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Culture and state boredom: A comparison between European Canadians and Chinese

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ABSTRACT

The primary goal of the present research was to examine cross-cultural validity of the Multidimensional State Boredom Scale (MSBS) by comparing a European Canadian sample and a Chinese sample. The secondary goal was to explore cross-cultural differences in the actual experience of boredom between European Canadian and Chinese participants when they completed a psychological survey. After establishing cross-cultural validity of the MSBS by eliminating items that functioned differentially across the two cultural groups, we found that European Canadians scored higher on the MSBS than did Chinese. Results are consistent with the literature on cultural differences in ideal affect, such that European North Americans (vs. East Asians) tend to value high-arousal positive affects (e.g., excitement) more, and low-arousal positive affect less (Tsai, Knutson, & Fung, 2006).

1. Introduction

Boredom, "the aversive experience of having an unfulfilled desire to be engaged in satisfying activity" (Fahlman, Mercer-Lynn, Flora, & Eastwood, 2013, p. 69), has been associated with a wide range of negative consequences, such as low academic achievement (Jarvis & Seifert, 2002), life dissatisfaction (Farmer & Sundberg, 1986), and physical complaints (Sommers & Vodanovich, 2000). Continuous research in elucidating psychological mechanisms underlying the experience of boredom may help ameliorate its negative consequences.

1.1. Measurement of boredom

A number of self-report scales have been devised to assess boredom. The Job Boredom Scale (JBS; Lee, 1986) and Leisure Boredom Scale (LBS; Iso-Ahola & Weissinger, 1990) are examples of measures limited to a specific domain. On the other hand, two measures have been developed to assess boredom more generally – the Boredom Proneness Scale (BPS; Farmer & Sundberg, 1986) and Boredom Susceptibility Scale (ZBS; Zuckerman, Eysenck, & Eysenck, 1978). These two scales assess the propensity to become bored, so they are considered measures of trait boredom.

To fully understand the psychological phenomenon of boredom, it is important to differentiate between chronic propensity to experience boredom (i.e., trait boredom) and the actual experience of boredom (i.e., state boredom) (Todman, 2003; Vodanovich, 2003). While reflecting a psychological characteristic of a *person*, trait boredom is definitely one potential cause of state boredom. Yet, state boredom is also highly determined by the *situation*. Further, state boredom is typically thought of as mediating the effect of trait boredom. Thus, having a valid measure of state boredom is crucial for boredom research. With these concerns in mind, Fahlman et al. (2013) recently developed the Multidimensional State Boredom Scale (MSBS). Initial validation of the MSBS was conducted in Canada (Fahlman et al., 2013). In the Canadian context, it was demonstrated that state boredom is a multidimensional construct, with five first-order factors (i.e., Disengagement, High Arousal, Low Arousal, Inattention, Time Perception) subsumed under a single second-order factor (i.e., General Boredom).

1.2. Culture and boredom

Culture exerts profound influences on a wide array of basic psychological processes, including emotional experiences (e.g., Mesquita & Karasawa, 2002). Cultural investigations in boredom, however, remain sporadic, and extant results appear inconsistent. Of relevance to our current cultural comparison, Wang et al. (2000) found that Chinese participants (vs. existing Western data) were less susceptible to boredom. Sundberg, Latkin, Farmer, and

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Saoud (1991), on the other hand, found that Hong Kong Chinese and Lebanese (vs. American and Australian) participants were more boredom prone.

One issue regarding the above-mentioned findings is that researchers have used different scales to measure (trait) boredom, and therefore these seemingly contradictory results are not directly comparable. Supporting this possibility, Mercer-Lynn, Flora, Fahlman and Eastwood (2013) provided evidence that the BPS (Farmer & Sundberg, 1986) and the ZBS (Zuckerman et al., 1978) measure somewhat different constructs that are associated with different outcomes. Another issue is that past cross-cultural studies in boredom, to the best of our knowledge, did not address measurement invariance. This issue is critical because group differences cannot be meaningfully interpreted without first ensuring that items are free of cultural bias (Chen, 2008).

1.3. The present research

The primary purpose of the present research was to examine cross-cultural validity of the MSBS by comparing a European Canadian sample and a Chinese sample. The secondary purpose of the present research was to explore cross-cultural differences in the actual experience of boredom between European Canadian and Chinese participants when they engaged in the same task (i.e., completing a psychological survey).

2. Method

2.1. Participants, materials, and procedure

Seven hundred and seventy-five Chinese participants (466 female) were recruited from a university in Heilongjiang province in China to participate in this study. The MSBS was translated into simplified Chinese[1] using the back-translation method and discrepancies were resolved by the first and the third authors who are bilingual in Chinese and English (see Appendix A for the English version and Appendix B for the final Chinese version[2]). Consenting participants completed a demographics questionnaire and the Chinese MSBS. All items were rated on a 7-point scale (1 = strongly disagree; 7 = strongly agree).

Our comparison group of European Canadian participants was obtained from archival data (n = 572; 376 female). We controlled the potential effect of age by creating age-matched samples for the present study. For each age category, we randomly removed participants from the cultural group with the larger number of participants within that age category until achieving age-matched samples. The final data set consisted of 383 European Canadian (255 female) participants and 383 Chinese (235 female) participants. For both cultural groups, the age range was from 17 to 28 years and the median age was 19 years.

3. Results

3.1. Measurement invariance

Multiple-group Confirmatory Factor Analysis (CFA) using AMOS 20.0 was used to perform measurement invariance tests.

3.1.1. Configural invariance

To examine whether the same items load onto the same latent factor across the two cultural groups, configural invariance tests were conducted by constraining the factorial structure to be equal. The MSBS was designed to measure state boredom as a multidimensional construct (Fahlman et al., 2013) with five primary factors subsumed under a secondary factor. Accordingly, we first used CFA to test this second-order model for each cultural group.

For the European Canadian sample, this model fit the data reasonably well, χ^2 (372) = 886.07 (χ^2/df = 2.38), Tucker-Lewis Index (TLI) = .901, Comparative Fit Index (CFI) = .909, root mean square error of approximation (RMSEA) (and 90% CI) = .060 (.055, .065). For the Chinese sample, however, this model provided somewhat unsatisfactory fit to the data, χ^2 (372) = 1081.45 (χ^2/df = 2.91), TLI = .824, CFI = .839, RMSEA (and 90% CI) = .071 (.066, .076). Standardized regression weights revealed that the factor loading of item 19 (“I wish I was doing something more exciting”) was low (.26). Furthermore, modification indices suggested that the following items loaded onto multiple factors: item 1 (“Time is passing by slower than usual” ← Time Perception and Low Arousal), item 14 (“I feel agitated” ← High Arousal and Inattention), item 21 (“I am impatient right now” ← High Arousal and Inattention), and item 27 (“I am annoyed with the people around me” ← High Arousal and Inattention). These five items were eliminated thus modifying items within the original second-order model. This revised 24-item model provided reasonable fit to the Chinese data, χ^2 (247) = 637.84 (χ^2/df = 2.58), TLI = .868, CFI = .881, RMSEA (and 90% CI) = .064 (.058, .071), as well as the European Canadian data, χ^2 (247) = 578.38 (χ^2/df = 2.34), TLI = .914, CFI = .923, RMSEA (and 90% CI) = .059 (.053, .066).

These individual CFAs suggest configural invariance using the revised 24-item version of the MSBS; that is, the pattern of loadings for the second-order model was comparable across the two cultural groups. Hence, this revised model was used as the baseline model for subsequent measurement invariance tests.

3.1.2. First-order metric invariance

Using multiple-group CFA, we first tested the unconstrained baseline model (Model 0) which, not surprisingly, provided reasonably good fit to the data, χ^2 (494) = 1216.22, (χ^2/df = 2.46) TLI = .894, CFI = .905, RMSEA (and 90% CI) = .044 (.041, .047). To examine whether all first-order factor loadings were equivalent across cultures, we then tested a model with all first-order factor loadings constrained to be equal (Model 1) and obtained the following indexes: χ^2 (513) = 1270.67, (χ^2/df = 2.48) TLI = .893, CFI = .900, RMSEA (and 90% CI) = .044 (.041, .047). Model 1 was then compared to Model 0 using ΔCFI: CFI (Model 0) – CFI (Model 1) = .905–.900 = .005. This ΔCFI is less than .01, and thus this measurement model is invariant at the first-order metric level (Cheung & Rensvold, 2002), suggesting that all first-order factor loadings were equivalent across the two cultures.

3.1.3. Scalar invariance

To examine whether observed scores could be compared across cultures, scalar invariance tests were conducted. We first tested a model with all first-order factor loadings and all item intercepts constrained to be equal across the two cultural groups (Model 2a) and obtained the following indexes: χ^2 (537) = 1870.67, (χ^2/df = 3.48) TLI = .819, CFI = .824, RMSEA (and 90% CI) = .057 (.054, .060). Model 2a was then compared to Model 1 using ΔCFI: CFI (Model 1) – CFI (Model 2a) = .900–.824 = .076. This ΔCFI is greater than .01, and thus this measurement model is not invariant at the scalar level (Cheung & Rensvold, 2002), suggesting that some items functioned differentially across cultures.

[1] There are two standard character sets for the Chinese written language. Simplified Chinese characters are commonly used in mainland China and Singapore whereas traditional Chinese characters are commonly used in Hong Kong and Taiwan. The meanings of the words are not affected by the character set used.

[2] Basic psychometric properties of the Chinese MSBS were reported in Liu et al. (2013).