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Chapter 26

**ADAPTIVE EMOTIONAL FUNCTIONING:
A COMPREHENSIVE MODEL OF
EMOTIONAL INTELLIGENCE**

Nicola S. Schutte and John M. Malouff

University of New England, Australia

ABSTRACT

Emotional intelligence describes adaptive emotional functioning. Perceiving, understanding and managing emotions effectively in the self and others are core elements of emotional intelligence.

The model of emotional intelligence presented in this chapter organizes the numerous promising categories of research findings on emotional intelligence through a dimensional framework that describes aspects of emotional intelligence, possible antecedents of emotional intelligence, and likely consequences of emotional intelligence.

Aspects of emotional intelligence are the core dimension of the model and include ability emotional intelligence, emotional self-efficacy, and trait emotional intelligence. Ability emotional intelligence is the potential to show emotional competency. Emotional self-efficacy is the expectation that one can bring about good outcomes in emotional functioning.

Trait emotional intelligence describes the extent to which individuals actually show emotional competence in their daily lives.

The dimension of antecedents of emotional intelligence consists of the categories of individual difference characteristics and situational factors. Possible individual-difference antecedents of emotional intelligence include genetically and neurologically determined dispositions, cognitive abilities, emotion-related mastery experiences, processing style, characteristic states of consciousness such as mindfulness, and motivation. Antecedent situational factors include priming and social networks.

The dimension of consequences of emotional intelligence consists of categories reflecting functioning in different realms of life. These realms of life include subjective well-being, mental and physical health, relationships, work, and personality. Several intervention studies designed to increase emotional intelligence provide evidence for the causal role of emotional intelligence in bringing about improvements in these realms of life.

The dimensional model of emotional intelligence provides a framework for understanding discoveries already made regarding emotional intelligence as well as a guide for future research.

INTRODUCTION

Several models have attempted to define and operationalize emotional intelligence. These models focus on emotional abilities or competencies that group together and that involve drawing on emotion in adaptive ways.

Perceiving, understanding and managing emotions effectively in the self and others are competencies typically included in the models. Some models describe in detail aspects of perception, understanding and managing emotions; other models include in their conceptualization of emotional intelligence outcomes, such as stress management, that might arise from good perception, understanding and management of emotions.

A large number of findings on emotional intelligence have been published in the last two decades. At the end of 2011, over 7000 scholarly articles, chapters and books focusing on emotional intelligence were listed in the data base PsycINFO, which abstracts most, though not all, scholarly work relating to psychology.

Present influential models of emotional intelligence, such as those developed by Mayer, Salovey and Caruso, (2004, 2008) and Bar-On (2000) are useful, but do not provide comprehensive frameworks for organizing the many findings regarding emotional intelligence and do not provide a broad impetus for further research in the area.

The new model of emotional intelligence presented in this chapter organizes numerous categories of promising research findings on emotional intelligence through a dimensional framework that describes aspects of emotional intelligence, possible antecedents of emotional intelligence, and likely consequences of emotional intelligence.

INFLUENTIAL MODELS OF EMOTIONAL INTELLIGENCE

The four-branch model of emotional intelligence (Mayer, Salovey, & Caruso, 2004, 2008) holds that emotional intelligence is comprised of levels of competencies that build on each other.

The most basic competency is perception of emotion in the self and others. Accurate perception of emotion is the foundation for the second competency, using emotion to facilitate cognitive processes.

The next highest level involves understanding causes of emotion. Regulating emotion in the self and others is the highest-level competency and builds on the foundation created by the other emotional competencies.

The four-branch model of emotional intelligence is the most theoretically developed model of emotional intelligence and is the basis for much research in the area.

Bar-On's (2000) model of emotional intelligence exemplifies models that provide a broad definition of emotional intelligence. Bar-On's model posits that emotional intelligence

consists of basic competencies such as perception and regulation of emotion as well as various skills or characteristics that may stem from the effective perception or regulation of emotions, such as good interpersonal relationships, problem solving, and stress tolerance.

As part of their presentation of the four-branch model, Mayer et al. (2004, 2008) maintained that emotional intelligence is best conceptualized as an ability similar in nature to cognitive intelligence.

They suggested that emotional intelligence is best assessed through performance measures that pose test-type problems to respondents. Other theorists and researchers (Neubauer & Freudenthaler, 2005; Petrides & Furnham, 2003) have argued that emotional intelligence can also be conceptualized and measured as trait (or typical) functioning.

Trait emotional intelligence has been assessed through self-report or reports by close others, in a manner similar to many personality inventories assessing other traits, such as the Big-Five Personality Factors.

A COMPREHENSIVE NEW DIMENSIONAL MODEL OF EMOTIONAL INTELLIGENCE

Many studies provide information regarding variables associated with emotional intelligence, and several studies provide information regarding possible causes of emotional intelligence and consequences of emotional intelligence.

The following model of adaptive emotional functioning provides a theoretical model that organizes these findings in a dimensional framework describing aspects of emotional intelligence, possible antecedents of emotional intelligence, and likely consequences of emotional intelligence.

Aspects of emotional intelligence lie at the core of the model and include ability emotional intelligence, emotional self-efficacy, and trait emotional intelligence.

Possible antecedents of emotional intelligence include individual difference characteristics, such as cognitive abilities, and situational factors, such as social networks.

Possible consequences of emotional intelligence group into categories reflecting functioning in different realms of life, such as health and work.

The Dimensional Model of Emotional Intelligence helps organize existing research and stimulates ideas for future research. In the following sections relevant research is presented for each component of the model.

This is followed by an explanation of how the component relates to other components of the model and by suggestions for future research. Figure 1 shows the components of the Dimensional Model of Emotional Intelligence and the proposed relationships between components.

DIMENSIONAL MODEL OF EMOTIONAL INTELLIGENCE

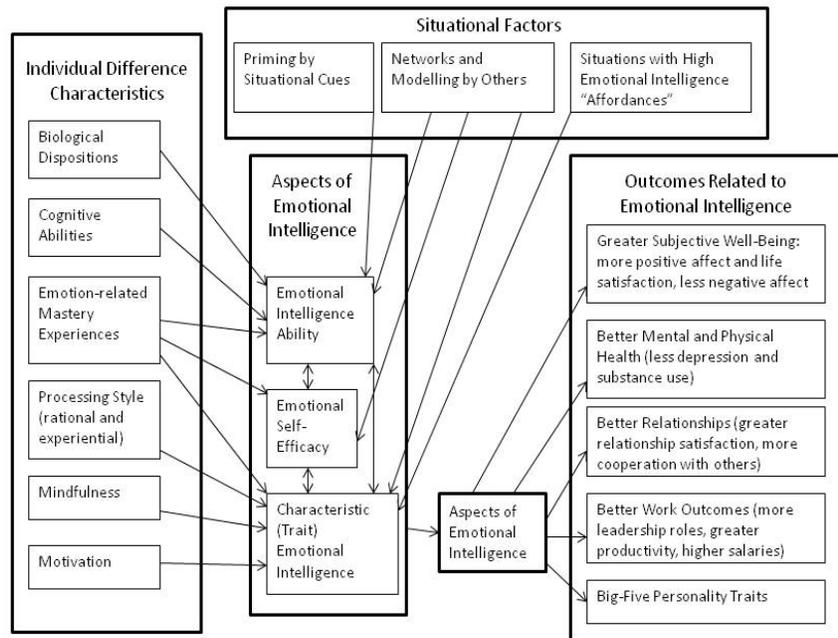


Figure 1. Dimensional Model of Emotional Intelligence.

RESEARCH ON THREE ASPECTS OF EMOTIONAL INTELLIGENCE: ABILITY, TRAIT AND SELF-EFFICACY

Even though the emotional intelligence literature has sometimes presented ability and trait functioning conceptualizations of emotional intelligence as mutually exclusive alternatives (e.g., Mayer, Salovey, & Caruso, 2000), they seem to be inter-related components of adaptive emotional functioning (Schutte, Malouff & Hine, 2011). Measures of ability and trait emotional intelligence tend to share moderate variance (Bracket & Mayer, 2003; Kirk, Schutte & Hine, 2008; Schutte et al, 2011). For example, Kirk et al. (2008) found an association of $r=.29$ between ability and trait emotional intelligence and Schutte et al. (2011) found an association of $r=.33$ between ability and trait emotional intelligence. In an additional test of the relationship between the two types of emotional functioning with each other and with alcohol problems, Schutte et al. (2011) found that trait emotional intelligence mediated between ability emotional intelligence and alcohol problems.

Neubauer and Freudenthaler (2005) have used the term trait emotional self-efficacy for self-report based assessment of emotional intelligence to indicate that this type of operationalization of emotional intelligence focuses on individuals' beliefs about their emotional abilities rather than a completely objective assessment of abilities. High self-efficacy for emotional functioning involves the belief that one can bring about good outcomes in the realm of emotional functioning. Kirk, et al. (2008) made explicit the notion of emotional self-efficacy through development and validation of a scale of emotional self-efficacy which asks respondents to indicate how confident they are that they can carry out

adaptive emotional functions rather than asking them whether they typically show these functions as do trait measures. Kirk et al. (2008) found that emotional self-efficacy was significantly associated with ability emotional intelligence at $r=.34$ and with trait emotional intelligence at $r=.73$.

DIMENSIONAL MODEL INTERPRETATION OF THE RELATIONSHIPS AMONG THREE ASPECTS OF EMOTIONAL INTELLIGENCE

Emotional intelligence lies at the core of the model. Emotional intelligence may consist of three related aspects of adaptive emotional functioning: ability, self-efficacy and characteristic or trait functioning. The three aspects of emotional intelligence are related and influence each other. Emotional intelligence ability is an individual's actual current capacity for adaptive emotional functioning. The individual may or may not act on this capacity. Individuals with higher emotional intelligence ability are more likely to show good emotional functioning in daily life; this results in higher trait emotional intelligence. The finding that trait emotional intelligence mediated between ability emotional intelligence and alcohol problems (Schutte et al., 2011) suggests that ability emotional intelligence may be a latent function that when consistently expressed gives rise to trait emotional intelligence, which then influences outcomes such as alcohol problems. Whether abilities, such as cognitive intelligence, athletic ability, and emotional ability are consistently expressed as traits may depend on a variety of factors. Among the most important factors determining whether the ability is expressed may be an individual's motivation and situational factors.

Higher emotional intelligence ability along with the application of this ability in daily life may result in more confidence in the effectiveness of one's emotional functioning and thus in higher emotional self-efficacy.

Higher emotional self-efficacy may make it more likely that individuals will devote resources to developing their emotional abilities and also make it more likely that they will draw on emotional competencies in daily life, resulting in higher trait emotional intelligence. An intervention (Kirk, Schutte & Hine, 2011) designed to increase emotional self-efficacy resulted in an increase in both emotional self-efficacy and trait emotional intelligence, lending some support to the notion that emotional self-efficacy promotes trait emotional intelligence. Finally, individuals with higher trait emotional intelligence characteristically show competencies comprising emotional intelligence in daily life and thus have more opportunities to practice and receive feedback on these competencies. Such practice and feedback may influence both emotional intelligence ability and emotional self-efficacy.

CHARACTERISTICS ASSOCIATED WITH EMOTIONAL INTELLIGENCE THAT MAY GIVE INSIGHTS INTO THE ORIGINS OF EMOTIONAL INTELLIGENCE

A number of characteristics associated with emotional intelligence may provide preliminary insights into the origins of emotional intelligence. Most of the studies reviewed in this section on possible origins of emotional intelligence are correlational in design; thus

identifying these characteristics as contributing to the development of emotional intelligence is speculative. Future experimental studies might further examine the direction of causality for the variables proposed as contributing to the development of emotional intelligence.

Some of the possible origins of emotional intelligence reviewed in this section can be described as individual-difference characteristics in that individuals differ in the extent to which they manifest these characteristics. For example, some individuals have greater cognitive ability than others. Other possible origins of emotional intelligence can be described as situational. Situational factors consist of conditions in the world that influence individuals in relatively similar ways. For example, most individuals are more outgoing when at a party than when attending a public lecture.

INDIVIDUAL-DIFFERENCE CHARACTERISTICS THAT MAY PROMOTE EMOTIONAL INTELLIGENCE

Research on Biological Characteristics. Research findings suggest that genetic influences may be related to the development of emotional intelligence. In two studies using family and twin designs respectively, Vernon, Petrides, Bratko, & Schermer (2008) found heritability estimates of .32 and .42 for trait emotional intelligence.

A separate line of research indicates that neurological functioning may play a role in emotional intelligence (Krueger et al., 2009; Takeuchi et al., 2011). Krueger et al. (2009) found that head injured veterans' prefrontal cortex functioning was associated with their trait emotional intelligence scores. Takeuchi et al. (2011) found that in healthy young adults gray matter density of various regions of the brain was associated with trait emotional intelligence. Such differences in neurological functioning might be in part genetically determined or might be shaped during individuals' development and interaction with the environment.

Dimensional Model Interpretation of Biological Antecedents. If emotional intelligence has a genetic component, as suggested by Vernon et al.'s (2008) research, future studies might explore which genes are involved in facilitating the development of emotional competencies, epigenetic factors, and how genetic predispositions unfold in the context of learning opportunities afforded by an individual's environment. Future studies might also build on the work of Krueger et al. (2009) and Takeuchi et al. (2011) to further examine differences in neurological functioning and brain structure as determinants of emotional intelligence.

Research on Cognitive Ability. According to the four branch model of emotional intelligence (Mayer, Salovey, & Caruso, 2004, 2008), emotional intelligence involves an interplay of cognition and emotion. One would thus expect cognitive ability to be related to emotional intelligence. A meta-analysis by Joseph and Newman (2010) showed a moderate relationship between cognitive intelligence and ability emotional intelligence, with an r of .22 across 28 samples, and a smaller relationship between cognitive intelligence and trait emotional intelligence, with an r of .09 across 19 studies.

Dimensional Model Interpretation of Cognitive Ability. Moderate significant associations found across numerous studies examining the relationship between cognitive intelligence and ability emotional intelligence (Joseph and Newman, 2010) provide some support for the four branch model of emotional intelligence (Mayer et al., 2004, 2008)

proposition that cognitive ability interacts with emotional processing in determining ability emotional intelligence. More conclusive support for the causal role of cognitive ability in facilitating emotional intelligence might come from future longitudinal studies examining whether increases in emotional intelligence follow increases in cognitive ability rather than the reverse. Across numerous studies there is a slight relationship between greater cognitive ability and trait emotional intelligence (Joseph & Newman, 2010). Future research might explore whether this relationship of cognitive intelligence and trait emotional intelligence is mediated by ability emotional intelligence to test the possibility that the relationship between cognitive ability and trait emotional intelligence occurs because cognitive ability influences ability emotional intelligence, which in turn influences trait emotional intelligence.

Research on Processing Style. Processing style is important in human perception and learning. Dual process models attempt to explain the basic mechanisms through which humans react to information and learn from experience. These models distinguish between two systems, one involving associative, experiential processes, and one involving analytic, explicit processes (Schroyens, Schaeken & Handley, 2003). The two systems operate together in guiding individuals' interpretations of the world and their ensuing reactions. Epstein's (1994) dual process model defines these processes as consisting of an experiential system that is effortless, rapid, and tied to emotion and a rational system that is intentional, logic-based, and relatively free of emotion. Schutte, Thorsteinsson, Hine, Foster, Cauchi, and Binns (2010) found that higher levels of both experiential and rational processing were associated with greater trait emotional intelligence. Rational processing was associated with emotional intelligence at $r=.38$ and experiential processing was associated with emotional intelligence at $r=.50$.

Dimensional Model Interpretation of Processing Style. Information processing style may provide a foundation for the development of emotional intelligence. The finding that both greater associative, experiential emotional processing and greater analytic, explicit cognitive processing are related to trait emotional intelligence (Schutte et al., 2010) is congruent with the notion that emotional intelligence is a function of emotion and cognition in combination (Mayer et al., 2004; 2008). The dimensional model of emotional intelligence proposes that a combination of high levels of basic processing styles promotes emotional intelligence. Schutte et al. (2010) found that high trait emotional intelligence mediated between high levels of the processing styles and greater subjective well-being, lending some support to the idea that processing styles are at a more fundamental level of functioning than emotional intelligence, and that emotional intelligence builds on processing styles. Future research might examine the relationship between processing style and ability emotional intelligence and emotional self-efficacy.

Research on Mindfulness. Aspects of consciousness may be related to emotional intelligence. Mindfulness is a state of consciousness that involves non-evaluative awareness and focus on the present. It is a flexible state of open attention to both one's inner state and the outside world (Brown & Ryan, 2003; Brown, Ryan, & Cresswell, 2007). Mindfulness has been found to be a generally beneficial state of consciousness in that it is associated with good outcomes such as greater well-being and better health (Brown et al., 2007). Brown et al. (2007) made the case that as well as being a state of consciousness, mindfulness is also an individual-difference characteristic in that some individuals are more typically in a mindful state than others. Greater typical mindfulness is associated with higher trait emotional

intelligence (Baer, Smith & Allen, 2004; Brown & Ryan, 2003; Schutte & Malouff, 2011). For example, Schutte and Malouff (2011) found an association of $r=.65$ between mindfulness and trait emotional intelligence.

Dimensional Model Interpretation of Mindfulness. Individuals' preferred state of consciousness may influence emotional intelligence. A higher level of characteristic mindfulness may make it more likely that individuals show competencies, such as accurate perception of emotion and understanding of emotion, that comprise trait emotional intelligence. Aspects of mindfulness such as awareness may make it more likely that emotions are noticed, and other aspects, such as non-evaluativeness, may allow non-defensive emotional processing. In line with this notion, Schutte and Malouff (2011) found that greater mindfulness was related to more trait emotional intelligence and that trait emotional intelligence mediated between mindfulness and subjective well-being. The finding regarding the mediating role of trait emotional intelligence lends some support to the proposition that mindfulness is at a fundamental level of functioning and that emotional intelligence builds on mindfulness. Future research might explore the relationship between mindfulness and ability emotional intelligence and the effect of interventions aimed at increasing mindfulness on trait and ability emotional intelligence.

Research on Emotional Self-Efficacy and Emotion-related Mastery Experiences. Self-efficacy in a realm of life involves the expectation that one can bring about a good outcome in that realm (Bandura, 1997). A stronger sense of self-efficacy results in a greater likelihood of successfully carrying out an action (Bandura, 1997). Kirk et al. (2008) found that greater emotional self-efficacy was associated with higher trait emotional intelligence.

Each individual has a unique learning history. Actions that bring about desired or reinforcing results are likely to be repeated in the future, while actions that bring about undesired results are not likely to be repeated (Mazur, 2005). Competencies involved in emotional intelligence, such as attempting to understand the causes of others' emotions, may be learned just as many other cognitive and behavioral processes are learned.

As well as having a direct effect on the learning of competencies, successful emotional functioning may lead to an increase in emotional intelligence through personal mastery. Social Cognitive Theory (Bandura, 1984) examines cognitive and social aspects of learning. Bandura (1997) conceptualizes mastery experiences as performing a task or meeting a challenge in a manner the individual perceives as adequate. According to Bandura (1997) such successful personal mastery experiences are one of the most important ways to build a sense of self-efficacy, which in turn leads to a greater likelihood of showing a behavior related to this sense of self-efficacy. Kirk, et al. (2011) found that an intervention based on encouraging employees to reflect on personal mastery of emotional competencies as well as observation of emotional competency in others led to a rise in both emotional self-efficacy and in trait emotional intelligence in the employees who participated in the intervention.

Dimensional Model Interpretation of Mastery Experiences. An individual's learning experiences related to emotion are likely to influence ability emotional intelligence, emotional self-efficacy, and trait emotional intelligence. When individuals process emotions in an adaptive manner, for example by perceiving another person's emotion and helping that person regulate the emotion in useful way, this is likely to bring about desired outcomes, such as comforting a friend who is sad or helping a colleague down-regulate anger. The accumulation of such mastery experiences may influence emotional self-efficacy, ability emotional intelligence, and trait emotional intelligence.

Emotion-related mastery experiences may lead to new learning that increases emotional ability. Emotion related mastery experiences may also build confidence in being able to achieve good outcomes in the realm of emotional functioning and thus build emotional self-efficacy. Finally, such mastery experiences may make it more likely that individuals later show emotional competencies in daily life, and thus increase trait emotional intelligence. Emotional intelligence interventions (Kirk et al., 2011; Kotsou, Nelis, Grégoire & Mikolajczak, 2011; Nelis, Kotsou, Quoidbach, Hansenne, Weytens, Dupuis, & Mikolajczak, 2011) have tended to encourage practice of emotional competencies or reflection on successful emotional functioning, and thus have drawn on mastery-related learning. Such interventions have led to increases in trait emotional intelligence (Kotsou et al., 2011; Nelis et al., 2011) and in the case of the Kirk et al. (2011) study increases in both emotional self-efficacy and trait emotional intelligence.

Future experimental research might investigate the effect of mastery experiences on ability emotional intelligence. Future research might also examine specific aspects of mastery experiences that lead to the most pronounced increases in emotional intelligence.

Research on Motivation. Motivation initiates and maintains human functioning, including functioning related to emotions. Motivation can stem from goals an individual is attempting to reach, such as wanting to obtain a certain type of employment, intrinsic conditions, such as enjoyment of music, and external conditions, such as praise or monetary rewards. Being motivated to show competencies comprising emotional intelligence should make it more likely that individuals show higher trait emotional intelligence. Christie, Jordan, Troth and Lawrence (2007) examined the association between different motives such as need for achievement and need for affiliation with trait emotional intelligence. Some of these motivations were associated with components of trait emotional intelligence. For example, need for achievement was associated with regulation of emotion at $r=.66$ and need for affiliation was associated with appraisal of others' emotions at $r=.28$. Other research showed that individuals' moral identity and characteristics such as Machiavellianism can give rise to goals that then may influence how competencies comprising emotional intelligence are used (Cote, Decelles, McCarthy, Van Kleef, & Hideg, 2011).

Dimensional Model Interpretation of Motivation. Motivation may be a key element in determining trait emotional intelligence. Individuals have many abilities and behavior patterns upon which they can draw. Motivation helps determine which abilities or behavior patterns an individual will choose to show. Thus goals, such as wanting to understand another's emotions, as might be a goal of a therapist working with a client, intrinsic factors such as enjoyment that stems from fully experiencing positive emotions, and external factors, such as others reacting positively to an individual's attempt to regulate his or her emotions in a difficult situation, may prompt motivation to show competencies comprising trait emotional intelligence.

Some research (Christie et al., 2007; Cote et al., 2011) has started to examine how aspects of motivation, such as pro-social goals and achievement related goals, are related to emotional intelligence. The relationship of many other aspects of goals, intrinsic motivations and external motivators with emotional intelligence remains to be explored. Future intervention studies might examine the impact of modifying aspects of motivation on emotional intelligence.

Situational Influences that May Promote Emotional Intelligence Research on Priming. Environmental cues can prime or activate aspects of an individual's cognitive

system and this in turn can influence performance. Environmental primes can result in changes in facial expressions, reaction time, performance on mathematics problems, and visual acuity (Dijksterhuis & Bargh, 2001; Langer, Djikic, Pirson, Madenci & Donohue, 2010). In two experimental studies Schutte and Malouff (2012) investigated the effect of priming individuals' emotion-related self-schemas and found that priming aspects of the self-schema related to high emotional self-efficacy resulted in significantly better performance on a measure of ability emotional intelligence.

Dimensional Model Interpretation of Priming. Aspects of the environment such as primes may determine whether individuals draw on their emotional competencies at a particular time. Such aspects of the environment might consist of others showing emotional competencies or reminders of times the individual has successfully shown emotional competencies. The active self-schema model (Wheeler, DeMarree, & Petty, 2007) provides a framework for understanding how aspects of the environment can activate emotional competencies.

According to this model, individuals have an active self-schema that is linked to the static self-schema. The static self-schema consists of a relatively stable representation of aspects of the self. The active self-schema is the individual's current state and draws on aspects of the static self-schema in response to primes. The active self-schema responds to external stimuli, such as primes, that relate to the static self-schema. Thus, when a prime relating to emotional competency activates aspects of the self-schema that relate to emotion processing, this may make more likely the display of emotional ability.

The finding that manipulation of primes can change performance on a test of ability emotional intelligence (Schutte & Malouff, 2012) provides preliminary support for the notion that transient aspects of the environment can influence emotional intelligence ability. If an individual often encounters such primes prompting display of his or her emotional intelligence ability, this may over time result in higher trait emotional intelligence. Future research might examine the relationship between primes and emotional self-efficacy and trait emotional intelligence.

Research on Transmission of Behavior Shown in Networks. Individuals learn much from observing others. Such learning has been termed vicarious learning (Bandura, 1984) and qualities of models which make it more likely that others will emulate the behavior shown by a model include higher status of models, more perceived observer-model similarity, and good outcomes for models showing the behavior. These processes may in part account for transmission or "contagion" of behaviors and emotions in networks. The spread of registering for an internet-based health forum (Centola, 2010) among individuals in contact with each other is an example of behavior contagion, and the spread of contentment through a network of relationships (Hill, Rand, Nowak & Christakis, 2010) is an example of emotion contagion.

Dimensional Model Interpretation of Emotional Competencies Shown in Networks. Parents can be important in modeling emotional competencies (Mayer et al., 2004) that children then may internalize through vicarious learning. Individuals' work and peer networks may also be sources of vicarious emotional learning opportunities. Further, such social networks may cue which learned abilities or competencies, including emotional competencies, might be appropriate in the context of the social network.

Two studies (Schutte, 2012) explored possible connections between emotional competency shown in an individual's social network and the individual's trait emotional intelligence. Individuals who gave high ratings to the emotional competence of the two adults

with whom they spent the most time had higher trait emotional intelligence and more life satisfaction. In a second study with a longitudinal design, residents of colleges with higher composite emotional competency at the start of a semester showed greater increases in emotional intelligence from the start to the end of the semester and also showed greater increases in positive affect. These findings suggest that close others may indeed influence individuals' trait emotional intelligence and outcomes associated with emotional intelligence.

Future studies might examine what aspects of emotional intelligence displayed in social networks are most associated with an individual's emotional intelligence, the effect of qualities such as similarity of others in a social network, and the association between emotional intelligence displayed in a network and individuals' emotional self-efficacy and ability emotional intelligence.

Situationist and Interactionist Perspectives. The situationist perspective (e.g., Forgas & Van Heck 1992) holds that situations determine much behavior. Building on the situationist perspective, the interactionist approach (e.g., Hettema & Kenrick 1992) proposes that behavior is the result of interactions between situations and traits. Some of the ways in which situations and traits interact include some characteristics being more compatible with the requirements of a situation, individuals choosing to enter situations that will allow them to show characteristics that are strengths, and some situations having entry requirements that favor individuals with certain characteristics.

Dimensional Model Interpretation of Emotional Affordances of Situations through the Situationist and Interactionist Perspectives. Situations may influence whether individuals show competencies comprising emotional intelligence. Individuals can reliably rate the extent to which situations allow people encountering the situation to show emotional competencies (Schutte, Malouff, Price, Walter, Burke & Wilkinson, 2008). For example, raters agree that individuals have more opportunities to show emotional competency when at a dinner with friends than when watching television alone at home. Situations that allow or encourage expression of emotional competencies can be described as being high in "emotional affordances."

Individuals who frequently encounter situations with high emotional affordances may have more opportunities to observe others express emotional competencies and may have more opportunity to practice their own emotional competencies. These opportunities might lead to rises in ability emotional intelligence, emotional self-efficacy and trait emotional intelligence.

In line with this prediction, Schutte et al. (2008) found associations between individuals' trait emotional intelligence and the situations they chose to enter. They also found that observers rated as better the functioning of individuals high in emotional intelligence than those low in emotional intelligence in high affordance situations. Future research might examine more closely the nature of emotional affordances and different ways in which these emotional affordances interact with individuals' emotional intelligence to bring about various outcomes.

CHARACTERISTICS ASSOCIATED WITH EMOTIONAL INTELLIGENCE THAT MAY GIVE INSIGHTS INTO CONSEQUENCES OF EMOTIONAL INTELLIGENCE

Some characteristics associated with emotional intelligence may be the result of the competencies comprising emotional intelligence. Most of the studies reviewed in this section on possible consequences of emotional intelligence are correlational in design, so identifying these characteristics as resulting from emotional intelligence is speculative. A few studies have attempted to increase emotional intelligence through an intervention and then examined the effect of the intervention on characteristics thought to be related to emotional intelligence. Such experimental studies provide a stronger basis for inferring that emotional intelligence causes changes in these characteristics.

Research on Subjective Well-being. Ability emotional intelligence, trait emotional intelligence and emotional self-efficacy are all associated with indices of subjective well-being (Brackett & Mayer, 2003; Brackett, Mayer, & Warner, 2004; Ciarrochi, Forgas, & Mayer, 2006; Kirk, et al., 2008; Van Rooy & Viswesvaran, 2004). Positive affect, low negative affect, and life satisfaction are commonly used indicators of subjective well-being (Lyubomirsky, King & Diener, 2005). Examples of the relationship between emotional intelligence and subjective well-being include higher ability emotional intelligence being significantly associated with greater life satisfaction at $r=.12$ (Brackett, Rivers, Shiffman, & Salovey, 2006); higher trait emotional intelligence being associated with more positive affect at $r=.57$, less negative affect at $r=-.31$, and more life satisfaction at $r=.47$ (Schutte & Malouff, 2011); and higher emotional self-efficacy being associated with more positive affect at $r=.40$, and less negative affect at $r=-.35$ (Kirk et al., 2008).

Intervention studies provide preliminary information regarding the causal role of emotional intelligence in fostering subjective well-being. An intervention study designed to increase trait emotional intelligence (Kotsou et al., 2011) resulted in increases in self-reported as well as observer-reported trait emotional intelligence and also led to concomitant increases in life satisfaction. Another intervention intended to increase trait emotional intelligence (Nelis et al., 2011) resulted in increased self and other-reported trait emotional intelligence as well as increases in life satisfaction and happiness. A third intervention designed to increase trait emotional intelligence also led to increases in trait emotional intelligence as well as life satisfaction (Wing, Schutte, & Byrne, 2006). An intervention intended to increase emotional self-efficacy led to a significant increase in emotional self-efficacy and positive affect (Kirk et al., 2011).

Dimensional Model Interpretation of Subjective Well-being. Competencies, such as the ability to understand and regulate one's own emotions, comprising emotional intelligence theoretically should promote subjective well-being. For example, the ability to up-regulate positive emotions might be expected to lead to more characteristic positive affect, and the ability to down-regulate negative emotions might be expected to lead to less negative affect. Consistent with this prediction, research findings have shown associations of ability emotional intelligence, trait emotional intelligence and emotional self-efficacy with subjective well-being indices (e.g., Brackett et al., 2006; Kirk et al., 2008; Schutte & Malouff, 2011). Even stronger evidence for the causal role of emotional intelligence comes from experimental

intervention studies aimed to raise emotional intelligence (Kirk et al., 2011; Kotsou et al., 2011; Nelis et al., 2011, Wing et al., 2006) that also increased subjective well-being.

Future experimental research might investigate the causal role of ability emotional intelligence in promoting subjective well-being. Future research might also investigate which emotional intelligence competencies are most important for raising subjective well-being and whether there is a feedback loop such that higher subjective well-being might facilitate further development of emotional intelligence.

Research on Mental, Psychosomatic, and Physical Health. Two meta-analyses (Martins, Ramalho & Morin, 2010; Schutte, Malouff, Thorsteinsson, Bhullar & Rooke, 2007) have reported effect sizes of the relationship between emotional intelligence and mental and physical health across many studies. In the Schutte et al. (2007) meta-analysis, which included 44 effect sizes and 7,898 participants, emotional intelligence had significant associations with health, with an average association of $r=.31$ with psychosomatic health, $r=.29$ with mental health, and $r=.22$ with physical health. Associations between trait emotional intelligence and health measures were stronger than associations between ability emotional intelligence and health measures. The later Martins et al. (2010) meta-analysis, which included 105 effect sizes and 19,000 participants, also reported significant associations of emotional intelligence with mental health, $r=.36$, psychosomatic health, $r=.33$, and physical health, $r=.27$. Again associations between trait emotional intelligence and health were stronger than those between ability emotional intelligence and health. An example of the relationship between emotional intelligence and health are the associations between lower ability emotional intelligence and more alcohol-related problems, $r=-.30$, and between lower trait emotional intelligence and more alcohol problems, $r=-.27$, found by Schutte et al. (2011).

An intervention study designed to increase trait emotional intelligence (Kotsou et al., 2011) provides some preliminary information regarding the causal role of emotional intelligence in improving health. The intervention increased both self-reported trait emotional intelligence and observer reports of the emotional intelligence of participants (Kotsou et al., 2011). Accompanying the increase in emotional intelligence were lowered self-reported stress levels and better cortisol levels as measured by saliva assays (Kotsou et al., 2011). Another intervention intended to increase trait emotional intelligence (Nelis et al., 2011) resulted in increased self and other-reported trait emotional intelligence as well as in better mental health and fewer somatic complaints.

Dimensional Model Interpretation of Health. Competencies, such as the ability to perceive, understand and regulate one's emotions may facilitate mental, psychosomatic and physical health. Mood and anxiety disorders are characterized by maladaptive emotional states and other disorders, such as some personality disorders and impulse control disorders, are characterized by lack of awareness of emotion and inability to manage emotion (Schutte et al., 2007). Emotional intelligence may provide individuals with resilience in the face of adversity so that mental health problems are less likely to develop. Similarly, the awareness and understanding of emotional states that are components of emotional intelligence may make it more likely that individuals adaptively deal with life stressors resulting in fewer psychosomatic reactions. Finally, understanding and regulation of emotion may make it more likely that individuals engage in positive health behaviors, such as participation in sustained exercise programs.

The associations between emotional intelligence and mental, psychosomatic and physical health (Martins et al., 2010; Schutte et al., 2007) provide some support for the role of

emotional intelligence in supporting health. Intervention studies aimed at raising emotional intelligence that improved mental and physical health at the same time as raising emotional intelligence (Kotsou et al., 2011; Nelis et al., 2011) provide even more convincing evidence of the causal role of emotional intelligence in promoting health.

Future studies might investigate the association between emotional intelligence and aspects of health not previously examined as well as possible mediators between emotional intelligence and health. For example, positive affect may mediate some of the relationships between emotional intelligence and health. Higher emotional intelligence is associated with greater characteristic positive affect. Positive affect in turn is associated with better health (Lyubomirsky et al., 2005). Future experimental research might investigate which aspects of emotional intelligence have the greatest impact on mental, psychosomatic and physical health.

Research on Relationships. Both higher ability emotional intelligence and higher trait emotional intelligence tend to be associated with better interpersonal relationships (Lopes, Brackett, Nezlek, Schutz, Sellin, & Salovey, 2004; Lopes, Salovey, Cote, & Beers, 2005; Schutte et al., 2001). A meta-analysis of 22 analyses involving 1188 individuals found an overall association of $r=.23$ between emotional intelligence and romantic relationship satisfaction (Malouff, Schutte & Thorsteinsson, 2012). The association between trait emotional intelligence and relationship satisfaction was stronger than the association between ability emotional intelligence and relationship satisfaction.

An intervention study designed to increase trait emotional intelligence (Kotsou et al. 2011) provides information regarding the causal role of emotional intelligence in improving relationships. The intervention resulted in increased self-reported and observer-reported trait emotional intelligence as well as self-reported and other-reported relationship quality. Another intervention intended to increase trait emotional intelligence (Nelis et al., 2011) resulted in increased self and other-reported trait emotional intelligence as well as in better social functioning.

Dimensional Model Interpretation of Relationships. Emotional intelligence includes competencies relating to perceiving and understanding the emotions of others and helping others regulate their emotions. Thus, one would expect that individuals higher in emotional intelligence would be able to build and maintain better relationships with others. The association between trait and ability emotional intelligence with more relationship satisfaction and better quality relationships (Lopes et al., 2004; Malouff et al., under review; Schutte et al., 2001) provides some support for this proposition. Even stronger support comes from intervention studies aimed at increasing trait emotional intelligence that also resulted in better general relationship quality and better social functioning (Kotsou et al. 2011; Nelis et al., 2011).

Future research might examine characteristics or behaviors that mediate between emotional intelligence and relationship quality or satisfaction. For example, individuals higher in emotional intelligence may use certain communication styles that in turn are associated with greater mutual satisfaction with a relationship. Future experimental research might also examine the effect of increasing ability emotional intelligence and emotional self-efficacy on relationship quality.

Research on Work. Ability emotional intelligence is related to work outcomes such as higher supervisor ratings, more merit-based increases in salary and a higher job rank (Lopes, Cote, Grewal, Salovey, Kadis & Gall, 2006). Trait emotional intelligence is related to work

outcomes such as work performance, work commitment and job satisfaction (Carmeli, 2003). In a comprehensive meta-analysis of emotional intelligence and job performance, both higher ability emotional intelligence and higher trait emotional intelligence were related to superior job performance (Joseph & Newman, 2010). The association between ability emotional intelligence and performance was $r=.18$ across 10 samples and the association between trait emotional intelligence and performance was $r=.47$ across 9 samples. Emotional intelligence is associated with aspects of work-related leadership, including leadership style (Harms & Credé, 2010). For example, across 62 samples, the association between ability and trait emotional intelligence with transformational leadership was $r=.36$ (Harms & Credé, 2010).

An intervention intended to increase trait emotional intelligence (Nelis et al., 2011) resulted in increased self and other-reported trait emotional intelligence as well as in higher ratings of employability. An intervention designed to increase emotional self-efficacy (Kirk et al., 2011) resulted in increases in emotional self-efficacy and workplace civility.

Dimensional Model Interpretation of Work. Competencies comprising emotional intelligence may make it more likely that individuals have good work-related outcomes. For example, using emotion to facilitate cognitive processes may allow employees to more effectively solve work-related problems. Regulating emotions in the self and others may result in individuals creating more harmonious and productive relationships with co-workers. Associations between emotional intelligence and work-related outcomes and characteristics (Carmeli, 2003; Harms & Credé, 2010; Joseph & Newman, 2010; Lopes et al., 2006) provide some support for these propositions. Stronger evidence for the causal role of emotional intelligence comes from intervention studies aimed at raising trait emotional intelligence (Nelis et al., 2011) and emotional self-efficacy (Kirk et al., 2011) that found the respective interventions influenced work-related outcomes.

Future research might examine possible mediators and moderators that connect emotional intelligence and work outcomes. It may be that type of work is a moderator in that for certain types of work emotional intelligence is more beneficial than for other types of work, and that high emotional intelligence may even be a drawback for some types of work. For example, high emotional intelligence in a psychotherapist may be more important in allowing the therapist to bring about good outcomes for a client than high emotional intelligence might be for an engineer working on an intrinsically interesting project in bringing about a good outcome for the project. Future intervention research might also establish more firmly the causal role of emotional intelligence in determining various work outcomes.

Research on the Big Five Personality Characteristics. Conscientiousness, extraversion, emotional stability, agreeableness, and openness are the Big Five personality characteristics identified in many factor analytic studies, including cross cultural studies (McCrae & Costa, 1997, 1999). These characteristics are associated with a variety of life outcomes ranging from longevity, to mental health, to creativity (Costa & McCrae, 1996; McCrae & Costa, 1997, 1999; Malouff, Schutte & Thorsteinsson, 2005). A meta-analysis of associations of emotional intelligence with the Big Five characteristics (Joseph & Newman, 2010) found that higher levels of each of the characteristics were associated with both more ability emotional intelligence and more trait emotional intelligence. Across studies ranging from 58 to 60 samples for the five characteristics, r values ranged from .45 for the association between emotional stability and trait emotional intelligence to .12 for the association between conscientiousness and ability emotional intelligence.

In an intervention study designed to increase trait emotional intelligence, Nelis et al. (2011) found that the intervention increased trait emotional intelligence as well as extraversion, agreeableness and emotional stability.

Dimensional Model Interpretation of the Big Five Personality Characteristics. Emotional intelligence may be a partial foundation for the formation of personality characteristics. For example, being able to understand one's own and others' emotions may provide a platform for the development of agreeableness. The relationship between emotional intelligence and the Big Five personality characteristics has been much studied, with significant low to moderate associations found between a number of the Big Five characteristics and emotional intelligence (Joseph & Newman, 2010). An intervention study aimed to increase trait emotional intelligence that also increased the level of some of the Big Five characteristics (Nelis et al., 2011) provides support for the causal role of emotional intelligence in the development of these Big Five characteristics.

Future research might examine the role of emotional intelligence in the development of other individual-difference characteristics. Future research might also examine the possible reciprocal relationship between emotional intelligence and some of the Big Five characteristics. Strengthening of some of the Big Five characteristics might lead to increases in emotional intelligence as well as increases in emotional intelligence resulting in changes in Big Five characteristics.

CONCLUSION

The Dimensional Model of Emotional Intelligence provides a framework for discoveries already made regarding emotional intelligence and a guide for future research. The model delineates aspects of emotional intelligence, antecedents of emotional intelligence, and consequences of emotional intelligence. Much research can be placed into one of these dimensions. Some research spans dimensions of the model. For example, the finding that trait emotional intelligence mediates between mindfulness and subjective well-being (Schutte & Malouff, 2011) spans the dimensions of antecedents, aspects, and consequences.

Additional constructs can be incorporated into the dimensions of antecedents of emotional intelligence, aspects of emotional intelligence or consequences of emotional intelligence. For example, evolutionary psychology constructs might be incorporated in the antecedent dimension. Evolutionary psychology focuses on human characteristics that over time developed as a result of natural selection leading to optimal adaptation to natural and social environments. The genetic tendencies towards emotional competencies comprising emotional intelligence may have been shaped in part through such evolutionary processes.

Researchers have only recently begun conducting applied experimental research on interventions to increase emotional intelligence. These types of studies may soon increase in number because of their potential for practical benefits and because of the promising results so far. Intervention studies can provide more information regarding causal antecedents of emotional intelligence, the most effective ways of drawing on antecedents to maximize gains in emotional intelligence, and ways of optimizing emotional intelligence to facilitate beneficial life outcomes. By including possible mediators in intervention studies, researchers can help clarify the mechanism of effects. Much remains to be explored regarding the nature

of aspects of emotional intelligence and the antecedents and consequences of emotional intelligence.

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