ability. Clearly even here more research needs to be done for finding out the relations between EI and cognitive abilities (i.e., general intelligence).

The MSCEIT is not closely related to personality traits as showed by Livingstone and Day (2005), which also has been confirmed by numerous studies (Brackett & Mayer, 2003; Brackett et al., 2006; Van Rooy & Viswesvaran, 2004, Van Rooy et al., 2005). These findings seem consistent and favor the view of ability measures of EI as not measuring the same thing as personality.

There exist several studies published in peer-reviewed articles examining practical implications of EI as measured as an ability (Mayer et al., 2008), some of them have been described in this thesis. Most of the findings presented suggest relations with some of the four branches from the MSCEIT and different outcomes in life, which suggests EI as measured as an ability, can be a an important construct measuring something that goes beyond what personality traits and cognitive abilities can predict in different aspects of life. Even in this area more research needs to be done for further validating if EI is a contributing factor, and can be explained by the four branches in Mayer and Salovey's model.

Bar-On's view of emotional intelligence. The factor structure of EI, which according to Bar-On and colleagues, could be said to be explained by a five-factor model, including 15 subscales from the EQ-i (Bar-On, 2000) have been validated by others who had

not found this structure to be a good fit. Palmer, Manocha, Gignac, and Stough (2003) did a study in Australia with 377 participants completing the EQ-i, and with exploratory and confirmatory factor analyses their findings suggested there to be a general factor of EI and six primary factors. Palmer and colleagues (2003) convey that their findings need to be replicated to conclude that this could be a better structural model for EI. Furthermore, they point out that little independent research have been done examining the dimensional structures of measures of EI and therefore more research needs to be done to validate the psychometric properties of different EI measures (Palmer et al., 2003). Livingstone and Day (2005) could not find support for the factor structure of the Bar-On's five-factor model of EI in their study when conducting a confirmatory factor analysis on the EQ-i, using a sample of 211 military personnel. Instead one factor was found, which all the 15 factors weighted on. However, just explaining EI with a one-factor model was thought to be too simple and no good (Livingstone & Day, 2005). The contradicting indications found is a weakness of the factor structure of Bar-On's model and the EQ-i measure, which clearly indicates more research needs to be done, for validating and confirming how good Bar-On's model and the EQ-i could be for explaining EI.

Bar-On and colleagues claim the EQ-i not being significantly related to cognitive ability (i.e., IQ or general intelligence) as showed by four studies they refer to, which are unpublished material (Bar-On, 2000). This was supported by Livingstone and Day (2005) who found no significant correlations between the EQ-i and cognitive ability. Other studies have also found smaller correlations between the mixed-models and cognitive ability than between the ability-models and cognitive ability (Van Rooy & Viswesvaran, 2004; Van Rooy et al., 2005). These supporting findings strengthen Bar-On's model in predicting EI as measuring something else than IQ. Some weaknesses though are the mixed-models sometimes pretty strong relations with personality traits, as have been suggested in some

studies (Brackett & Mayer, 2003; Livingstone & Day, 2005; Van Rooy et al., 2005). These relations with personality traits indicate EI as not measuring much more than personality traits.

The study conducted by Bachman and colleagues (2000) showing correlations with more or less successful debt collectors and EI, did not account for personality traits or cognitive ability when suggesting that higher EI correlated with success in their work performance (Bachman et al., 2000). This must be said to be a weakness of the study, since the findings could be due to personality traits or cognitive ability instead of EI. The researchers did not even mention this problem in their discussion.

Furthermore, many of the studies claiming EI to be related with different outcomes such as: academic success, performance in the workplace, predicting physical wellness, and predicting emotional wellbeing, refer to unpublished manuscripts and the technical manual of the EQ-i (Bar-On, 2004). This also makes it difficult to say how the studies have been made and how relevant they are, more studies needs to be done in published peer-reviewed articles by independent researchers.

Goleman's view of emotional intelligence. Goleman suggests that his theory of EI differs from the ones made by Bar-On, and Salovey and Mayer. Based on social and emotional competencies Goleman wants to develop a theory of work performance. According to Goleman, Bar-On wants to develop more general measures of EI that predicts emotional well-being and adaptation. Mayer and Salovey want to establish the validity and utility of EI as a new intelligence (Emmerling & Goleman, 2003).

For testing Goleman's model of EI, Goleman claims it has been done studies in work settings at hundreds of companies (Emmerling & Goleman, 2003). However, according to Conte (2005) not many of them have been conducted by independent researchers and could be found in peer-reviewed articles, thus makes it difficult to judge the reliability and validity of

the ECI. Conte concludes that not before there are peer-reviewed articles showing the reliability and validity of the ECI "the scale does not deserve serious consideration" (Conte, 2005, p. 434). Boyatzis and Sala (2004) refer to several studies where the ECI has been used to predict work and leadership performance, but when looking at their references none of the studies have been published in peer-reviewed articles. Some of them are master's theses and others are unpublished doctoral dissertations or research reports from Hay/McBer (Boyatzis & Sala, 2004). The Hay Group describes themselves as being a global management consulting firm working with leaders to change strategies into reality (Hay Group, 2011). Cherniss (2001) has acknowledged this problem, about the lack of published research in peer-reviewed scientific journals, and concludes it is because much of the interesting findings come from consulting firms, like the Hay Group. The firms are interested in the results of the studies for their own purposes and for corporative clients. These clients are not willing to pay and give more time to the researchers for preparing the studies for publication. Another aspect is the competition among different firms; they are not willing to share details about findings to their corporative competitors. The problems arising due to this are the unpublished studies' uncertain validity, since the peer review process cannot look at the methods and the results from the studies. Cherniss hopes more of the studies eventually to be published in peer-reviewed scientific journals to make the foundations of the research even stronger. However, identifies the difficulties in the current business climate, which is dilemma for the field of EI (Cherniss, 2001).

Matthews, Zeidner, and Roberts (2002) have reviewed the three theories of EI and claimed that Goleman's model of EI could just be considered as good ideas to look at because his conceptualizations and the biological and psychological roots, which he based his ideas on, where too "open-ended and loosely specified to constitute a good scientific theory" (Matthews et al., 2002, p. 15). They also agree upon the notion that much of the research

supporting Goleman's model have not been published in peer-reviewed articles, and they have therefore not been able to judge if the research meets accepted psychometric standards (Matthews et al., 2002).

Agreeing with Conte (2005), Cherniss (2001), and Matthews et al. (2002) it has been difficult finding peer-reviewed articles and therefore looking at the findings made in the area of EI from Goleman's perspective. Data used in this thesis therefore comes from the sources available including several published books by Goleman and colleagues (Boyatzis et al., 2000; Boyatzis & Sala, 2004; Goleman, 1995, 1999, 2001; Goleman et al., 2002) and technical manuals being available on their webpage the eiconsortium.org (Sala, 2002; Wolff, 2005) as well as an article published on the same webpage (Emmerling & Goleman, 2003). The lack of peer-reviewed articles, published in scientific journals, is a weakness of Goleman's model, since the validity and reliability of the model and measures are difficult to examine, which also weakens the findings on what EI competencies are able to predict.

Overarching reflections and conclusions

The three major views of EI that have been presented and discussed in this thesis are not the only views of EI in the field. There are other views and measures of EI, also suggested, which in the future may take higher ground and be of more importance in the field of EI research than they are today.

As for example Ashkanasy and Daus (2005) suggested there to be three streams of EI research, depending on what types of tests were used, where the second stream (i.e., self-report instruments based on the Mayer-Salovey model) just have been briefly discussed in this work. Another approach of EI, and according to Cherniss (2010) the most recent approach, is called 'trait emotional intelligence'. This model includes several of the competencies or traits from both Goleman and Bar-On's models. Petrides, Pita, and Kokkinaki (2007) claim that

"trait EI is a personality trait, as opposed to a cognitive ability"(Petrides et al., 2007, p. 274), and they search to find where in the personality domains this trait EI can fit.

It seems to be important to differentiate among the ability-models and the mixed-models of EI, since they seem to measure somewhat different constructs, and also have different relations with cognitive ability and personality traits. They rely on differently broad definitions, where the mixed-models include wider terms in their construct of EI, whereas the ability-model is based on a narrower definition. These two types of models also usually apply different types of measures, where the mixed-models rely on self-reports and multirater measures, whereas the ability-model relies on ability- or performance tests.

Mayer and Salovey's definition of EI is narrow and includes abilities; therefore their model is seen as an ability-model. Their model is measured by the MSCEIT, which is a performance test. Bar-On's definition of EI is broader than Mayer and Salovey's definition, and the model includes abilities as well as some wider competencies as general mood and stress management, and it is therefore referred to as a mixed-model of EI. It relies mostly on the self-report measure, the EQ-i, but other multirater measures have also been developed based on the EQ-i. Goleman's definition of EI is also broader than Mayer and Salovey's definition, and the model includes several emotional competencies such as optimism and empathy. It is referred to as a mixed-model of EI; the measure most widely used in this view is the ECI, which is a multirater measure.

A possible solution to the problem with the varying models of EI have lately been suggested by Cherniss (2010), who divides the models into models of EI and models of ESC. Instead of trying to assert that one model is better than the other, this distinction of the types of models can help the field be clearer, since both of the types of models could be potentially useful.

The three major views of EI been presented in this thesis all show strengths and weaknesses in their models, measures and practical usefulness. Hopefully this presentation and discussion around the three major views have contributed to some deeper background understanding of the research field of EI, and made you curious to stay updated following the expansion of this rather new and very interesting field to find out more about possible practical implications, for which the field already shows some indications to be important.

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