

Emotional Intelligence – A Personal Resource for Employees who Work With People: Processes and Implications

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Summary

Previous research indicates that emotional intelligence (EI) is a personal resource for employees who work with people. Emotionally intelligent people have repeatedly been found to perform better on the job and to be less likely to experience burnout than people with low emotional abilities. However, the mechanisms that underlie such well-established relations are largely unknown. Furthermore, testing the supposed potential of EI in the context of personnel selection has been widely neglected in previous studies. To address some of the existing gaps in this research, I wanted to examine whether EI would have the potential to operate as a personal resource for people working in and applying for jobs that are associated with emotional demands.

The present dissertation consists of five parts. Chapter 1 provides an introduction to the construct of emotional intelligence and explains the relevance of EI in the context of working with people. At the end of Chapter 1, I present an overview of my empirical research on EI by presenting the central research questions that are revisited in the subsequent chapters.

Chapter 2 concerns the processing of emotional signals as a function of EI. Working with people is characterized by frequent and sometimes even conflict-laden interactions with clients. Previous research has indicated that EI is positively related to the quality of social interactions (e.g., Lopes et al., 2004). As emotions convey information about inner states, thoughts, and intentions (see Keltner & Haidt, 1999), the accurate appraisal of others' emotions may help employees to act successfully in their social interactions with clients. For this reason, I examined the relation between EI and nonverbal dominance, which can be considered to be an adaptive strategy of emotion appraisal. As expected, emotionally intelligent people, especially those high in the ability to understand emotions, relied more strongly on the nonverbal part of emotion-relevant information when appraising others' emotional states than people low on EI.

In Chapter 3, I take up existing gaps in research on the indirect effects of EI on work-related outcomes. Understanding the relation between teacher EI and student misconduct as an indicator of poor job performance for teachers was the goal of the research that is presented in this chapter. The results showed that teachers' self-perceived EI was negatively related to student misconduct and that this relation was mediated by teachers' tendency to attend to student needs. Furthermore, I investigated

processes that may underlie the relation between teachers' perceived abilities to appraise emotions and burnout. Results showed that both an intrapersonal (i.e., proactive coping) and an interpersonal process (i.e., attending to student needs) were mediators of the relation between the self-perceived ability to appraise one's own emotions and burnout as well as between the self-perceived ability to appraise others' emotions and burnout.

Chapter 4 concerns the relevance of EI in the context of personnel selection. Although a large number of studies have pointed to the potential of EI in personnel selection, research in real-life selection contexts has been scarce so far. Thus, the aim of the study that is presented in this chapter was to examine whether the EI of people who applied for the job of a flight attendant would predict aptitude ratings. There was a trend toward a positive direct effect of applicants' ability to perceive emotions on the aptitude ratings. Furthermore, applicants' abilities to understand and regulate emotions exerted indirect effects on the aptitude ratings through observer ratings on their job-relevant competencies.

An integration of and a conclusion about my research on EI in the context of working with people is shown in Chapter 5. The main research findings are summarized by providing answers to the central research questions of my dissertation. In the overall discussion, I take up the processes that seem to underlie the effects of EI on job performance and burnout and elaborate on the transferability of these processes to other professions. Furthermore, I point to the uniqueness of the EI facet emotion understanding and discuss possible maladaptive effects of an exaggerated EI. Following the general limitations and suggestions for future research, practical implications with regard to EI training and personnel selection are illustrated and an overall conclusion is drawn.

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1. Introduction: Emotional Intelligence in the Context of Working With People¹

1.1 What Is Already Known? The Relevance of EI in the Workplace

“What distinguishes top performers in every field in every industry sector, is not high IQ or technical expertise, it is Emotional Intelligence. Having the right intellectual ability and technical know-how is the baseline or threshold: it may guarantee average-ness, but it will not guarantee greatness.”

(Chris Watkin, 2000, p. 91)

Research suggests that cognitive intelligence predicts job performance better than any other psychological concept (e.g., Schmidt & Hunter, 1998). However, there is still a great amount of variance in job performance that cannot be explained by cognitive intelligence. As the statement by Watkin (2000) illustrates, it is sometimes even argued that cognitive intelligence constitutes only a foundation for successful functioning at work.

In recent years, emotional intelligence has gained much interest as an additional predictor of several work-related outcomes. Enormous public interest in the construct was induced by Daniel Goleman’s (1995) bestselling book “Emotional intelligence: Why it can matter more than IQ.” As indicated by the title, the author made extraordinary propositions about EI. He claimed that EQ (i.e., Emotional Intelligence Quotient) could account for success “in any domain of life” (Goleman, 1995, p. 36); in some cases, over and above IQ. Although these strong assertions remained nearly unsubstantiated, subsequent studies have suggested that EI constitutes a personal resource in the context of work (for a review, see Brackett, Rivers, & Salovey, 2011). For example, EI has been found to be positively associated with job performance (e.g., Côté, 2006), job satisfaction (e.g., Brackett, Palomera, Mojsa-Kaja, Reyes, & Salovey, 2010), as well as with mental and physical health (e.g., Zeidner, Matthews, & Roberts, 2012). Supporting Watkin’s (2000) proposition, there is still evidence that EI can

¹ For reasons of style and clarity, the formatting of the dissertation differs in some aspects (i.e., line spacing, headings, and indentation) from the guidelines of the American Psychological Association (i.e., APA, 6th ed.).

predict job performance over and above cognitive intelligence and personality (for a meta-analytical review, see O'Boyle, Humphrey, Pollack, Hawver, & Story, 2011).

My dissertation is aimed at closing some gaps in the research on the potential processes that underlie well-established relations between EI and work-related outcomes.

Furthermore, I will dwell on the relevance that EI might have in the context of personnel selection. At the end of this chapter, I will provide a general overview of my empirical research on EI in the context of working with people. But before that, I will provide an introduction to the construct of emotional intelligence and related aspects. In detail, I will elaborate on the importance of emotions at work; introduce the concept, the underlying models, and the measurement of EI; and characterize emotional labor as a specific job demand of working with people.

1.2 Emotions at Work

The importance of emotions at work has long been neglected (for a review, see Ashforth & Humphrey, 1995), and dysfunctions in emotions are actually quite prominent such that emotions have been considered to negatively impact rather than to promote job performance. For example, the emotion of love as producing dysfunctional behavior in the context of office romances has been found to have a negative impact on work group effectiveness (e.g., Mainiero, 1986).

More recently, there has been a rethinking of emotions at work. Emotions are now even considered to be functional with regard to job performance. According to Ashforth and Humphrey (1995), emotions are inextricably linked to task activity. Mayer and Salovey (1997), who first introduced the concept of emotional intelligence into scientific psychology, viewed emotions as “potentially contributing to thought rather than disorganizing it” (p. 9).

Emotions can be considered to be core elements of social interactions (see Keltner & Haidt, 1999). Thus, working with people, which is the focus of my dissertation, is inconceivable without emotions. Emotions play different roles in social interactions (see Keltner & Haidt, 1999). For my research objectives, interpersonal functions at individual and dyadic levels were of most interest.

First, appraisal processes provoke emotions in the individual, and these emotions in turn contain information about changing social events. Second, certain physiological and

cognitive processes that accompany emotions prepare the individual to act adaptively in social interactions. At the dyadic level, emotions are communicated through verbal and nonverbal channels. Emotional expressions convey information about an interaction partner's emotions, beliefs, and intentions. This information, in turn, can help the individual to coordinate social interactions adaptively. To sum up, emotions evoked in the individual and expressed by the interaction partner convey information and consequently provoke behavior in the individual, and such emotions can shape social interactions at work in a meaningful way.

1.3 The Construct of Emotional Intelligence (EI)

“(D)efinitions, claims, measures, and approaches are as diverse as they can possibly be.” (*Mayer, 2006, p. 4*)

Although the historical roots of the construct can be traced back to the 19th century (see Mayer, 2006), scientific research on EI began in the early 1990s (see Mayer, Salovey, & Caruso, 2000) when Salovey and Mayer (1990) introduced the first formal theory of EI. They defined EI as “a set of conceptually related mental processes involving emotional information” (Salovey & Mayer, 1990, p. 190). Several theoretical contributions emerged in the following years, and EI developed into an empirical research area.

1.3.1 Models of EI

There is no uniform definition of what EI is, and thus the EI concept constitutes a “fuzzily defined area” (Mayer, 2006, p. 8). The only thing EI definitions have in common is that they “all describe one or more aspects of personality” (Mayer, 2006, p. 9). Conceptualizations of EI show clear differences that depend on the underlying model. Mayer and colleagues (2000) suggested that researchers distinguish between ability and mixed models of EI. The competing models differ according to whether they focus stringently on mental abilities or broaden the concept by mixing mental abilities with personality attributes.

Ability EI model

In the ability model (Mayer & Salovey, 1997), EI was conceptualized as a form of general intelligence consisting of specific interrelated abilities and distinct from desirable personality traits. Salovey and Mayer (1990) defined emotional intelligence

originally as “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 action” (p. 189). As the initial definition was vague and neglected the ability to think about emotions, Mayer and Salovey (1997) proposed the following corrected definition of EI: “*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 regulate emotions to promote emotional and intellectual growth*” (p. 10).

The four branch model of emotional intelligence

According to the four branch model, EI comprises four fundamental abilities, with perceiving emotions constituting a basic psychological process and the ability to regulate emotions located at the highest level of complexity. The dimension *perceiving emotions* includes the ability to identify one’s own emotions and those of others as well as to express emotions accurately. *Using emotions* concerns the fact that emotions can assist thinking: Emotions direct attention toward important information, can be generated in order to help a person be better understood, and can help people to adopt multiple perspectives. Furthermore, certain emotional states facilitate work and reasoning. People high in *understanding emotions* label emotions easily, recognize similarities and differences between emotions, and are familiar with complex emotions as well as transitions from one emotion to another. Moreover, they are able to extract information about relations that go along with emotions. Finally, the EI dimension *regulating emotions* concerns the conscious management of one’s own and others’ emotions. People high in this branch are open to feelings, can engage in or detach from emotions, and can monitor them.

The cascading model of emotional intelligence

Similar to Mayer and Salovey (1997), in the cascading model of EI proposed by Joseph and Newman (2010), the branch at the lowest level concerns the ability to perceive emotions and the branch at the highest level concerns the ability to regulate emotions; however, the ability to use emotions to facilitate thought was not included. Joseph and Newman (2010) argued that people who are able to perceive emotions subsequently have a larger and more accurate base of emotional information, which, in the second step, enables them to use their knowledge about emotions to accurately appraise

emotions and, in the third step, to show appropriate responses because they are able to consciously regulate their emotions.

Overlap between emotional intelligence and social intelligence

As Salovey and Mayer (1990) introduced EI as a part of social intelligence (SI) in their initial work, there is reason to believe that the two concepts overlap to some extent. Similar to the ability EI model, social intelligence is conceptualized as comprising mental abilities (Thorndike, 1920). However, there is some evidence that EI is not just “old wine in new barrels” (for a critical review, see Furnham, 2006). From a theoretical point of view, it has been argued that EI is broader than SI because it includes intrapersonal emotions that are thought to be important for personal growth (Mayer et al., 2000). On the other hand, EI is more focused than SI because EI is primarily related to emotional aspects of interpersonal problems. Empirically, ability EI has been found to be only moderately related to social competence (e.g., Márquez, Martín, & Brackett, 2006).

Mixed EI models

Conceptualizations of EI that underlie the so-called mixed models are much broader. They not only include mental abilities but explicitly involve socially desirable personality traits. In the field of mixed EI conceptualizations, the Bar-On model of EI (Bar-On, 1997) has evoked much attention in research (see Mayer, 2006). On the basis of the question “*Why are some individuals more able to succeed in life than others*” (see Mayer et al., 2000, p. 402), Bar-On (1997) identified five broad dimensions that are further divided into subscales: (a) intrapersonal skills (comprising self-regard, emotional self-awareness, assertiveness, self-actualization, and independence), (b) interpersonal skills (comprising empathy, social responsibility, and interpersonal relationships), (c) adaptability (comprising problem solving, reality testing, and flexibility), (d) stress management (comprising stress tolerance and impulse control), and (e) general mood (comprising happiness and optimism). Whereas adaptability, for example, primarily represents mental abilities, interpersonal skills primarily pertain to personality characteristics.

As mixed EI models do not clearly and exclusively refer to aspects of emotion and intelligence, it is often recommended that the term emotional intelligence be reserved for the ability EI model. For example, Mayer (2006) suggested that the term “measures

of self-judged personality” (p. 20) be used for self-reports that concern not only emotional abilities but also concepts of personality. Even Bar-On (2006), in reference to his own model, reflected that “it is more accurate to refer to (...) ‘emotional-social intelligence’” (p. 14).

Which type of emotional intelligence am I focusing on?

To conclude, the concept of ability EI is much more narrowly defined than mixed EI. Ability EI comprises specific mental abilities in processing emotional information and is conceptually separate from personality. Mixed models of EI have been repeatedly criticized, mostly because of their strong overlap with established personality traits. Thus, I based my dissertation on the ability model of emotional intelligence (Mayer & Salovey, 1997; Salovey & Mayer, 1990).

1.3.2 Measurement of EI

The two EI models involve different forms of measurement. A methodological distinction between trait EI and ability EI was proposed by Petrides and Furnham (2001). Trait EI is measured with questionnaires and refers to a constellation of “behavioral dispositions and perceived (emotional) abilities” (Petrides & Furnham, 2001, p. 426). By contrast, ability EI refers to emotional abilities that are measured with performance-based tests. As my dissertation was based on the ability EI model, I focused on the measurement of the corresponding construct.

Performance-based tests of ability EI

Similar to traditional intelligence, the gold standard for measuring emotional abilities is to use a performance-based test. The Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Mayer, Salovey, & Caruso, 2002a), for example, is a widely used problem-based measure that is related to Mayer and Salovey’s (1997) four branch model of EI. The test consists of 144 items that are divided between eight tasks, two for each branch. Answers to test items are compared with a criterion of correctness. The consensus scoring method relates the participant’s answers to the answers of a normative sample. The expert scoring method is based on a sample of 21 members of the International Society for Research on Emotions (ISRE). The two scoring methods were found to correlate with each other (Mayer, Salovey, & Caruso, 2004), thus alleviating concerns that high MSCEIT scores represent the norm rather than high EI.

The German version of the MSCEIT (Mayer-Salovey-Caruso Test zur Emotionalen Intelligenz) was published by Steinmayr, Schütz, Hertel, and Schröder-Abé (2011a). The test has reasonable to very good reliabilities at the full-scale level, at branch levels, and at the task level of the perceiving emotions branch. The four-factor structure of the test was found to be congruent with the theoretical model (Steinmayr, Schütz, Hertel, & Schröder-Abé, 2011b). The test authors reported a full-test split-half reliability of $r_{12} = .92$ for consensus scoring and $r_{12} = .91$ for expert scoring. The test-retest reliability of the full test over a 4-month period was $r_{tt} = .80$; albeit, this result was reported by the test authors as provisional. Thus, it has to be treated with caution because the default rate of the sample was relatively high. In accordance with the ability model, the German version of the MSCEIT was found to be only moderately related to some of the Big Five factors (Steinmayr et al., 2011b).

Self-report measures of ability EI

There are self-report measures that map directly onto the mental ability concept of EI (Mayer & Salovey, 1997; Salovey & Mayer, 1990). They are intended to assess a person's actual knowledge about his or her own ability to process emotional information (i.e., emotional self-efficacy; see Dacre Pool & Qualter, 2012). The Wong and Law Emotional Intelligence Scale (WLEIS; Wong & Law, 2002), for example, is a self-report measure for research purposes based on Salovey and Mayer's (1990) definition of ability EI. The measure contains 16 items intended to assess the following individual aspects of self-perceived EI: (a) Self-emotion appraisal, (b) Other-emotion appraisal, (c) Use of emotion, and (d) Regulation of emotion. The four-factor structure was supported by a confirmatory factor analysis (Wong & Law, 2002). According to the authors, Cronbach's alpha coefficients for the four dimensions ranged from .83 to .90. The scale was found to have discriminant validity with Big Five personality dimensions and incremental validity in the prediction of life satisfaction over and above the Big Five (Wong & Law, 2002).

Observer-report of ability EI

Observer-report is an alternative approach to EI that is based on the assumption that EI is reflected in behavior (see Mayer, 2006). This approach is sometimes used in organizational (e.g., in the context of 360 degrees of feedback) and pedagogical (e.g., in the form of parent-report) settings. The Emotionale-Kompetenz-Fragebogen (EKF;

Rindermann, 2009; Engl.: Emotional Competence Questionnaire), for example, uses the self- and other-report approach to assess a person's emotional abilities.

Physiological measurement of ability EI

Thus far, physiological parameters have been widely neglected as indicators of emotional abilities. However, recent studies have shown that the neural efficacy phenomenon, for example, is not restricted to the cognitive ability domain. Frontal EEG activity was found to reflect emotion perception (e.g., Freudenthaler, Fink, & Neubauer, 2006) and emotion regulation abilities (e.g., Dennis & Solomon, 2010). Furthermore, results of a recent study by Tolegenova, Kusutbayeva, and Matthews (in press) showed that mood repair (i.e., a facet of self-perceived ability EI) predicted frontal EEG responses of participants while they watched an emotionally arousing video clip. Despite such promising findings, the physiological measurement of EI is still in the very early stages of development. Relations between physiological parameters and emotional abilities seem to be complex. Thus, much more research is needed, for example, on potential moderators such as sex, task type, or ability components (see Freudenthaler et al., 2006).

The discrepancy between performance-based and self-perceived ability EI

Performance-based tests and self-report measures of ability EI have been found to be correlated at a relatively low level (for a meta-analytical review, see Joseph & Newman, 2010). Thus, the two approaches are supposed to tap different aspects of the construct (Joseph & Newman, 2010; Van Rooy, Viswesvaran, & Pluta, 2005). Problem-based EI measures assess a person's performance on problem-solving tasks involving emotion. Accordingly, test scores provide information on a person's maximal performance in a laboratory context. However, performance-based EI measures do not assess people's actual tendency to use available knowledge and to implement emotion regulation strategies in everyday emotionally arousing situations. This is why some critics (e.g., Zeidner, Matthews, & Roberts, 2001) have argued that performance-based tests primarily measure the available knowledge and skills involved in the processing of emotional information.

Self-reports, by contrast, provide information about a person's typical performance in various realms of life. They are based on a person's subjective experience in everyday

interactions. In contrast to performance-based tests, self-reports can be affected by a participant's self-concept and impression management (see Mayer et al., 2000).

Joseph and Newman (2010) argued that self-report measures of EI “address motivation rather than ability” (p. 71). Thus, the term self-perceived ability EI is sometimes deemed inappropriate (e.g., Mayer, 2006). An alternative concept is emotional competence, which also focuses on people's typical performance in everyday life but explicitly includes the assumption that typical performance depends on people's attitudes toward their feelings (Rindermann, 2009). Accordingly, emotional competence is considered a disposition that helps people to act successfully in emotionally charged situations. To conclude, the two approaches provide different information about people's emotional abilities, each relevant to a specific purpose. In my dissertation, both a performance-based test and a self-report measure of ability EI were used, depending on the particular aim of the studies.

1.4 Emotional Labor

In recent research, emotional intelligence has proven to be more relevant to some occupations than to others. Joseph and Newman (2010), for example, reported a positive relation between EI and job performance for people in high emotional labor jobs. By contrast, for people in low emotional labor jobs, the authors found no or even negative relations between EI and job performance.

Emotional labor is a fundamental aspect of working with people (for a review, see Zapf, 2002); it was defined as the “effort, planning, and control needed to express organizationally desired emotions during interpersonal transactions” (Morris & Feldman, 1996, p. 987). There are two strategies for conforming to the emotion display rules of the organization (Hochschild, 1979, 1983): A person can merely adapt his or her own emotional expressions (i.e., surface acting) or modify his or her own inner feelings in order to express the required emotion (i.e., deep acting). An alternative strategy of emotional labor is authenticity, which is the spontaneous expression of expected but naturally felt emotions (Ashforth & Humphrey, 1993; Diefendorff, Croyle, & Gosserand, 2005).

Functional as well as dysfunctional aspects are associated with emotional labor. Expressing the required emotions at work can facilitate task effectiveness by shaping interactions to render them more predictable and to avoid interpersonal problems

(Ashforth & Humphrey, 1993). However, emotional dissonance can occur when a person expresses an organizationally desired emotion that is not genuinely felt (Morris & Feldman, 1996; Zapf, 2002). The discrepancy between expressed emotions and inner feelings can impair employees' well-being. Surface acting was found to be positively related to burnout (e.g., Brotheridge & Grandey, 2002; Montgomery & Panagopolou, 2006; Näring, Briët, & Brouwers, 2006) and negatively related to job satisfaction (Chen, Sun, Hu, Huo, & Zhong, 2012; Grandey, 2003). By contrast, deep acting appears to be a more effective strategy of emotional labor as it was found to be positively related not only to employees' job satisfaction (Grandey, 2003) but to customer satisfaction (Kernbach & Schutte, 2005).

Emotional labor jobs are primarily located in the service sector and in social professions. The prototypical high emotional labor jobs that I focused on in my dissertation consisted of the jobs of flight attendant and teacher (see Chiang, 2009; Hochschild, 1983). Both professions are characterized by frequent interactions with clients (i.e., the people who interact with the employee; see Zapf, 2002). However, the comprehensive requirements to show appropriate emotions are associated with different organizational display rules. Whereas flight attendants are required to smile nearly invariably during their interactions with passengers, teachers in their role as educators are supposed to express positive and negative emotions.

1.5 What Is Still Missing? Existing Gaps in Research and the Questions in this Dissertation

In the next three chapters, I will present my empirical research on EI in the context of working with people. To address some of the existing knowledge gaps, I wanted to examine how EI might help people to act successfully in social interactions and thereby prevent or quickly counter the stressors that may result from the demands of high emotional labor jobs. In detail, I wanted to provide answers to the following questions:

Do emotionally intelligent people rely more strongly on the nonverbal part of emotion-relevant information when appraising others' emotional states than their less emotionally intelligent counterparts? (Chapter 2)

One reason why employees high in EI can interact with clients in an adaptive manner might be that they appraise their clients' emotional states more accurately than people low in EI. Nonverbal dominance can be considered an effective strategy for processing the emotional signals sent by others. Thus, in the study presented in Chapter 2, I wanted to empirically investigate whether EI would be positively related to nonverbal dominance.

Why do emotionally intelligent teachers perform better on the job than their less emotionally intelligent counterparts? (Chapter 3.1)

As adumbrated at the beginning of this chapter, a large number of studies have shown that EI is related to several work-related outcomes. For example, EI has repeatedly been found to be positively related to job performance and negatively related to burnout. However, research on the processes that underlie such well-established relations is still in its early stages. To address some of the knowledge gaps, I examined the indirect effects that EI might have on job performance and burnout in a sample of teachers.

Chapter 3.1 concerns the relation between EI and job performance. In the study presented in this chapter, I wanted to examine potential indirect effects by using student misconduct as an indicator of poor job performance for teachers. I hypothesized that the interpersonal regulation strategy of attending to student needs would contribute to the expected negative effect of teacher EI on student misconduct.

Why are emotionally intelligent teachers less likely to experience burnout than those low in EI? (Chapter 3.2)

In the second part of Chapter 3, I focused on the indirect effects that EI might have on burnout. In the study presented in this chapter, two antecedent-focused coping strategies (i.e., attending to student needs and proactive coping) were examined as potential processes underlying the expected negative effect of teacher EI on burnout.

Does applicants' EI predict aptitude ratings in a high emotional labor job? And furthermore, which processes might mediate the expected positive relations?

(Chapter 4)

On the basis of the great number of studies that have indicated that EI can help people perform their high emotional labor jobs, considering EI as an aspect in personnel selection appears promising. Empirical studies on the potential of measuring applicants' EI designed in real-life selection contexts are relatively scarce, though. To address existing gaps in this research area, Chapter 4 concerns the relevance EI might have in the context of personnel selection. In the study presented in this chapter, I wanted to examine whether and how the emotional abilities of people who applied for the job of a flight attendant would predict aptitude ratings in the context of personnel selection. It was hypothesized that ratings of job-relevant competencies would mediate the expected positive effect of applicants' EI on the aptitude ratings.

2. Processing the Emotion-Relevant Information of Others as a Function of Emotional Intelligence

2.1 The Relevance of Accurate Emotion Appraisal for the Quality of Social Interactions

Working with people is characterized by frequent social interactions. Previous studies have repeatedly shown that ability EI is positively related to the quality of social interactions (e.g., Brackett, Mayer, & Warner, 2004; Lopes et al., 2004; Schröder-Abé & Schütz, 2011). For example, employees' EI was found to be associated with customer orientation (Rozell, Pettijohn, & Parker, 2004). Generally speaking, emotionally intelligent employees seem to engage more successfully in social interactions with clients than their less emotionally intelligent counterparts. As already explained in Chapter 1, emotional communication is an important part of social interaction. Emotions sent by clients convey important information that can be used to shape social interactions in an adaptive manner (see Keltner & Haidt, 1999). Previous research (e.g., Ciarrochi, Chan, & Bajgar, 2001) has indicated that emotionally intelligent people can more accurately appraise emotions than others. One reason might be that they focus on the nonverbal parts of emotion-relevant information, and these tend to be more authentic than the verbal parts. Thus, the study presented below was aimed at examining whether EI would be positively related to nonverbal dominance.

2.2 On the Relation between EI and Nonverbal Dominance²

2.2.1 Emotional Communication

The exchange of information takes place at both verbal (expressed in words) and nonverbal (e.g., facial expressions, gestures, and tone of voice) levels. The relation between verbal and nonverbal communication is mostly synergistic, meaning that nonverbal cues emphasize the verbal part of the message. However, in some

² Previous versions of parts of this chapter were published as a journal article: Jacob, H., Kreifelts, B., Brück, C., Nizielski, S., Schütz, A., & Wildgruber, D. (2012). Nonverbal signals speak up: Association of perceptual nonverbal dominance and emotional intelligence. *Cognition & Emotion*, 27, 783-799. doi:10.1080/02699931.2012.739999

conversational situations (e.g., when social rules prohibit the expression of “true feelings”), nonverbal information may in fact contradict the verbal part of the message. The same occurs when irony is used as a rhetorical device.

2.2.2 Nonverbal Dominance

Confronted with conflicting verbal and nonverbal information, people tend to give more weight to the nonverbal part of the message (Argyle, 1975; Mehrabian, 1972). A possible explanation for this perceptual nonverbal dominance (i.e., the decoder’s tendency to rely more strongly on nonverbal information than on verbal information) in the appraisal of others’ emotional states might be the decoder’s knowledge that faking nonverbal expressions entails more effort than faking the verbal part of the message. This is why some information that is hidden by the verbal channel may be unintentionally expressed through “leaky” nonverbal channels (Ekman & Friesen, 1969; Rosenthal & DePaulo, 1979). In other words, whereas most individuals may succeed in hiding their true emotional states or intentions when it comes to the words they speak, nonverbal signals may be harder to control. Accordingly, the nonverbal channel can often prove to be the more informative one when it comes to deciphering the “truth” behind spoken words. With regard to indicators of deception, for example, liars have been found to show increased general nervousness and tension and to speak with a higher pitch (for a review, see DePaulo et al., 2003). Consequently, focusing on nonverbal signals might entail benefits to the individual in social interactions. This idea is supported by research indicating that the ability to identify nonverbal emotional cues is related to successful social outcomes (e.g., Lopes et al., 2004).

2.2.3 The Current State of Research

In previous studies, self-perceived EI was found to be positively related to the ability to identify emotions in photographs of faces (Ciarrochi et al., 2001). Furthermore, participants with higher self-perceived EI were faster at identifying morphed emotional facial expressions with respect to the displayed emotions (Petrides & Furnham, 2003). Using muted clips of dynamic facial expressions, Edgar, McRorie, and Sneddon (2012) found significant positive correlations between self-perceived EI and the reliability of fear decoding as well as between EI and overall emotion intensity rating scores.

Although the aforementioned studies found evidence that EI is related to performance in emotion decoding, it is still unclear whether the decoder's emotional abilities are associated with his or her nonverbal dominance in emotion perception. Beyond that, all of the studies cited above have addressed the decoding of only static and dynamic facial expressions but not the perception of any other nonverbal cues. And further, emotional abilities were only self-perceived but not assessed with performance-based tests.

2.2.4 The Present Study

Consequently, the present study was aimed at quantifying the impact of verbal and nonverbal cues on the appraisal of others' emotional states. To this end, we tried to increase the ecological validity of the stimulus material as compared with former studies by employing dynamic audiovisual recordings of a person. Earlier studies comprised combinations of static photographs and written sentences (e.g., Friedman, 1978, 1979), combinations of static photographs and dynamic audio recordings of single words (e.g., Mehrabian & Ferris, 1967), or dynamic audiovisual material without verbal messages that clearly expressed the emotional state of the sender (e.g., Argyle, Alkema, & Gilmour, 1971; Argyle, Salter, Nicholson, Williams, & Burgess, 1970). Beyond an analysis of statistical measures at the group level, we intended to assess the relative nonverbal dominance in emotion perception at the individual level (individual nonverbal dominance index; INDI). Furthermore, we examined whether the INDI would be associated with the decoder's emotional abilities.

Taking into consideration the results of Austin's (2005) study, which showed a positive relation between EI and performance on an emotion task only for measures based on the ability model of EI, focusing on ability EI (rather than mixed EI) appeared to be adequate for the aims of this study. As we were interested in participants' performance on emotion problem-solving tasks, we decided to assess EI with a performance-based test; namely, the Mayer-Salovey-Caruso Emotional Intelligence Test (German version of the MSCEIT; Steinmayr et al., 2011a).

We hypothesized, in line with previous studies, that nonverbal cues would have a stronger impact than verbal cues on the perception of the sender's emotional state. Given that nonverbal emotional expressions have been shown to convey more authentic information than verbal expressions, the decoder's tendency to rely more on nonverbal information presumably allows for more successful social interactions. Therefore, we

expected that emotionally intelligent decoders would show a stronger nonverbal dominance than decoders with lower emotional abilities. More specifically, the individual tendency to focus attention on the nonverbal channel was predicted to be related to the ability to correctly perceive nonverbal signals. Thus, on the basis of Salovey and Mayer's (1990) EI definition, we hypothesized that decoders scoring high on measures pertaining to the perceiving emotions branch would be more sensitive to nonverbal signals, and as a result, would exhibit a stronger nonverbal dominance than decoders with a lower ability to perceive emotions. In addition, complex emotional signals (e.g., irony, sarcasm, deception) and signals conveying mixed feelings present particular challenges to the decoder: For instance, if the information expressed at the verbal level conflicts with the information from the nonverbal level, the ability to understand the meaning behind the contradictory message is required. The decoder of such messages needs to be able to attend to both the verbal and nonverbal aspects of the message and to assign weight to them appropriately. This process depends on the understanding that nonverbal cues reflect the emotional state more authentically than verbal messages. Therefore, we predicted that decoders scoring high on measures of understanding emotions would show a stronger nonverbal dominance than decoders with lower abilities in this branch. In sum, we hypothesized that emotionally intelligent decoders, especially those high in perceiving and understanding emotions, would primarily focus on nonverbal signals and rely more strongly on the corresponding nonverbal information. This reasoning led us to propose:

Hypothesis 1: The individual nonverbal dominance index (INDI) will be positively related to total EI.

Hypothesis 1a: The individual nonverbal dominance index (INDI) will be positively related to the first branch of the MSCEIT, perceiving emotions.

Hypothesis 1b: The individual nonverbal dominance index (INDI) will be positively related to the third branch of the MSCEIT, understanding emotions.

With regard to the branches using and managing emotions, we did not have specific hypotheses and therefore examined these two EI dimensions in an exploratory manner.

Beyond that, we hypothesized that emotionally intelligent decoders, especially those high in perceiving and understanding emotions, would benefit from their respective skills. The possible behavioral benefit was operationalized with the help of participants'

reaction times. This approach was chosen because previous studies have demonstrated significant relations between EI and reaction times. As already mentioned above, Petrides and Furnham (2003) reported that participants with higher self-perceived EI were faster at identifying morphed emotional facial expressions with respect to the displayed emotions. Moreover, participants with higher total EI showed lower processing times on a social exchange reasoning task (Reis et al., 2007). On the basis of these results, we predicted that emotionally intelligent decoders, especially those high in perceiving and understanding emotions, would be faster at identifying the emotional state of the sender. Thus, we proposed:

Hypothesis 2: Total EI will be negatively related to individual mean reaction times.

Hypothesis 2a: The first branch of the MSCEIT, perceiving emotions, will be negatively related to individual mean reaction times.

Hypothesis 2b: The third branch of the MSCEIT, understanding emotions, will be negatively related to individual mean reaction times.

With regard to the branches using and managing emotions, we did not have specific hypotheses and therefore examined these two EI facets in an exploratory manner.

Furthermore, we operationalized the ability to manage mismatches between verbal and nonverbal displays of emotions by the differences in reaction times between emotionally incongruent and congruent conditions. The reaction times were then calculated by subtracting the baseline scores from the reaction times for emotionally incongruent trials. We predicted that emotionally intelligent decoders would resolve existing emotional incongruencies more quickly and that this would be reflected in smaller reaction time differences between emotionally incongruent and congruent conditions. Consequently, we expected that differences in reaction times between emotionally incongruent and congruent conditions would be negatively related to total EI as well as to perceiving emotions and understanding emotions. Thus, we proposed:

Hypothesis 3: Total EI will be negatively related to reaction time differences.

Hypothesis 3a: The first branch of the MSCEIT, perceiving emotions, will be negatively related to reaction time differences.

Hypothesis 3b: The third branch of the MSCEIT, understanding emotions, will be negatively related to reaction time differences.

With regard to the branches using and managing emotions, we did not have specific hypotheses and therefore examined these two EI facets in an exploratory manner.

2.2.5 Method

Participants

Forty healthy students (20 females, 20 males; $M_{\text{age}} = 23.4$ years, $SD_{\text{age}} = 2.2$) participated voluntarily in the study. All participants were native speakers of German and were right handed, as assessed with the Edinburgh Handedness Inventory (Oldfield, 1971). They reported normal hearing and normal or corrected-to-normal vision. None of the participants reported a history of neurological or psychiatric illnesses or a history of substance abuse. They stated that they were currently not taking any medication. The study was conducted according to the Code of Ethics of the World Medical Association (Declaration of Helsinki). The protocol of human investigation was approved by the local ethics committee. All participants gave their written informed consent prior to inclusion in the study and afterward received a small financial compensation for their participation.

Stimuli

The stimuli were videos of actors' faces. Ten professional actors spoke six short German sentences expressing the emotional state of the sender on a verbal level. The verbal contents were neutral, positive, or negative (e.g., "Ich fühle mich gut [I feel good]"). The actors' nonverbal expressions (countenance and tone of voice) were neutral, positive (happiness), or negative (anger). The intensities of verbal and nonverbal information were graded in two steps (positive, highly positive, negative, highly negative).

Generation of the stimulus material

The following sections provide a stepwise overview of the generation of stimulus material comprising five stages: (a) sentence selection (Pre-Study 1), (b) recording of the stimulus material, (c) editing of the stimulus material, (d) pretesting of the stimulus material (Pre-Studies 2 and 3), and (e) selection and compilation of the final set of stimulus material.

Sentence selection (Pre-Study 1)

The first pre-study was conducted to select appropriate self-referential statements. A sample of 32 participants (16 females, 16 males; $M_{\text{age}} = 23.6$ years, $SD_{\text{age}} = 2.5$) rated an initial set of 94 written sentences concerning their valence and frequency of use in daily life. The valence of the sentences was rated on a 9-point Self-Assessment Manikin scale (SAM; Bradley & Lang, 1994) for valence (1 = *highly negative*; 5 = *neutral*; 9 = *highly positive*). In order to avoid effects attributable to the arrangement of response alternatives, the scale was reversed (i.e., the positive and the negative poles of the scale were flipped horizontally) for half of the participants. The frequency of use of the sentences was rated on a 9-point scale (1 = *never* to 9 = *very often*). Answers were collected by means of two paper-and-pencil questionnaires. The selection of the final sentences was based on two selection criteria: One criterion was to choose sentences with valence ratings that provided five distinct verbal valence categories (highly negative, negative, neutral, positive, highly positive). The other criterion was to choose only sentences that had a frequency-of-use rating greater than 5. Using this selection method, six final sentences were chosen (see Table 1). Based on the results of the first pre-study, the verbal valence values of the five verbal valence categories were calculated (highly negative, negative, neutral, positive, highly positive; see Table 2).

Recordings of the stimulus material

Each of the six sentences was spoken by five female ($M_{\text{age}} = 38.6$ years, $SD_{\text{age}} = 11.1$, $\text{range}_{\text{age}} = 8\text{-}57$) and five male professional actors ($M_{\text{age}} = 38.4$ years, $SD_{\text{age}} = 12.1$, $\text{range}_{\text{age}} = 26\text{-}56$) with a neutral, positive (happy), or negative (angry) facial expression and tone of voice. Happiness and anger were portrayed with two levels of intensity; namely, a low and a high intensity. The nonverbal expressions were varied independently from the verbal contents (i.e., each sentence was combined with neutral, positive, and negative nonverbal expressions). Prior to recording, the actors received short scenarios describing typical emotional situations to elicit the respective emotions (e.g., “Du hast dich mit deinem Freund/deiner Freundin verabredet. Du wartest schon eine Weile am Treffpunkt und schaut immer wieder auf die Uhr. Nach 20 Minuten rufst du deine Freundin/deinen Freund an. Sie/er sagt, dass sie/er den Termin vergessen hat. Du bist sauer und drückst deinen Ärger gegenüber ihr/ihm aus. [You have a date with your girlfriend/boyfriend. You have been waiting for a while at the meeting place, glancing at your watch over and over again. After 20 minutes, you call your

girlfriend/boyfriend. She/he says that she/he had forgotten the date. You are angry and express your anger toward her/him.]”). The actors were paid for their services. A cameraman filmed the actors’ faces and monitored the audio recordings.

Editing of the stimulus material

The video footage was edited in Adobe Premiere Pro CS3 (Adobe Systems Incorporated, San Jose, CA, USA) in a four-stage process: (a) centering the actors’ faces, (b) video scaling, (c) rotating the actors’ faces to ensure that the facial midline was vertical, and (d) adjusting the brightness and contrast. The audio track was edited in a two-stage process: (a) individual noise reduction or removal of disturbing background noise (e.g., clicks and pops) with Cool Edit Pro 2.1 (Syntrillium Software Cooperation, Phoenix, AZ, USA) and (b) normalization to 70 dB mean intensity using PRAAT 5.1.07 (Boersma, 2001). The edited video and audio tracks were combined in Adobe Premiere Pro CS3 and saved in an audio video interleaved (*.avi) format. The videos had a frame size of 720×576 (4:3).

Pre-testing of the stimulus material (Pre-Studies 2 and 3)

The aim of the second pre-study was to verify the quality of the actors’ nonverbal expressions. The stimulus material was presented on a computer using the software “Presentation” (Neurobehavioral Systems Inc., Albany, CA, USA). The initial set of 649 videos (13 sentences³ x 10 actors x 5 grades; one clip was damaged and had to be excluded) was split into two blocks. Within the blocks, the videos were randomized, and the two blocks were counterbalanced across participants. Sound was presented through Sennheiser HD 515 headphones (Sennheiser electronic GmbH & Co. KG, Wedemark-Wennebostel, Germany) at a comfortable listening level, adjusted individually during a short training session prior to the second pre-study. A sample of 12 participants (6 females, 6 males; $M_{\text{age}} = 23.7$ years, $SD_{\text{age}} = 2.9$) rated the valence of nonverbal signals (i.e., facial expressions and tone of voice) while disregarding the potential emotional contents of the sentence. Answers were given on the 9-point SAM scale (Bradley & Lang, 1994) for valence (1 = *highly negative*; 5 = *neutral*; 9 = *highly positive*); the scale was reversed for half of the sample. Participants were asked to indicate their responses as quickly as possible via the number keys (1-9) on the

³ The current study used only six sentences; however, to collect stimulus material for future studies, we pre-tested actor portrayals of seven additional sentences.

keyboard. Based on the results of the second pre-study, the nonverbal valence values of the five nonverbal valence categories were calculated (highly negative, negative, neutral, positive, highly positive; see Table 2). To reduce the possible influence of verbal information, only nonverbal valence ratings of the 40 videos (six with a highly negative nonverbal expression, six with a negative nonverbal expression, 16 with a neutral nonverbal expression, six with a positive nonverbal expression, six with a highly positive nonverbal expression) with actors speaking neutral sentences were included in the calculation of the nonverbal valence values.

The aim of the third pre-study was to verify the authenticity of the actors' portrayals. The experiment was presented under the same experimental conditions as described for the second pre-study. A sample of 12 participants (6 females, 6 males; $M_{\text{age}} = 22.9$ years, $SD_{\text{age}} = 2.3$) rated 499 videos (10 sentences⁴ \times 10 actors \times 5 grades; one clip was damaged and had to be excluded) with regard to the authenticity of the actors' nonverbal signals. Answers were given on a 9-point scale for authenticity (1 = *low authenticity* to 9 = *high authenticity*); the scale was reversed for half of the sample.

Selection and compilation of the final set of stimulus material

The selection of the final set of stimulus material was based on two selection criteria: One criterion was to choose videos that were matched with respect to the valence values of the verbal and nonverbal cues. Therefore, only videos with nonverbal valence value ratings (Pre-Study 2) within the range of the respective verbal valence value ratings (Pre-Study 1) were chosen. It should be mentioned, however, that it was not possible to achieve a one-to-one matching of verbal and nonverbal valence values within each category. One-sample t tests (test value: 5 = *neutral*) revealed that neutral verbal sentences were rated as slightly more positive, $t(63) = 2.63$, $p < .05$ (see Table 2), whereas neutral nonverbal videos were rated as slightly more negative, $t(15) = -7.27$, $p < .001$ (see Table 2). The other criterion was to choose only videos that had an authenticity rating above 4 (Pre-Study 3). Using this selection method, a final stimulus set of 120 videos (mean duration = 1,458.7 ms, $SD = 316.6$) was compiled (see Table 1).

⁴ The current study used only six sentences; however, to collect stimulus material for future studies, we pre-tested actor portrayals of four additional sentences.

Procedure

The experiment was run on a computer using the software “Presentation” (Neurobehavioral Systems Inc., Albany, CA, USA). Sound was played through Sennheiser HD 515 headphones (Sennheiser electronic GmbH & Co. KG, Wedemark-Wennebostel, Germany) at a comfortable listening level. Each participant watched all 120 videos, which were equally divided into two blocks (60 stimuli per block). The stimulus material was balanced as follows: (a) *balancing across the actors*—each of the 10 actors was represented in a block with six videos, (b) *balancing across the sentences*—each of the six sentences was represented in a block 10 times (spoken by a female actor five times and spoken by a male actor five times), and (c) *balancing across emotions*—out of the 60 stimuli of each block, 20 were portrayed with a neutral nonverbal expression, 10 were portrayed with low- and 10 with high-intensity happiness, 10 were portrayed with low- and 10 with high-intensity anger. The block order was balanced across the participants (i.e., half of the participants began with Block 1, whereas the other half began with Block 2) and the stimulus order within each block was randomized. The stimulus onset was varied in each trial (range = 1,700–3,400 ms; in 16.7% of the trials, this time frame was extended by approximately 10 s) in order to prevent participants from anticipating the appearance of the next stimulus. The participants’ task was to state their overall impression of the emotional state of the sender. Answers were given on a 4-point scale for valence (– – = *highly negative*, – = *negative*, + = *positive*, + + = *highly positive*). In order to avoid effects attributable to the arrangement of response categories, the scale was reversed for half of the participants. We deliberately omitted the response option “neutral” in order to enforce the differentiation of slightly positive and negative nuances contained in the stimulus material and to prevent a response bias toward “neutral” for participants who were uncertain. Participants were asked to indicate their subjective judgment as quickly as possible via one of four buttons on a Cedrus RB-730 Response Pad (Cedrus Corporation, San Pedro, CA, USA). Answers were expected within a time frame of 5 s beginning at the stimulus onset. Participants were allowed to give their answers while the video was still running. Subsequent to the end of a video, the scale and the given answer were shown as feedback. To acquaint the participants with the use of the response pad and to adjust the volume to a comfortable listening level, a short training

session was conducted before the main experiment. The training experiment did not employ any of the stimuli included in the main experiment.

Measurement of EI

Participants' EI was assessed with the German version of the MSCEIT (Steinmayr et al., 2011a), a performance-based measure that draws on the definition of EI proposed by Mayer and Salovey (1997). The MSCEIT comprises eight tasks, two for each of the four branches of EI: (a) Perceiving emotions, (b) Using emotions, (c) Understanding emotions, and (d) Regulating emotions. Response formats vary across tasks. In order to assess the ability to perceive emotions, participants were shown pictures of (a) faces and (b) landscapes as well as abstract designs and were asked to identify the emotions expressed in the pictures. Participants were presented with different emotion labels and were asked to indicate the extent to which the respective emotion was expressed in the actual picture. Answers were given on a 5-point scale ranging from 1 (*no/not at all*) to 5 (*extreme/very strong*). The ability to use emotions to facilitate thought was assessed by asking participants: (a) how helpful different emotions are for solving a given problem, and (b) to imagine certain emotional sensations and to match them to nonemotional vocabulary. Responses were collected on a 5-point scale ranging from 1 (*not useful/not alike*) to 5 (*useful/very much alike*). The ability to understand emotions was assessed by asking participants to indicate: (a) how emotions change over time, and (b) how blends of emotions result in complex feelings. Participants responded by choosing one out of five answers. The ability to regulate emotions was assessed by asking participants to rate the effectiveness of different strategies for managing: (a) their own emotions and (b) the emotions of others. Responses were collected on a 5-point scale ranging from 1 (*very ineffective*) to 5 (*very effective*).

A total EI score and four branch scores were calculated using the expert scoring method. Accordingly, MSCEIT scores reflect the extent to which participants' responses match those of a sample of emotion experts. The split-half reliability coefficients of the MSCEIT (Steinmayr et al., 2011b) were .91 for total EI, .92 for the Perceiving emotions branch, .67 for the Using emotions branch, .70 for the Understanding emotions branch, .67 for the Regulating emotions branch, .86 for the faces task, and .91 for the pictures task.

Data analysis

The valence ratings and reaction times of the participants were treated as outcome variables. The valence ratings were recoded from symbols to numeric values ($-- = 1$, $- = 2$, $+ = 3$, $++ = 4$). The data were analyzed using the software package IBM SPSS Statistics Version 19 (IBM Corporation, Armonk, NY, USA).

The effects of the verbal and nonverbal information on participants' valence ratings were evaluated by means of a 5×5 repeated-measures analysis of variance (ANOVA) with Verbal (highly negative, negative, neutral, positive, highly positive) and Nonverbal Information (highly negative, negative, neutral, positive, highly positive) defined as within-subjects factors. To account for violations of sphericity, the results were Greenhouse-Geisser corrected (Geisser & Greenhouse, 1958).

Linear relations between the mean valence ratings of each stimulus and the verbal valence of the stimuli (Pre-Study 1) as well as the nonverbal valence of the stimuli (Pre-Study 2) were examined. Steiger's (1980) method was used to compare these two correlations. The Kolmogorov-Smirnov test revealed that the verbal valence of the stimuli (*Kolmogorov-Smirnov-Z* = 2.32, $p < .001$) as well as the nonverbal valence of the stimuli (*Kolmogorov-Smirnov-Z* = 2.61, $p < .001$) were not normally distributed. A multiple linear regression analysis was computed with the mean valence ratings of each stimulus as dependent variables and the verbal valence of the stimuli (Pre-Study 1) and the nonverbal valence of the stimuli (Pre-Study 2) as independent variables.

Furthermore, individual multiple linear regressions were computed with the participants' valence ratings of each stimulus as dependent variables and the verbal valence of the stimuli (Pre-Study 1) and the nonverbal valence of the stimuli (Pre-Study 2) as independent variables. By doing so, separate beta coefficients for the impact of verbal (β_{verbal}) and nonverbal information ($\beta_{\text{nonverbal}}$) were obtained. A quotient of the averaged beta coefficients was used to quantify the relative impact of nonverbal as compared with verbal emotional information on the overall valence judgments ($\beta_{\text{nonverbal}} / \beta_{\text{verbal}}$).

To obtain an individual parameter quantifying the relative impact of nonverbal information as compared with verbal information, the individual nonverbal dominance index (INDI) was calculated for each participant:

$$\text{INDI} = [(\beta_{\text{nonverbal}} - \beta_{\text{verbal}}) / (\beta_{\text{nonverbal}} + \beta_{\text{verbal}}) + 1] / 2$$

Given that the audiovisual approach guaranteed a simultaneous conveyance of verbal and nonverbal cues and that the stimulus material consisted of more incongruent than congruent video stimuli, negative beta coefficients do not necessarily represent a negative impact on emotional judgments and should be interpreted cautiously. Consequently, negative beta coefficients were set to zero. Due to this procedure, the INDI could range from 0%, indicating that the given ratings were driven solely by verbal information, to 100%, indicating a complete nonverbal dominance in the participant's judgment of emotional expressions.

Spearman rank-order correlations were used to describe the linear relations between the INDI and total EI and between the INDI and the four EI branches. To investigate individual differences in the speed of emotion judgments, Spearman rank-order correlations were used to describe the linear relations between the individual mean reaction times and the INDI, total EI, as well as the four EI facets.

To investigate emotional incongruence effects on reaction times, the videos were arranged in two categories: (a) *emotionally congruent stimuli*—videos with positive verbal and positive nonverbal information or negative verbal and negative nonverbal information, and (b) *emotionally incongruent stimuli*—videos with positive verbal and negative nonverbal information or negative verbal and positive nonverbal information. Then the differences between the mean reaction times to emotionally incongruent stimuli and the mean reaction times to emotionally congruent stimuli were calculated. In the next step, Spearman rank-order correlations were used to describe the linear relations between the reaction time differences and the INDI, total EI, as well as the four EI facets.

2.2.6 Results

Valence ratings

A 5×5 repeated-measures ANOVA with Verbal and Nonverbal Information as within-subjects factors indicated a main effect of Verbal Information, $F(1.77, 69.10) = 12.71$, $p < .001$, Nonverbal Information, $F(1.84, 71.83) = 621.61$, $p < .001$, and an interaction between these factors, $F(9.75, 380.04) = 16.82$, $p < .001$. The main effects are depicted in Figure 1.

Relative impact of verbal and nonverbal information on the overall valence ratings

Significant positive correlations between the mean valence ratings and the verbal ($r_s = .19, p < .05$) and nonverbal information ($r_s = .91, p < .001$) were found. The positive correlation between the mean valence ratings and the verbal information was smaller than the positive correlation between the mean valence ratings and the nonverbal information ($z = -5.74; p < .001$). A multiple linear regression analysis indicated that 90.7% (adjusted $R^2 = .91$) of the variance in the mean valence ratings was explained by the verbal and nonverbal information.

The mean beta coefficient for verbal information ($\beta = .10$) was significantly lower than the one for nonverbal information ($\beta = .80$), $t(39) = 21.85, p < .001$. The ratio of the two coefficients was 8.04, indicating that in the given experimental setting and across all participants in the study, the impact of the nonverbal information on the ratings was approximately eight times higher than the impact of the verbal information.

Individual nonverbal dominance index

At the level of individual subjects, the INDIs were calculated to quantify the relative nonverbal dominance in emotion perception. Individual ratings ranged from 55 to 100%, indicating that in the given experimental setting, each and every participant showed a more or less pronounced relative dominance of nonverbal information in the judgment of the sender's emotional state. The mean INDI was 89.46% ($SD = 11.04$).

Emotional intelligence

The participants' total EI scores ranged from .34 to .66 ($M = .52, SD = .07$). The scores of the first branch of the MSCEIT, perceiving emotions, ranged from .13 to .74 ($M = .53, SD = .16$). The scores of the second branch of the MSCEIT, using emotions, ranged from .24 to .56 ($M = .45, SD = .08$). The scores of the third branch of the MSCEIT, understanding emotions, ranged from .40 to .85 ($M = .66, SD = .10$). The scores of the fourth branch of the MSCEIT, managing emotions, ranged from .21 to .52 ($M = .43, SD = .06$).

Relation between individual nonverbal dominance and emotional intelligence

Supporting Hypotheses 1 and 1b, significant positive correlations between the INDI and total EI ($r_s = .41, p < .01$; see Figure 2 and Table 3) and between the INDI and the third branch of the MSCEIT, understanding emotions, were found ($r_s = .47, p < .01$; see

Figure 2 and Table 3). None of the other three branches of the MSCEIT were significantly correlated with the INDI (all $ps > .05$; see Table 3). Because the moderate relation between the INDI and the first branch of the MSCEIT, perceiving emotions, did not reach the conventional level of significance ($r_s = .29, p = .07$), in a further step, we examined the association of the INDI and the faces task, which belongs to the first branch of the MSCEIT, perceiving emotions. A significant positive correlation between the INDI and the faces task ($r_s = .48, p < .01$) was found. Because visual inspection of the distribution of the INDI values revealed two outliers, we examined whether the results were primarily driven by the two participants with the lowest INDI values. Even after excluding these outliers, the INDI was still positively correlated with the third branch of the MSCEIT, understanding emotions ($r_s = .42, p < .01$), as well as with the faces task of the MSCEIT ($r_s = .42, p < .01$). The relation between the INDI and total EI did not reach the conventional level of significance ($r_s = .31, p = .06$).

Reaction times

The investigation of potential individual differences in the processing speed of emotional expression judgments revealed no significant relation between the individual mean reaction times and the INDI ($r_s = -.19, p > .05$). With regard to EI, a significant negative correlation between the individual mean reaction times and the second branch of the MSCEIT, using emotions, was found ($r_s = -.41, p < .01$; see Table 3). In contrast to our expectations (Hypotheses 2, 2a, and 2b), neither total EI nor any of the other three branches of the MSCEIT were significantly correlated with the individual mean reaction times (all $ps > .05$; see Table 3).

To investigate possible reaction time effects associated with emotional incongruence, the differences between the mean reaction times to the emotionally incongruent stimuli and the mean reaction times to the emotionally congruent stimuli were calculated. In the next step, these reaction time differences were analyzed for correlations with the INDI, total EI, and the four EI branches (see Table 3). A significant negative correlation between the reaction time differences and the INDI was found ($r_s = -.65, p < .001$; see Figure 3A). After excluding the two INDI outlier values, the reaction time differences were still negatively correlated with the INDI ($r_s = -.59, p < .001$). Supporting Hypotheses 3 and 3b, a significant negative correlation was found between the reaction time differences and the total EI score ($r_s = -.44, p < .01$; see Figure 3B and Table 3) as

well as between the reaction time differences and the third branch of the MSCEIT, understanding emotions ($r_s = -.44, p < .01$; see Figure 3B and Table 3). None of the other three branches of the MSCEIT were significantly correlated with the reaction time differences (all $ps > .05$; see Table 3). Because the moderate negative relation between the reaction time differences and the first branch of the MSCEIT, perceiving emotions, did not reach the conventional level of significance ($r_s = -.28, p = .08$), in a further step, we examined the association between the reaction time differences and the faces task, which belongs to the first branch of the MSCEIT, perceiving emotions. A significant negative correlation between the reaction time differences and the faces task ($r_s = -.42, p < .01$) was found.

2.2.7 Discussion

There are a large number of studies (e.g., Argyle et al., 1970, 1971; Mehrabian & Ferris, 1967; Mehrabian & Wiener, 1967; for a review, see Noller, 1985) that have confirmed nonverbal dominance in the appraisal of others' emotional states. One aim of our study was to quantify the impact of verbal and nonverbal cues on emotion perception at the individual level using audiovisual stimulus material of the highest technical standard. Moreover, we examined the relation between performance-based EI and individual nonverbal dominance in emotion perception along with a possible behavioral benefit.

The relative impact of verbal and nonverbal information on valence ratings

The results of our study showed that verbal and nonverbal cues had an impact on emotion perception. This indicates that when there were simultaneously conveyed verbal and nonverbal cues, judgments concerning the emotional state of the sender were made on the basis of both available sources. However, we found a stronger correlation between the overall mean valence ratings and the nonverbal information than between the overall mean valence ratings and the verbal information, a finding that indicates a stronger impact of nonverbal cues. To quantify the impact of verbal and nonverbal cues, separate beta coefficients were calculated. The ratio of the two coefficients was 8.04, indicating that in the given experimental setting, the impact on the valence ratings from the nonverbal information was approximately eight times stronger than the impact of the verbal information at the group level. Considering individual subjects, the INDI was calculated to quantify the relative nonverbal dominance in emotion perception. These individual indices ranged between 55 and 100%, indicating that in the given

experimental setting, each and every participant showed a more or less pronounced relative dominance of nonverbal information when rating the emotional state of the sender. Examination of the relation between individual mean reaction times and the INDI revealed no significant correlation between these two parameters. Therefore, the observed nonverbal dominance patterns could not be explained by individual tendencies toward slower or faster responses. However, with regard to a possible behavioral benefit of nonverbal dominance, it was shown that the higher the participants' nonverbal dominance indices were, the smaller were the reaction time differences between emotionally incongruent and congruent stimuli. Accordingly, people who rely more strongly on the nonverbal part of the message as an important source of emotional communication might resolve a mismatch between the verbal and the nonverbal part of a message more quickly. In contrast to verbal messages, which are easier to control, nonverbal cues are ever present and sometimes reveal information unintentionally. A question such as "How are you feeling today?" may be verbally answered with "I feel good," whereas at the same time, nonverbal signals (e.g., sad facial expression and tone of voice) might reveal sadness. As a result, nonverbal dominance might be a strategy by which to detect "true" emotions that are not expressed at the verbal level.

Emotional intelligence

With regard to EI, we expected a positive correlation between total EI and the INDI. This hypothesis was confirmed: The more emotionally intelligent the participants were, the more their emotion perception was driven by nonverbal cues. In addition, we hypothesized a positive correlation between the INDI and the first branch of the MSCEIT, perceiving emotions. However, this hypothesis was not confirmed as the effect did not reach the conventional level of significance. But our results suggested that the emotion perception of participants with higher abilities in perceiving emotions in faces were more driven by nonverbal cues. More specifically, only the MSCEIT faces task, which explicitly refers to the ability to appraise nonverbal emotional information in others, was positively related to nonverbal dominance in emotion perception, whereas the pictures task (including landscapes and abstract designs) was not. This reveals why the overall association between the participants' ability to perceive emotions and their nonverbal dominance was relatively small. Moreover, we hypothesized a positive correlation between the INDI and the third branch of the MSCEIT, understanding emotions. This hypothesis was confirmed: The more skilled the participants were at

understanding emotions, the more their emotion perception was driven by nonverbal cues. Although we could not infer causality, one explanation for this finding might be that over time, the ability to understand emotions may have led participants to realize that the verbal and the nonverbal channels do not necessarily match and to conclude that authentic emotional states are more likely to be communicated through nonverbal channels. Based on such reasoning, they may have become convinced that more strongly relying on the nonverbal part of emotion-relevant information provides a more realistic image of others' emotional states.

With regard to possible behavioral benefits of emotional abilities, we expected emotionally intelligent participants, especially those high in perceiving and understanding emotions, to be faster at judging the sender's emotional state. In contrast to our expectations, only participants high in using emotions were faster at identifying the sender's emotional state. With regard to mismatches between verbal and nonverbal displays of emotions, we expected emotionally intelligent participants, especially those high in perceiving and understanding emotions, to resolve emotional incongruencies more quickly, a finding that would be reflected by smaller reaction time differences between the emotionally incongruent and congruent conditions. This hypothesis was partially confirmed: In general, the more emotionally intelligent the participants were, the smaller were their reaction time differences between emotionally incongruent and congruent stimuli. This association was also found for the third branch of the MSCEIT, understanding emotions: The more skilled the participants were at understanding emotions, the smaller were their reaction time differences between emotionally incongruent and congruent stimuli. These findings might be attributable to these participants' ability to resolve existing emotional incongruencies more quickly and, as a result, their reaction times to emotionally incongruent and congruent trials converged. Especially with regard to the third branch of the MSCEIT, understanding emotions, which is "most cognitively saturated" and in fact "correlate[s] most highly with IQ" (Mayer, Salovey, Caruso, & Sitarenios, 2001, p. 235), the faster resolution of existing emotional incongruence might particularly result from a faster information processing speed due to higher cognitive abilities. This assumption is supported by the finding that faster reaction times and general mental abilities are related to each other (Rushton & Ankney, 2009). We found a moderate relation between the participants' abilities to perceive emotions and reaction time differences between emotionally incongruent and

congruent stimuli, but our result did not reach the conventional level of significance. Thus, the results indicated that participants with a higher ability to perceive emotions in faces had smaller reaction time differences between emotionally incongruent and congruent stimuli.

Critical review

Limitations of the study design

The age of the decoder might influence the relative importance of the channels (Noller, 1985), and it might have an influence on the abilities of emotion perception, with elderly people showing impairments in their ability to decode nonverbal expressions of emotions (Horning, Cornwell, & Davis, 2012; Lambrecht, Kreifelts, & Wildgruber, 2012; Mill, Allik, Realo, & Valk, 2009; Ruffman, Henry, Livingstone, & Phillips, 2008; Suzuki, Hoshino, Shigemasu, & Kawamura, 2007). Moreover, the age of the decoder might also influence emotional abilities. A study by Kafetsios (2004) indicated that elderly people are able to use, understand, and manage emotions better than younger people. Hence, future studies should consider nonstudent samples to investigate potential age-related differences concerning nonverbal dominance in emotion perception and its relation to EI. We used the MSCEIT (Steinmayr et al., 2011a) to assess performance-based EI in this study. It has to be noted that some subscales (i.e., using, understanding, and regulating emotions) of this measure have only moderate reliabilities. Moreover, it should be mentioned that the participants' response alternatives were limited. The choice of a 4-point scale for valence did not provide any information about the category of the perceived emotion, the existence of blended emotions, or—especially in cases of incongruence between verbal and nonverbal signals—the occurrence of phenomena such as irony.

Advantages and limitations of the stimulus material

In contrast to prior studies, we used dynamic audiovisual recordings of actors clearly expressing emotional states. We chose sentences and not single words because we view the former as more akin to natural communication. Furthermore, we used sentences that explicitly expressed the current emotional state of the sender because we think that self-referential content is required to create a clear interference between the emotional state expressed at the verbal level versus at the nonverbal level. Other studies (e.g., Mitchell, 2006; Wittfoth et al., 2010) have used sentences with neutral, positive, or negative

semantic contents about a third party or an animal, for example. But, for instance, making a statement such as “The dog had to be put down” (Mitchell, 2006, p. 301) with a happy tone of voice might not inevitably be interpreted as providing conflicting information regarding the actual emotional state of the sender. If the dog had attacked and bitten the sender before, the sender’s happiness about the dog’s death would appear quite reasonable.

Using actor portrayals of emotions, however, might be criticized as not equivalent to emotions in everyday life (for a detailed discussion of the pros and cons of actor portrayals, see Bänziger & Scherer, 2007). However, in order to achieve emotion portrayals that were as natural as possible, we worked only with professional actors, used emotion-eliciting scenarios, and ascertained authenticity ratings as a selection criterion.

Furthermore, it has to be noted that the task instructions and the stimulus material did not contain any emotional context information. Emotional context might be a valuable additional source of information and thus might be used to identify the emotional state of the sender (Aviezer, Hassin, Bentin, & Trope, 2008; Carroll & Russell, 1996; Fernández-Dols, Wallbott, & Sanchez, 1991; Lee, Choi, & Cho, 2012; Masuda et al., 2008; Righart & de Gelder, 2008; Wallbott, 1990).

Conclusions

The present study revealed that the impact of nonverbal information on emotional judgments was approximately eight times higher than the impact of verbal information. Considering the subjects’ individual nonverbal dominance, each and every participant showed a more or less pronounced relative perceptual dominance of nonverbal information. Furthermore, EI, particularly the ability to understand emotions, was positively correlated with the tendency to base emotional judgments on nonverbal emotional signals. Moreover, higher EI as well as an increased ability to understand emotions led to smaller reaction time differences between emotionally incongruent and congruent stimuli. Thus, EI, and more specifically, the ability to understand emotions, might be linked to focusing on nonverbal signals as these signals are particularly helpful for detecting “true” feelings and are thereby helpful for solving existing incongruencies between verbal and nonverbal signals.

3. Looking Behind the Scenes: Potential Processes of Well-Established Relations Between Emotional Intelligence and Work-Related Outcomes

3.1 On the Indirect Effect of EI on Job Performance⁵

3.1.1 Teaching as a High Emotional Labor Job

In a meta-analytical study, Joseph and Newman (2010) found that the positive relation between EI and job performance held only for people in high emotional labor jobs. As can be seen in the next paragraph, emotional labor is an important part of the demands made of teachers. Thus, I examined the potential indirect effects of EI on job performance in a sample of teachers.

Teaching involves continuous and sometimes conflict-laden interactions with students (Gregoriadis & Tsigilis, 2008). Poor student motivation or misconduct, for example, constitutes a serious challenge that can provoke anger in teachers (Abel & Sewell, 2001; Cowie, 2011; Jacobsson, Pousette, & Thylefors, 2001), but expressing anger openly is often considered unprofessional (McPherson, Kearney, & Plax, 2003). Emotion regulation is also required because emotional outbursts can damage the teacher-student relationship. By contrast, positive affective states are thought to contribute to better outcomes (George, 1991; Isen & Reeve, 2005). Teachers, in contrast to most (service) personnel, however, are not invariably expected to show positive emotions but rather to “wear many hats” (Davis, 2001, p. 431). As a “friend” and “protector,” they are supposed to show empathy. Expressing negative emotions may also be in accordance with organizational display rules; for example, when they act as a “disciplinarian.” In such instances, showing negative emotions may be relevant for successful task performance too.

⁵ Previous versions of parts of this chapter were published as a journal article: Nizielski, S., Hallum, S., Lopes, P. N., & Schütz, A. (2012). Attention to student needs mediates the relationship between teacher emotional intelligence and student misconduct in the classroom. *Journal of Psychoeducational Assessment*, 30, 320-329. doi:10.1177/0734282912449439

3.1.2 Student Misconduct as a Central Indicator of Teachers' Job Performance

Apart from the pure transmission of knowledge, teachers are often required to accurately appraise and appropriately regulate their own emotions as well as those of their students. Teachers are educators and role models who both increase student knowledge and shape student conduct in the classroom. Thus, students' academic achievement and student conduct in the classroom are important educational outcomes. Vice versa, the poor academic achievement of students and student misconduct can be viewed as negative indicators of teachers' job performance. But teachers' EI should be more closely linked to students' behavior in the classroom than to students' pure knowledge acquisition. Thus, student misconduct was examined as the outcome in the relation between teacher EI and job performance.

3.1.3 The Current State of Research

Research has largely neglected relating teacher EI to indicators of job performance. However, studies showing positive relations between teachers' perceived EI and work-related outcomes such as job satisfaction (e.g., Yin, Lee, Zhang, & Jin, 2013) and organizational commitment (e.g., Anari, 2012) point to the importance of teacher EI in the school setting. Although we do not really know why EI might help teachers perform their jobs, previous research findings have indicated that EI might promote adaptive reactions in emotionally charged situations. Sutton's (2004) qualitative study suggested that it is essential for teachers to be able to regulate their own emotions and those of their students. Additional data showed that teachers' self-reported EI was related to perceived efficacy in responding to students and managing the classroom (Di Fabio & Palazzeschi, 2008) and that teachers who scored high on EI tests dealt more constructively with negative situations and were more likely to look for positive solutions (Perry & Ball, 2007).

3.1.4 The Present Study

In this study, we examined the relation between self-perceived teacher EI and student misconduct. We regarded emotion appraisal and regulation of emotion as the most relevant facets.⁶ The ability to appraise emotions requires the perception of emotions

⁶ When I use these terms in this chapter, I am referring to the perceived abilities to appraise one's own and others' emotions and to regulate emotions.

(Gross & Thompson, 2007) and enables teachers to evaluate their own emotions as well as those of their students. Regulation of emotion is often considered a key facet of EI, and meta-analytic evidence suggests that it is a crucial antecedent of job performance (Joseph & Newman, 2010). This specific ability is likely to be particularly important for managing behavior and constructively handling difficult and emotionally charged situations (Lopes et al., 2011). Although EI self-reports may be somewhat distorted by self-enhancement and other biases, they are likely to reflect a global assessment of one's tendency to accurately identify, understand, use, and regulate emotions in real life. Because we were interested in teachers' actual behaviors in the emotionally challenging context of the classroom, we examined perceived EI in real-life situations by using a retrospective self-report measure. This approach is useful for providing insight into an individual's subjective experience of past performance across a variety of everyday situations.

Hypotheses

Because emotional labor is a central characteristic of the teaching profession, we assumed that EI would help teachers do a better job. As research has shown that people's EI can predict the behavior of other people (e.g., Wong & Law, 2002), we expected teacher EI to be negatively related to student misconduct. More specifically, effects were hypothesized for self-perceived EI as an overall construct, emotion appraisal, and the regulation of emotion.⁷ Thus, we proposed:

Hypothesis 1: Teacher EI will be negatively related to student misconduct.

Hypothesis 1a: Self-emotion appraisal will be negatively related to student misconduct.

Hypothesis 1b: Other-emotion appraisal will be negatively related to student misconduct.

Hypothesis 1c: Regulation of emotion will be negatively related to student misconduct.

Moreover, we examined a mechanism that might explain the relation between teacher EI and student misconduct. As student and teacher behavior are closely intertwined (Bakker, Hakanen, Demerouti, & Yanthopoulou, 2007; Leflot, van Lier, Onghena, &

⁷ Subsequent data analyses were conducted with respect to the overall construct of emotional intelligence (EI) as well as the dimensions of interest (i.e., self-emotion appraisal, other-emotion appraisal, and regulation of emotion).

Colpin, 2010), we expected teacher EI to affect the way teachers attend to students, a teacher behavior that would again affect student conduct. Specifically, we thought that attending to student needs would help teachers to manage student misconduct because it would convey the teachers' concerns, thereby fostering empathy and effective communication with students, and would establish an appropriate emotional climate and an atmosphere of caring and collaboration. In addition, attending to students' needs can help teachers to consider students' motivations in order to find effective ways to influence them. Apart from total EI, we expected three dimensions of EI to contribute to the attention that teachers pay to students' needs. Teachers who are skilled at identifying and understanding their own emotions effectively may be better able to attend to students' needs insofar as the teachers divert less attention and smaller amounts of cognitive resources toward making sense of their own feelings and concerns. The ability to identify and understand others' emotions should also help teachers to attend and respond to students' needs, interests, and concerns because it provides emotional information, and this information can focus teachers' attention. Finally, the ability to regulate emotions may help teachers to focus on students' needs and to maintain constructive engagement during emotionally arousing situations rather than focusing on their own frustration and concerns and consequently disengaging from the interaction. This reasoning led us to propose:

Hypothesis 2: Total EI will be positively related to attending to student needs.

Hypothesis 2a: Self-emotion appraisal will be positively related to attending to student needs.

Hypothesis 2b: Other-emotion appraisal will be positively related to attending to student needs.

Hypothesis 2c: Regulation of emotion will be positively related to attending to student needs.

In contrast to teachers choosing to disengage or act in ways that might antagonize students or provoke an escalation of student misconduct, we additionally hypothesized that attending to student needs would help teachers to regulate their own behavior so as to influence students effectively and thereby prevent misconduct. Teacher and student behavior in the classroom are closely linked (Leflot et al., 2010), and Mainhard, Brekelmans, and Wubbels (2011) found that supportive teacher behavior was

significantly related to a positive social climate in the classroom. Consequently, education that goes beyond solely equipping students with knowledge but includes attention to students' needs should be inversely related to inappropriate student conduct in the classroom. If teachers attend to students' needs, students should less frequently disrupt the class, quarrel with one another, or show disrespect toward the teacher. This reasoning led us to propose:

Hypothesis 3: Attending to student needs will be negatively related to student misconduct.

We tested attending to student needs as potentially accounting for the relation between teacher EI and student misconduct. In other words, we hypothesized that attending to student needs would mediate the negative teacher-EI-student-misconduct association. Apart from total EI, we expected indirect effects of emotion appraisal and regulation of emotion on student misconduct through attending to student needs. Thus, we proposed:

Hypothesis 4: The expected negative effect of teacher EI on student misconduct will be mediated by attending to student needs.

Hypothesis 4a: The expected negative effect of self-emotion appraisal on student misconduct will be mediated by attending to student needs.

Hypothesis 4b: The expected negative effect of other-emotion appraisal on student misconduct will be mediated by attending to student needs.

Hypothesis 4c: The expected negative effect of regulation of emotion on student misconduct will be mediated by attending to student needs.

3.1.5 Method

Subjects

Three hundred fully qualified Syrian teachers (205 women and 95 men) from 13 schools in one geographic area (i.e., Lattakia) participated voluntarily in the study. They worked at integrated schools (i.e., a combination of elementary, secondary, and high school) and their students' ages varied between 10 and 18 years. Teachers' mean age was 40.37 years ($SD = 7.77$). Each teacher specialized in one field (e.g., Arabic, history, mathematics, or chemistry) and had taught that subject for a mean of 15.37 years ($SD = 7.94$).

Procedure

We invited approximately 400 teachers to participate in a study concerning emotions at school. Those who agreed to take part received brief oral instructions and were assured that their responses would be treated confidentially. The teachers completed a set of questionnaires and returned them in sealed envelopes. All scales had been translated into Arabic and then back-translated into the original language to ensure that the contents were equivalent. Data were collected in November, 2009 (more than 1 year before the beginning of armed conflict in Syria).

Measurement

Emotional intelligence

We used the Wong and Law Emotional Intelligence Scale (WLEIS; Wong & Law, 2002) to measure perceived EI. This self-report measure is based on the definition of EI proposed by Salovey and Mayer (1990) and consists of four dimensions: Self-emotion appraisal, Other-emotion appraisal, Use of emotion, and Regulation of emotion. Self-emotion appraisal assesses a person's ability to identify and understand his or her own emotions. Other-emotion appraisal concerns the ability to identify and understand others' emotions. Use of emotion involves the ability to employ emotions to facilitate performance. Finally, Regulation of emotion encompasses the ability to monitor and control one's own emotions. Each subscale consists of four items with a 7-point response format ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). For example, the Regulation of emotion subscale includes items such as "I can always calm down quickly when I am angry." Cronbach's alpha coefficients for the four dimensions ranged from .76 to .84.

Attending to student needs

As there was no suitable measure of teachers' tendency to attend to student needs, an exploratory measure was created. We reviewed the literature on supportive teacher behavior, and this information provided the basis for the 15 items that we formulated. We conducted an exploratory factor analysis with these items using a Promax rotation. Six items were deleted because of low loadings and communalities. Considering the eigenvalues, scree plot, and interpretability, a single factor was extracted, accounting for 38.64% of the total variance. The retained items, which are shown in the Appendix, tap teachers' interpersonal behaviors such as providing explanations, discussing ideas, or

giving advice. A sample item is “I listen to my students when they want to share doubts and concerns.” Teachers were asked to indicate the extent to which they agreed with each item on a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The internal consistency of the scale was .79.

Student misconduct

We obtained teacher ratings of student misbehavior using a shortened version of the Disrespect subscale of the Pupil Behavior Patterns (PBP) scale (Friedman, 1995). The scale that we used consists of eight items regarding typical negative student behavior patterns at the class level, such as showing little respect toward the teacher, disrupting the class, or quarreling with each other. Responses were collected on a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). A sample item is “They all talk at the same time.” Cronbach’s alpha was .85.

Demographics

Teachers reported their age, gender, level of education, and teaching experience.

3.1.6 Results

Table 4 shows the descriptive statistics for the main variables. Teacher EI (*Kolmogorov-Smirnov-Z* = 1.41, $p < .05$) and attending to student needs (*Kolmogorov-Smirnov-Z* = 1.70, $p < .01$) were significantly skewed, revealing the typical positivity bias. Age and teaching experience were unrelated to EI, attending to student needs, and student misconduct. Other-emotion appraisal increased with teaching experience ($r_s = .15$, $p < .01$). To test for gender differences in EI, we used the Mann-Whitney *U* test. No significant differences were found between women and men ($U = 9555.50$, $p > .05$).

Spearman rank-order correlations between the variables of interest are presented in Table 5. Teacher EI as well as self-emotion appraisal and regulation of emotion were negatively related to student misconduct, supporting Hypotheses 1, 1a, and 1c. In line with Hypotheses 2, 2a, 2b, and 2c, EI, self-emotion appraisal, other-emotion appraisal, and regulation of emotion were positively related to attending to student needs.

Attending to student needs was negatively related to student misconduct, supporting Hypothesis 3.

Mediation analyses

The conventional preconditions for mediation were met insofar as we found significant associations between teacher EI and attending to student needs, between teacher EI and student misconduct, as well as between attending to student needs and student misconduct. These conditions held for self-emotion appraisal, regulation of emotion, and the total EI scores but not for other-emotion appraisal, which was unrelated to student misconduct. Therefore, we examined whether attending to student needs would mediate the relations between these three indicators of teacher EI and student misconduct. We tested indirect effects using the nonparametric bootstrapping procedure suggested by Hayes (2012). Bootstrapped estimates (1,000 bootstrap resamples, bias-corrected means) provided support for Hypothesis 4. Total EI exerted an indirect effect on student misconduct through attending to student needs ($\gamma = -.07$, $SE = .04$, 95% CI $[-.151, -.004]$, $p < .05$). Controlling for attending to student needs, the direct effect of total EI on student misconduct became nonsignificant (see Figure 4).

According to our hypotheses, we examined the indirect effects of self-emotion appraisal and regulation of emotion on student misconduct through attending to student needs. Supporting Hypothesis 4a, the indirect effect of self-emotion appraisal on student misconduct was significant ($\gamma = -.07$, $SE = .03$, 95% CI $[-.137, -.026]$, $p < .05$). Controlling for attending to student needs, the direct effect of self-emotion appraisal on student misconduct became nonsignificant. Regulation of emotion had a significant indirect effect on student misconduct through attending to student needs ($\gamma = -.04$, $SE = .02$, 95% CI $[-.078, -.012]$, $p < .05$), supporting Hypothesis 4c. Controlling for attending to student needs, the direct effect of regulation of emotion on student misconduct became nonsignificant.

3.1.7 Discussion

This study extended prior research on the EI-job-performance relation and supported past findings on the importance of EI for people in high emotional labor jobs. Teachers' self-perceived EI was negatively related to student misconduct, which can be seen as an indicator of poor job performance and as an important educational outcome in its own right. By examining not only the overall construct of EI but also specific dimensions of EI, we showed that self-emotion appraisal and regulation of emotion were negatively related to student misconduct. Our interpretation of these findings is that the perceived

ability to appraise one's own emotions helps teachers to monitor their emotional state effectively, contributing to self-regulation and effective allocation of attentional resources; and the perceived ability to regulate emotions facilitates the expression and communication of emotions in ways that positively influence encounters with students.

Contrary to our expectations, the perceived ability to appraise others' emotions was not significantly related to student misconduct, although it was positively related to attending to student needs. One possible explanation for this unexpected finding is that high scores on the ability to perceive and understand others' emotions, as measured with the WLEIS, might reflect an excessive preoccupation with others and a hypersensitivity to others' feelings. These behavioral tendencies could disrupt a teacher's capacity to be assertive and enforce appropriate discipline in the classroom and thereby undermine the positive effect of attending to student needs. This is an issue that calls for further research.

To our knowledge, this study is one of the first attempts to investigate the interpersonal processes underlying the relation between EI and job performance. We examined attending to student needs as one possible mechanism underlying the teacher-EI-student-misconduct relation. Similar to Perry and Ball (2007), we found that teachers with low versus high levels of EI differ in their reported behavior toward students: Based on their accounts, teachers high in self-perceived EI were more attentive to their students' needs. First, we reason that teachers who are emotionally skilled have more resources for attending to their students and can more clearly see what their students need. Positive emotions typically broaden behavioral repertoires and increase the scope of attention (Fredrickson & Branigan, 2005). Nonetheless, expressing effectively regulated negative emotions can be adaptive in certain situations, for example, when teachers want to clearly signal that they are dissatisfied with students' conduct in the classroom. Second, the regulation of emotion can allow teachers to induce and sustain appropriate internal affective states, which may help them to focus on their students' needs. As positive affect promotes intrinsic motivation (Isen & Reeve, 2005), it is not surprising that teachers high in EI do not solely impart knowledge but also establish good working relationships with their students. In addition, attending to student needs—as it is negatively associated with student misconduct—seems to play an important role in the management of students' disruptive and oppositional behaviors. It is plausible that students who feel well attended to are less inclined to act out. Thus, we argue that

one of the processes through which teachers' emotional abilities are negatively linked to student misconduct is the sincere focus on students and their specific desires, problems, resources, and weaknesses. In sum, attending to student needs has been shown to account for the relation between teacher EI and student misconduct. More generally, our results indicate that EI predicts the job performance of people in high emotional labor jobs through interpersonal processes.

Limitations and future directions

Some limitations of this study should be noted. First, because of the cross-sectional study design, we cannot infer causality. Thus, the indirect effect of teacher EI on student misconduct through attending to student needs cannot be seen as a causal chain. We consider EI to be the more stable variable and consequently assume that teacher EI more strongly affects attending to student needs as well as student misconduct, rather than the other way around. High EI may help teachers to focus on their students' needs. And in turn, students who are well attended to may work more constructively. Nonetheless, it is conceivable that focusing on students' needs may contribute to the development of teachers' emotional abilities. In addition, it may be easier for teachers to attend to students who do not misbehave. However, our data did not support the reverse causal mechanism: The indirect effect of attending to student needs on teacher EI through student misconduct was not significant.

Second, teachers reported their own emotional abilities, their tendency to attend to student needs, as well as their students' misconduct. Self-reports may be limited by self-enhancement, social desirability bias, and lack of accurate self-knowledge. As Hastings and Bham (2003) pointed out, teacher ratings of student misconduct do not always accurately reflect actual student behavior in the classroom. Future studies with independent measures are needed to address problems of common source and method bias. Such research could use a performance-based test to assess teacher EI, field observations to assess student misconduct, and students' ratings to assess teacher interpersonal behavior.

Third, student conduct in the classroom is influenced by many factors. Thus, teacher EI can be considered just one explanatory variable among many others. This may be a plausible reason for the modest relation between teacher EI and student misconduct found in this study.

Last but not least, the relation between teacher EI and student misconduct may vary across cultural contexts and may depend on collectivism, power distance, and other factors. Syria is a high-contact and collectivistic culture. It is not clear whether results would be similar in more individualistic cultures. Further research on the relation between teacher EI and student misconduct in different cultures is needed.

Conclusions and practical implications

Despite these limitations, the present study provides a better understanding of the teacher-EI-student-misconduct relation by examining attending to student needs as the underlying mechanism. The negative teacher-EI-student-misconduct relation supports and extends previous findings on the importance of EI in shaping and improving social relationships (e.g., Lopes, Salovey, Côté, & Beers, 2005). Although we cannot infer causality, student misconduct in the classroom was linked to poor perceived emotional abilities of teachers. Teachers' difficulties in interacting with students may often result from their inability to appraise and regulate their own emotions to attend to what their students need. By contrast, EI might enable teachers to establish good working relationships with students. Adequate behavior management techniques may reduce disruptive and oppositional classroom behaviors. In conclusion, teachers high in perceived EI seem to indirectly influence student conduct in the classroom by creating a supportive classroom atmosphere and an effective context for learning.

These findings have some practical implications with respect to the selection and training of teachers. Emotionally intelligent people are often considered desirable employees, especially in working environments that involve emotional labor (Engelberg & Sjöberg, 2005). Wong and Law (2002) suggested matching people's levels of EI to specific job requirements. As teaching involves emotional labor, teacher selection and training should more strongly include a focus on emotional abilities. Teacher selection that comprises emotional abilities as one criterion may entail benefits for both teachers' job performance and students' conduct. As there is evidence that emotional skills can be developed (e.g., Dulewicz & Higgs, 2004; Eack, Hogarty, Greenwald, Hogarty, & Keshavan, 2007), we furthermore suggest improving teacher training programs by helping teachers to develop emotional abilities in ways that help them to focus on students' needs.

3.2 On the Indirect Effects of EI on Burnout⁸

3.2.1 Teachers Are Among the Groups at High Risk for Burnout

People in social professions are especially affected by high psychological strain, females more than males (WIdO, 2012). There is an alarming picture of an increasing number of days missed due to psychological illnesses. Primary and secondary school teachers as well as special education teachers rank among the occupational groups with the highest rates of absence. According to a press release (WIdO, 2012) by a scientific institution representing the German public health fund AOK (Allgemeine Ortskrankenkasse), in 2011 there were about 191 days of absence per 1,000 AOK members. Among teachers, another noteworthy aspect is the high ratio of early retirement such that more teachers leave the profession early than stay until retirement. In Germany, for example, fewer than 30% of those teachers who went into retirement in the year 2012 actually reached the statutory retirement age (Statistisches Bundesamt, 2014). To sum up, teachers can be considered a high-risk group for burnout. Thus, I decided to examine the indirect effects of EI on burnout in a sample of teachers as well.

3.2.2 Definition of Burnout

Burnout is a syndrome comprised of three dimensions: emotional exhaustion, depersonalization, and reduced personal accomplishment (Maslach, 1982; Maslach & Jackson, 1984). Emotional exhaustion “reflects the stress dimension of burnout” (Maslach, Schaufeli, & Leiter, 2001, p. 403) and refers to feeling emotionally overextended and drained. Among teachers, this experience is often associated with strained or overly taxing interactions with students, parents, or colleagues (Stoeber & Rennert, 2008; Taris, Peeters, Le Blanc, Schreurs, & Schaufeli, 2001). Depersonalization is an attempt to distance oneself cognitively from clients (Maslach et al., 2001). Negative or inappropriate attitudes toward students, treating them as impersonal objects, and responding in cynical ways are signs of depersonalization

⁸ Previous versions of parts of this chapter were published as a journal article: Nizielski, S., Hallum, S., Schütz, A., & Lopes, P. N. (2013). A note on emotion appraisal and burnout: The mediating role of antecedent-focused coping strategies. *Journal of Occupational Health Psychology, 18*, 363-369. doi:10.1037/a0033043

Nizielski and Hallum contributed equally to this work.

(Wisniewski & Gargiulo, 1997). Reduced personal accomplishment concerns a person's diminished job effectiveness. Lack of effort, reduced success, and feelings of incompetence can be indicators of this dimension of burnout (Maslach & Jackson, 1981).

3.2.3 The Current State of Research

In previous studies, teachers high in perceived EI were found to be less likely to suffer from burnout than those low in perceived EI (e.g., Platsidou, 2010). However, research on the mechanisms underlying the negative relation between EI and burnout has been scarce so far. Nevertheless, some previous research findings indicate why EI might protect against burnout. Gawali (2012), for example, found that teachers' EI is positively related to adaptive coping in emotionally demanding situations. According to the four branch model of EI proposed by Mayer and Salovey (1997), EI comprises the ability to perceive, understand, use, and regulate emotions. This model is based on a functional view of emotion, according to which, affect conveys important information to guide self-regulation and behavior. Thus, the ability to perceive emotions clearly in oneself and others provides crucial information for managing one's own and others' emotions. A meta-analysis by Joseph and Newman (2010) provided empirical support for a cascading model of emotional intelligence in which the ability to perceive emotions contributes to effective emotion regulation—and thereby to performance in jobs requiring interpersonal interaction.

3.2.4 The Present Study

We were interested in teachers' abilities to both perceive and understand emotional information as a basis for effective coping. Therefore, we followed Wong and Law's (2002) conceptualization of emotion appraisal, which combines emotion perception and emotion understanding into a single dimension.⁹ On the basis of self-report data, these researchers found that the ability to appraise emotions in oneself can be distinguished from the ability to appraise emotions in others. Therefore, we examined this conceptual distinction as well. For the sake of consistency and parsimony, henceforth, we adopt their terminology and refer to these abilities as self-emotion appraisal and other-emotion

⁹ When I use these terms in this chapter, I am referring to the perceived abilities to appraise one's own and others' emotions.

appraisal. We expected that teachers high in the self-rated abilities to perceive and understand their own emotions and those of others would be less likely to experience burnout than those low in self- and other-emotion appraisal. Thus, we proposed:

Hypothesis 1a: Self-emotion appraisal will be negatively related to burnout.

Hypothesis 1b: Other-emotion appraisal will be negatively related to burnout.

Coping and regulation strategies

Little attention has been paid to the mechanisms that underlie the effect of emotion appraisal on burnout. To address this gap, we investigated two coping strategies that might mediate this relation. According to Gross' (1998) model of emotion regulation, response-focused regulation strategies are activated after an emotional response has gathered momentum but are relatively ineffective. By contrast, antecedent-focused regulation strategies, which are activated early in an emotional response (e.g., situation selection, situation modification, and attention deployment), are more effective. Thus, we examined antecedent-focused strategies.

Research on emotion regulation has generally focused on *intrapersonal* processes and has neglected *interpersonal* processes. The social interaction model of emotion regulation (Côté, 2005) calls attention to the fact that, in a social context such as the classroom, teachers and students operate in a reciprocal feedback loop. A teacher's emotional response induces emotional reactions from students that may amplify or attenuate the expresser's experience of work strain. Therefore, we examined two antecedent-focused coping strategies that may help teachers to prevent burnout through both intra- and interpersonal pathways: (a) proactive coping and (b) attending to student needs.

Proactive coping takes place at an early stage when potentially stressful events are anticipated (Aspinwall, 2005). It aims to prevent the occurrence of such events or to attenuate their impact (Aspinwall & Taylor, 1997) through situation selection or modification, for example. We conceptualized attending to student needs as encompassing both paying attention to students' needs (an attentional process) and addressing these needs (a behavioral process). Proactive coping and attending to student needs can help teachers to take action before problems fester and negative emotional reactions become more difficult to control. Both strategies can be viewed as facilitating effective problem solving, coping, and emotion regulation (considering that both coping

and emotion regulation are interlinked because problem- and emotion-focused coping can contribute to emotion regulation and vice versa). However, proactive coping is a general coping strategy that is applicable to all realms of life and to all professions, whereas attending to student needs can be viewed as an antecedent-focused regulation or coping strategy that is specific to teaching.

In line with the cascading model of EI (Joseph & Newman, 2010), we reasoned that the abilities to appraise their own as well as their students' emotions can help teachers to activate effective antecedent-focused coping strategies. In the social context of a classroom, both internal and external cues can alert teachers to a given problem. Internal cues of emotion can provide important information to guide sound judgment and decision-making (Damásio, 1994) and thereby facilitate the selection and implementation of effective coping strategies. Similarly, students' displays of emotion convey important information about their inner states, thoughts, and intentions. The ability to appraise students' subtle or low-intensity feelings can therefore help teachers to evaluate situations accurately, to anticipate the development of emotionally laden situations, and to spot potential stressors that lie ahead. For example, recognizing subtle feelings of frustration in themselves or in their students can help teachers to realize that they need to calm down before they lose their temper or explain the subject matter in a different way before students lose interest and start misbehaving. By contrast, less perceptive teachers may recognize the problem only later on, when the situation has obviously been derailed. This reasoning led us to propose:

Hypothesis 2a: Self-emotion appraisal will be positively related to proactive coping.

Hypothesis 2b: Other-emotion appraisal will be positively related to proactive coping.

Hypothesis 3a: Self-emotion appraisal will be positively related to attending to student needs.

Hypothesis 3b: Other-emotion appraisal will be positively related to attending to student needs.

In turn, proactive coping and attending to student needs can protect teachers from burnout because these strategies contribute to effective self-regulation, problem-solving, and performance. Research on emotion regulation and emotional labor suggests that antecedent-focused regulation strategies are more effective for managing the inner experience of negative emotions than response-focused strategies (Gross, 1998;

Hülshager & Schewe, 2011). Among other reasons, it is harder to down-regulate anger when the mind is flooded with emotion-related thoughts and memories and the physiological system has been fully mobilized for a stress response. Research on interpersonal conflict has suggested that a failure to address problems early on often leads to further problems and an escalation of conflict (Tice & Baumeister, 1993). Furthermore, proactive coping has been associated with various adaptive outcomes. Schwarzer, Schmitz, and Tang (2008) reported that teachers with a proactive attitude (a motivational antecedent of proactive coping; see Schwarzer, 1999) did not suffer from burnout as much as their less proactive counterparts. Support for the beneficial effects of proactivity was also found by Thomas, Whitman, and Viswesvaran (2010). Thus, we proposed:

Hypothesis 4a: Proactive coping will be negatively related to burnout.

Likewise, attending to student needs can protect teachers from burnout in several ways: First, focusing attention on others rather than on the self can be viewed as a form of attention deployment that may help teachers to avoid spirals of dysphoric self-preoccupation and negative affect, which in turn could contribute to burnout (Little, Simmons, & Nelson, 2007). Second, showing student-oriented behavior such as paying attention to and addressing student needs can elicit positive emotional responses from students (Mainhard et al., 2011). Third, attending to student needs can facilitate effective problem solving, communication, and conflict management, all of which in turn depend on having a good understanding of interpersonal problems and of others' interests and concerns (Thompson, 2001). Consistent with these arguments, attending to student needs was found to be inversely related to problem behavior in students (Nizielski, Hallum, Lopes, & Schütz, 2012), and problem behavior was shown to be an important predictor of burnout (Kokkinos, 2007). Furthermore, Truchot and Deregard (2001) found that a focus on others was negatively related to burnout. Thus, we proposed:

Hypothesis 4b: Attending to student needs will be negatively related to burnout.

The four hypotheses above led to our key hypotheses regarding mediation:

Hypothesis 5a: The expected negative effect of self-emotion appraisal on burnout will be mediated by both proactive coping and attending to student needs.

Hypothesis 5b: The expected negative effect of other-emotion appraisal on burnout will be mediated by both proactive coping and attending to student needs.

We were interested in teachers' global abilities to appraise their own and others' emotions. Performance-based tests of emotion perception do not measure the ability to perceive emotions in oneself. Moreover, research suggests that no single performance-based test of emotion perception covers the whole domain adequately (Bernieri, 2001) because nonverbal decoding accuracy tests that rely on different channels of nonverbal communication are only weakly correlated. By contrast, a self-report measure can provide an overall assessment of a person's perceived abilities and tendencies to appraise one's own and others' emotions across different channels of nonverbal communication and across different situations in life. Therefore, we used self-reports to measure these abilities.

3.2.5 Method

Participants and procedure

We invited 400 Syrian teachers from one geographic area (Lattakia) to participate voluntarily in this study. Those who agreed received oral instructions and were assured that the data would be treated confidentially. Measures were translated into Arabic by professional translators and retranslated to ensure accuracy. The data were collected in November, 2009 (more than 1 year before the beginning of armed conflict in Syria).

The participants consisted of 300 teachers (68.3% women, 31.7% men) from 13 integrated schools (whose students were between the ages of 10 to 18 years) in Syria. Teachers' age ranged from 23 to 59 years ($M = 40.37$, $SD = 7.77$); average teaching experience was 15.37 years ($SD = 7.94$). These teachers specialized in subjects such as Arabic, history, mathematics, or chemistry.

Measures

Descriptive statistics and reliabilities are reported in Table 6.

Emotion appraisal

The self-perceived ability to appraise emotions was assessed with the Wong and Law Emotional Intelligence Scale (WLEIS; Wong & Law, 2002). The two subscales Self-emotion appraisal and Other-emotion appraisal were used to measure teachers' self-rated abilities to both perceive and understand their own and others' emotions,

respectively. Responses were collected on a 7-point Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Sample items are “I have a good sense of why I have certain feelings most of the time” (Self-emotion appraisal); “I have a good understanding of the emotions of the people around me” (Other-emotion appraisal).

Proactive coping

Proactive coping was measured using the eponymous subscale of the Proactive Coping Inventory (PCI; Greenglass, Schwarzer, & Taubert, 1999). Fourteen items (e.g., “When I experience a problem, I take the initiative to resolve it”) were answered on a 4-point Likert-type scale ranging from 1 (*not true at all*) to 4 (*completely true*).

Attending to student needs

Because we could not find an appropriate measure to assess teachers’ tendency to attend to and address students’ needs, we created a new scale. After reviewing the literature on teachers’ interpersonal behavior, we generated 15 items. Based on an exploratory factor analysis, and taking into consideration the eigenvalues, the scree plot, and interpretability, a single factor was extracted. We excluded items with low loadings and retained nine items with factor loadings ranging from .43 to .66. The factor explained 38.64% of the variance in this set of items, shown in the Appendix. The internal consistency of the scale was .79. Teachers indicated the extent to which they agreed with each item on a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). High scores on this measure reflect teachers’ tendencies to pay attention to students’ needs and to establish a pattern of communication and interaction that may help them to address students’ needs early on.

Burnout

Burnout was measured with the Maslach Burnout Inventory (MBI; Maslach, Jackson, & Leiter, 1996). Items were adapted to the teaching context by replacing the term *recipients* with *students*. The scale consists of three dimensions: Emotional Exhaustion, Depersonalization, and Personal Accomplishment. Sample items are “I feel emotionally drained from my work” (Emotional Exhaustion); “I feel my students blame me for some of their problems” (Depersonalization); “I feel I have accomplished many worthwhile things with my students” (Personal Accomplishment). Responses were collected on a 4-point Likert-type scale ranging from 1 (*not at all true*) to 4 (*exactly true*). Because burnout reflects reduced personal accomplishment, we reversed the scores for this

subscale. The Global Burnout score (henceforth, simply designated “burnout”) was computed by averaging the subscale scores.

Control variables

Work demands were assessed using a shortened version of the Job Demands Scale by Jones, Fletcher, and Ibbetson (1991). Due to time constraints and on the basis of applicability to the present content, we selected seven out of 22 items (see Appendix), which were answered on a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Furthermore, we adapted items to the school context by replacing the term *client* with *student*. A sample item is: “I have more work than I have time to do.” We measured teachers’ general self-efficacy with an adapted nine-item version of the General Self-Efficacy Scale by Schwarzer and Jerusalem (1995). For reasons of economy, we deleted one item and shortened the wording of six other items. Responses were collected on a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). A sample item is: “I can find the ways and means to get what I want.”

3.2.6 Results

Descriptive statistics and intercorrelations are shown in Table 6. Because our key variables (i.e., self- and other-emotion appraisal, proactive coping, attending to student needs, and burnout) were significantly skewed, reflecting the typical positivity bias ($1.70 \leq \text{Kolmogorov-Smirnov-}Z \leq 2.84$, $ps < .01$), we report Spearman rank-order correlations.

Self- and other-emotion appraisals were negatively related to burnout, supporting Hypotheses 1a and 1b. Supporting Hypotheses 2a and 2b, self- and other-emotion appraisals were positively related to proactive coping. Supporting Hypotheses 3a and 3b, self- and other-emotion appraisals were positively related to attending to student needs. In turn, proactive coping and attending to student needs were negatively related to burnout, supporting Hypotheses 4a and 4b.

Multiple mediation analyses

Next, we examined whether the self-perceived abilities to appraise one’s own and others’ emotions were related to burnout through two pathways: proactive coping and attending to student needs. Because indirect effects seldom have normal sampling distributions (see Preacher & Hayes, 2008), we tested the indirect effects of

simultaneous mediation (i.e., mediators operating in parallel) using the nonparametric bootstrapping procedure (based on 1,000 resamples) as suggested by Hayes (2012). To address concerns about self-enhancement, socially desirable responding, and other potential confounds, we controlled statistically for general perceived self-efficacy, teaching experience, work demands, and school-level effects (using dummy variables to allow for differences in the intercept across schools).

Estimates of the bootstrapped indirect effects through proactive coping and attending to student needs are reported in Table 7. Both proactive coping and attending to student needs accounted for the effects of self-emotion appraisal and other-emotion appraisal on burnout, supporting Hypotheses 5a and 5b. Estimates of direct and total effects of self- and other-emotion appraisals on burnout are reported in Table 8. Note that the total effect of other-emotion appraisal was no longer significant in the model including covariates—an issue discussed below. Multiple mediation models are illustrated in Figure 5.

3.2.7 Discussion

Our hypotheses were supported, indicating that the self-perceived abilities to appraise emotions in oneself and others were negatively related to burnout through proactive coping and attending to student needs. In other words, teachers who gave strong evaluations of their abilities to appraise emotions in themselves and others were less likely to experience burnout, and these effects were mediated by proactive coping and attending to student needs. The indirect or mediated effects were statistically significant even after controlling for general perceived self-efficacy, teaching experience, work demands, and school level effects, attenuating concerns about common method, self-enhancement, and social desirability biases.

Our findings provide support for the hierarchical or cascading models of emotional intelligence proposed by Joseph and Newman (2010) and Mayer and Salovey (1997); these models suggest that the ability to perceive emotions is an essential foundation for and precursor of the effective regulation of emotion in oneself and others. Furthermore, our findings extend prior research on the role of abilities to perceive emotions in work contexts (e.g., Elfenbein, Foo, White, Tan, & Aik, 2007; Joseph & Newman, 2010; O'Boyle et al., 2011) by investigating the processes that underlie the relation between emotion appraisal and burnout. We hypothesized and found that this relation was

mediated by two antecedent-focused coping processes that entail attention deployment and situation modification. These strategies facilitate adaptive regulation because they can be activated at an early stage before problems fester and negative emotions become difficult to manage.

Because our findings were consistent with theory and research supporting causality (see Joseph & Newman, 2010), we conclude that the abilities to appraise emotions in oneself and others can guide one's attention to and provide useful information about potential stressors (see Dolan, 2002). This may help teachers to take appropriate action to eliminate stressors or nip them in the bud through problem-focused coping or otherwise attenuate the emotional impact of these stressors through emotion-focused coping, reducing the risk of burnout. Baum and King (2006) suggested that teachers would do well to know their own emotions and how these emotions affect their behavior toward students. We would add that teachers should also be aware of their students' emotions and how students' emotions affect students' behavior in the classroom.

The importance of attending to student needs for effective self-regulation among teachers has been largely neglected by prior research. Attending to student needs can help to prevent burnout because students who feel well attended to are less likely to act out in the classroom, and misbehavior in the classroom is a major source of stress for teachers. It can be considered an antecedent-focused or preventive strategy as long as teachers attend to students, recognize their needs, and take action early on before problems fester. By contrast, attending to students' needs only when the signs of trouble are blatant and problems have degenerated into misbehavior could be considered a reactive or response-focused coping strategy. Our findings suggest that high scores on our measure of attending to student needs reflect a tendency to establish a pattern of open communication that helps teachers to detect students' needs early on and behave proactively to prevent problems and negative emotional reactions.

It is interesting that both self- and other-emotion appraisals were positively related to both proactive coping and attending to student needs. This suggests that intra- and interpersonal processes are closely intertwined in emotion regulation. We have argued that both teachers' own inner cues of emotion and students' outer displays of emotion can provide useful information to guide teachers' self-regulation, broadly construed to encompass the regulation of both emotion and behavior. Moreover, attending to student needs can also facilitate self-regulation by helping teachers to solve problems

effectively and to prevent excessive self-preoccupation or dysphoric self-focused rumination.

Limitations

One of the limitations of self-report EI measures is that people may lack accurate self-knowledge, and their self-ratings may be distorted by self-enhancement and social desirability biases. In the present study, common method variance may also have led to inflated estimates of the strength of relations between variables. Yet, the support we found for our mediation hypothesis when controlling statistically for perceived general self-efficacy attenuates these concerns.

In mediation analyses controlling for general self-efficacy, work demands, teacher experience, and school-level effects, the significant and negative indirect effect of other-emotion appraisal on burnout was attenuated by a weak positive direct effect such that the total effect was no longer statistically significant. One possible explanation for this unexpected finding is that high scores on a self-report measure of other-emotion appraisal might not only reflect a teacher's actual abilities to perceive and understand emotions accurately (which evidence suggests is adaptive and therefore should help to prevent burnout) but may also tap into an excessive preoccupation with others (which may exacerbate stress and burnout) to some extent. We measured the abilities to appraise one's own and others' emotions with self-reports because performance-based tests cannot measure the ability to appraise one's own emotions and do not capture all the nonverbal communication channels of interest. Moreover, the exploratory scale that we created for assessing teachers' tendency to attend to students' needs warrants further research.

Finally, we do not know the extent to which our results might vary across cultures and types of schools. The Arab world scores high on power distance (Hofstede, 2001), and the Syrian culture can be considered a high-contact and collectivistic one (see Merkin & Ramadan, 2010). This may influence the ways in which teachers interact with students and cope with stressors at work.

Conclusion

We cannot infer causality from cross-sectional data, but, viewed in the light of prior theories and research, the present study suggests that the self-perceived ability to

appraise emotions helps to protect teachers from burnout. Self- and other-emotion appraisals seem to enable teachers to use information from emotional cues in order to prevent or manage stressors early on (see Elfenbein et al., 2007). More generally, the self-perceived ability to appraise emotions can be considered the basis for healthy self-regulation and for successful interactions with others, and these in turn can reduce the risk of burnout. This points to the importance of including both emotion appraisal and self-regulation skills in teacher preparation programs.

4. Applications of Emotional Intelligence in the Context of Personnel Selection

4.1 The Relevance of EI in Personnel Selection

On the basis of the large number of studies reporting EI to be a strong predictor of several work-related outcomes (for a review, see Brackett et al., 2011), there has been an increasing discussion about the practical implications EI might have in terms of training and selection. However, in contrast to studies on the effectiveness of EI trainings, research on the relevance of applicants' EI in selection settings has been relatively scarce. To illustrate, a search in PsycINFO (February 3, 2014) involving the keywords "emotional intelligence" and "training" and no further restrictions yielded 623 results; the combination of "emotional intelligence" and "selection"¹⁰ yielded only 209 results.

Furthermore, previous research suggests that EI is especially relevant to jobs associated with many emotional demands. For people in high emotional labor jobs, Joseph and Newman (2010) reported a positive relation between EI and job performance. By contrast, they found no or even a negative relation between EI and job performance for people working in low emotional labor jobs. Accordingly, in selection procedures for high emotional labor jobs, in particular, there may be the potential to improve the conventional selection process by including applicants' EI as an aspect. Thus, the study presented below was aimed at examining whether and how EI would predict aptitude ratings for people applying for a high emotional labor job.

¹⁰ Restricting the term to personnel selection, the PsychINFO search yielded 66 results. Restricting the term to applicant selection, the PsychINFO search yielded 4 results.

4.2 Applicants' EI as a Predictor of Flight Attendant Aptitude Ratings¹¹

4.2.1 The Current State of Research

There is a gradually increasing amount of research on the relevance of EI in the context of personnel selection, but such research has primarily been based on the often criticized mixed conceptualizations of EI. Most of the existing studies have focused on the relevance of EI in the admission to medical school. In a pilot study, Carrothers, Gregory, and Gallagher (2000) tested mixed EI (comprised of maturity, compassion, morality, sociability, and calm disposition) in applicants to a medical school. As expected, applicants' EI was significantly related to their personal and interpersonal competencies as rated by interviewers. Moreover, successful applicants had higher EI scores than those who were not accepted even though EI scores were not used in the decision-making process.

4.2.2 The Present Study

To address the existing gaps in this area of research, we conducted a study on a sample of people applying for a position as a flight attendant and tested whether and how applicants' ability EI predicted others' ratings of their job-relevant competencies and general aptitude in the selection procedure. We decided to analyze the data of people who applied for the flight attendant job at a large German airline for two main reasons: First, a comprehensive selection procedure—including an assessment center (AC)—precedes the in-firm training of flight attendants. Second, being a flight attendant can be considered to rank among prototypically high emotional labor jobs (see Hochschild, 1979; Kinman, 2009; Sonnentag & Natter, 2004). To illustrate, MacDonald, Deddens, Grajewski, Whelan, and Hurrell (2003) compared the psychological job demands of flight attendants and employees working for a division of the government. Core fields of work in the latter group are occupational safety and work time regulation. They found that the psychological job demands of the flight attendants were significantly

¹¹ Previous versions of parts of this chapter have been submitted as a journal article: Herpertz, S., Nizielski, S., Schütz, A., & Hock, M. (2014). The relevance of emotional intelligence in personnel selection for high emotional labor jobs. Manuscript submitted for publication. Herpertz and Nizielski contributed equally to this work.

higher than those of the government workers. For example, regardless of their own discomfort, flight attendants have to express calmness and composure (Hochschild, 1979), and sometimes they are expected to suppress their own feelings of frustration in the face of angry or disruptive passengers to maintain a professional appearance (Ballard et al., 2004; Hochschild, 1983). Thus, being a flight attendant is more sophisticated than generally thought in the light of the job's standard tasks such as welcoming and saying good bye to passengers, storing luggage, closing doors, and serving food and drinks (see Stopperan, 2011).

Next to the general advantages of the ability model over mixed EI models already mentioned in Chapter 1 (e.g., narrowly defined construct, conceptual distinction from established personality traits), a specific benefit of the ability model in the context of personnel selection is that ability EI can be measured via performance-based tests. Faking good is a serious problem in personnel selection situations (Christiansen, Janovics, & Siers, 2010). In contrast to performance-based tests, self-reports are vulnerable to self-enhancement and socially desirable responding (Law, Mobley & Wong, 2002; Paulhus, 1991). Thus, performance-based tests can be considered more valid than self-reports in the context of personnel selection. The Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Mayer et al., 2002a) was found to be resistant to faking good (Day & Carroll, 2004) and unrelated to cognitive biases such as overestimating one's own skills (Mayer, Salovey, & Caruso, 2002b). Thus, we chose this measure to examine applicants' ability EI in a flight attendant selection setting.

The applied selection situation was characterized by time restrictions, and for reasons of economy, we assessed only three of the four facets from the Mayer and Salovey (1997) model of ability EI. In line with the cascading model of EI (Joseph & Newman, 2010), the ability to use emotions was excluded. It has often been argued that this branch is conceptually redundant with other EI facets, especially with the abilities to regulate (see Cole, Martin, & Dennis, 2004; Joseph & Newman, 2010) and perceive emotions (Fan, Jackson, Yang, Tang, & Zhang, 2010). Furthermore, the ability to use emotions lacks construct validity. Several studies have indicated a better model fit without the use of emotions facet (Gignac, 2005; Palmer, Gignac, Manocha, & Stough, 2005; Rossen, Kranzler, & Algina, 2008). Thus, we focused on the abilities to perceive, understand, and regulate emotions in this study. In line with Joseph and Newman's (2010) cascading model of EI, these EI facets were viewed as building upon each other,

meaning that perceiving emotions provides emotional information that people can apply to their available knowledge about emotions. Appraising emotions accurately, in turn, is required for the effective regulation of emotions. This reasoning led us to propose:

Hypothesis 1: The positive relation between the abilities to perceive and regulate emotions will be mediated by the ability to understand emotions.

As the flight attendant job is characterized by high emotional job demands, we predicted that emotionally intelligent applicants would be more likely to be rated as suitable for the flight attendant job than their less emotionally intelligent counterparts. Thus, we hypothesized:

Hypothesis 2a: Applicants' ability to perceive emotions will be positively related to the aptitude ratings.

Hypothesis 2b: Applicants' ability to understand emotions will be positively related to the aptitude ratings.

Hypothesis 2c: Applicants' ability to regulate emotions will be positively related to the aptitude ratings.

The flight attendant job is associated with a variety of tasks. In this study, we focused on competencies that may help potential flight attendants to meet the emotional job demands that were simulated in the AC. These job-relevant competencies involve interpersonal skills, cooperation and teamwork, customer service orientation, realistic self-evaluation, and stress-resistance.

Interpersonal skills

The flight attendant job is characterized by frequent and sometimes conflict-laden interactions with passengers. Thus, interpersonal skills can be considered important job-relevant competencies of a flight attendant. It has often been argued that interacting with others requires emotional intelligence (e.g., Morrison, 2007). In agreement with Engelberg and Sjöberg (2005), we viewed EI as constituting a basis for interpersonal skills, which in turn can shape social interactions and relationships with passengers in an effective way. Previous research suggests that emotionally intelligent people are disposed to possess interpersonal skills. Pilch (2008), for example, found positive relations between self-ratings of ability EI and social competence. Lopes, Grewal, Kadis, Gall, and Salovey (2006) reported that performance-based ability EI was

positively related to peer-rated sociability and negatively related to peer-rated negative social interaction. At the facet level, the abilities to understand and regulate emotions were negatively related to peer-rated negative social interaction.

Cooperation and teamwork

A flight attendant not only interacts with passengers but is part of a closely collaborating team. Thus, cooperation and teamwork can be considered further tasks of the flight attendant job. In a study by Troth, Jordan, and Lawrence (2012), the self-perceived management of others' emotions was positively related to ratings of communication effectiveness and appropriateness as well as to perceptions of the social cohesion of the team. Furthermore, Devonish and Greenidge (2010) found that self-perceived EI was negatively related to counterproductive behavior toward individuals in the organization.

Customer service orientation

Service is a key component of the flight attendant job. Thus, we considered customer service orientation as an additional job-relevant competency. People high in ability EI have been shown to meet high service standards (Kernbach & Schutte, 2005; Rozell et al., 2004). Previous studies showed that ability EI is positively related to deep acting, which is the strategy of complying with emotional display rules by modifying one's internal feelings (Brotheridge, 2006; Cheung & Tang, 2009). Deep acting, in turn, was found to be associated with customer satisfaction (Kernbach & Schutte, 2005) but also employees' well-being (Côté, 2005; Gross & John, 2003). Yagil (2012) showed that engagement mediated the relation between deep acting and customer satisfaction. At the facet level, flight attendants' ability to identify emotions was positively related to their service performance (Piñar-Chelso & Fernández-Castro, 2011). Furthermore, the ability to understand emotions might help flight attendants to correctly interpret emotion cues sent by passengers and thus receive important information about how to interact adaptively with passengers and respond to their concerns and needs. Supporting these assumptions, the appraisal and utilization of emotions were found to be related to the service performance of casino hosts (Prentice & King, 2013).

Realistic self-evaluation

In order to improve oneself in the flight attendant job, it is important to have a realistic perception of oneself and of one's own job performance. According to the cascading model of Joseph and Newman (2010), people high in the ability to perceive emotions might have a larger and more accurate base of emotional information, which they can use to evaluate their own job performance. Recognizing anger in oneself, for example, might show a flight attendant that he or she needs to be trained in effective emotion-regulation strategies. Thus, emotional abilities may facilitate a realistic self-evaluation. Especially the abilities to perceive and understand emotions should help the applicants to rate themselves accurately concerning their performance in the AC.

Stress-resistance

Flight attendants face many stressors at work. For example, complaining passengers constitute a challenge. Thus, stress-resistance can be considered to be a job-relevant competency that helps flight attendants to show good job performance and mental health in the long run. Previous research has indicated that people high in the ability to regulate emotions less often apply the maladaptive strategy of emotion suppression (e.g., Little, Kluemper, Nelson, & Gooty, 2012; Wranik, Barrett, & Salovey, 2007). In a study by Piñar-Chelso and Fernández-Castro (2011), flight attendants participated in a role play in which they were faced with a difficult passenger. The authors found that participants high in perceived emotional clarity (i.e., the self-perceived ability to understand one's own feelings) were less likely to report symptoms of stress and emotional dissonance (i.e., the discrepancy between felt and expressed emotions) than their less emotionally intelligent counterparts. Lopes and colleagues (2006) found that EI was positively related to supervisor-rated stress tolerance. At the facet level, both the abilities to perceive and to regulate emotions were positively related to supervisor-rated stress tolerance.

Thus, we expected emotionally intelligent applicants to possess job-relevant competencies that may help them to engage successfully in the selection situations of the AC. This reasoning led us to propose:

Hypothesis 3a: Applicants' ability to perceive emotions will be positively related to the AC ratings of their job-relevant competencies.

Hypothesis 3b: Applicants' ability to understand emotions will be positively related to the AC ratings of their job-relevant competencies.

Hypothesis 3c: Applicants' ability to regulate emotions will be positively related to the AC ratings of their job-relevant competencies.

We expected applicants high in these job-relevant competencies to engage more successfully in the AC and thus receive higher ratings of their job-relevant competencies than others. As these competencies are integrated in decision making, we hypothesized that applicants with high ratings of their job-relevant competencies would be more likely to be classified as suitable for the job than their competitors. This reasoning led us to propose:

Hypothesis 4: The AC ratings of applicants' job-relevant competencies will be positively related to the ratings of their overall aptitude as a flight attendant.

In sum, we surmised that emotionally intelligent applicants would have more job-relevant competencies available than their counterparts. These job-relevant competencies, in turn, could help them to meet the emotional job demands simulated in the AC. Applicants who engaged successfully in the AC were expected to be rated as suitable for the job. This reasoning led us to propose:

Hypothesis 5a: The expected positive relation between applicants' ability to perceive emotions and the aptitude ratings will be mediated by the AC ratings of their job-relevant competencies.

Hypothesis 5b: The expected positive relation between applicants' ability to understand emotions and the aptitude ratings will be mediated by the AC ratings of their job-relevant competencies.

Hypothesis 5c: The expected positive relation between applicants' ability to regulate emotions and the aptitude ratings will be mediated by the AC ratings of their job-relevant competencies.

4.2.3 Method

Participants and procedure

We analyzed the data of 193 people who had applied for the job of flight attendant at a large German airline in 2011; 138 applicants were accepted, and 55 were not. Women

comprised 78.8% of the sample, and 21.2% were men. Ages ranged from 17 to 52 years ($M = 25.88$, $SD = 7.13$).

The selection procedure consisted of several steps. In Stage 1, applicants completed an online form. They were asked to proceed to Stage 2 if they met certain minimum standards (e.g., height ≥ 1.60 meters, completed graduation) and if they had passed a telephone interview on English language skills and job motivation. In Stage 2, they completed the airline's standard AC for the flight attendant job. In addition to the conventional selection procedure, participants also completed a computerized test of emotional intelligence.

Measures

Emotional intelligence

The German version of the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Steinmayr et al., 2011a) was used to assess performance-based EI. The MSCEIT represents Mayer and Salovey's (1997) model of emotional intelligence. As already mentioned, we applied an abbreviated form. In order to measure the ability to perceive emotions in others (henceforth, simply called *the ability to perceive emotions*), applicants worked on the faces task, for which they had to correctly name emotions in four photographs of faces. Answers were collected on a 5-point scale ranging from 1 (*no/not at all*) to 5 (*extreme/very strong*). Because the pictures task is often not well-accepted by participants, we decided not to use this task in the personnel selection context. A high split-half reliability of the faces task enabled us to cut out the pictures task.

The ability to understand emotions was assessed by both tasks of this branch. The applicants were asked to indicate how (a) emotions change over time and (b) blends of emotions result in complex feelings. Responses were made by choosing one out of five answers. The ability to regulate emotions was assessed by asking participants to rate the effectiveness of different strategies to manage (a) their own emotions and (b) the emotions of others on a 5-point scale ranging from 1 (*very ineffective*) to 5 (*very effective*). Applicants' scores were calculated using the consensus scoring method. The test authors reported split-half reliability coefficients of .86 for the faces task and .72 and .73 for the understanding and regulating emotion branches, respectively (Steinmayr et al., 2011b).

Job-relevant competencies and characteristics

In order to assess their job-relevant competencies and characteristics, the applicants took part in the airline's standard AC, which includes simulated selection situations. In a group exercise (involving three to five people), which was designed as a performance test based on samples of work-relevant behavior, each applicant was observed by a psychologist. The psychologist was not involved in the present study and was blind to the hypotheses. He or she rated each applicant with respect to (a) interpersonal skills in a group interaction and (b) cooperation and teamwork. Ratings were collected on a Likert-type scale ranging from 1 (*low*) to 5 (*high*).

Another psychologist (likewise not involved in the present study and blind to the hypotheses) conducted a structured interview with each applicant. During the interview, the applicants had to participate in a role play in which the psychologist played the role of the passenger and the applicant played the role of the flight attendant. The psychologist rated each applicant with respect to (a) motivation and realistic job view, (b) professional conduct and physical appearance, (c) interpersonal skills in dyadic interaction, (d) customer service orientation, (e) realistic self-evaluation, and (f) stress-resistance. All job-relevant competencies and characteristics were provided by (behavioral) anchors, which were translated into English for the present paper (see Appendix).

Flight attendant job aptitude ratings

Following the AC, the overall aptitude rating was obtained by taking into account the AC ratings of applicants' job-relevant competencies and characteristics. In detail, the psychologists exchanged their documented observations in the selection situations and discussed their corresponding ratings. By doing so, they reached an overall consensus on the rating of the applicant's aptitude as a flight attendant. Scores from 3 to 5 led to acceptance, whereas scores of 1 or 2 led to rejection. Applicants' performance on the test of emotional intelligence was not considered in this decision. The psychologists had no access to the applicants' EI scores.

In this study, we were interested in whether applicants with high emotional abilities would be more likely to be rated as suitable for a high emotional labor job. However, some of the competencies and characteristics that were assessed in the AC were not relevant to meeting the emotional demands of the flight attendant job. For example, we

expected emotional intelligence to be unrelated to physical appearance. Reviewing the literature, previous research has shown no considerable relations between emotional intelligence on the one hand and motivation, realistic job view, professional conduct, and physical appearance on the other. Thus, we focused on the following job-relevant competencies: interpersonal skills in group interaction, cooperation and teamwork (assessed with the AC group exercise); interpersonal skills in dyadic interaction, customer-service orientation, realistic self-evaluation, and stress-resistance (assessed with the interview and the AC role play).

Data analysis

Data analysis, using the free statistical software R version 2.15.2 (R Development Core Team, 2012), comprised three steps: (a) descriptive analyses, (b) a principal component analysis, and (c) a path analysis.

4.2.4 Results

Descriptive statistics, intercorrelations, and comparisons of means

Descriptive statistics are reported in Table 9; intercorrelations are reported in Table 10. Applicants' aptitude ratings and emotional abilities were not significantly correlated with age. Stress-resistance ($r = .16, p < .05$) increased with age. Male and female applicants differed on the aptitude ratings, $t(191) = -2.43, p < .05$, and the ability to perceive emotions, $t(51) = -2.20, p < .05$. There were significant correlations between AC ratings of job-relevant competencies and overall aptitude ratings as well as between AC ratings of competencies and characteristics irrelevant to emotional labor (i.e., motivation and realistic job view, professional conduct, and physical appearance) and aptitude ratings.

Principal component analysis of the AC ratings of applicants' job-relevant competencies

In order to analyze whether there were global components present in the AC ratings of applicants' job-relevant competencies, we conducted a principal component analysis using the R package psych 1.3.2 (Revelle, 2013). Parallel analysis results based on the principal components of the rating data (Horn, 1965; Revelle, 2013) suggested two principal components with eigenvalues that exceeded the eigenvalues of the random variables. After conducting a Varimax rotation, these components explained 38% and

31% of the variance, respectively. Ratings of applicants' job-relevant competencies based on their performance in the interview and the role play loaded clearly on the first principal component (henceforth, simply called *interview and role play ratings of job-relevant competencies*), and ratings of applicants' job-relevant competencies based on their performance in the group exercise loaded on the second component (henceforth, simply called *group exercise ratings of job-relevant competencies*). The resulting component scores were used in the subsequent path analysis and are shown in Table 11.

Path analysis

To investigate whether applicants' emotional abilities had positive effects on the AC ratings of their job-relevant competencies and consequently on the overall aptitude ratings, we conducted a path analysis. The test of the path model was conducted with the R-package lavaan (Rosseel, 2012) using the mean-adjusted maximum-likelihood (MLM) estimation method, which yields a standard maximum likelihood estimation of the model parameters with robust standard errors and a Satorra-Bentler-scaled test statistic (e.g., Finney & DiStefano, 2006). We accepted a model that included the three EI facets (i.e., the abilities to perceive, understand, and regulate emotions) as predictors, the two principal components (i.e., the interview and role play ratings of job-relevant competencies and the group exercise ratings of job-relevant competencies) as potential mediators, and the aptitude ratings as the outcome. We inserted gender as an additional predictor in the model because male and female applicants differed significantly in their ability to perceive emotions and in the aptitude ratings. As stress-resistance increased with age, we examined dummy coded age (i.e., younger and older applicants) as a further predictor. Model fit was very good with a nonsignificant chi-square statistic ($X^2 = 8.32$, $df = 10$, $p = .60$), CFI = 1.00, TLI = 1.02, RMSEA < .001, SRMR = .035. The path model is shown in Figure 6.

In contrast to Hypothesis 1, there was no significant indirect effect of perceiving emotions on regulating emotions through understanding emotions ($\beta = .05$, $p = .09$). Examining Hypothesis 2a, we found that applicants' ability to perceive emotions was positively related to the aptitude ratings; however, the direct effect also failed to reach the conventional level of significance ($\beta = .08$, $p = .07$). There were no direct effects of the applicants' abilities to understand or regulate emotions on the aptitude ratings.

Partially supporting Hypothesis 3b, there was a significant positive effect of the ability to understand emotions on the interview and role play ratings of job-relevant competencies ($\beta = .19, p < .05$). Partially supporting Hypothesis 3c, there was a significant positive effect of the ability to regulate emotions on the group exercise ratings of job-relevant competencies ($\beta = .15, p < .05$). In contrast to Hypothesis 3b, the effect of the ability to understand emotions on the group exercise ratings of job-relevant competencies was negative ($\beta = -.24, p < .01$). The interview and role play ratings ($\beta = .71, p < .001$) and the group exercise ratings of job-relevant competencies ($\beta = .43, p < .001$) were significantly related to the ratings of the applicants' aptitude as a flight attendant, supporting Hypothesis 4.

Recent publications on mediation analyses have agreed that a significant path between the predictor and the outcome is not a necessary precondition of mediation. As shown by Zhao, Lynch, and Chen (2010), a significant indirect effect is sufficient for establishing mediation. In terms of the typology proposed by the authors, the group exercise ratings of job-relevant competencies, for example, might act as an *indirect-only mediator* between the ability to understand emotions and the aptitude ratings. Thus, we tested indirect effects—even though we found only a marginally significant direct effect of applicants' ability to perceive emotions on the aptitude ratings. Indeed, there was a significant indirect effect of applicants' ability to understand emotions on the aptitude ratings through the interview and role play ratings of their job-relevant competencies ($\beta = .14, p < .05$), partially supporting Hypothesis 5b. The unexpected negative effect of applicants' ability to understand emotions on the aptitude ratings was mediated by group exercise ratings of job-relevant competencies ($\beta = -.10, p < .01$). Partially supporting Hypothesis 5c, the positive effect of applicants' ability to regulate emotions on the aptitude ratings was mediated by the group-exercise ratings of job-relevant competencies ($\beta = .06, p < .05$). Standardized coefficients and standard errors of the indirect effects are reported in Table 12.

4.2.5 Discussion

Empirical research on the impact of applicants' EI in real-life selection settings has been relatively scarce. In previous studies, EI—primarily based on so-called mixed models—has mostly been investigated in applicants to medicine schools. In the current study, which comprised an authentic selection situation, we examined whether and how the

ability EI of people applying for a position as a flight attendant (i.e., a prototypically high emotional labor job) would predict their other-rated overall aptitude. Furthermore, we were interested in the mechanisms underlying this expected relation.

First, our results did not support the basic assumption of the cascading model of EI (Joseph & Newman, 2010). Thus, we cannot conclude that emotion understanding is the copula between accurate emotion perception and effective emotion regulation. Although the abilities to perceive, understand, and regulate emotions were related to each other, the findings of our study indicate that these emotional abilities are important on their own and that effective emotion regulation does not necessarily require emotion understanding.

The central aim of our study was to examine whether emotionally intelligent applicants would be more likely to be rated as suitable for a high emotional labor job than their competitors. Our results showed that applicants' ability to perceive emotions was positively related to the aptitude ratings. Nevertheless, the direct effect did not reach the conventional level of significance, and the other two EI facets were not related to the aptitude ratings. These findings might be due to the airline's concept of flight attendant aptitude: Ratings of applicants' aptitude were not based solely on the competencies that are necessary for meeting the emotional demands of the job. Other job-relevant competencies and characteristics such as physical appearance, motivation, and realistic job view were also used in the aptitude ratings. For example, physical appearance was as strongly related to the applicants' aptitude ratings as was customer service orientation.

Furthermore, we examined whether emotionally intelligent applicants would be given higher AC ratings of their job-relevant competencies than their less emotionally intelligent counterparts. We found a positive effect of the ability to understand emotions on the interview and role play ratings of job-relevant competencies and a positive effect of the ability to regulate emotions on the group exercise ratings of job-relevant competencies. An interesting but unexpected finding was the negative effect of the ability to understand emotions on the group exercise ratings of job-relevant competencies. To sum up, we found inconsistent effects of the applicants' ability to understand emotions on the AC ratings of their job-relevant competencies. Thus, we believe that the type of selection situation may be relevant to the subsequent AC ratings: The group exercise was performed under time pressure and therefore could have been a

more stressful selection situation than the interview and the role play. The ability to understand emotions is the “most cognitively saturated” (Mayer et al., 2001, p. 235) EI facet and may actually be harmful in unpredictable stressful situations in which spontaneous reactions are required. Interpreting one’s own emotional cues and the cues of others might prohibit spontaneous behavior and demand cognitive resources that are needed to act adaptively in such a group situation. We believe that applicants with a pronounced ability to understand emotions may have been cognitively occupied by analyzing the situation instead of acting spontaneously and may therefore have received low ratings on their interpersonal skills in group interactions as well as on their cooperation and teamwork in the group exercise. By contrast, the interview and the role play were more predictable situations that involved dyadic interactions. Thus, applicants high in the ability to understand emotions might outperform others who are less able to understand emotions because the high-ability applicants have the cognitive resources available to follow existing norms and act upon behavioral scripts. This strategy seems to be adaptive in interview situations because Sieverding (2009) found that people who tried to suppress emotions during the interview according to conventional display rules were given higher competence ratings than so-called nonsuppressors (i.e., people who did not try to hide or suppress their emotions). Moreover, significant positive effects of the AC ratings of job-related competencies on the applicants’ aptitude for the flight attendant job indicated that the final decision was indeed based on observer ratings of the job-relevant competencies.

Finally, we expected that ratings of the job-relevant competencies would be found to be underlying mechanisms of the relations between applicants’ emotional abilities and the aptitude ratings. In our model, we included the interview and role play ratings and the group exercise ratings of job-relevant competencies as potential mediators. In accordance with our hypothesis, the group exercise ratings of job-relevant competencies (comprised of interpersonal skills in group interaction, cooperation, and teamwork) mediated the positive relation between the ability to regulate emotions and the aptitude ratings. In other words, applicants with a pronounced ability to regulate emotions received higher ratings of their job-related competencies than others. High ratings of job-relevant competencies, in turn, were positively associated with the overall ratings of the applicants’ aptitude for the flight attendant job. With regard to the applicants’ ability to understand emotions, the indirect effects on the aptitude ratings were more complex.

Applicants with a pronounced ability to understand emotions received high interview and role play ratings but low group exercise ratings of their job-relevant competencies. This finding might explain the nonsignificant direct effect of the ability to understand emotions on the flight attendant aptitude ratings.

Limitations and directions for future research

Some limitations of this study should be noted. A critical aspect of the selection process was that only one psychologist provided ratings in each situation. Although such less than optimal approaches are common in real-life selection settings (see Zibarras & Woods, 2010), two people should be employed in each rating situation in future studies.

We used the MSCEIT (Steinmayr et al., 2011a) to assess applicants' EI. Some subscales (i.e., understanding and regulating emotions) of this measure have only moderate reliabilities, and this in turn reduces the associations with the mediators and the outcome. With a more reliable measure, larger effects may have emerged. And further, for reasons of limited time and acceptance, we used only the faces task of the MSCEIT (Steinmayr et al., 2011a) to assess applicants' ability to perceive emotions.

Furthermore, because the data were cross-sectional in nature, we do not have information about the long-term job success of the accepted applicants. We thus recommend that future studies apply a longitudinal approach and examine the mental health and job performance of accepted applicants over a period of time. In addition, the incremental validity of EI above and beyond other selection variables (e.g., cognitive intelligence and conscientiousness) needs to be further established.

Practical implications

Focusing on applicants' abilities to perceive and regulate emotions seems to be useful for selecting applicants for high emotional labor jobs. First, our results indicate that there is a trend toward applicants' ability to perceive emotions affecting personnel decisions directly. We thus argue that it may be useful to integrate a performance-based measure of perceiving emotions as a screening instrument early in the selection process, preceding more expensive procedures such as an AC. Still, more research is needed on this issue.

Our results suggest that applicants' emotional abilities impact their behavior in selection situations. This behavior, in turn, predicts ratings of job-relevant competencies and

subsequent aptitude ratings. Personnel selection might be assisted by integrating a performance-based measure of the ability to regulate emotions because applicants' scores on regulating emotions seem to be indicative of their ability to work as team members and to meet the corresponding demands (e.g., cooperation) of a high emotional labor job. When focusing on the ability to understand emotions, caution is required because of our inconsistent results with regard to dyadic and group selection situations. Applicants' scores on this "most cognitively saturated" (Mayer et al., 2001, p. 235) EI facet are ambiguous and might be used when cognitive abilities are of specific interest.

Even though future studies are needed to replicate the present results, we believe that including measures of applicants' EI in the selection process can improve traditional personnel selection procedures for high emotional labor jobs. We recommend using a performance-based test of EI to avoid faking good (Day & Carroll, 2008). As there is evidence that performance-based EI is related to job performance (e.g., Lopes et al., 2006) and mental health (e.g., Davis & Humphrey, 2012), we assume that including ability EI in personnel selection may help to identify applicants who can meet the demands of high emotional labor jobs in the long run.

5. Integration and Conclusion

5.1 Central Research Findings

In the following, I will summarize the most important findings of my dissertation and provide answers to the research questions I introduced at the end of Chapter 1.

Do emotionally intelligent people rely more strongly on the nonverbal part of emotion-relevant information when appraising others' emotional states than their less emotionally intelligent counterparts?

The results of the dissertation replicated the existence of perceptual nonverbal dominance. Although each and every participant showed a relative nonverbal dominance in emotion perception, participants differed in the extent to which they based emotional judgments on nonverbal emotional signals as a function of emotional intelligence. As an answer to the above question: The more emotionally intelligent the participants were, the more their emotion perception was driven by nonverbal cues. In other words, compared with participants low on performance-based EI, those high on EI relied more strongly on nonverbal emotional signals when they were asked to appraise the emotional states of others.

At the facet level, the ability to understand emotions was also positively related to nonverbal dominance. Contrary to expectations, the ability to perceive emotions was not significantly related to nonverbal dominance. Upon closer examination, however, there were differences between the two MSCEIT (Steinmayr et al., 2011a) tasks that correspond to the perceiving emotions branch. In contrast to the pictures task, the MSCEIT (Steinmayr et al., 2011a) faces task, which explicitly refers to the ability to appraise nonverbal information in others' faces, was positively related to nonverbal dominance.

Why do emotionally intelligent teachers perform better on the job than their less emotionally intelligent counterparts?

First, the results of the dissertation support previous research indicating that EI can contribute to the performance of people working in high emotional labor jobs. In a sample of teachers, perceived emotional abilities were negatively related to student misconduct, which was used as an indicator of poor job performance. When looking

further into the question of which processes might contribute to the negative effect of teacher EI on student misconduct, the interpersonal regulation strategy of attending to student needs was identified as one possible mechanism. Attending to student needs fully mediated the negative effects total EI and the perceived abilities to appraise and regulate one's own emotions on student misconduct. Contrary to my expectations, teachers' perceived ability to appraise others' emotions was not significantly related to attending to student needs. This is an interesting finding that will be discussed further in a subsequent paragraph.

Why are emotionally intelligent teachers less likely to experience burnout than those low in EI?

The results of the present dissertation were consistent with previous research showing a negative relation between EI and burnout in a sample of teachers. A further investigation into the indirect effects of teacher EI on burnout yielded two processes that might help protect teachers from burnout. Both attending to student needs and proactive coping accounted for the negative effects of teachers' perceived abilities to appraise their own and others' emotions on burnout.

Does applicants' EI predict aptitude ratings in a high emotional labor job?

In the context of a real-life selection setting, a positive relation between applicants' ability to perceive emotions and other-reported aptitude ratings for the job as a flight attendant was found. However, the direct effect of perceiving emotions on the aptitude ratings failed to reach the conventional level of significance. In contrast to my expectations, there were no direct effects of the abilities to understand or regulate emotions on the aptitude ratings.

And furthermore, which processes might mediate the expected positive relations?

Although there was only a trend toward positive direct effects, several indirect effects of applicants' EI on the aptitude ratings were found: Ratings of applicants' job-relevant competencies, which were based on their performance in the group exercise of the AC, mediated the positive relation between the ability to regulate emotions and the flight attendant aptitude ratings. In addition, the positive relation between the ability to understand emotions and the aptitude ratings was mediated by the ratings of applicants' job-relevant competencies, which were based on their performance in the interview and the role play of the AC. In contrast to my expectations, there was a negative indirect

effect of the ability to understand emotions on the flight attendant aptitude ratings through the ratings of applicants' job-relevant competencies, which were based on their performance in the group exercise. This noticeable finding is revisited in a subsequent section of the overall discussion.

5.2 Overall Discussion

5.2.1 Perceived EI Seems to Promote Antecedent-Focused Coping Strategies

Although there are an overwhelming number of studies on the relevance of EI in the workplace, little attention has been paid so far to the mechanisms that underlie the well-established relations between EI and work-related outcomes. To address this gap, I concentrated on antecedent-focused strategies, which are generally considered to be more effective than response-focused regulation (see Gross, 1998), and examined whether these strategies contribute to the effects of perceived EI on job performance and burnout. Because interaction with clients is a central characteristic of high emotional labor jobs, I investigated not only intra- but also interpersonal regulation strategies as potential mechanisms.

Even though causality cannot be inferred due to the cross-sectional study design, the findings of the dissertation indicate that teachers high in perceived emotional abilities seem to instigate intra- and interpersonal regulation strategies early on—before stress occurs. In detail, teachers high on the perceived abilities to appraise one's own and others' emotions seem to prevent work-related stressors by anticipating difficult situations at work but evaluating them as challenges and opportunities for personal growth rather than as serious threats. Furthermore, teachers who believe in their own abilities to appraise and regulate their own emotions seem to attend to their students and address their students' needs. This interpersonal regulation strategy might help them to establish good working relationships with their students and thus to prevent student misconduct, which is a serious stressor in the teaching profession.

5.2.2 Transferability of These Strategies to Other Professions

I examined both kinds of antecedent-focused regulation strategies in a sample of teachers. Nevertheless, these strategies might be applicable to other professions as well. Proactive coping is a general regulation strategy, whereas attending to student needs is specific to teaching. However, the latter—in the more general form of attending to

clients' needs—may also be an adaptive strategy for people working in other high emotional labor jobs.

An example located in the service sector might emphasize the supposed transferability: Customer complaints, for example, can provoke anger in a service provider. However, expressing anger toward the customer usually contradicts the emotional display rules of the organization and can damage the quality of social interaction. Suppressing anger is emotionally exhausting to the service provider (see Chapter 1), though, and can lead to burnout in the long run. Hence, preventing anger from the outset can be considered an effective coping strategy that can promote job performance and protect the service provider from burnout.

According to the findings of the dissertation, the perceived abilities to appraise one's own and others' emotions seem to help employees to anticipate difficult situations with clients and to take future-oriented actions to prevent them from occurring. Emotions include important information about inner states, thoughts, and intentions. Thus, being positive about one's own ability to appraise others' emotions might help the service provider to focus on the customer and probably to perceive subtle signals of dissatisfaction. The interpersonal strategy of attending to and addressing the needs of the customer might help the service provider to improve the situation (or more generally to modify the situation) and thus to prevent the customer from complaining.

If anger still continues to increase, believing in one's own abilities to appraise and regulate one's own emotions might help the service provider to recognize that he or she needs to calm down to avoid losing his or her temper. Self-regulation strategies such as attention deployment (e.g., attending to the customer's needs rather than to one's own inner state) or a re-evaluation of the situation (e.g., satisfying the difficult customer is now treated as a challenge) might help the service provider to prevent the situation from escalating. Thus, perceived emotional abilities might also help employees to nip emotionally demanding situations in the bud—or more generally—to attenuate the impact of work-related stressors.

5.2.3 The Uniqueness of the Ability to Understand Emotions

According to the findings of the dissertation, the ability to understand emotions is a facet of EI that requires particular attention. As expected, there were positive relations between the ability to understand emotions and work-related outcomes when this EI

facet was combined with the ability to perceive emotions to form the construct of emotion appraisal and was assessed by self-report (see Chapter 3). When using the problem-based approach to the ability to understand emotions, however, the results were inconsistent. As expected, the ability to understand emotions was positively correlated with the tendency to base emotional judgments on nonverbal emotional signals (see Chapter 2). However, with regard to the flight attendant job, there was no direct effect of applicants' ability to understand emotions on aptitude ratings (see Chapter 4). In line with my expectations, there was a positive indirect effect of applicants' ability to understand emotions on the aptitude ratings through the ratings of applicants' job-relevant competencies, which were based on their performance in the interview and role play. Contrary to my expectations, there was a negative indirect effect of the ability to understand emotions on the aptitude ratings through the ratings of the applicants' job-relevant competencies, which were based on their performance in the group exercise. It is possible that the performance-based approach to the ability to understand emotions assesses general cognitive ability and information-processing speed rather than a person's capacity to understand emotions. This idea was supported by Mayer et al. (2001) who viewed the ability to understand emotions as the most cognitive EI facet as it is generally more strongly related to IQ than the other EI facets. Further support resulted from a finding of the present dissertation (see Chapter 2): Those people high in the ability to understand emotions were faster at appraising others' emotional states.

5.2.4 The More, the Better? On the Possible Maladaptive Effects of EI

As already mentioned, previous research (for a meta-analytical review, see Joseph & Newman, 2010) indicates that not everybody benefits from high EI with regard to one's own job performance. But also within high emotional labor jobs, it is a debatable point whether EI constitutes a personal resource for employees without any limitation. The findings of the present dissertation suggest that EI, especially the ability to understand emotions and the tendency to use this skill in everyday life, may also have some costs. For example, there was a nonsignificant relation between teachers' perceived ability to appraise others' emotions and student misconduct. A pronounced self-efficacy in appraising others' emotions might be indicative of an exaggerated focus on others and their emotional states. Thus, it is conceivable that teachers who are markedly positive about their own ability to appraise others' emotions pay too much attention to their

students' emotional states and thus use up cognitive resources that could be put to better use in establishing good working relationships with their students. Furthermore, believing in one's own ability to appraise others' emotions might reflect a hypersensitivity to the emotional signals sent by others. Focusing on nonverbal signals of emotions can yield information that was intended to be concealed by the sender. Thus, for example, detecting students' emotions that are not in line with social rules can impair the quality of working relationships in the classroom.

Even negative indirect effects were found for applicants' ability to understand emotions on the aptitude ratings through the ratings of their job-relevant competencies, which were based on their performance in the group exercise of the AC. People who are good at understanding emotions might tend to focus on their own and others' emotional signals in order to collect information that they can use to make sense of the situation and to anticipate the development of the situation. However, the group exercise is a relatively stressful and unpredictable situation in which spontaneous behavior is required. Thus, I conclude that being able to understand emotions might prohibit the tendency to act spontaneously.

5.2.5 Is Nonverbal Dominance Beneficial for the Quality of Social Interaction?

The findings of the present dissertation indicate that emotionally intelligent people process emotional signals sent by others more effectively than their less emotionally intelligent counterparts. In emotion perception, they rely more strongly on the nonverbal than on the verbal part of emotion-relevant information. As nonverbal signals of emotions can be considered more authentic than verbal signals, emotionally intelligent people might perceive a more realistic image of others' emotional states, and this in turn presumably allows for more successful interaction. Thus, nonverbal dominance might be a further process through which EI promotes the performance of people in jobs in which a high quality of social interaction with clients is a fundamental concern. Closely linked to my remarks in the previous paragraph, there might also be some costs associated with nonverbal dominance, though. This is an issue that needs further empirical work.

5.3 General Limitations and Suggestions for Future Research

5.3.1 Chosen Approaches to Ability EI

Currently, there are different models and measurement approaches to EI. In my empirical research, I focused on the well-established ability EI model (Mayer & Salovey, 1997; Salovey & Mayer, 1990) and applied, depending on the specific research question, both a performance-based test and a self-report measure of ability EI.

However, the use of self-report EI measures is controversial for several reasons: In general, self-ratings can be distorted by self-serving biases such as self-enhancement or impression management (e.g., Paulhus, 1991). Second, and specific to EI, people may have limited self-knowledge concerning their emotional abilities. Supporting this idea, van der Zee, Thjis, and Schakel (2002) found that global reports of EI made by others are more reliable than self-reports. Thus, ratings by informed others might provide an alternative approach to perceived EI. Third, previous research (for a meta-analytical review, see Joseph & Newman, 2010) has suggested that self-reports of ability EI are more strongly related to personality inventories than performance-based EI measures. In fact, critical voices have been raised, saying that self-perceived EI is not more than personality in disguise (e.g., Davies, Stankov, & Roberts, 1998; Matthews, Zeidner, & Roberts, 2002; Vernon, Villani, Schermer, & Petrides, 2008). Thus, it is advisable to integrate well-established personality traits as covariates in future studies on EI, especially in those using a self-report EI measure.

Relations to job performance and burnout

Despite the problems associated with self-perceived EI, I viewed the actual tendency to use available emotional abilities in everyday life as more relevant to the implementation of antecedent-focused regulation strategies than the capacity to act in an emotionally intelligent fashion. Thus, I resorted to the self-report approach when I examined antecedent-focused regulation strategies as potential mechanisms underlying the effects of EI on job performance and burnout. Nevertheless, it would be interesting to determine whether the identified indirect effects of EI on job performance and burnout can also be found when EI is assessed with a performance-based test. Furthermore, replicating the findings of the teacher study by using external reports of EI would attenuate concerns that the indirect effects of teacher EI on job performance and burnout were the result of common method biases.

The relation to nonverbal dominance

Vice versa, it would be interesting to examine the relation between perceived EI (in addition to performance-based EI) and nonverbal dominance. As correlations between performance-based tests and self-report measures of ability EI are generally relatively low (for a meta-analytic review, see Joseph & Newman, 2010), the positive relation between EI and nonverbal dominance will not necessarily be found in future studies using the self-report approach to EI. A positive relation between self-perceived EI and nonverbal dominance, however, would support the idea that it is important to believe in one's own emotional abilities in order to rely on the nonverbal part of emotion-relevant information when appraising others' emotional states. And furthermore, using both a self-report measure and a performance-based test of ability EI would allow for the investigation of whether self-perceived EI has incremental validity over and above performance-based EI in the prediction of nonverbal dominance.

The relation to aptitude ratings in the context of personnel selection

Measuring performance-based EI (instead of self-perceived EI) can be considered the gold standard in the context of personnel selection. This is why I resorted to the performance-based approach to EI when examining the relation between applicants' EI and the aptitude ratings. However, in future studies focusing on the relevance of EI in personnel selection, performance tests of EI might be endorsed by self-reports. Even though self-reports are prone to faking good, and faking good is of particular concern in personnel selection, applicants' self-perceived EI can provide relevant information. If EI is a central component of the job profile, high scores on self-perceived EI may partially reflect the applicants' awareness of the specific requirements associated with a high emotional labor job (see Tett, Freund, Christiansen, Fox, & Coaster, 2012). Being aware of these job requirements and believing in one's own emotional abilities (i.e., emotional self-efficacy), in turn, might promote the implementation of available emotional abilities in AC selection situations that simulate high emotional job demands. Thus, future studies could examine whether applicants' self-perceived EI has incremental validity over and above performance-based EI in the prediction of aptitude ratings.

Nevertheless, in the context of personnel selection, self-reports of EI should only be used in conjunction with a performance-based EI test. A recent study by Tett and

colleagues (2012) suggested that faking increases with a greater opportunity to fake. In other words, faking might be most distinctive in those applicants who are low on EI under honest conditions. Thus, performance-based EI scores might be viewed as the basis of a broader picture of applicants' EI as performance tests provide information about whether the applicant even has the capacity to act in an emotionally intelligent way.

5.3.2 Sample

Relations between EI and work-related outcomes were examined in a sample of teachers because teaching is a prototypically high emotional labor job and involves a relatively high risk for suffering from burnout. Measuring the job performance of teachers is quite challenging (see Abele, 2011), though. Whereas achieving a specified number of units can constitute a suitable indicator of the job performance of assembly line workers, it is impossible to identify such an objective indicator of teachers' job performance. Merit increases or company rank are widely used variables for assessing job performance but are inappropriate for the teaching profession as well. Thus, perceived student misconduct was used as a subjective indicator of poor job performance for teachers. An interesting avenue for future research would be to examine the relation between teacher EI and job performance using another subjective indicator; an example might be organizational citizenship behaviors (OCB; Organ, Podsakoff, & McKenzie, 2006). Apart from that, we still do not know whether the indirect effects investigated in a sample of teachers working in Syria can also be found in more individualistic cultures. However, effects in more individualistic samples (e.g., German teachers) are supposed to be even higher because, in a recent study, self-perceived EI was found to be more closely related to life satisfaction in an individualistic than in a collectivistic culture (Koydemir, Şimşek, Schütz, & Tipandjan, 2013).

Furthermore, it would be interesting to examine whether the identified antecedent-focused strategies might also be adaptive in other professions. As I already mentioned in the overall discussion, proactive coping and attending to clients' needs (as a more general form of attending to student needs) might also contribute to job performance and prevent burnout in people working in other high emotional labor jobs. However, this assumption needs empirical investigation. When examining attending to clients'

needs as a potential mediator of the relation between EI and job performance in a sample of insurance salesmen, for example, it is even possible to use objective indicators of job performance such as the number of insurance policies sold. A more subjective indicator of insurance salesmen's job performance could be customer satisfaction.

5.3.3 Cross-Sectional Study Design

In my empirical research on EI, I made use of cross-sectional study designs. Thus, I am not able to disentangle cause and effect or to answer questions such as “Does high self-perceived EI prevent burnout?”—or the other way around—“Does burnout reduce emotional self-efficacy?” On the basis of correlational analyses, I cannot conclude that people's actual capacity to process emotional information positively influences their tendency to rely on the nonverbal part of emotion-relevant information when appraising others' emotional states. The opposite direction is also possible such that those people who show a pronounced nonverbal dominance might have more opportunities to practice their emotional abilities and thus possess higher EI in the long run than people who rely less strongly on the nonverbal part of emotion-relevant information. Longitudinal or training studies can investigate this.

Although difficult to achieve in real-life selection settings, an interesting avenue for future research would be a longitudinal investigation of the applicants who were granted these high emotional labor jobs. The results of my study using cross-sectional data only showed a trend toward a direct positive effect of applicants' ability to perceive emotions on the aptitude ratings. However, the benefits of EI may become more apparent over the long run when people have to cope with real-life emotional demands on a daily basis. Considering promising research findings on the relevance of EI in high emotional labor jobs, it is conceivable that people high in EI who were given such jobs would actually show higher job performance and better mental health over time than the people low in EI who were given such jobs.

5.3.4 Moderate Level of Indirect Effects

As already adumbrated above, many factors are supposed to contribute to the effects of EI on job performance and burnout. Hence, the identified intra- and interpersonal regulation processes may exist among others. This might be one reason for the moderate

indirect effects reported in the present dissertation. Thus, further research is needed to obtain a more comprehensive picture of the processes underlying the effects of EI on job performance and burnout. Remember that nonverbal dominance might be a further process through which EI is related to the performance of people working in high emotional labor jobs (see Paragraph 5.2.5).

Another potential mediator of the relation between EI and burnout could be social support. In consideration of previous studies that have shown positive relations between EI and the quality of social interactions (e.g., Lopes et al., 2004; Schröder-Abé & Schütz, 2011), EI might help to build a stable and supportive social network. Social support, in turn, was found in previous research to be negatively related to burnout (e.g., Greenglass, Fiksenbaum, & Burke, 1996). Supporting this idea, recent studies have shown that perceived social support mediated the relations between self-perceived ability EI and life satisfaction (Kong, Zhao, & You, 2012; Koydemir et al., 2013).

5.4 Practical Implications

The alarming number of employees suffering from burnout, high rates of absence, and early retirement, especially in occupational groups that are confronted with many emotional demands, require actions that can slow or counteract such negative trends. The focus of the present dissertation was on emotional intelligence as a personal resource. In consideration of the findings of the present dissertation, two central pillars of practical implications can be derived: EI training and personnel selection.

5.4.1 Training EI in Vocational and Further Education

Although the studies presented here are cross-sectional in nature, and causality cannot be inferred, the findings of my dissertation suggest that training in emotional skills may help people who work in high emotional labor jobs to deal with emotional demands adaptively and thus to avoid or manage stressors early on. Even though emotional abilities seem to be partly determined by genetic factors, “there is some room for change” (Lopes et al., 2006, p. 30). Supporting this statement, several studies have shown that emotional abilities can be developed (e.g., Dulewicz & Higgs, 2004; Eack et al., 2007). And further, there is evidence that training in EI can improve mental health (Ruiz-Aranda et al., 2012) and work-related outcomes such as service quality (e.g., Beigi & Shirmohammadi, 2011). Training in emotional abilities might also prepare

incumbents to effectively deal with the emotional demands of the job and thus increase their employability. Supporting this idea, a recent study by Vesely, Saklofske, and Nordstokke (in press) reported some preliminary effects of an EI program in a sample of preservice teachers. Those who participated in the program showed an increase in self-perceived EI, teacher efficacy, and sense of mastery as an indicator of resiliency. Thus, EI training programs should be more strongly integrated in vocational and further education. In consideration of the findings of the present dissertation, enhancing emotional self-efficacy—in addition to improving emotional abilities—should be a further aim of EI training. Emotional self-efficacy constitutes a central aspect of perceived EI as it is supposed to promote the implementation of improved emotional abilities in everyday life (see Bandura, 2012). Dacre Pool and Qualter (2012) found that training people in EI can actually improve both their emotional abilities and their emotional self-efficacy. According to Lopes and colleagues (2004), however, it is relatively difficult “to change people in a short time” (p. 23). Thus, EI trainings should be designed in a way that facilitates and motivates the trainees to learn from everyday emotionally arousing situations. Encouraging their openness toward emotions or raising their awareness of the influence emotions can have on them and their interaction partners might provide possible starting points.

5.4.2 Integrating EI in Personnel Selection

Selecting suitable applicants with high emotional abilities can constitute another preventive measure against the burnout, low job satisfaction, and high attrition rates of people working in high emotional labor jobs. Including tests of emotional intelligence might assist the traditional selection procedure by identifying applicants who are able to effectively deal with the emotional demands of the job. I found that applicants high in the ability to perceive emotions tended to be rated as suitable for the flight attendant job. Furthermore, there were several indirect effects of applicants’ emotional abilities on the aptitude ratings. Thus, a test of applicants’ emotional abilities might constitute a screening instrument of their capabilities to effectively deal with the emotional demands of the job. Employing a performance-based EI test in personnel selection is economical and may therefore precede more expensive selection procedures. As already mentioned above, I assume that people high in EI who are given job positions might be those workers who turn out to be suitable in the long run. However, this is a research question that has not been answered yet.

Last but not least, the specific requirements of the job have to be kept in mind when selecting personnel. Extraordinary propositions about EI propagated in the public community by Daniel Goleman (1995), for example, and a “blind” belief in research findings that look promising might induce an exorbitant use of EI measures in selection contexts. But in consideration of my findings and previous research by Joseph and Newman (2010), for example, EI does not appear to be beneficial in every situation and for any job. In fact, there might be some costs. It is even possible that extraordinarily high EI is counterproductive in high emotional labor jobs. However, this is an assumption that needs empirical investigation.

5.5 Conclusion

To sum up, the present dissertation provides a better understanding of EI and how EI may operate as a personal resource for people working in and applying for high emotional labor jobs. First, people high in performance-based EI seem to rely more strongly on the nonverbal part of emotion-relevant information in the perception of others’ emotional states, and this in turn could help them to evaluate social encounters accurately and anticipate the development of emotionally laden situations. Second, the findings of my dissertation indicate that perceived EI helps people in high emotional labor jobs to initiate healthy self-regulation and to show adequate behavior toward clients. And finally, people high on performance-based EI seem to manage emotional demands simulated in predictable selection situations more successfully so that they tend to appear more suitable for a high emotional labor job than their less emotionally intelligent competitors. Although the present dissertation contributes to closing gaps in the research on the relevance of EI in the context of working with people, more research is needed, particularly (a) to demonstrate causality and (b) to further justify the potential of EI in preventive measures.

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Appendix

Table 1

Distribution of the 120 Videos per Category

	Nonverbal valence					
	Negative		Neutral	Positive		
Verbal valence	--	-		+	++	Σ
Negative						
-- “Ich fühle mich erbärmlich [I feel awful]”	5	3	6	3	3	20
- “Ich fühle mich unwohl [I feel uncomfortable] ”	3	5	6	3	3	20
Neutral						
“Ich bin ruhig [I am calm] ”	3	3	8	3	3	20
“Ich bin etwas aufgeregt [I am a bit excited] ”	3	3	8	3	3	20
Positive						
+ “Ich fühle mich gut [I feel good] ”	3	3	6	5	3	20
++ “Ich fühle mich großartig [I feel great] ”	3	3	6	3	5	20
Σ	20	20	40	20	20	120

Table 2

Verbal and Nonverbal Valence Values

<i>Valence category</i>	<i>Valence values</i>	
	<i>Verbal^a</i>	<i>Nonverbal^b</i>
<i>Negative</i>		
--	1.5 ±0.7	2.1 ±0.5
–	3.0 ±1.0	3.3 ±0.3
<i>Neutral</i>		
	5.4 ±1.2 ^c	4.3 ±0.4
<i>Positive</i>		
+	7.3 ±1.1	6.3 ±0.4
++	8.2 ±0.8	7.4 ±0.5

Note. All the data included in this table are mean values and their standard deviations. The valence scale ranged from 1 to 9 (1 = *highly negative*; 5 = *neutral*; 9 = *highly positive*). ^aRatings were derived from the first pre-study. ^bRatings were derived from the second pre-study. ^cAs the nonverbal neutral category had no graded intensities, the averaged valence ratings of the two neutral sentences are reported.

Table 3

Correlations between Emotional Intelligence (EI) and the Individual Nonverbal Dominance Indices (INDI), the Mean Reaction Times (RT), as well as the Reaction Time Differences (RT_{diff})

		<i>MSCEIT</i>			
	<i>Total EI</i>	<i>Perceiving emotions (Branch 1)</i>	<i>Using emotions (Branch 2)</i>	<i>Understanding emotions (Branch 3)</i>	<i>Regulating emotions (Branch 4)</i>
<i>INDI</i>	.41**	.29	.26	.47**	-.03
<i>RT</i>	-.17	-.22	-.41**	-.04	.02
<i>RT_{diff}</i>	-.44**	-.28	-.29	-.44**	-.23

Note. $N = 40$.

** $p < .01$, two-tailed.

Table 4

Descriptive Statistics

Variable	<i>M</i>	<i>SD</i>	<i>α</i>
Self-emotion appraisal	6.00	0.74	.83
Other-emotion appraisal	5.57	0.92	.84
Regulation of emotion	5.78	0.98	.84
Emotional intelligence	5.82	0.62	.88
Attending to student needs	4.30	0.44	.79
Student misconduct	2.41	0.81	.85

Note. *N* = 300.

Table 5

Spearman Rank-Order Correlations between the Main Variables in the Study

Variable	1	2	3	4	5	6
1. Self-emotion appraisal		.45**	.45**	.74**	.31**	-.16**
2. Other-emotion appraisal			.33**	.68**	.24**	-.07
3. Regulation of emotion				.78**	.31**	-.29**
4. Emotional intelligence					.41**	-.23**
5. Attending to student needs						-.18**
6. Student misconduct						

Note. $N = 300$.****** $p < .01$, two-tailed.

Table 6

Descriptive Statistics, Reliabilities, and Spearman Rank-Order Correlations

Variable	<i>M</i>	<i>SD</i>	α	1	2	3	4	5	6	7	8
1. Self-emotion appraisal	6.00	0.74	.83		.45**	.38**	.31**	-.32**	.02	-.04	.45**
2. Other-emotion appraisal	5.57	0.92	.84			.42**	.24**	-.16**	.15*	.04	.46**
3. Proactive coping	3.39	0.44	.81				.33**	-.40**	.02	.02	.46**
4. Attending to student needs	4.30	0.44	.79					-.25**	-.02	.05	.31**
5. Burnout	1.63	0.46	.89						-.03	.40**	-.33**
6. Teaching experience	17.12	7.59								-.12**	.09*
7. Work demands	2.91	0.71	.70								-.11*
8. General self-efficacy	3.91	0.58	.88								

Note. $N = 300$.* $p < .05$. ** $p < .01$, two-tailed.

Table 7

Bootstrap Estimates of Total and Specific Indirect Effects of Self- and Other-Emotion Appraisals on Burnout through Proactive Coping and Attending to Student Needs

Appraisal	Bootstrap estimate	SE ^a	BC 95% CI	
			LL	UL
<i>Self-emotion appraisal</i>				
Proactive coping	-.06	.02	-.099	-.028
Attending to student needs	-.01	.01	-.040	-.001
TOTAL	-.07	.02	-.120	-.038
<i>Other-emotion appraisal</i>				
Proactive coping	-.04	.01	-.079	-.019
Attending to student needs	-.01	.01	-.028	-.001
TOTAL	-.05	.02	-.094	-.025

Note. Effects are unstandardized. BC 95% CI = bias-corrected 95% bootstrap confidence interval (1,000 bootstrap samples); LL = lower limit ; UL = upper limit, $N = 300$.

^a Standard errors are based on the HC3 heteroscedasticity-consistent standard error estimator; covariates were general perceived self-efficacy, teaching experience, work demands, and school.

Table 8

Estimates of Direct and Total Effects of Self- and Other-Emotion Appraisals on Burnout

Appraisal	Effect	SE ^a	<i>T</i>	<i>p</i>
<i>Self-emotion appraisal</i>				
Total effect	-.14	.04	-3.33	.00
Direct effect	-.07	.04	-1.75	.08
<i>Other-emotion appraisal</i>				
Total effect	.01	.04	.22	.82
Direct effect	.06	.04	1.66	.10

Note. Effects are unstandardized, $N = 300$.

^a Standard errors of model coefficients are based on the HC3 heteroscedasticity-consistent standard error estimator; covariates were general self-efficacy, teaching experience, work demands, and school.

Table 9

Descriptive Statistics

Variable	<i>M</i>	<i>SD</i>
Ability to perceive emotions	108.36	13.08
Ability to understand emotions	102.96	14.91
Ability to regulate emotions	101.75	15.28
Flight attendant aptitude ratings	2.94	0.72
<i>Job-relevant competencies assessed with the interview</i>		
Motivation and realistic job view	3.24	0.64
Professional conduct and physical appearance	3.13	0.65
Interpersonal skills in dyadic interaction	3.05	0.68
Stress-resistance	3.24	0.52
<i>Job-relevant competencies assessed with the role play</i>		
Customer service orientation	3.09	0.72
Realistic self-evaluation	3.11	0.52
<i>Job-relevant competencies assessed with the group exercise</i>		
Interpersonal skills in group interaction	3.03	0.56
Cooperation and teamwork	3.15	0.55

Note. *N* = 193.

Table 10

Pearson Product-Moment Correlations

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Ability to perceive emotions		.27**	.34**	.12	.05	.11	.11	-.04	.02	.03	.10	.04
2. Ability to understand emotions			.25**	.08	-.03	.01	.09	.08	.09	.17*	-.14	-.13
3. Ability to regulate emotions				.07	.08	.05	.12	-.02	.09	.04	.12	.10
4. Flight attendant aptitude ratings					.60**	.70**	.84**	.35**	.70**	.52**	.45**	.43**
<i>Job-relevant competencies assessed with the interview</i>												
5. Motivation and realistic job view						.52**	.57**	.26**	.50**	.51**	.33**	.31**
6. Professional conduct and physical appearance							.71**	.36**	.52**	.42**	.49**	.42**

7. Interpersonal skills in dyadic interaction	.42**	.63**	.52**	.40**	.36**
8. Stress-resistance		.39**	.28**	.09	.07
<i>Job-relevant competencies assessed with the role play</i>					
9. Customer service orientation			.44**	.32**	.26**
10. Realistic self-evaluation				.20**	.21**
<i>Job-relevant competencies assessed with the group exercise</i>					
11. Interpersonal skills in group interaction					.69**
12. Cooperation and teamwork					

Note. $N = 193$.

* $p < .05$. ** $p < .01$, two-tailed.

Table 11

Varimax Rotated Two-Factor Structure of the AC Ratings of Job-Relevant Competencies

Job-relevant competencies	a_1	a_2	h^2
<i>Assessed with the interview</i>			
Interpersonal skills in dyadic interaction	.78	.36	.74
Stress-resistance	.73	-.11	.55
<i>Assessed with the role play exercise</i>			
Customer service orientation	.77	.25	.66
Realistic self-evaluation	.71	.15	.52
<i>Assessed with the group exercise</i>			
Interpersonal skills in group interaction	.15	.90	.82
Cooperation and teamwork	.11	.90	.82

Note. $N = 193$. a_1 = loadings on the first principal component (PC1; called “interview and role play ratings of job-relevant competencies”); a_2 = loadings on the second principal component (PC2; called “group exercise ratings of job-relevant competencies”); h^2 = communality.

Table 12

Indirect Effects of the EI Facets on the Aptitude Ratings as a Flight Attendant through Interview and Role Play Ratings and Group Exercise Ratings of Job-Relevant Competencies

Predictor	Mediator	Outcome	β	SE
Ability to perceive emotions	→ Interview and role play ratings of job-relevant competencies	→ Flight attendant aptitude ratings	-.03	.003
Ability to understand emotions	→ Interview and role play ratings of job-relevant competencies	→ Flight attendant aptitude ratings	.14*	.003
Ability to regulate emotions	→ Interview and role play ratings of job-relevant competencies	→ Flight attendant aptitude ratings	.01	.003
Ability to perceive emotions	→ Group exercise ratings of job-relevant competencies	→ Flight attendant aptitude ratings	.03	.002
Ability to understand emotions	→ Group exercise ratings of job-relevant competencies	→ Flight attendant aptitude ratings	-.10**	.002
Ability to regulate emotions	→ Group exercise ratings of job-relevant competencies	→ Flight attendant aptitude ratings	.06*	.002

Note. $N = 193$. β = standardized regression coefficients; SE = robust standard errors.

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

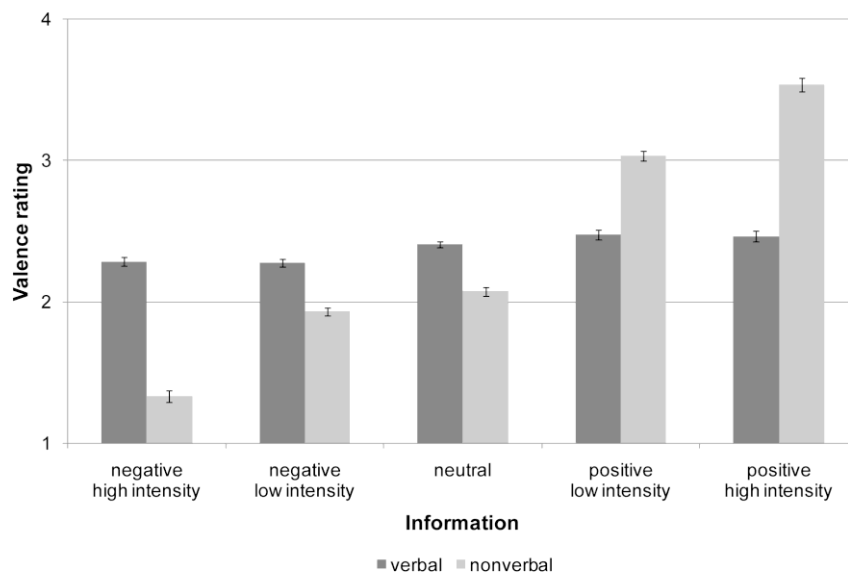


Figure 1. Effects of verbal and nonverbal information on valence ratings (– – = 1, – = 2, + = 3, ++ = 4). Dark gray bars represent the mean valence ratings of the five verbal information categories. Light gray bars represent the mean valence ratings of the five nonverbal information categories. Error bars represent the standard error of the mean.

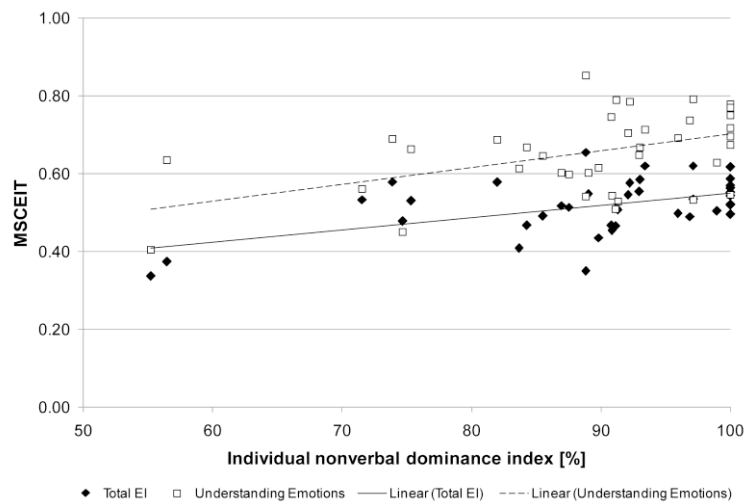


Figure 2. Correlation between the individual nonverbal dominance indices and total EI ($r_s = .41, p < .01$, two-tailed) as well as the third branch of the MSCEIT, understanding emotions ($r_s = .47, p < .01$, two-tailed).

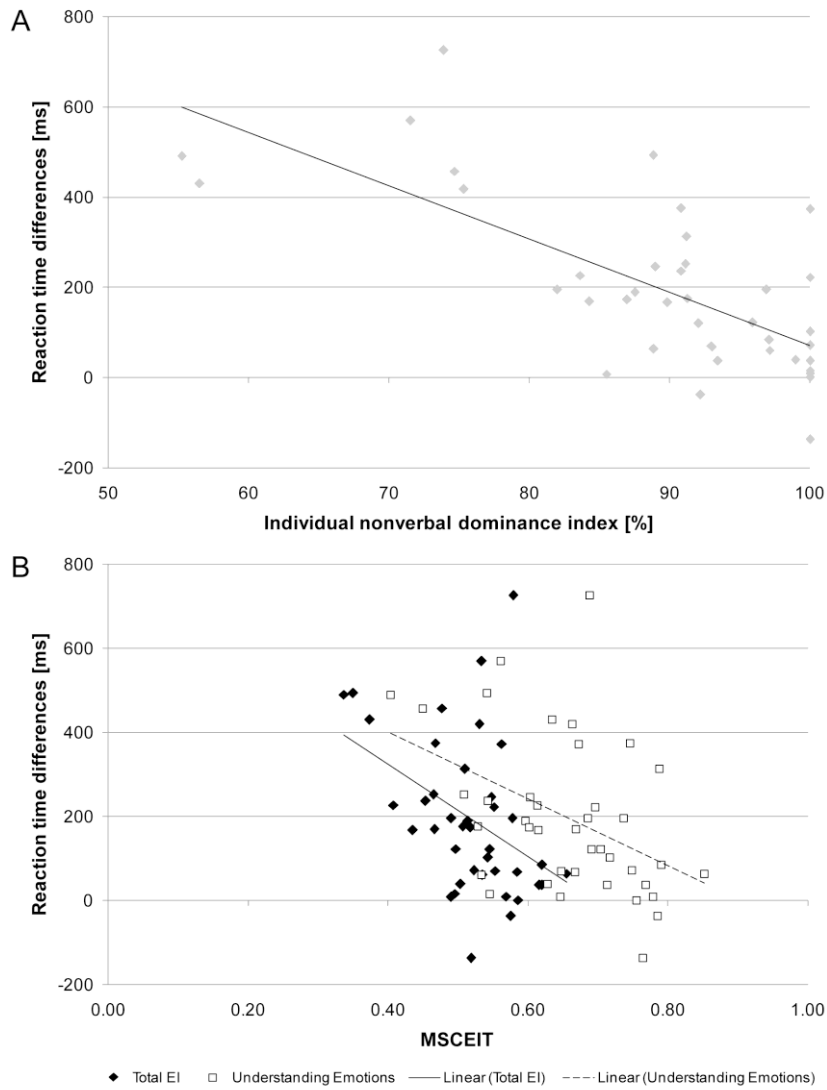


Figure 3. Correlations between the reaction time differences and (A) the individual nonverbal dominance indices ($r_s = -.65$, $p < .001$, two-tailed) and (B) total EI ($r_s = -.44$, $p < .01$, two-tailed) as well as the third branch of the MSCEIT, understanding emotions ($r_s = -.44$, $p < .01$, two-tailed).

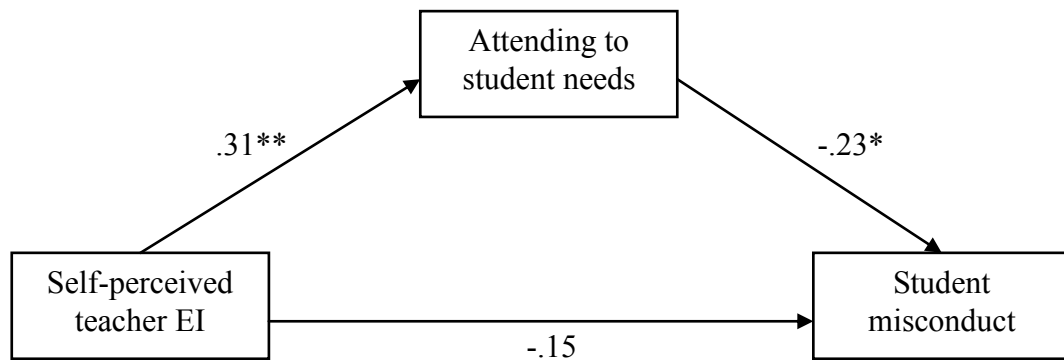


Figure 4. Illustration of mediation. Perceived teacher emotional intelligence (EI) exerted an indirect effect on student misconduct through attending to student needs.

* $p < .05$. ** $p < .01$, two-tailed.

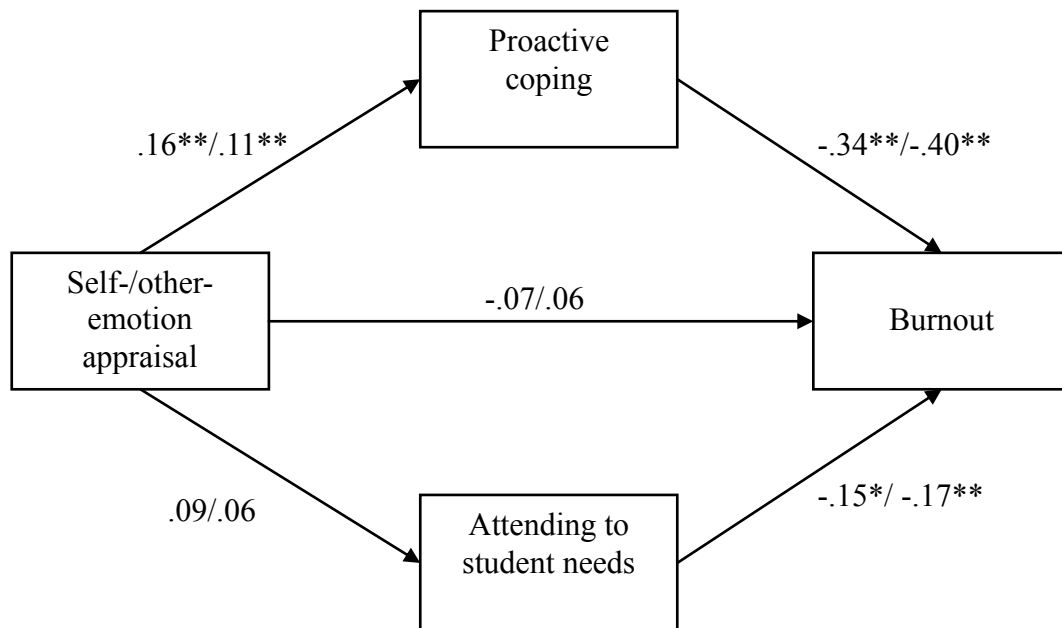


Figure 5. Mediation models. Unstandardized path coefficients for multiple mediation models with self- and other-emotion appraisals as predictors.

* $p < .05$. ** $p < .01$, two-tailed.

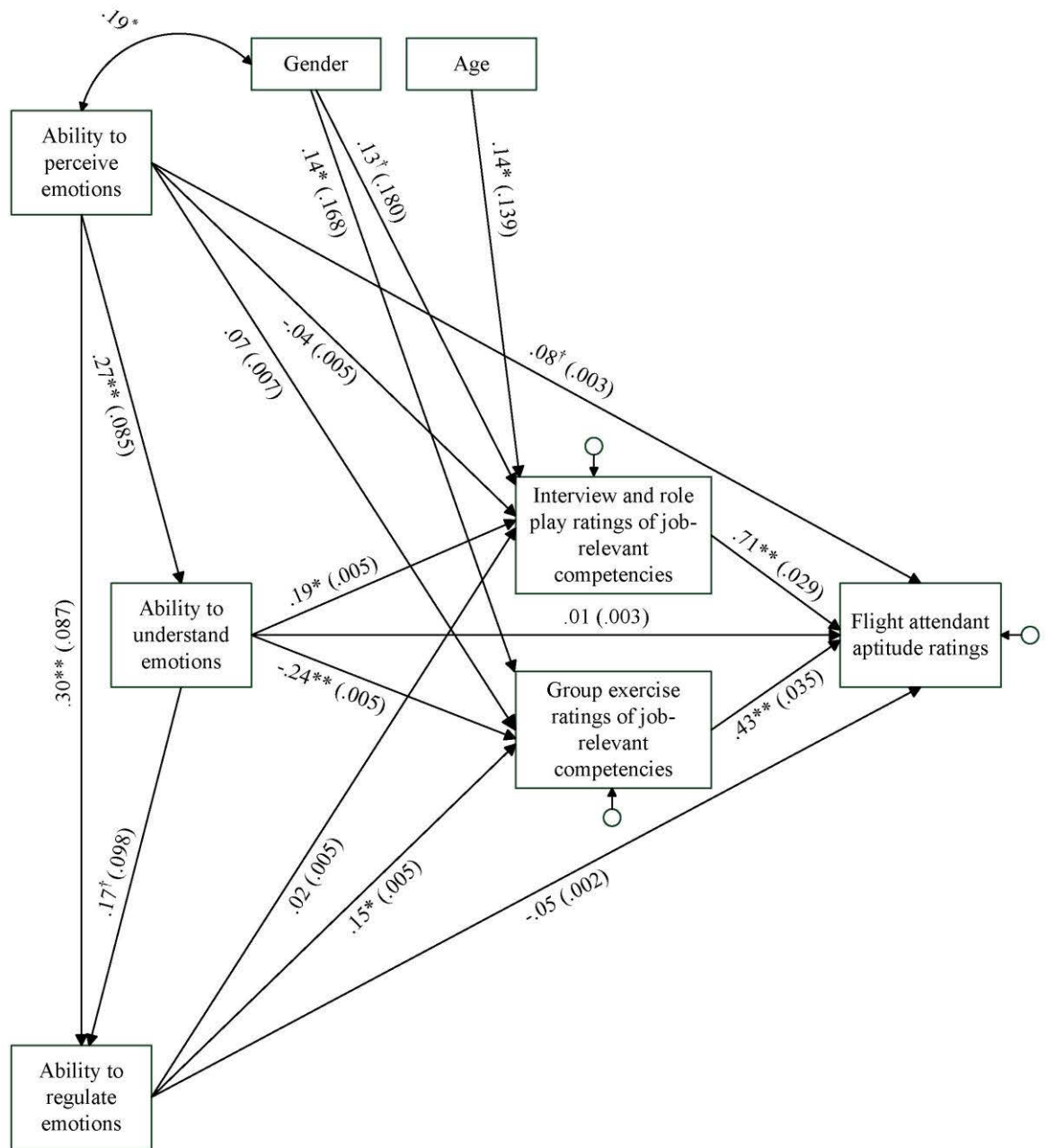


Figure 6. Path model with standardized regression coefficients of the paths; in brackets: robust standard errors.

$N = 193$.

$^\dagger p < .10$. $*p < .05$. $**p < .01$.

Attending to Student Needs Items

1. I help my students whenever they really need help.
2. I provide explanations when my students do not understand me.
3. I give my students advice to help them solve problems.
4. I listen to my students when they want to share doubts and concerns.
5. I discuss ideas with my students and listen to their opinions.
6. I do not encourage my students to ask questions. (–)
7. I often ignore what my students say in class. (–)
8. I discuss my students' learning progress and behavior with them.
9. I do not pay much attention to my students' needs. (–)

Work Demands Items

1. I have more work than I have time to do.
2. Feeling responsible for students makes my job demanding.
3. Keeping up with legislative changes makes my job difficult.
4. Trying to meet the often conflicting needs of my students makes my job difficult.
5. Policies and procedures are unclear to me.
6. Having a wide variety of tasks makes my job difficult.
7. Much of the day I do not have enough to do. (–)

Behavioral Anchors of the Job-Relevant Competencies Assessed with the Group
Exercise

Interpersonal Skills in Group Interaction.

1. The applicant makes a bee-line for others.
2. The applicant is frank with others.
3. The applicant is kind and warm.
4. The applicant listens carefully to others.
5. The applicant states the facts concisely and in an understandable manner.

Cooperation and Teamwork.

1. The applicant accepts different opinions.
2. The applicant looks for conflict resolutions or tradeoffs.
3. The applicant makes arrangements with group members regarding the task.
4. The applicant espouses collective solutions.

(Behavioral) Anchors of the Job-Relevant Competencies and Characteristics Assessed
with the Interview and Role Play

Motivation and Realistic Job View.

1. The applicant possesses a comprehensible, well-founded motivation.
2. The applicant has a realistic concept of the flight attendant job.

Professional Conduct and Physical Appearance.

1. The applicant shows appropriate and respectful behavior.
2. The applicant appears smart and attractive.
3. The applicant is natural-looking and undisguised.
4. The applicant is adequately dressed.
5. The applicant radiates vitality and dynamism.

Interpersonal Skills in Dyadic Interaction.

1. The applicant makes a bee-line for others.
2. The applicant listens carefully to others and makes eye contact.
3. The applicant is frank with others.
4. The applicant has an open body posture.
5. The applicant is kind and warm.
6. The applicant is eloquent and diplomatic.

Customer Service Orientation.

1. The applicant actively guides contact with the customer.
2. The applicant looks for a solution and offers alternatives.
3. The applicant treats others respectfully.
4. The applicant is able to set adequate bounds.
5. The applicant recognizes customer wishes and needs.
6. The applicant is able to end the conflict positively.

Realistic Self-Evaluation.

1. The applicant realistically appraises his/her own impression.
2. The applicant identifies relevant potential for self-improvement.

Stress-Resistance.

1. The applicant keeps calm and focused during the interview.
2. The applicant shows no or only slight stress symptoms.