Evaluating the Discriminant Validity of the Metaphors Test

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ABSTRACT

The Metaphors Test (Barchard, Hensley, & Walker, 2011) is a new test of emotion perception in which test takers indicate the extent to which various emotions are conveyed by metaphors. In order for the Metaphors Test to be considered a valid test of emotion perception, it must have discriminant validity. The Five Factor Model (McCrae & John, 1992), also known as the Big Five Model, is one of the most well-known frameworks for personality. Based upon theory and previous research, the Metaphors Test should have low correlations with the Big Five. Conscientiousness had a moderate correlation with the Metaphors Test. Agreeableness had a moderate-to-high correlation with the Metaphors Test. This might suggest that the proportion consensus scoring (of any attribute) is influenced by the tendency to care about other people think. Future research on emotion perception might benefit from focusing on tests with veridical scoring keys, such as the new Measure of Emotional Connotations (Barchard, Kirsch, Anderson, Grob, & Anderson, 2012).

INTRODUCTION AND PURPOSE OF THE STUDY

The Big Five (Five Factor Model) was developed as a means to establish a list of personality traits and the Metaphors Test was designed to measure a cognitive ability. For the Metaphors Test to be considered a valid test, it needs to have discriminant validity. Discriminant validity is achieved when measurements between different constructs have low correlations (Reitman, Scheepers & Janssen, 2007). Given that cognitive abilities and personality usually have low to moderate correlations, the Metaphors Test should have low to moderate correlations with the Big Five in order to have discriminant validity.

LITERATURE REVIEW

Emotion Perception Tests

The Metaphors Test

The original study on the Metaphors Test showed that it had small correlations with each of the Big Five personality traits. Only two dimensions had significant correlations and both of these correlations were small. They were openness (r = .26, p < .05) and agreeableness (r = .24, p < .05).

The five of the correlations were similar in the current study: the correlation for extraversion was still very small and the correlation for openness was still small but significant. However, the other correlations were larger in the study than in the previous one. Restriction of range in the student sample might account for the difference in the size of the correlations.

This study found a moderate correlation between the Metaphors Test and conscientiousness. This comparison, Phillips, M. L., Drevets, W. C., Rauch, S. L., & Lane, R. (2003). Neurobiology of emotion perception in healthy individuals. Biological Psychiatry, 54, 504 - 514. doi:10.1016/S0006-3223(03)00168-9

Participants

A total of 181 individuals participated in this study through mTurk. Participants were paid 10 cents. Participants ranged in age from 20 to 68. Of those, 44.8% were female and 55.2% were male. Participants lived in the United States, with 88% of the respondents being from the western United States. The MEC was designed so that the correct answers were known for each item, regardless of the responses of the norm group. A study of the relationship of the MEC to personality (Hensley, Craun, Grob, & Barchard, 2012) found significant but small correlations with openness (r = .28, p < .01) and agreeableness (r = .28, p < .01).

METHODOLOGY

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RESULTS

The Metaphors Test correlated significantly with four of the five scales of the Five Factor Test. The only exception was extraversion. The results are shown in Table 1. Most of these correlations are small to moderate. However, the correlation with agreeableness (r = .58, p < .01) might be interpreted as large.

Expected Discriminant Validity

The ability to perceive emotions is one aspect of emotional intelligence. To demonstrate that emotional intelligence is a new and useful construct, it is important that it is distinct from well-known constructs such as the Big Five personality traits (Joseph & Newman, 2010). The Big Five traits are Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism (McCrae & John, 1992). The Metaphors Test is expected to have low to moderate correlations with each of these dimensions, because it should be measuring different constructs.

CONCLUSION

The original study on the Metaphors Test showed that it had small correlations with each of the Big Five personality traits. Only two dimensions had significant correlations and both of these correlations were small. They were openness (r = .26, p < .05) and agreeableness (r = .24, p < .05).

Two of the five correlations were similar in the current study: the correlation for extraversion was still very small and the correlation for openness was still small but significant. However, the other correlations were larger in the study than in the previous one. Restriction of range in the student sample might account for the difference in the size of the correlations.

This study found a moderate correlation between the Metaphors Test and conscientiousness. This correlation is consistent with previous research on the Big Five (McCrae & John, 1992) and previous research on the MEC (Hensley, Craun, Grob, & Barchard, 2012). Although the MEC has been found to have small correlations with openness and agreeableness, the correlation with conscientiousness is moderate. These findings suggest that the Metaphors Test has a moderate-to-high correlation with agreeableness.

A new test has been designed to attempt to circumvent the problems found on the Metaphors Test. The Measure of Emotional Connotations (MEC) (Barchard, Hensley, Anderson, Grob, & Anderson, 2012) is a new test of emotion perception that has discriminant validity. The MEC has been found to have significant but small correlations with openness (r = .28, p < .01) and agreeableness (r = .28, p < .01).

REFERENCES


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Conclusions

The Metaphors Test had low to moderate correlations with the Big Five. Conscientiousness had a moderate correlation with the Metaphors Test. Agreeableness had a moderate-to-high correlation with the Metaphors Test. This might suggest that the proportion consensus scoring (of any attribute) is influenced by the tendency to care about other people think. Future research on emotion perception might benefit from focusing on tests with veridical scoring keys, such as the new Measure of Emotional Connotations (Barchard, Kirsch, Anderson, Grob, & Anderson, 2012).

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The Metaphors Test was designed to measure an individual’s ability to perceive the emotional connotations of written language (Barchard et al., 2011), while avoiding the limitations of previous tests. Specifically, the item stems do not include any explicit emotion words, and items were designed to be relatively difficult. See Figure 1 for an example item.

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