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ABSTRACT. This study examined the relationship between multicultural personality dispositions and trait emotional intelligence. The sample included 152 graduate education students enrolled at a university in a large northeastern city of the United States. The multicultural personality dispositions of *Cultural Empathy* and *Social Initiative* predicted variance in trait emotional intelligence above and beyond the variance accounted for by gender and potential socially desirable responding. Study limitations are highlighted, and suggestions for follow-up quantitative and qualitative research are presented.

Keywords: cultural adaptability, cultural competence, multicultural personality, trait emotional intelligence

PSYCHOLOGISTS HAVE LONG BEEN INTERESTED in examining those aspects of social and personality development that predispose one to effectively interact across cultural boundaries and adapt successfully in evolving multicultural communities (Allport, 1954; Arasaratnam & Doerfel, 2005; Herfst, Van Oudenhoven, & Timmerman, 2008; Sternberg & Grigorenko, 2004). One construct in the literature that focuses on cultural adaptability, intercultural competence, and multicultural effectiveness is the "multicultural personality." Though

there are varied models of the multicultural personality emanating from diverse specialties in psychology, for instance from personnel psychology (Van der Zee & Van Oudenhoven, 2000; Van der Zee, Zaal, & Piekstra, 2003), from clinical and educational psychology (Ramirez, 1999), and from counseling and positive psychology (e.g., Ponterotto, 2010; Ponterotto, Utsey, & Pedersen, 2006), it is the conceptualization proposed by Van der Zee and Van Oudenhoven (2000, 2001) that is the most theoretically robust and empirically supported (Ponterotto, 2008).

Van der Zee and Van Oudenhoven's (2000) model of the multicultural personality is anchored in the operational construct of "multicultural effectiveness," which was defined as an expatriate's "success in the fields of professional effectiveness, personal adjustment and intercultural interactions" (p. 293). These authors developed their construct of multicultural effectiveness based on an integration of theory and research on cross-cultural and international adaptability and coping. The multicultural personality is broken down into five components or factors as follows: *Cultural Empathy*, conceptualized as the ability to empathize with the thoughts, feelings, and behaviors of culturally diverse individuals; *Open-Mindedness*, which describes an unprejudiced and open attitude toward different groups and culturally diverse value systems; *Emotional Stability*, characterized as the ability to remain calm under stressful and novel situations; *Social Initiative*, which describes initiative taking and approaching social situations in an active manner; and *Flexibility*, which refers to the tendency to approach unknown situations as a challenge and to adjust one's behavior to the expectations of new and ambiguous situations (Van der Zee & Van Oudenhoven, 2001).

Van der Zee and Van Oudenhoven (2000, 2001) conceptualized the multicultural personality as a narrow cluster of personality traits that can be subsumed under broad models of personality such as the Big Five (McCrae & Costa, 1999). Importantly, narrow personality traits have been shown to be more accurate predictors of social behavior than have broad personality factors (McAdams & Pals, 2006; Paunonen, Haddock, Forsterling, & Keinonen, 2003; Ponterotto, 2010).

In addition to intercultural competence, a core social interaction construct of interest to psychologists is emotional intelligence (EI). Matsumoto (2004) hypothesized that emotion regulation and emotional intelligence are critical components of intercultural competence (see also Yoo, Matsumoto, & LeRoux, 2006). Furthermore, Van Rooy and Viswesvaran (2004) highlighted the relevance of EI to expatriate worker adjustment and success as well as to minority-majority cultural relations in heterogeneous societies.

Early research on EI was stimulated by Salovey and Mayer's (1990) ability-focused model, which defined EI as inclusive of three inter-related adaptive components: appraising and expressing emotions, regulating emotions, and utilizing emotions in a productive way to aid problem solving. Salovey and colleagues have continued to develop and refine their EI model and are now promoting a four-branch model that focuses on the ability to perceive, use, understand, and manage emotions (Mayer, Salovey, & Caruso, 2004; Salovey & Grewal, 2005). In more

recent work, Mayer, Salovey, and Caruso (2008) defined emotional intelligence as inclusive of "the ability to engage in sophisticated information processing about one's own and others' emotions and the ability to use this information as a guide to thinking and behavior" (p. 503).

In contrast to the "ability" focus of EI emphasized in Mayer et al. (2008), there is an equally strong emphasis on EI as a "trait," akin to a personality trait or disposition. In this case, EI is synonymous with emotional self-efficacy (Petrides, Furnham, & Mavroveli, 2007). At present there is healthy and ongoing debate between proponents of EI as an ability (Mayer et al., 2008) and as a trait (Perez, Petrides, & Furnham, 2005; Petrides & Furnham, 2001). Our view is that the two EI constructs are fairly orthogonal and both are important social psychological constructs worthy of study (see discussions in Freudenthaler, Neubauer, & Haller, 2008; Van Rooy, Viswesvaran, & Pluta, 2005).

The importance of EI to the work of psychologists and health professionals is now well-established after almost 20 years of research since Salovey's and Mayer's (1990) theoretical contribution. Particularly noteworthy is a series of three meta-analytic investigations that examined the relationship of both EI trait and ability measures to: a) assessments of general mental ability, personality, and performance in employment, academic, and life settings (Van Rooy & Viswesvaran, 2004; Van Rooy et al., 2005); and b) mental health, psychosomatic health, and physical health (Schutte, Malouff, Thorsteinsson, Bhullar, & Rooke, 2007).

Collectively, these meta-analytic studies integrated the results of 162 individual studies incorporating 26, 265 participants. Overall findings indicated that a) both trait and ability measures correlated with performance in employment, academic, and life settings, and with self-reported levels of mental health, psychosomatic health, and physical health; b) that across all these criterion variables, trait measures of EI were stronger predictors than were ability measures; c) EI ability measures correlated more highly with measures of general mental ability and cognitive ability than did the trait measures; and d) trait EI measures correlated more highly with broad assessments of personality (e.g., Big Five) than EI ability measures, though the correlations were only moderate (and thus not redundant with general personality; Schutte et al., 2007; Van Rooy & Viswesvaran, 2004; Van Rooy et al., 2005).

Speaking further to the relationship between trait EI and broad personality development, Petrides, Pita, and Kokkinaki (2007) demonstrated clearly that trait EI can be conceptualized as emotion-related facets of personality falling at the lower levels of both the Great Three and Big Five personality dimensions. This finding was recently supported in the first behavioral genetic investigation where Vernon, Villani, Schermer, and Petrides (2008) examined genetic and environmental influences in the relationship between trait EI and the Big Five among adult monozygotic and dizygotic twins. Findings clearly supported "incorporating EI as a trait within existing personality taxonomies" (p. 524).

Additionally, like research on the multicultural personality discussed earlier, trait EI has been found to predict variance in quality of life variables (i.e., life satisfaction, rumination, psychological coping) above and beyond the variance accounted for by broad personality dimensions (Law, Wong, & Song, 2004; Petrides, Perez-Gonzalez, & Furnham, 2007; Petrides, Pita, & Kokkinaki, 2007). Given the focus of the present study is on measures of psychological and emotional functioning, rather than on mental or cognitive abilities, the trait EI construct was deemed salient for study purposes.

Though theoretically there would appear to be overlap between the multicultural personality (interacting, negotiating, and effectively managing culturally diverse interactions and environments) and EI (appraising and appropriately expressing emotions, regulating emotions, and utilizing emotions to promote positive interaction in a variety of contexts), the empirical relationship between multicultural personality traits and emotional intelligence has not been established. Therefore, the purpose of this exploratory study is to examine this relationship. Furthermore, given that research on both the multicultural personality and EI have identified gender differences (with females generally scoring higher), the present study further tests this finding (e.g., Ciarrochi, Chan, & Bajgar, 2001; Freudenthaler et al., 2008; Ponterotto, 2008). Additionally, as this study focuses on socially sensitive topics (multiculturalism and intelligence), we also wanted to control for social desirability contamination (see Kluemper, 2008).

The present study hypothesizes that scores on the multicultural personality traits of *Cultural Empathy*, *Open-Mindedness*, *Emotional Stability*, *Social Initiative*, and *Flexibility* (Van der Zee & Van Oudenhoven, 2000, 2001) will account for a significant amount of variance of scores on trait EI (Schutte et al., 1998) above and beyond the variance accounted for by both gender and potential social desirability contamination. Given the lack of previous research linking multicultural effectiveness or self-efficacy to emotional self-efficacy, it is difficult to present specific hypotheses with regard to the expected relationships between the distinct multicultural personality dispositions and trait emotional intelligence. However, from the available research on the multicultural personality (Ponterotto, 2008), and given the item operationalization of the multicultural personality factors (Van der Zee & Van Oudenhoven, 2000, 2001), it is expected that *Cultural Empathy* (empathizing with the feelings of culturally diverse individuals) would have the highest relevance to trait emotional intelligence.

Method

Sample

Using Cohen's (1992, p. 158) power analysis table, we calculated that for seven predictor variables, at a power level of .80, set for a medium effect size with

alpha = .01, that we would need a sample size of 141 participants. The present study included 152 university students enrolled in a graduate school of education located in a large, culturally diverse northeastern U.S. city. The sample was primarily female (82%) and heterosexual (96%), and ranged in age from 21 years to 58 years, with a mean age of 28 (standard deviation of 7 years). With regard to race of participants, 68% self-reported as Caucasian, 9% Black/African American, 9% Hispanic-White, 5% Asian American/Pacific Islander, 2% multiracial, 1% Hispanic-Black, and the remaining indicating "other."

Religious affiliations among the participants included the following: 47% Catholic, 17% Jewish, 12% Protestant, 5% agnostic, and the remainder was spread across a wide number of religions (e.g., Buddhist, Hindu). With regard to financial status, 43% of respondents were fully self-supporting, 41% were partially self-supporting, and 16% were fully dependent on family for support. Personal income of the participants was as follows: 42% earned $15,000 or less, 23% earned between $15,001 and $25,000, and 35% earned $25,001 or more.

Measures

Multicultural Personality Questionnaire (MPQ). The MPQ (Van der Zee & Van Oudenhoven, 2000, 2001) is a 91-item, five-point (1 = *totally not applicable* to 5 = *completely applicable*) Likert-type self-report scale that consists of five moderately correlated factors: *Cultural Empathy* (18 items; sample item: "pays attention to the emotions of others), *Open-Mindedness* (18 items; sample item: "is intrigued by differences"), *Social Initiative* (17 items; sample item: "easily approaches other people"), *Emotional Stability* (20 items; sample item: "gets upset easily" [reverse-scored]), and *Flexibility* (18 items; sample item: "works mostly according to a strict scheme" [reverse-scored]). The MPQ is available in Dutch, Italian, and English (United Kingdom). Ponterotto et al. (2007) slightly adapted the UK English version for United States samples by modifying five items to be more consistent with U.S. English language variation. For example, the original MPQ item "avoids from adventure" was changed to "shies away from adventure," and the item "keeps calm at ill luck" was changed to "keeps calm when things don't go well." The Ponterotto et al. (2007) adaptation of the MPQ had no discernable effects on measures of score central tendency, variance, or internal consistency, relative to pre-existing MPQ versions. Recently, Houtz, Ponterotto, Burger, and Marino (2010) further validated the U.S.-based MPQ version. We used this U.S. English version in the current study.

Van der Zee and Van Oudenhoven's (2001) five-factor MPQ structure was supported in additional exploratory factor analyses (30.3% of variance accounted for; Van der Zee et al., 2003) and confirmatory factor analyses in both Dutch and Italian university students (Comparative Fit Indexes of .90 and .91; Leone, Lucidi, Ercolani, & Presaghi, 2003: Leone, Van der Zee, Van Oudenhoven,

Perugini, & Ercolani, 2005). In an integrative review of 15 studies incorporating the MPQ, Ponterotto (2008) found strong support for score construct and criterion validity. Specifically, MPQ factor scores accounted for significant variance in psychological well-being, job satisfaction, coping with interculturally stressful situations, extent of multicultural activity, international career orientation, among other variables of interest to psychologists. Furthermore, in hierarchical models, MPQ factor scores predicted variance in some of these criterions above and beyond the variance accounted for by measures of general personality (e.g., the Big Five). Finally, with regard to reliability, Ponterotto (2008) identified 14 studies that calculated coefficient alpha for the five MPQ factors. The median coefficients alphas for the factors were as follows: *Cultural Empathy*, .83, *Open-Mindedness*, .84, *Emotional Stability*, .86, *Social Initiative*, .89, and *Flexibility*, .74. (Coefficient alphas for all scales in the present study are presented in the Results section.)

Emotional Intelligence Scale (EIS). The EIS (Schutte et al., 1998) operationalizes Salovey and Mayer's (1990) original model of emotional intelligence. This instrument consists of 33 self-report items that are presented to respondents on a 5-oint Likert-type scale (from 1, *strongly disagree* to 5, *strongly agree*). EIS items assess the extent to which participants characteristically (i.e., as a trait) identify, harness, understand, and regulate emotions in themselves and others (Riley & Schutte, 2003). True to Salovey and Mayer's model, EIS items tap three categories of adaptive abilities: appraisal and expression of emotion (e.g., "I know when to speak about my personal problems to others"), regulation of emotion (e.g., "I have control over my emotions"), and utilization of emotions in solving problems (e.g., "When I am in a positive mood, solving problems is easy for me"; Schutte et al., 1998, p. 172).

Schutte et al. (1998) developed the EIS over the course of five systematic mini-studies which included assessments of score factor structure, reliability, and construct validity. These authors found a single-factor solution to be the most robust and interpretable. However, independent researchers have factor analyzed EIS scores and have promoted either a three- or four-factor model as the best-fit solution (Austin, Saklofske, Huang, & McKenney, 2004; Ciarrochi, Chan, & Bajgar, 2001; Ciarrochi, Deane, & Anderson, 2002; Petrides & Furnham, 2000; Siu, 2009).

Incorporating either the single-factor model or the multi-factor model, researchers have found good evidence for the construct, criterion, and incremental validity of EI scores. For example, incorporating the single-factor model, Schutte and her colleagues found EIS scores to correlate in theoretically predicted ways with scores on measures of alexithymia, attention to feelings, mood repair, optimism, impulse control, and alcohol- and drug-related concerns (Riley & Schutte, 2003; Schutte et al., 1998; Schutte et al., 2001). Impressively, in a one-year longitudinal study, Schutte et al. (1998) found EIS scores to predict

final college grades. More recently, Miville, Carlozzi, Gushue, Schara, and Ueda (2006) found EIS scores to correlate with measures of empathy in a national sample of counselor trainees; and Schutte et al. (2007) found EIS scores to correlate positively with a variety of mental health measures. With regard to reliability of the one-factor EIS model, Schutte et al. (1998) found coefficient alpha of .90, and .87 respectively over two samples; and a two-week test-retest reliability coefficient of .78.

Relying on a three-factor interpretation of EIA scores, Austin et al. (2004) found EIS factors to correlate significantly in theoretically expected directions with other measures of trait EI, and with general mood, stress management, and positive impression. Ciarrochi and colleagues' research teams (Ciarrochi et al., 2001; Ciarrochi, Deane, & Anderson, 2002) used both the three- and four-factor EIS model and found that EI was reliably measured in adolescents, that females scored higher than males, and that EI was correlated in expected directions to a variety of emotive, behavioral, and social support variables. Furthermore, these relationships held even after partialling out variance due to self-esteem and trait anxiety. Relying on a four-factor model, Siu (2009) found various EI factors to predict significant variance in self-report measures of depression, anxiety, stress, aggression, and delinquency in an adolesce3nt population. Reliabilities (coefficient alpha) have generally been in an acceptable range (.67 to .81) for the three-factor model, but not so for the four-factor model where factor 4 score α has often fallen in the .50 range (see Siu, 2009; Tett, Fox, & Wang, 2005).

Social Desirability Scale-13 (SDS-13). The SDS-13 (Reynolds, 1982) is a 13-item short version of the original 33-item Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1973). Reynolds selected items for the short form based on highest factor loadings (.40 or higher) resulting in a sample of 608 undergraduate students. Coefficient alpha for scores on the 13-item SDS was reported to be .76, and correlations between the short and original version was .93 (Fischer & Fick, 1993).

Procedure

After receiving university IRB approval, the research team approached professors in the Graduate School of Education to request class visitation to distribute the study survey packet. Seven professors (of 12 approached) agreed to have research team members visit a class in the ensuing month to distribute surveys. After a brief study introduction surveys were distributed during classes. No student refused to participate and the average time-to-completion of the survey packet was 20 minutes. To "give back to the community," research team members then gave a brief mini-lecture on the constructs of study, and facilitated group discussion on the topic (see Trimble & Fisher, 2006).

Results

Preliminary Analysis

The preliminary data analysis involved factor analyzing scores on the Emotional Intelligence Scale (EIS: Schutte et al., 1998) and assessing potential method bias given study reliance on two trait self-report instruments.

EIS factor analysis. With regard to the factor structure of the EIS, Petrides and Furnham (2000) have suggested the use of both total and factor scores until more definitive assessment of the multidimensionality of the EIS is established. They further suggested that researchers factor analyze the EIS with their own samples. Accordingly, we conducted a principal components analysis of EIS scores. Ten Eigenvalues achieved unity, with the Scree test indicating 3 or 4 interpretable factors. Given prior research has focused on a single or multi-dimensional factor model, we closely examined the one-, two-, three-, and four-factor extractions. Acknowledging moderate correlations among potential EIS factors (see Siu, 2009; Tett et al., 2005) an oblique (Oblimin) rotation was selected. Criteria for model selection was unique structure loadings at .40 or higher (i.e., no multiple high loadings), a minimum of 6 items per factor, a minimum coefficient alpha of .70 per factor, and clear interpretability.

Of the four models examined, the three-factor extraction was the best fit model for the current sample. The three factor model accounted for 37.1% of cumulative variance (Eigenvalues of 8.3, 2.1, and 1.9). Factor 1 included 12 unique loadings of .4 or higher (24.9% of variance; coefficient alpha = .80) and the items appeared to tap *Optimism and Emotion Regulation* (e.g., item #10, "I expect good things to happen," and item #21 "I have control over my emotions"). Factor 2 (6.5% of variance; coefficient alpha = .70) included six unique high loadings of .4+, and its items focused on *Empathy* (e.g., "other people find it easy to confide in me"). Factor 3 included seven unique loadings at .4+ (5.7% of variance) and items focused on awareness and *Healthy Utilization of Emotions* (e.g., item #17, "When I am in a positive mood, solving problems is easy for me"). (Note the four factor model could not be sustained, with only one structure coefficient reaching a unique high loading of .4+ on the 4th factor.) The three-factor model utilized 25 of 33 items, with seven items eliminated for multiple high loadings, and 1 item eliminated for no high loading.

The factor analysis results are consistent with Salovey and Mayer's (1990) original model, tapping the constructs of appraisal and expression of emotions (our Empathy factor), regulation of emotions (our *Optimism and Emotion Regulation* factor), and utilization of emotions (our *Healthy Utilization of Emotions* factor). There is also considerable overlap with three-factor extractions reviewed in Tett et al. (2005). Given the results of the factor analysis, the EIS scores will be examined as a three-factor instrument later in the Results section.

Examination of method bias. In their classic review of common method biases in behavioral research, P. M. Podsakoff, MacKenzie, Lee, and N. P. Podsakoff (2003) review bias due to "common scale formats" and "social desirability," both of which have bearing on the present study. The MPQ and EIS are both self-report Likert-type instruments, and thus the common scale format can yield either over- or under-estimates of true correlations due to error variance. One procedure for examining common scale format method bias is *Harmon's single-factor test* (Podsakoff et al., 2003), which involves factor analyzing all scale items together and examining whether the unrotated factor solution yields only a single factor. If the unrotated matrix primarily supports a single factor, then a substantial amount of common method variance is present. If a clear multidimensional structure emerges, then the researcher has more confidence that potentially only an unsubstantial amount of error variance is in play. Podsakoff et al. (2003) note that the *Harmon's single-factor test* has limitations and is an imperfect estimate, but its use is appropriate for the present study. Our collective factor analysis of the 91 MPQ items and 33 EIS items (total of 124 items), yielded 28 eigenvalues greater than unity and a scree test capturing from six to nine interpretable factors. Thus, *Harmon's test* for the present instruments did not uncover substantial method bias due to common scale formats.

A second form of method bias common in social psychological research is social desirability contamination. We controlled for this potential error variance by incorporating social desirability as a statistical control in our hierarchical regression model as will be discussed in the next section.

Primary Analyses

Table 1 presents measures of central tendency, variance, skewness, and coefficient alpha for the 10 scales comprising the focus of this study. Mean scores tended to be slightly negatively skewed, though all skewness statistics fell well within the -2 to $+2$ range deemed preferable (George & Mallery, 1999). To test for multicollinearity, we examined the *Tolerance* and *Variable Inflation Factor* (VIF) across variables. Tolerance statistics ranged from .46 to .99, and VIFs ranged from 1.00 to 2.18; these values are all well within the normal range as identified by Mertler and Vannatta (2005).

Coefficient alphas across all scales were satisfactory save for the social desirability scale which had an alpha of .69. Our criterion variables, the total and factor scores on the EIS, yielded alphas from .70 to .90, and the main predictor variables of interest, the five MPQ scales, reached coefficient alphas in the .80 (*Emotional Stability*) to .89 (*Cultural Empathy*) range. Ponterotto and Ruckdeschel (2007) strongly recommended calculating the 95% confidence intervals on coefficient alphas in convenience samples, and this data, calculated from Feldt's formula (1965, Table 2, p. 369), is included in the last column of Table 1.

TABLE 1. Mean, Standard Deviation, Skewness, and Coefficient Alpha Across Study Variables

Scale	Mean	*SD*	Skewness	Alpha	95% CI Alpha
Cultural empathy	4.12	.44	−.08	.89	.86/.91
Open-mindedness	3.74	.48	.01	.86	.83/.89
Social initiative	3.58	.50	−.28	.87	.84/.90
Emotional stability	3.08	.39	−.02	.80	.75/.84
Flexibility	3.12	.42	.14	.82	.78/.86
EIS total	3.97	.40	−1.09	.90	.88/.92
Optimism and emotion regulation	3.53	.45	−.75	.80	.75/.84
EIS empathy EIS	4.07	.57	−.99	.70	.63/.77
Emotional utilization	4.57	.58	−.61	.71	.64/.77
Social desirability	1.45	.22	−.27	.69	.61/.76

TABLE 2. Bivariate Correlation Matrix for Study Variables

	O	SI	ES	F	EI-T	EI-O	EI-E	EI-U	*SD*	Gender
CE	.60**	.49**	.22**	.07	.54**	.49**	.43**	.29**	.20*	.27**
O		.38**	.30**	.47**	.34**	.27**	.31**	.28**	.16*	.113
SI			.46**	.26**	.42**	.40**	.41**	.19*	.19*	.19*
ES				.35**	.15	.14	.27**	.01	.32**	−.10
F					.10	.06	.15	.15	.08	.07
EI-T						.84**	.73**	.70**	.08	.26**
EI-O							.41**	.45**	.19*	.27**
EI-E								.41**	.05	.11
EI-U									−.10	.19*
SD										−.06

Note. * = p < .05, ** = p < .01.

A bivariate correlation matrix of study variables is presented in Table 2. As expected (cf. Ponterotto, 2008) the MPQ scales were moderately intercorrelated, ranging from a low of $r = .07$ (*Flexibility* and *Cultural Empathy*), to a high of $r = .60$ (*Open-Mindedness* and *Cultural Empathy*). The mean MPQ interscale correlation was $r = .36$. Furthermore, as expected (cf. Tett et al., 2005) the three Emotional Intelligence scales significantly intercorrelated with a range of .41 to .45 (Mean $r = .42$).

Three of the MPQ scales, *Cultural Empathy*, *Open-Mindedness*, and *Social Initiative* correlated moderately and significantly with the Emotional Intelligence

total and scale scores, ranging from .19 for MPQ *Social Initiative* and EI *Utilization of Emotions*, to .54, for MPQ *Cultural Empathy* to EI Total score. MPQ *Emotional Stability* correlated significantly only with EI *Empathy* ($r = .27$), while MPQ *Flexibility* evidenced no significant correlations across EI total and scale scores. Using Cohen's (1988) effect size criteria, the majority of correlations fell in the medium effect size range.

Furthermore, gender correlated lowly but significantly with *Cultural Empathy* ($r = .27$), *Social Initiative* ($r = .19$), EI total score ($r = .26$), EI *Optimism/Emotion Regulation*, and EI *Healthy Utilization of Emotions*, in all case with females scoring higher. Only one MPQ scale, *Emotional Stability*, correlated moderately ($r = .32$) with Social Desirability. All other scale correlations with Social Desirability fell under $r = .20$.

The primary analysis for this study was a series of four hierarchical regressions where social desirability and gender were entered into step one of the model, and the five MPQ factors in step two. The criterion variables were the EI total and scale scores. Model statistics are summarized below and in Table 3. With regard to the EI total score, the collective set of predictor variables accounted for 33.9% of the variance in scores. Step one included gender and social desirability and accounted for 7.8% of the variance; while step 2 which included the five MPQ scales, added an additional 26.1% of the variance in total scores on emotional intelligence. Specifically, the model was significant at step one ($F (2, 149) = 6.33$, $p = .002$; $R = .28$, $R^2 = .08$, $R^2_{Adj} = .07$, $SEE = .39$, $\Delta F = 6.33 (2, 149)$, $p < .01$), and at step 2 ($F (7, 144) = 10.56$, $p < .01$; $R = .58$, $R^2 = .34$, $R^2_{Adj} = .31$, $SEE = .33$, $\Delta F = 11.38 (5, 144)$, $p < .01$).

Regarding the EI *Optimism and Emotion Regulation* scale, the predictive model accounted for 28.6% of the score variance, with step 1 accounting for 7.2% of the variance and step 2 adding an additional 21.4% of variance. This model was significant at step one ($F (2, 149) = 5.77$, $p < .01$; $R = .27$, $R^2 = .07$, $R^2_{Adj} = .06$, $SEE = .44$, $\Delta F = 5.77 (2, 149)$, $p < .01$, and at step 2 ($F (7, 144) = 8.23$, $p < .001$; $R = .54$, $R^2 = .29$, $R^2_{Adj} = .25$, $SEE = .39$, $\Delta F = 8.62 (5, 144)$, $p < .001$).

Examining the EI *Empathy* scale, the predictive model accounted for 26.3% of the total score variance, with step one accounting for 4.3% of variance, and step two adding an additional 22% of the score variance. The model was significant at step one ($F (2, 149) = 3.36$, $p < .05$; $R = .21$, $R^2 = .04$, $R^2_{Adj} = .03$, $SEE = .56$, $\Delta F = 3.36 (2, 149)$, $p < .05$), and at step 2 ($F (7, 144) = 7.36$, $p < .001$; $R = .51$, $R^2 = .26$, $R^2_{Adj} = .23$, $SEE = .50$, $\Delta F = 8.61 (5, 144)$, $p < .001$).

Finally, with regard to EI *Healthy Utilization of Emotions*, the predictors accounted for 14.5% of the score variance, with step one accounting for 2.9% of variance and step two adding an additional 11.6% of variance. This model was not significant at step one ($F (2, 149) = 2.25$, $p > .05$; $R = .17$, $R^2 = .03$, $R^2_{Adj} = .02$, $SEE = .57$, $\Delta F = 2.25 (2, 149)$, $p = .109$). but was significant at step 2 ($F (7, 144) = 3.49$, $p < .01$; $R = .38$, $R^2 = .15$, $R^2_{Adj} = .10$, $SEE = .55$,

TABLE 3. Hierarchical Multiple Regression With Predictor Variables of Social Desirability, Gender, Cultural Empathy, Openmindedness, Social Initiative, Emotional Stability, and Flexibility on the Criterion Variables of Emotional Intelligence Total and Factor Scores

| | Emotional intelligence scores | | | | | | | | | | | |
| | EI total | | | EI optimism/emotion regulation | | | EI empathy | | | EI utilization | | |
Predictor	ΔR²	β	βr (%)	ΔR²	β	βr (%)	ΔR²	β	βr (%)	ΔR²	β	βr (%)
Step 1	.08**			.07**			.04*			.03		
Social desirability		.10	10		.20*	41		.07	15		−.09	25
Gender		.27**	90		.20*	59		.20*	85		.14	75
(Sum)			100			100			100			100
Step 2	.26**			.21**			.22**			.12**		
Social desirability		−.03	1		.10	6		−.08	2		−.15	10
Gender		.10	7		.04	3		.09	4		.04	5
Cultural empathy		.43**	66		.40**	58		.28**	46		.19	37
Open-mindedness		.00	0		−.06	5		.02	2		.14	26
Social initiative		.20*	24		.22*	26		.20*	32		.09	11
Emotional stability		−.03	1		−.06	2		.13	13		−.09	1
Flexibility		.03	1		.01	0		.02	1		.09	9
(Sum)			100			100			100			99

Note. βr (%) Bring's (1960; Hoffman, 1960) Product Measure rounded to whole number; sum total of percentages may not add up to 100 due to rounding effects. *p < .05. **p < .01.

$\Delta F = 3.89$ (5, 144), $p < .01$). Utilizing R^2 as a measure of effect size (Cohen, 1988), at step one the R^2 realized a small effect size across models, and at step two, a medium to large effect size.

An examination of the standardized Beta coefficients across all four models indicate that in step one, gender accounted for significant variance in scores on EI total, *Optimism/Emotion Regulation*, and *Empathy*, while social desirability accounted for significant score variance only in EI *Optimism/Emotion Regulation*. In step two across models, *Cultural Empathy* and *Social Initiative* accounted for significant variance in scores on EI total, *Optimism/Emotion Regulation*, and *Empathy* above and beyond the variance accounted for by gender and social desirability.

Relative Importance of Predictor Variables

To examine more closely the relative importance of the MPQ variables in predicting EI scores, we incorporated Hoffman's (1960, 1962) relative weight formula (also known as the *Product Measure*, see Bring, 1996) to assess the dispersion importance (Johnson & LeBreton, 2004) of the five MPQ factors. Though not without limitation (Johnson & Le Breton, 2004), the *Product Measure* is a valuable interpretation tool for understanding the relative importance of multiple, correlated predictors. In fact, Pratt (1987) has presented a strong theoretical justification for using the *Product Measure* as an index of relative importance of predictor variables. The *Product Measure* is the product of the standardized Beta coefficient and the zero order correlation between a predictor and criterion variable. Johnson and LeBreton (2004) suggested presenting the coefficient as a percentage of the relative weight to R^2 of all model predictors, as in: $\beta r/R^2$ (100). In Table 3, the third column under each of the four criterion variables presents the *Product Measure* percentage. Across step 1 of the four models, gender explained a major portion of the variance relative to social desirability for EI total score (90%), EI *Empathy* (85%), and EI *Utilization* (75%); while for EI *Optimism/Emotion Regulation*, gender explained only slightly more variance (59%).

In step two of the four regression models, after controlling for gender and social desirability in step one, *Cultural Empathy* accounted for the highest relative importance across the five MPQ factors in explaining variance of scores in EI total (66%), EI Optimism/Emotion Regulation (58%), and EI Empathy (46%). The only other MPQ factor of relative importance in explaining variance in EI was *Social Initiative*, where the relative weight percentage was 24% for EI total score, 22% for EI *Optimism/Emotion Regulation*, and 32% for EI *Empathy*. The MPQ factor of *Open-mindedness, Emotional Stability,* and *Flexibility* evidenced negligible relative weights contribution to EI scores.

Discussion

This study has examined the relationship between multicultural personality dispositions and trait-based emotional intelligence. The multicultural personality was operationalized by the Multicultural Personality Questionnaire (MPQ; Van der Zee & Van Oudenhoven, 2000, 2001), and trait emotional intelligence (EI) was operationalized with the Emotional Intelligence Scale (Schutte et al., 1998). The major finding of the study was that the MPQ factors of *Cultural Empathy* and *Social Initiative* accounted for a significant portion of the variance in scores on EI above and beyond the variance accounted for by gender or socially desirable responding (with large effect sizes using Cohen's [1988] standards). Examining the relative importance of MP factors using Hoffman's (1960) relative weighting procedures, it is clear that *Cultural Empathy* had by far the highest relative weight contributions, with *Social Initiative* adding a moderate contribution to three of the four regression models.

Our study hypothesis was only partially supported in that we expected all five MPQ factors to incrementally predict variance in EI. The fact that *Cultural Empathy* predicted EI scores is not surprising in that empathy, generally, has been linked to EI (e.g., Miville et al., 2006), and a close reading of Schutte et al.'s (1998) EIS items reveal quite a few dealing with sensitivity to others' feelings. *Social Initiative*, as well, is theoretically linked to EI in that both constructs address initiating contact and interactions with others.

It was surprising that the remaining MPQ factors, *Open-Mindedness*, *Emotional Stability*, and *Flexibility* did not account for significant incremental variance in explaining EI scores, as all constructs could be theoretically, and in some cases, empirically linked to EI. For example, Schutte and colleagues' (2007) recent meta-analysis found strong support for the relationship between EI total score and mental health, and thus we expected the *Emotional Stability* factor to play a significant role in our regression model. Though *Emotional Stability* did correlate significantly with EI *Empathy* ($r = .27$) in the bivariate correlation, this significant relationship was not maintained in the regression model. One explanation for a lack of significant relationship here is that this study found a moderate and statistically significant correlation ($r = .32$) between *Emotional Stability* and Social Desirability, which may have affected the results. Another possible explanation is that the MPQ operationalization of *Emotional Stability* is different than how general constructs of mental health are operationalized. More specifically, *Emotional Stability* as conceptualized by Van der Zee and Van Oudenhoven (2000) is defined within the context of expatriate worker adjustment and the ability to remain calm under novel and stressful situations. This conceptualization varies from the popular broader definition of emotional stability with a focus on mental health and a general absence of mental illness symptoms such as depression and anxiety.

Though *Open-Mindedness* did not add significant incremental variance in explaining EI scores, it is important to note that this factor did correlate moderately and significantly ($r = .27$ to $r = .34$) with EI scale scores in the bivariate correlation; though the association was not strong enough to overcome the initial variance accounted for by gender and social desirability in Step 1 of our hierarchical model.

The finding that gender predicted initial variance in three of the EI scores in step 1 of the regression model and also correlated with *Cultural Empathy* and *Social Initiative*, is not surprising in that women have tended to score higher on the Emotional Intelligence Scale total score (Schutte et al., 1998) and on select factors of Multicultural Personality Questionnaire (Ponterotto, 2008). An explanation for this finding deals with women's socialization in the United States in terms of awareness and expression of feelings, and sensitivity to others' emotions and ways of being in the world (Gilligan, 1982).

This study has found that components of the multicultural personality are relevant to the multi-dimensional construct of trait emotional intelligence (EI). Trait EI is an important individual difference construct in psychology in that it has been theoretically and empirically been linked to many quality of life, mental health, coping, social relations, and success criterion variables (Mavrovelli, Petrides, Rieffe, & Bakker, 2007; Mikolajczak, Luminet, & Menil, 2006; Petrides, Pita, & Kokkinaki, 2007; Petrides, Sangareau, Furnham, & Frederickson, 2006; Tett et al., 2005; Van Rooy & Viswesvaran, 2004; Van Rooy et al., 2005; Schutte et al., 2007; Siu, 2009). As the United States and other countries become more culturally diverse through differential fertility rates, documented and undocumented immigration, and refugee displacement and resettlement, it is logical to further study the relationship between EI and multicultural effectiveness.

To our knowledge, this is the first study to examine the relationship between the constructs of the multicultural personality and trait emotional intelligence, and, as such, should be considered exploratory in nature. Our study has numerous limitations that can guide future researchers in this area. First, now that the constructs of multicultural personality and trait EI have been empirically linked, follow-up research using larger samples and more sophisticated designs need to be conducted. For example, using hierarchical modeling, it would be instructive to examine the incremental validity that the multicultural personality dispositions add in predicting EI above variance accounted for by general personality factors such as the Big Five. Furthermore, as theory on EI (Petrides, Pita, and Kokkinaki, 2007; Vernon, Petrides, et al., 2008) and the multicultural personality (Ponterotto, 2008; Ponterotto, 2010) continues to evolve, researchers may hypothesize and test specific path models for these individual difference constructs. Along these lines, future research can also examine trait EI as predictors in various multicultural personality models (i.e., Ponterotto, 2010; Ponterotto et al., 2006; Ramirez, 1999; Van der Zee & Van Oudenhoven, 2000).

A second limitation of the present study is the reliance on one instrument to measure each construct of interest. Though both the Emotional Intelligence Scale (EIS; Schutte et al., 1998) and the Multicultural Personality Questionnaire (MPQ; Van der Zee & Van Oudenhoven, 2000, 2001) are considered appropriate measures for their constructs (Ciarrochi et al., 2001; Ciarrochi et al., 2002; Ponterotto, 2008; Van der Zee et al., 2003; Van Rooy & Viswesvaran, 2004; Van Rooy et al., 2005), there is still some questions about the best-fit factor structure for each measure (e.g., Keele & Bell, 2008; Petrides & Furnham, 2000; Ponterotto, 2008). Large sample national and international research incorporating confirmatory factor analysis is needed to more closely examine the construct validity of each measure, particularly Schutte and colleagues' (1998) EIS. Furthermore, given that coefficient alphas of the EIS factors 2 and 3 have hovered around the .70 range (see Tett et al., 2005), more systematic and rigorous testing of reliability is indicated (see testing models in Ponterotto & Charter, 2009; Ponterotto & Ruckdeschel, 2007).

A third limitation of this study further relates to instrument selection. Though the 91-item MPQ appears to adequately capture the content domain of Van der Zee and Van Oudenhoven's (2000) MP construct (see critique in Ponterotto, 2008), there is some question of whether Schutte and colleagues' (1998) EIS is comprehensive enough to adequately represent the intended content domains of Salovey and Mayer's (1990) EI construct (see Freudenthaler et al., 2008; Petrides & Furnham, 2000). Thus, this study needs to be replicated using more expansive measures of trait EI such as those developed by Tett et al. (2005) and Petrides (2001; Mikolajczak, Luminet, Leroy, & Roy, 2007).

A fourth limitation is that our sample was one of convenience and was highly educated and studying in an urban area. The study results are not generalizable beyond very similar samples (i.e., predominantly Caucasian and female graduate education students in an U.S. urban northeast locale). Finally, a fifth limitation of this study is its sole reliance on self-report measures (see Podsakoff et al., 2003), and though the present study implemented two statistical controls (Harmon's single factor test and controlling for social desirability), broader research methods are needed. For example, future researchers might consider longitudinal designs, experimental analogue studies, and qualitative research.

More specifically, a longitudinal study might ask whether college freshmen in a culturally diverse university environment who score higher on multicultural personality development (or trait emotional intelligence) experience better academic and social adjustment outcomes at the end of the first year. Another question might address whether scores on multicultural personality increase during a semester abroad and whether potential score increases also correlate with general adjustment abroad.

A necessary step to further advance research on understanding the construct of EI and MP as traits within existing personality taxonomies is to incorporate

behavior genetic model-fitting analyses. The recent monozygotic and dizygotic twin studies of Vernon, Villani, et al. (2008) and Vernon, Petrides, Bratko, and Schermer (2008) provide models to consider and replicate.

Examples of needed qualitative research include in-depth interview studies or life-story analyses of individuals nominated by peers for their perceived multicultural orientation to life and multicultural competence (e.g., see examples in Ponterotto, Casas, Suzuki, & Alexander, 2010). Additionally, participant-observation studies of social environments (e.g., K-12 schools, colleges and universities, corporations, government agencies) that promote multicultural personality development could aid psychologists in their institutional consultation work (Ponterotto, Mendelowitz, & Collabolletta, 2008). In conclusion, we hope that this study stimulates increased research among psychology students and professionals on the link between multicultural personality dispositions and important quality of life variables.

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