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Personality Traits and Sex Differences in Emotions Recognition Among African Americans and Caucasians

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Keywords

emotion recognition; personality traits; openness; sex differences; cross; cultural

Introduction

This study investigated the role of personality traits and sex differences in emotion recognition. In several studies using samples with mostly young Caucasian and Asian students, Matsumoto *et al*.[1] found strong evidence that recognition of emotional expression in faces was related to Openness to Experience and, to a lesser extent, Conscientiousness. Openness is one of the major dimensions of the five-factor model[2] (FFM) of personality that might play an important role in the recognition of emotion. Open individuals tend to be intellectually curious, imaginative, and sensitive to aesthetics and inner feelings. The present study seeks to replicate Matsumoto *et al*. and extend the findings to an older African American and an older Caucasian sample. Furthermore, this study tests whether the relation between personality traits and emotion recognition can be replicated with a purely verbal task. Finally, the hypothesis that women tend to be better than men in decoding facial expressions of emotion will be tested.

Method

The African American sample was composed of 106 individuals (51 males, 55 females; aged 21 to 92; mean age 52.6 years) participating in NIA's Healthy Aging in Nationally Diverse Longitudinal Samples study (HANDLS). The HANDLS participants live in a low socioeconomic status neighborhood and have an average of 12 years of education. The second sample was composed of 46 individuals (24 males, 22 females; aged 22 to 87; mean age 66.1) participating in the Baltimore Longitudinal Study of Aging. This sample, composed of 38 Caucasians, 5 Asian or Pacific Islanders, and 3 Hispanics, had a higher socioeconomic status and an average of 16 years of education.

Two subtasks of the Perception of Affect Task (PAT) were used.[3] The faces subtask requires participants to recognize which of six emotions (happiness, sadness, anger, fear, disgust, and surprise) or neutral expression is portrayed in pictures of Caucasian faces. The sentences subtask requires the recognition of emotional content from sentences. The same basic emotions were depicted in vignettes. To assess the major dimensions of the FFM, the NEO Five-Factor Inventory was used with the African American sample, and the Revised NEO Personality Inventory[4] was used with the Caucasian sample.

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Results & Discussion

The proportion of correct responses for faces and sentences tasks are given in Table 1. The performance of the African American sample was significantly worse than the performance of the mostly Caucasian sample on the faces task ($t(150) = -5.00$, $p < .01$, $d = .94$). The lower score of the African Americans might be caused by the use of Caucasian faces. However, a similarly low score was obtained with the sentence task ($t(150) = -4.62$, $p < .01$, $d = .90$), and the correlation between the two subtasks was .61 and .42 respectively for the African American and Caucasian sample. ANCOVA analyses were performed to control for the effect of education. Although education predicted performance ($p < .01$), the differences between groups remained significant ($p < .01$). These results suggest that ethnicity, cultural, or individual factors are more likely to explain differences in performance between these samples.

As shown in Table 1, Openness to Experience was the only dimension of the FFM to be significantly correlated with the ability to recognize emotions from facial expressions and sentences in both the African American and Caucasian samples. Further analyses at the level of specific emotions suggest that the correlations with personality traits are not task-or emotion-specific, but reflect a general ability to recognize emotions.

With the faces task, no sex difference was found for the African American sample ($t(104) = 0.07$, $p > .05$, $d = .01$), but women scored significantly higher than men in the Caucasian sample ($t(44) = -3.08$, $p < .01$, $d = .92$). With the sentences task, no sex difference was found in the African American sample ($t(104) = 0.51$, $p > .05$, $d = .10$) but women showed a trend toward scoring higher than men in the Caucasian sample ($t(44) = -1.81$, $p = .08$, $d = .54$). These contrasts in the pattern of sex differences are consistent with the study of sex differences in personality traits[5] and emotions[6] across cultures, and suggest that factors such as race or socioeconomic status might moderate the relation between sex and emotion recognition.

Conclusion

This study showed evidences for the role of individual and cultural factors in emotion recognition. At the individual level, this study lends support to the notion that Openness to Experience is important for affective processing. The consistency of results using verbal and non-verbal stimuli suggests that Openness to Experience is related to basic processing, possibly universal. This interpretation is also supported by the fact that the Matsumoto *et al.* and the present study use judges from different races, cultural backgrounds, and age groups. The advantage in emotion recognition of individuals with higher scores on Openness is consistent with a study[7] that found Openness to be inversely related to a measure of Alexithymia, a cognitive-affective construct that includes difficulty in identifying and expressing feelings. Openness has also been related to variation in the structure of self-rated affect.[8] Finally, women performed better than men in the Caucasian sample, but no in the African American sample. This contrast in the pattern of sex differences highlights the importance of cultural factors.

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Table 1

Mean Proportion Correct in Emotion Recognition Tasks and Correlations with Personality Traits.

	African American (*n* = 106)		Caucasian (*n* = 46)	
	Faces	**Sentences**	**Faces**	**Sentences**
Mean (SD)	.74 (.14)	.74 (.17)	.86 (.11)	.86 (.09)
Neuroticism	.06	.01	−.17	−.03
Extraversion	.10	.14	.03	−.04
Openness	.24**	.28**	.30*	.25*
Agreeableness	.05	.10	.12	−.14
Conscientiousness	−.13	−.06	.14	.08

* $p < .05$;

** $p < .01$ (one-tailed)