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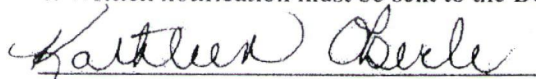
This is to certify that the Conjoint Faculties Research Ethics Board at the University of Calgary has examined the following research proposal and found the proposed research involving human subjects to be in accordance with University of Calgary Guidelines and the Tri-Council Policy Statement on *"Ethical Conduct in Research Using Human Subjects"*. This form and accompanying letter constitute the Certification of Institutional Ethics Review.

File no: **6721**
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Department: **Education, Faculty of**
Project Title: **Individual Differences in Emotional Intelligence (EI)**
Sponsor (if applicable):

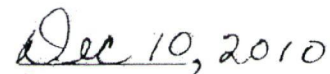
Restrictions:

This Certification is subject to the following conditions:

1. Approval is granted only for the project and purposes described in the application.
2. Any modifications to the authorized protocol must be submitted to the Chair, Conjoint Faculties Research Ethics Board for approval.
3. A progress report must be submitted 12 months from the date of this Certification, and should provide the expected completion date for the project.
4. Written notification must be sent to the Board when the project is complete or terminated.



Kathleen Oberle, PhD
Chair
Conjoint Faculties Research Ethics Board


Date:

Distribution: (1) Applicant, (2) Supervisor (if applicable), (3) Chair, Department/Faculty Research Ethics Committee, (4) Sponsor, (5) Conjoint Faculties Research Ethics Board (6) Research Services.

UNIVERSITY OF CALGARY

Relations of Emotional Intelligence with Gender-Linked Personality and the Big Five

by

Alexander B. Siegling

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE
DEGREE OF MASTER OF SCIENCE

FACULTY OF EDUCATION

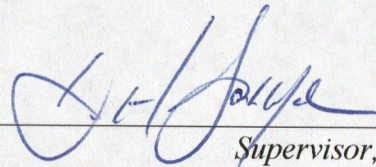
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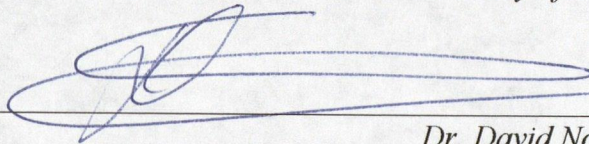
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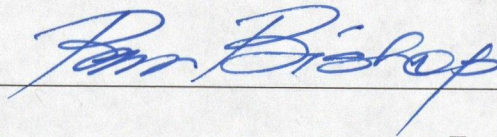
The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Relations of Emotional Intelligence with Gender-Linked Personality and the Big Five" submitted by Alexander B. Siegling in partial fulfilment of the requirements of the degree of Master of Science.



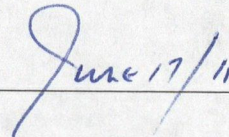
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Abstract

The purpose of the present research was to investigate the relationships of trait emotional intelligence (EI) and ability EI with the gender-linked personality dimensions of *Agency* and *Communion*, using a Canadian sample of undergraduate students. In addition, this study examined the incremental validity of gender-linked personality over the Big Five personality traits. Results supported the hypothesis that both Agency, which is male-normative, and Communion, which is female-normative, would be associated with trait EI, and that Agency would be the stronger correlate. Further, the hypothesis that Communion would be the stronger correlate of ability EI was also supported. Both agency and Communion demonstrated incremental validity over the Big Five in the prediction of students' trait EI. The results suggest that sex differences in trait EI are more likely to be mediated by socialization processes than sex differences in ability EI.

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List of Abbreviations

Big Five	Big Five personality traits
EI	Emotional Intelligence
IQ	Intelligence Quotient (a measure of general intelligence)
MSCEIT	Mayer-Salovey-Caruso Emotional Intelligence Test
PAQ	Personal Attributes Questionnaire
TEIQue-SF	Trait Emotional Intelligence Questionnaire – Short Form

Relations of Emotional Intelligence with Gender-Linked Personality and the Big Five

Many studies have investigated the implications of masculinity and femininity in various psychological health constructs, such as self-esteem, depression, and marital satisfaction (see Cook, 1985, for a review). An overarching assumption of this research has been that androgynous individuals, who possess high levels of masculine and feminine attributes, experience greater behavioural flexibility and therefore show more adaptive behaviour than sex-typed individuals (e.g., Bem, 1974; Spence, Helmreich, & Stapp, 1975). However, uneven correlations of masculinity and femininity with various criteria have led researchers to formulate more specific models. Much evidence has supported the *masculinity model* (Marsh & Byrne, 1991), with several meta-analytic studies indicating that a person's level of masculinity makes the strongest contribution to the positive effects of androgyny on adjustment, and femininity explaining little incremental variance or none at all (e.g., Bassoff & Glass, 1982; Taylor & Hall, 1982; Withley, 1984). This pattern has consistently appeared for both sexes (Taylor & Hall, 1982) and has been attributed to the "masculine supremacy effect", or the greater social utility value placed on masculine attributes in Western societies (Cook, 1985). The *differentiated additive androgyny model* has also received some empirical support (Marsh & Byrne, 1991). According to this model, the relative contributions of masculinity and femininity depend on the specific criterion variable under study, particularly on their theoretical relation.

A psychological construct that has received little attention in the sex-role literature is emotional intelligence (EI), in spite of its implication in psychological health and people's perception of EI as a gendered domain of intelligence. Furnham (2006) has

stated that the term EI is a more feminine than a masculine concept, noting that men give higher self-estimates for IQ than women, but that the opposite applies for EI (Furnham & Petrides, 2004; Petrides, Furnham, & Martin, 2004). Petrides, Furnham, and Martin also found that male and female participants rated their mothers higher on EI but lower on IQ than their fathers, indicating that people perceive IQ as a masculine attribute and EI as a feminine attribute. On the other hand, this stereotypical perception of EI diminished when participants estimated their own score on different EI facets rather than providing an overall estimate. As Petrides et al. have suggested, these findings reflect lay views of rationality as a masculine trait and emotionality as a feminine trait. However, research investigating the relationships of EI with masculine and feminine attributes has been sparse.

Gender-Linked Personality

Researchers now agree that masculinity and femininity are multidimensional and multifaceted constructs (e.g., Deaux & Lewis, 1984; Spence & Helmreich, 1978), encompassing preferences, attitudes, interests, appearances, personality traits, and other dimensions. Thus, existing trait-based questionnaires of masculinity and femininity have been reconceptualised as measuring the personality dimensions that distinguish men and women: *Agency* and *Communion* (Bakan, 1966). Agentic traits (e.g., differentiation, assertiveness, competitiveness) are male-normative, referring to a focus on the self and forming separations, whereas the more female-normative communal traits (e.g., compassion, sensitivity to others, nurturance, selflessness) signify an orientation towards others and forming connections (Helgeson, 1994). Hence, the fact that much research has supported the masculinity model of androgyny may be attributable to a lack of focus on

interpersonal indicators of psychological health. Overall, the constructs of Agency and Communion have formed the basis for newer measures of gender-linked personality and facilitated the generation of research hypotheses regarding their correlates (Cook, 1985).

One particular advantage of focusing on Agency and Communion as opposed to the broader constructs of masculinity and femininity appears to be their coherence with existing personality taxonomies. In support of this idea, meta-analytic findings indicate that sex differences in various personality traits reflect the dimensions of Agency and Communion as overarching concepts (Feingold, 1994). Furthermore, two factors can be consistently extracted from the Big Five personality traits (Digman, 1997), leading Wiggins (2003) to recommend Agency and Communion as central meta-concepts within personality assessment paradigms, superordinate to the Big Five. For example, Agency correlates negatively with Neuroticism and positively with Extraversion and Conscientiousness (e.g., Marusic & Bratko, 1998; Ward, Thorn, Clements, Dixon, & Sanford, 2006). Communion on the other hand correlates with Agreeableness (Marusic & Bratko, 1998; Ward et al., 2006), a trait related to an individual's interpersonal functioning. A relevant question that has not received much attention in the literature concerns the extent to which these gender-linked personality dimensions and the Big Five predict various criteria over and above each other. The trait content of Agency and Communion would suggest that these constructs are particularly useful in predicting psychological health criteria involving both self-focussed and other-oriented elements.

The Two EIs and Their Relation with Sex

The study and measurement of EI has focused on both intrapersonal and interpersonal emotional capacities, although EI has been conceptualized in different

ways. While some researchers conceive of EI as a cognitive ability to be measured using maximum-performance tests (e.g., Mayer, Salovey, & Caruso, 2002), others have emphasized the trait dimension of EI and rely on self-report measures (e.g., Petrides & Furnham, 2001; Petrides, Pita, & Kokkinaki, 2007). Instead of fitting into the taxonomy of human cognitive ability, trait EI has been conceptualized as a constellation of emotional self-perceptions comprising the affective dimensions of personality (Petrides, Pita, et al., 2007); yet, numerous studies have demonstrated the incremental validity of trait EI over the Big Five and other related constructs in predicting affect-laden criteria (e.g., Petrides, Perez-Gonzalez, & Furnham, 2007; Petrides, Pita, et al., 2007). There is a poor convergence between self-report and performance-based measures of EI (e.g., Brackett & Mayer, 2003; O'Connor & Little, 2003; Warwick & Nettelbeck, 2004), which reflects conceptual and measurement distinctions between trait and ability EI. Consequently, one cannot expect the associations of gender-linked personality dimensions with EI to be consistent across trait- and ability-based measures.

Further reflecting the distinction between the two EIs, sex differences tend to vary depending on how EI is assessed. It has been noted that women score higher on interpersonal aspects of EI and men provide higher scores on intrapersonal skills, such as managing and controlling their emotions (e.g., McIntyre, 2010). Although this pattern has been observed for certain ability-related measures (e.g., Freudenthaler, Neubauer, & Haller, 2008), it is mostly evident for self-report measures, where sex differences appear most consistently at the factor level (e.g., Artech, Chamorro-Premuzic, Furnham, & Crump, 2008; Bechtoldt, 2008; Petrides, 2009; Sanchez-Nunez, Fernandez-Berrocal, Montanes, & Latorre, 2008). Sex differences in global trait EI are typically not found

amongst adults (e.g., Brackett & Mayer, 2003; Saklofske, Austin, Galloway, & Davidson, 2007) and adolescents (e.g., Williams, Daley, Burnside, & Hammond-Rowley, 2009; Petrides, Sangareau, Furnham, & Frederickson, 2006). In contrast, sex differences consistently emerge in favour of women for total ability EI and across the different ability EI domains assessed by the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; e.g., Mayer et al., 2002; Brackett, Rivers, Shiffman, Lerner, & Salovey, 2006; Goldenberg, Matheson, & Mantler, 2006).

EI and Gender-Linked Personality

Whereas Agency and Communion are considered higher-order personality factors, similar, and possibly superior to the Big Five, trait EI is located at the lower levels of personality hierarchies, showing substantial overlap with the Big Five personality traits (see Petrides, Vernon, Schermer, Ligthard, Boomsma, & Verselka, 2010, for a discussion). The only study that has examined the relationships between gender-linked personality dimensions and EI focused specifically on trait EI (Guastello & Guastello, 2003), using Schutte et al.'s (1998) Assessing Emotions Scale. Gender-linked personality was assessed via the Bem Sex Role Inventory (Bem, 1974). Both Agency and Communion were positively associated with the trait EI scores of college students and those of their mothers and fathers, which is consistent with the lack of sex differences in global trait EI. However, it should be noted that the correlation coefficients for Agency were moderate across generations and sexes, whereas those for Communion were small. As stated by the researchers, possible relationships between gender-linked personality and the distinct construct of ability EI remain to be investigated.

As the focus of Guastello and Guastello's (2003) work was on global trait EI, another question concerns the relationships of the trait EI factors with Agency and Communion. The dominating model of trait EI differentiates between *Emotionality*, *Self-Control*, *Sociability*, and *Well-Being* (Petrides, 2009). Individuals high in Emotionality are able to perceive and express emotions, which will benefit these individuals in nurturing close relationships with significant others. Individuals with high scores on the Self-Control factor are able to control their urges and desires, and can effectively regulate external pressures and stress. The Sociability factor emphasizes social relationships and social influence, which is distinct from an individual's personal relationships with close others. Individuals who score high on this factor can be expected to be good listeners and communicators with a diverse range of others. The fourth trait EI factor, Well-Being, reflects feelings of positivity, happiness, and fulfillment. Overall Agency may be a stronger correlate of the intrapersonal trait EI factors (i.e., Self-Control and Well-Being), whereas Communion should be more strongly associated with the interpersonal dimensions of Emotionality and Sociability.

In terms of ability EI, the four domains assessed by the MSCEIT are less separated in their focus on the self versus others. For example, the domain of *Perceiving Emotions* refers to the ability to perceive emotions in oneself and others, and *Managing Emotions* measures the ability to manage emotions in oneself and others to promote emotional and intellectual growth (Mayer et al., 2002). Thus, one would not necessarily expect different correlations between the four ability EI domains with gender-linked personality. The present study will therefore focus on the relationships between the two gender-linked personality dimensions and total ability EI only. Confirmatory factor

analysis supporting the one-factor model for the MSCEIT (Mayer, Salovey, Caruso, & Sitarenios, 2003) and high part-whole correlations between the four MSCEIT domains and total ability EI support the use of the total ability score without focusing on each domain individually (Brackett et al., 2006). As women consistently outscore men across the four ability EI domains, Communion can be expected to be stronger correlate of ability EI. On the other hand, ability EI consists of interpersonal and intrapersonal emotional capacities, suggesting that both Communion and Agency qualify as potential correlates.

The Present Study

The aim of the present research was to investigate the relations of trait and ability EI with Agency and Communion, the gender-specific dimensions of personality. This study extends the previous work of Guastello and Guastello (2003), by comparing the relationships of gender-linked personality dimensions between both EI conceptualizations. In addition, the present investigation used an up-to-date measure of trait EI as well as a questionnaire that more concisely taps the gender-linked personality dimensions of Agency and Communion. The relationships of Agency and Communion with the different factors comprising trait EI, which differ in their emphasis on intrapersonal and interpersonal emotional capacities, were also explored. A second objective of this study was to examine if gender-linked personality has incremental validity over the Big Five personality traits in predicting students' trait and ability EI scores. Given the role of EI in academic achievement (see Parker, Saklofske, Wood, & Collin, 2009), the study was performed on a Canadian sample of undergraduate students, using a web-based approach. In addition to facilitating the data collection process, the

online administration of all measures minimized the chance of sex-of-experimenter effects, which have been documented in several areas of psychological research (e.g., Fischer & Douglas, 2007; Littig & Branch, 1993). The following hypotheses concerning the relationships of trait EI and ability EI with Agency and Communion were formulated:

Hypothesis 1: Given the intrapersonal and interpersonal dimensions of trait EI, global trait EI was expected to be associated with both Agency and Communion. In light of previous findings (Guastello & Guastello, 2003), however, a stronger positive relationship of global trait EI with Agency compared to Communion was expected.

Hypothesis 2: When considering the different trait EI factors, the relations with Agency and Communion were expected to vary. Agency was expected to correlate more strongly with Self-Control and Well-Being, the more intrapersonal dimensions of trait EI. Communion was expected to be more strongly associated with the interpersonal trait EI factors (i.e., Emotionality and Sociability).

Hypothesis 3.a: The clear sex differences in ability EI in favour of women would only suggest a positive association of Communion with this EI type.

Hypothesis 3.b: Alternatively, the fact that ability EI includes self-focused emotional capacities suggests that Agency is implicated in ability EI as well. This idea is still consistent with the observed sex differences in ability EI, as women and men both possess agentic and communal traits—to varying degrees.

Regardless, stronger positive correlations between ability EI and Communion were expected.

Method

Participants

The participants were 668 undergraduate students ages 17 to 39 years ($M = 22.36$, $SD = 3.88$), who were recruited from a large western Canadian university. Recruitment took place over the course of a four-month period (January–April) and participants came from various academic disciplines, ranging from Accounting to Zoology. Of the participants, 477 were female and 191 were male. The data of three participants (2 female, 1 male) were excluded from the analyses because their gender identity, or private experience of the self as male or female, did not match their born sex. The ethnic composition of female participants was 67.0% Caucasian, 12.7% Asian, 4.7% Indian, 2.7% Hispanic, and 12.1% Other (4 female participants did not reveal their ethnic background). For male participants, the proportions were 61.4% Caucasian, 17.5% Asian, 7.4% Indian, 3.2% Hispanic, 2.1% Filipino, and 7.9% Other. Only one male participant did not disclose his ethnicity. As a form of reimbursement, participants were entered into a draw for gift certificates at the institution's book store. Participant treatment was consistent with the APA (2002) ethical standards.

Measures

Demographic information. Information was obtained about sex, gender identity, age, ethnic background, and program of study.

Trait EI. The Trait Emotional Intelligence Questionnaire – Short Form (TEIQue–SF; Petrides & Furnham, 2006) was used to measure global trait EI. The four trait EI factors (Well-Being, Self-Control, Emotionality, and Sociability) were derived from 26 of the TEIQue–SF items. Respondents answer 30 statements by indicating their

level of agreement with each statement on a 7-point Likert scale (e.g., “I often pause and think about my feelings”). Responses range from 1 (*completely disagree*) to 7 (*completely agree*). The TEIQue has demonstrated high criterion validity in various domains (Perez, Petrides, & Furnham, 2005). Petrides (2006) reported an internal consistency for the TEIQue–SF of .88 for global trait EI (.80 for males and .88 for females). In the present sample, the alpha-level was .89 for global trait EI and, among the four factors, ranged from .65 for Self-Control to .85 for Well-Being.

Ability EI. The MSCEIT Version 2.0 (Mayer et al., 2002) consists of 141 items, yielding total ability EI, domain, and task scores. The MSCEIT is appropriate for testing individuals of the ages 17 and older. As an ability-based scale, the MSCEIT measures respondents’ ability to perform tasks and solve emotional problems. The internet-based administration method, which was employed in the present study, yields indistinguishable scores relative to the booklet form (Mayer et al., 2002). The expert scoring method was selected, as the sample of this study may differ from the normative comparison group. This scoring method strongly converges with consensus scoring, the alternative procedure ($r = .93$ to $.99$; Mayer et al., 2002). Thus, credit for correct answers was awarded based on how well the answers matched those of emotions experts (i.e., researchers). A zero score is assigned to items that are omitted and scores are only provided when the proportion of answered items for the subtests is more than half.

The appropriate reliability indicator for the MSCEIT is the split-half reliability coefficient, due to the heterogeneity of the measure’s items. In the standardization sample, the split-half reliability coefficient was .91 for total ability EI, ranging from .76 for Facilitating Thought to .90 for Perceiving Emotions. The test publisher does not

provide reliability coefficients for ordered datasets. However, a supplementary scatter score of the MSCEIT assessing the amount of fluctuation in performance across tasks was moderate ($M = 99.26$, $SD = 13.91$), indicating a typical amount of variation in the task results. A second supplementary MSCEIT score assessed whether participants showed a bias in assigning negative versus positive emotions. This positive-negative bias score was also moderate ($M = 101.13$, $SD = 13.47$), signifying a typical amount of positive and negative assignments to the pictorial stimuli. Supporting the focus on total ability EI as opposed to the four MSCEIT domains, the part-whole correlations in the present study ranged from $r(202) = .65$ to $r(202) = .83$.

Gender-linked personality. The Personal Attributes Questionnaire (PAQ; Spence, Helmreich, & Stapp, 1973) was used to measure the gender-linked trait dimensions of Agency and Communion. Whereas most sex-role measures are heterogeneous in content, the PAQ is simple and focused in content, showing only one-factor solutions per scale (e.g., Helmreich, Spence, & Wilhelm, 1981; Wilson & Cook, 1984). The PAQ is also most consistent with the assumptions underlying sex-role conceptions (Cook, 1985), as the scales were developed by retaining those items that undergraduate students rated as socially desirable for both sexes but significantly more typical for one sex than the other. Hence, the PAQ is relatively independent from respondents' sex-role stereotypes, granting its status as a personality trait measure (Spence, Helmreich, & Stapp, 1975). Furthermore, men are more likely to rate the agentic items as self-descriptive, and the same applies to women for the communal items. By omitting the two items of "masculine" and "feminine," the PAQ more concisely measures the trait dimensions of Agency and Communion.

Respondents are asked to indicate what kind of person they think they are by rating themselves on 24 items presented on 5-point bipolar scales (e.g., “not at all aggressive...very aggressive”). Eight of these items comprise the Agency scale and another eight items comprise the Communion scale. A third 8-item factor assessed by the PAQ consists of agentic traits at one end and expressive traits at the other end. The items of this scale were judged to be both typical and socially desirable for one sex only. Although this factor has been ascribed little theoretical meaning, the items are typically retained in the measurement of Agency and Communion to maintain the psychometric integrity of the PAQ.

Even though the PAQ was developed in the 1970s, results of more recent validation studies support the continued use of this measure. For example, the PAQ's factor structure was replicated for English-speaking women and men in a Canadian sample of university administrators (Hill, Fekken, & Bond, 2000). Results supported the integrity of the factor structure, and the Agency and Communion scales had acceptable internal consistencies, ranging from .74 to .83. In another more recent investigation of the PAQ, alpha coefficients were .74 for Agency and .75 for Communion (Ward et al., 2006). In the present study, the internal consistency reliability was within an acceptable range for both scales (Agency $\alpha = .76$, Communion $\alpha = .79$).

Big Five personality traits. Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism were measured with the Big Five Inventory (John & Shrivastava, 1999). Respondents indicate the degree to which 44 brief descriptive items (e.g., “curious about many different things”) apply to them on 5-point scales, ranging from 1 (*disagree strongly*) to 5 (*agree strongly*). The test developers reported reliability

coefficients ranging from .79 for Agreeableness to .88 for Extraversion for a sample of 462 college students. Similarly, the alpha-level ranged from .80 for Agreeableness to .86 for Extraversion in the present sample.

Procedure

Undergraduate course instructors were approached and asked to forward a recruitment notice to their students. As this study was part of a larger research project, it was described to participants as an investigation of the relationship of EI, personality, and other personal factors with student outcomes. The measures were administered over the internet in two parts. In part 1 of the study, participants provided demographic information and completed the three self-report measures in the following order: the TEIQue-SF, the BFI, and the PAQ. The TEIQue-SF appeared at the beginning to minimize potential bias towards increased or decreased trait EI that may result from the administration of the other scales. The time for completing part 1 was approximately 15–20 minutes. Participants who completed this portion of the study were directly contacted again and invited to take the MSCEIT—part 2 of the study. The MSCEIT takes 30–45 minutes of administration time. The response rate of participants from part 1 of the study was 30.7%, resulting in 205 MSCEIT administrations.

Results

Preliminary Data Screening

The percentage of missing item responses for the self-report measures was low, ranging from .00 to .45%. Missing values were imputed separately for female and male participants, using the expectation maximization procedure. The MSCEIT online scoring system automatically assigns a zero score to items that are omitted and provides

composite scores only when the proportion of answered items for the subtests is more than half. However, MSCEIT variables were computed for all participants who completed the test, indicating that all participants completed more than half of the items.

Outliers were removed from the data based on scale scores. Given the large sample size, the cut-off value for outliers was set at $|3.5|$ standard deviations from the mean (Stevens, 2009). Following the removal of outlier cases (2 female, 1 male) and cross-gender participants (2 female, 1 male), the remaining number of participants was 662 (473 female, 189 male), with 202 MSCEIT administrations (156 female, 46 male). Histograms and statistics of skewness and kurtosis showed that all variables approximated a normal distribution. Further, an examination of scatter plots indicated that the relationships between the study variables were linear and homoscedastic.

Descriptive Statistics and Sex Differences

Table 1 displays the means and standard deviations for participants' EI, gender-linked personality, and Big Five scale scores as well as sex comparisons across these variables. Independent-samples *t* tests adjusted for multiple comparisons indicated that male and female participants had similar global trait EI scores, whereas female participants had significantly greater ability EI scores than male participants. Significant sex differences also appeared for two of the trait EI factors, with male participants self-reporting greater Self-Control and female participants self-reporting higher Emotionality. Further, there were significant sex differences in the expected direction for the gender-linked personality dimensions of Agency and Communion. In terms of the Big Five personality traits, female participants self-reported significantly higher Neuroticism and Conscientiousness.

Correlations among EI, Gender-Linked Personality, and the Big Five

Table 2 shows the Pearson product-moment correlation coefficients (two-tailed) for trait EI, ability EI, and gender-linked personality, separated by sex. Agency and Communion were significantly associated with global trait EI for male and female participants. Furthermore, the relationships between Agency and the four trait EI factors were consistently positive and significant for both sexes. Communion was also positively associated with the trait EI factors, with the exception of the Self-Control factor for female participants. Only Communion was a significant correlate of ability EI, which was consistent between male and female participants.

Regression Analyses Predicting Trait EI and Ability EI

Regression analyses examining the relative contributions of Agency and Communion and their incremental validity over the Big Five in predicting EI were collapsed across male and female participants. Two criteria justified these combined analyses: (a) The correlation coefficients relating the two EIs to the different personality variables were largely consistent between male and female participants; (b) The number of male participants who completed the MSCEIT was too small, relative to the number of predictor variables. Nonetheless, taking into consideration the significant sex differences on several study variables, sex was entered as a control variable. Participants' age was unrelated to the study variables and therefore not included in the main analyses.

Table 3 displays the results of 3-step hierarchical regression analyses predicting global trait EI as well as the four trait EI factors. Sex was entered as a control variable at step 1. Agency and Communion were entered at step 2 and together accounted for 49.5% of the variance in global trait EI and between 27.6% (Self-Control) to 36.5% (Well-

Being) in the trait EI factors. Of note, with Agency and Communion entered, the standardized correlation coefficient for sex became significant in the prediction of global trait EI. Agency was the stronger correlate of global trait EI and the trait EI factors of Sociability, Self-Control, and Well-Being. In contrast, Communion was the stronger predictor of Emotionality. The Big Five personality factors were entered at step 3 of each regression analysis to examine the incremental validity of gender-linked personality. In general, Agency and Communion remained significant predictors. However, with the Big Five entered into the equation, Agency no longer accounted for a significant amount of variance in the Emotionality factor.

The results of the same regression analyses predicting total ability EI will be presented in text. With sex entered at step 1 of the analysis, $F(1,200) = 17.26, p < .001$, $R^2_{Adj} = .07$, both Communion and Agency were significant predictors of ability EI at step 2, $F(3,198) = 10.01, p < .001$, $R^2_{Adj} = .12$. This time, Communion was a slightly stronger predictor than Agency. However, neither of the two gender-linked personality traits explained incremental variance in total ability EI over the Big Five, which were entered at step 3, $F(8,193) = 4.55, p < .001$, $R^2_{Adj} = .12$. At step 3, the only significant predictor of ability EI was sex.

Discussion

The primary aim of this study was to examine the relationships of gender-linked personality dimensions with the two current conceptualizations of EI. Although the main interest was in global trait EI and total ability EI, this study also explored the relationships of Agency and Communion with the four trait EI factors. A secondary aim was to establish whether Agency and Communion have incremental validity over the Big

Five personality traits in the prediction of trait EI and ability EI. The present study is only the second investigation to examine the implications of masculine and feminine personality dimensions in EI and the first to examine their relationships with ability EI specifically. In addition to using a newer measure of trait EI, this study also differed from Guastello and Guastello's (2003) work by using a more concise measure of the personality traits that differentiate the two sexes.

Overall, the results were consistent with the proposed hypotheses. As predicted by Hypothesis 1, both Agency and Communion were significantly associated with global trait EI, and Agency was the stronger correlate. These results are consistent with Guastello and Guastello's (2003) findings, obtained in a sample of American college students and the parents of these students. However, the correlation coefficients were overall stronger in the present study and accounted for a greater amount of variance. This subtle difference is most likely an effect of the more advanced measures used in the present study, as the sample resembled Guastello and Guastello's student sample.

Hypothesis 2 predicted that Agency would be the stronger correlate of the intrapersonal trait EI factors (i.e., Self-Control and Well-Being), whereas the correlation coefficients for Communion were expected to be greater in relation to the interpersonal trait EI factors (i.e., Emotionality and Sociability). This hypothesis was supported with the exception of the Sociability factor, which was more strongly associated with Agency. Although Sociability appears to be more interpersonal in nature, this result is not surprising considering that this factor consists of agentic facets, specifically assertiveness and self-esteem (Petrides, 2009). According to the developer of the TEIQue, the focus of

the Sociability factor “is on the individual as an agent in social contexts, rather than on personal relationships with family and close friends” (Petrides, 2009, p. 94).

Two competing hypotheses concerning the relationships of ability EI with Agency and Communion were proposed. Hypothesis 3.a predicted that only Communion would be associated with ability EI, because women consistently outperform men in all four domains measured by the MSCEIT (e.g., Mayer et al., 2002; Brackett et al., 2006; Goldenberg et al., 2006). Alternatively, Hypothesis 3.b stated that Agency might also be implicated in ability EI, due to the intrapersonal elements of ability EI. The results better fitted this second hypothesis, as the partial correlation of Agency with ability EI was significant when controlling for sex. As expected, however, communion was the stronger predictor of ability EI.

The results also showed that agency and communion explain additional variance over the Big Five personality traits in trait EI, which was the case for most trait EI factors for female and male participants. These findings reflect the notion that the Big Five predict but do not fully account for the variance in trait EI and other lower-order traits; they are not the “be-all and end-all of personality psychology” (Petrides, Pita, et al., 2007, p. 286). In terms of ability EI, however, neither gender-linked personality nor the Big Five were significant predictors when entered into the same regression equation. It should be noted that, from a statistical perspective, two variables (Agency and Communion) have less explanatory power than five variables (the Big Five). Agency and Communion also explained incremental variance over sex in the prediction of both trait EI and ability EI.

As a broad generalization, the relationships of EI with Agency and Communion seem to depend on the type of EI being examined and reflect conceptual and measurement distinctions between ability EI and trait EI. Whereas agency was the stronger correlate of trait EI, communion was more strongly associated with ability EI. However, this generality does not apply for the trait EI factor of Emotionality, which is characterized by more communal facets (e.g., trait empathy, emotion perception, relationships; Petrides, 2009) and was more strongly associated with Communion. Overall, these results are consistent with the differentiated additive androgyny model (Marsh & Byrne, 1991), which suggests that Agency and Communion should be associated with those criteria to which they are theoretically related. The results also show that these relationships are in excess of the pronounced overlap of EI, especially trait EI, with the Big Five personality traits.

The overall results are consistent with a recent study that explored EI-based general personality factors (McIntyre, 2010). This study extracted a single, general personality factor based on the Big Five, trait EI, and ability EI in an American sample of college students. However, the composition of this factor, which accounted for more than 35% of the total variance in the observed variables, differed between male and female participants. In particular, interpersonal functioning, as measured by the Bar-On EQ-i, loaded highest on the general personality factor for female participants, whereas intrapersonal skill was the highest loading variable for male participants. These extracted factors are conceptually coherent with the gender-linked personality dimensions of Agency and Communion.

Implications

The study of associations between gender-linked personality and psychological constructs such as EI has particular implications for our understanding of individual differences in adjustment and mental health. The results indicate that people who are high in agentic and communal traits (i.e., androgynous) can be expected to have higher trait and ability EI scores than individuals with lower Agency and Communion scores. Furthermore, the regression analysis for ability EI revealed interesting results when considering the broader literature on sex differences in various cognitive abilities (e.g., see Hyde's, 1981, meta-analysis). In general, research has revealed more similarities than differences between males and females, and small to negligible effect sizes in ability areas where differences do exist, such as in verbal and quantitative ability. In addition, researchers have stressed that within-sex differences are greater than between-sex differences across skill areas. In the present study, individual differences in ability EI in terms of gender-linked and general personality were examined, but sex remained the only significant predictor of ability EI when Agency, Communion, and the Big Five were added to the analysis.

The findings shed some light on the source of the observed sex differences in EI. Researchers have argued that the traits of Agency and Communion are acquired through sex-specific socialization processes (Spence & Helmreich, 1978). Considering the strong associations of Agency and Communion with trait EI and relatively small effect sizes pertaining to sex, differences in men's and women's trait EI scores are likely influenced by these social forces. In contrast, sex differences in ability EI appear to be less mediated by socialization processes leading girls to become more 'feminine' and boys more

‘masculine’ in their personalities; sex was a more robust predictor of ability EI than gender-linked and general personality.

These results would suggest that sex differences in ability EI have a stronger genetic basis, which is consistent with research on infant emotional development. Boys and girls display different interactional styles starting at birth, with female babies already paying more attention to faces than male babies at one day of age (Connellan, Baron-Cohen, Wheelwright, Batki, & Ahluwalia, 2001). Female babies are also more emotionally stable than male babies, who have a greater likelihood of being more irritable and difficult to comfort. Parenting styles may therefore not only reflect parents’ motivation to raise their daughters and sons in a manner that is consistent with gender role norms but also their reactions towards children (Bechtoldt, 2008). However, it is important to keep in mind that the stronger relationships between personality and trait EI may, in part, be attributable to shared-method variance, as both constructs were assessed via self-report measures.

Limitations

It is important to acknowledge some limitations of the present research. One limitation is the use of a university student sample, because the university population’s scores on measures of mental health and well-being, including EI, may be higher than those of the general population. As a consequence, relationships of gender-linked personality with EI may have been compromised. Another limitation is the use of the TEIQue-SF to measure the four trait EI factors. This portion of the study, which was intended to be more exploratory, needs to be replicated using the full version of the instrument.

Future Directions

It will be interesting to examine the relationship of EI with gender-linked personality in non-western, collectivist cultures, where interpersonal functioning is of greater social value than independence and individuality. Given the relatively strong relationships of trait EI with gender-linked personality, it is recommend that future investigations focusing on the health correlates (e.g., anxiety, depression, and perceived stress) of gender-linked personality dimensions examine trait EI as a mediator of these relationships. Another question that remains to be addressed is whether the differential relationships of Agency and Communion between the two EIs are predominantly a function of the measurement difference (i.e., maximum-performance vs. self-report) or if conceptual distinctions between ability EI and trait EI are more decisive.

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Table 1

Descriptive Statistics and Sex Differences in EI, Gender-Linked Personality, and the Big Five

Variable	Males		Females		<i>df</i>	<i>t</i>	<i>p</i>	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
Trait EI	149.10	22.90	150.40	20.99	660	-0.70	.485	-0.05
Well-Being	31.86	6.71	33.43	5.99	314	-2.79	.006	-0.32
Self-Control	29.14	5.52	26.65	5.64	660	5.35	.000	0.42
Emotionality	39.00	7.14	41.09	6.99	660	-3.45	.001	-0.27
Sociability	29.89	6.04	29.15	5.60	660	1.49	.136	0.12
Ability EI ^a	0.51	0.07	0.56	0.06	200	-4.16	.000	-0.59
Agency	20.87	5.20	19.38	4.81	660	3.50	.000	0.27
Communion	21.84	4.24	23.55	4.59	660	-4.43	.000	-0.35
N	21.44	6.65	24.28	6.14	660	-5.25	.000	-0.41
E	24.96	6.56	25.92	6.56	660	-1.70	.089	-0.13
O	37.24	6.48	36.58	6.42	660	1.20	.230	0.09
A	33.18	5.71	34.26	5.83	660	-2.16	.031	-0.17
C	30.64	5.68	32.66	5.92	660	-4.01	.000	-0.31

Note. *N* = 662 (473 female, 189 male); N = Neuroticism, E = Extraversion, O = Openness, A = Agreeableness, C = Conscientiousness.

^a*N* = 202 (156 female, 46 male)

Table 2

Intercorrelations for EI, Gender-Linked Personality, and the Big Five as a Function of Sex

Variable	1	2	3	4	5	6 ^a	7	8	9	10	11	12	13
1. Trait EI	—	.85***	.69***	.78***	.77***	.20	.72***	.37***	-.71***	.62***	.29***	.39***	.44***
2. Well-Being	.81***	—	.50***	.58***	.53***	.19	.72***	.37***	-.65***	.56***	.25***	.34***	.32***
3. Self-Control	.73***	.50***	—	.36***	.41***	.26	.54***	.17*	-.70***	.24***	.12	.37***	.32***
4. Emotionality	.72***	.46***	.33***	—	.53***	.23	.36***	.44***	-.41***	.49***	.30***	.41***	.22**
5. Sociability	.68***	.44***	.38***	.31***	—	.17	.64***	.23**	-.45***	.57***	.16*	.13	.35***
6. Ability EI ^a	.28***	.19*	.26**	.18*	.14	—	.16	.30*	-.21	-.06	.15	.17	.00
7. Agency	.60***	.46***	.48***	.24***	.57***	.14	—	.15*	-.60***	.50***	.20**	.09	.51***
8. Communion	.32***	.23***	.04	.55***	.10*	.16*	.00	—	-.09	.20**	.26***	.55***	.15*
9. N	-.68***	-.57***	-.74***	-.29***	-.40***	-.17*	-.46***	-.03	—	-.46***	-.11	-.38***	-.26***
10. E	.47***	.40***	.18***	.29***	.52***	.11	.43***	.16***	-.27***	—	.15*	.16*	.26***
11. O	.23***	.09	.10*	.24***	.25***	.19*	.26***	.16***	-.06	.19***	—	.11	.06
12. A	.46***	.39***	.28***	.10	.10*	.17*	.04	.66***	-.33***	.15**	.08	—	.03
13. C	.46***	.37***	.37***	.30***	.26***	.18*	.49***	.20***	-.26***	.15**	.03	.25***	—

Note. Intercorrelations for male participants ($n = 189$) are presented above the diagonal, and intercorrelations for female participants ($n = 473$) are presented below the diagonal. N = Neuroticism, E = Extraversion, O = Openness, A = Agreeableness, C = Conscientiousness.

^a $N = 202$ (156 female, 46 male)

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3

Hierarchical Regression Analyses Predicting Global Trait EI and Trait EI Factors from Gender-Linked Personality and the Big Five, Controlling for Sex (N = 662)

	Trait EI		Well-Being		Self-Control		Emotionality		Sociability	
Step 1	$F(1,660) = 0.49$		$F(1,660) = 8.59^{**}$		$F(1,660) = 28.66^{***}$		$F(1,660) = 11.89^{***}$		$F(1,660) = 2.23$	
Step 2	$F(3,658) = 217.02^{***}$		$F(3,658) = 104.21^{***}$		$F(3,658) = 84.80^{***}$		$F(3,658) = 123.87^{***}$		$F(3,658) = 127.56^{***}$	
Step 3	$F(8,653) = 210.02^{***}$		$F(8,653) = 83.66^{***}$		$F(8,653) = 123.25^{***}$		$F(8,653) = 67.20^{***}$		$F(8,653) = 70.63^{***}$	
Predictor	β	R^2_{Adj}	β	R^2_{Adj}	β	R^2_{Adj}	β	R^2_{Adj}	β	R^2_{Adj}
Sex (step1)	.03		.11 ^{**}		-.20 ^{***}		.13 ^{***}		-.06	
Agency		-.00		.01 ^{**}		.04 ^{***}		.02 ^{***}		.00
Communion	.63 ^{***}		.50 ^{***}		.49 ^{***}		.25 ^{***}		.59 ^{***}	
Sex (step 2)	.31 ^{***}		.23 ^{***}		.05		.53 ^{***}		.12 ^{***}	
N	.06 [*]		.14 ^{***}		-.15 ^{***}		.08 [*]		.00	
E		.50 ^{***}		.32 ^{***}		.28 ^{***}		.36 ^{***}		.36 ^{***}
O	-.42 ^{***}		-.37 ^{***}		-.62 ^{***}		-.16 ^{***}		-.15 ^{***}	
A	.19 ^{***}		.19 ^{***}		-.11 ^{***}		.16 ^{***}		.31 ^{***}	
C	.08 ^{***}		-.00		.03		.12 ^{***}		.06	
Agency	.13 ^{***}		.14 ^{***}		.10 ^{**}		.16 ^{***}		-.08	
Communion	.15 ^{***}		.05		.13 ^{***}		.09 ^{**}		.13	
Sex (step 3)	.24 ^{***}		.21 ^{***}		.16 ^{***}		.02		.37 ^{***}	
N	.15 ^{***}		.09 [*]		-.04		.36 ^{***}		.10 [*]	
E	.07 ^{***}		.17 ^{***}		-.07 ^{**}		.07 [*]		-.01	
O		.72 ^{***}		.50 ^{***}		.60 ^{***}		.44 ^{***}		.46 ^{***}
A										
C										

Note. N = Neuroticism, E = Extraversion, O = Openness, A = Agreeableness, C = Conscientiousness.

* $p < .05$. ** $p < .01$. *** $p < .001$.