Sex Differences in Emotional Intelligence: An Unexplained Mystery

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Abstract

Women score higher than men on emotional intelligence tests (Mayer, Caruso, & Salovey, 2000a, 2000b); however, it is unclear why these differences exist. Sex differences might be caused by emotion perception, which is posited to be the fundamental skill in emotional intelligence (Joseph & Newman, 2010). Sex differences could also be explained by differences in verbal ability, because women score higher on verbal ability tests (Burton, Lewis, & Robertson, 1988) and emotional intelligence is measured with written tests. Finally, sex differences might be explained by differences in emotionality, because experiencing more emotions may improve one's emotional skills. The purpose of this study was to explore these possible causes.

Two hundred and sixty-seven undergraduates completed tests of emotional intelligence, emotion perception, vocabulary, and emotional expressivity. The Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Mayer, Salovey, & Caruso, 2002) is a 141-item test that measures perceiving, using, understanding, and managing emotions. The Metaphors Test (Barchard, Anderson, Hensley, & Walker, 2012) is a 30-item test of emotion perception, in which respondents indicate the degree to which metaphors express certain emotions. The Las Vegas Vocabulary Test (Barchard, 2004) is 60-item multiple-choice test of verbal ability. The Positive Expressivity Scale (Barchard, 2001a, 2001b) and the Negative Expressivity Scale (Barchard, 2001a, 2001b) contain 10 and 14-items, respectively. They measure the tendency to express emotions non-verbally.

Analyses proceeded in two steps. Initially, t-tests determined if there were sex differences on the four branches of the MSCEIT. For those branches with sex differences, we determined if these variables can explain the sex differences using hierarchical multiple regression. In Step 1, the only predictor was sex. In Step 2, emotion perception, vocabulary, and emotional expressivity were added.

Women scored higher than men on all four MSCEIT branches, but these differences were only significant for Understanding and Managing Emotions. Emotion perception, vocabulary, and positive expressivity improved the prediction of both of these branches; however, sex was still a significant predictor. Thus, sex differences cannot be explained by differences in emotion perception, vocabulary, or emotional expressivity. Future research needs to address what other factors could account for the sex differences in emotional intelligence.

Introduction

> *But soft, what light through yonder window breaks?*
> *It is the east, and Juliet is the sun.*
> *Arise, fair sun, and kill the envious moon,*
> *Who is already sick and pale with grief*
> *That thou, her maid, art far more fair than she.*

What is Shakespeare trying to convey in the famous balcony scene of Romeo and Juliet? Is Romeo suggesting celestial homicide, or something beyond the literal interpretation? To answer this question, the reader needs to transcend the literal interpretation of the words. The reader needs emotional intelligence.

Emotional intelligence is the ability to perceive, understand, and manage emotions in oneself and others (Ciarrochi, Chan, & Caputi, 2000). Higher scores are associated with greater success at work (Lopes, Côté, Grewal, Salovey, Kadis, & Gall, 2006), at school (Márquez, Martín, & Brackett, 2006), and in one's personal relationships (Lopes, Salovey, & Straus, 2003; Rossen & Kranzler, 2009). Conversely, lower scores are associated with more drug and alcohol use, more physical fights, and more vandalism (Brackett & Mayer, 2003; Rossen & Kranzler, 2009).

Women score slightly higher than men on tests of emotional intelligence (Brackett, Mayer, & Warner, 2004; Mayer et al., 2000a, 2000b). However, the reason for these sex differences is not known. It may be that women score higher because they are more adept at emotion perception; emotion perception is thought to be the primary and fundamental skill in emotional intelligence (Joseph & Newman, 2010). Sex differences might also be explained by verbal ability. Tests of emotional intelligence are usually written tests and women score higher than men on tests of verbal ability (Burton, Lewis, & Robertson, 1988). Sex differences could also be explained by differences in emotional expressivity. Perhaps experiencing more emotions provides a person with additional practice and thus leads to greater emotional skills. The purpose of this study is to determine if sex differences in emotional intelligence are related to emotion perception, verbal ability, emotional expressivity, or some combination of the three.

Method

Participants

A total of 267 undergraduates (156 female, 111 male) completed this study in return for course credit. The participants ranged in age from 18-50 (mean = 20.02, SD = 3.60). Participants identified themselves as 56.9% Caucasian, 13.1% Hispanic, 12.4% Asian, 8.2% African-American, 5.6% Pacific Islander, and 3.4% other.

Measures

The Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Mayer et al., 2002**)** is an ability-based test that measures emotional intelligence. The MSCEIT includes 141 items and takes 35-45 minutes to complete. It measures four branches of emotional intelligence: Perception, Facilitation, Understanding, and Managing Emotions. The MSCEIT is scored using proportion consensus scoring, which means that a participant's score is based on the percentage of respondents in the norm group who gave the same response. For example, if 55% of respondents in the norm group gave the answer c, then a participant would be given a score of .55 if they chose that answer.

The Metaphors Test (Barchard et al., 2012) is a test of emotion perception. The test includes ten metaphors. Participants indicate on a five-point scale the extent to which the metaphor expresses each of three emotions. The Metaphors Test is also scored using proportion consensus scoring.

The Las Vegas Vocabulary Test (Barchard, 2004) is a 60-item multiple-choice test. It is divided into two parts; in each, items are arranged in order of difficulty. The item stems and response options are all single words.

The Positive Expressivity Scale (PES; Barchard, 2001a, 2001b) includes 10 items that measure the tendency to non-verbally express positive emotions, such as affection, happiness, and amusement (e.g., "Express my affection physically"). The Negative Expressivity Scale (NES; Barchard, 2001a; 2001b) includes 14 items that measure the tendency to non-verbally express negative emotions, such as fear, anger, and sadness (e.g., "Shout or scream when I'm angry"). Items are rated on a five-point scale (1 = *Very Inaccurate* and 5 = *Very Accurate*). Subjects indicate the degree to which each statement is true for them. Both PES and NES are part of the International Personality Item Pool (Goldberg, Johnson, Eber, Hogan, Ashton, Cloninger, & Gough, 2006). These scales are publicly available on the Internet and can be freely used and adapted (http://ipip.ori.org/newEmotionalIntelligenceKey.htm#Negative-Expressivity).

Procedures

Participants completed all measures as part of a larger study in two online, 90-minute testing sessions.

Data Analysis

First, to determine if there were sex differences on the MSCEIT, we compared men and women on each of the four branches using independent sample t-tests. We expected to find significant relationships, with women scoring higher. Next, to determine if sex differences on the MSCEIT could be explained by differences in emotion perception, vocabulary, or emotional expressivity, we used hierarchical multiple regression. We ran separate regressions for each branch of emotional intelligence. In the first step, we used sex to predict emotional intelligence. In the second step, we added emotion perception, vocabulary, positive expressivity, and negative expressivity as additional predictors. We expected that these new variables would be predictive but that sex would no longer be significant. If this occurred, this would suggest that the sex differences on the MSCEIT can be explained by differences in emotion perception, vocabulary, or emotional expressivity.

Results

Women scored higher than men on all of the MSCEIT branches. However, these differences were only significant for two branches: Understanding and Managing Emotions. See Table 1.

Table 1
Sex differences for the MSCEIT Branches

Branch	Sex	Mean	Standard Deviation	Effect size	Comparing Means
Perceiving	Male	97.08	14.76	-.17	$t(265) = 1.33$, $p = .184$
	Female	99.68	16.40		
Using	Male	91.80	18.91	-.18	$t(265) = 1.48$, $p = .141$
	Female	95.12	17.58		
Understanding	Male	85.02	14.18	-.38	$t(265) = 3.06$, $p = .002$
	Female	90.36	13.95		
Managing	Male	85.46	13.82	-.34	$t(265) = 2.75$, $p = .006$
	Female	90.46	15.23		

Note. Effect size = mean difference / standard deviation.
** p < .05. ** p < .001.*

Hierarchical multiple regression was used to determine if emotion perception could explain the sex differences on the Understanding and Managing Emotion branches of the MSCEIT. In the first step, sex significantly predicted both Understanding and Managing Emotions. In the second step, emotion perception, vocabulary, and positive expressivity assisted in the prediction of Emotional Understanding and Managing Emotions, once sex had already been taken into account. However, sex was still a significant predictor of both. Emotion perception, vocabulary, and positive expressivity could not explain the sex differences. Moreover, the beta-weights for sex were very similar in steps 1 and 2, for both Understanding and Managing Emotions. See Table 2.

Table 2
Hierarchical Multiple Regression Predicting Understanding and Managing Emotions

	Understanding Emotion		Managing Emotion	
Predictor	ΔR^2	β	ΔR^2	β
Step 1	.03**		.02*	
Sex		-.18		-.17*
Step 2	.33**		.26**	
Sex		-.18**		-.14*
Emotion Perception		.30**		.25**
Vocabulary		.39**		.17*
PES		.16*		.18*
NES		-.05		-.02

** p < .05. ** p < .001.*

Discussion

Our study examined whether sex differences on the MSCEIT could be explained by gender differences in emotion perception, vocabulary, or emotional expressivity. Although women scored higher than men on all four sections of the test, only two of these branches yielded significant differences. These branches were Understanding and Managing Emotions. Further analysis found that these sex differences could not be explained by differences in emotion perception, vocabulary, or emotional expressivity. This raises the question of what, then, is causing these sex differences? Future research should explore other possible causes of these differences.

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