Factor structure and correlates of the Mandarin version of the Managing the Emotions of Others (MEOS) scale

Donald H. Saklofske1, Elizabeth J. Austin2, Gonggu Yan3, and Martin M. Smith1

1Department of Psychology, University of Western Ontario, London, Canada
2Department of Psychology, University of Edinburgh, Edinburgh, UK
3School of Psychology, Beijing Normal University, Beijing, China

The English-language version of the Managing the Emotions of Others (MEOS) scale has been found to have a six-factor structure. This includes two pairs (Enhance, Divert and Worsen, Inauthentic) that respectively describe prosocial and non-prosocial interpersonalemotionmanagement, together with an emotional concealment factor (Conceal) and a factor assessing poor self-rated emotional skills. A Mandarin translation of the MEOS was completed by 277 Chinese student participants. Factor analysis indicated a four-factor structure comprising a merged Enhance/Divert factor, together with Worsen, Inauthentic and Conceal factors. The emergence of a different factor structure compared to Western samples may be related to culture-dependent attitudes to emotional expression. The associations of the MEOS factors with Five-Factor model personality, the Dark Triad and trait emotional intelligence (EI) were examined; these were similar to but generally weaker than those found for the English-language version.

Keywords: Emotional intelligence; Emotion regulation; Factor analysis.

Cultural differences in the emotional domain have been widely studied, but much of this research has focused on differences in the experience of emotions (e.g. Mesquita & Walker, 2003; Scherer & Brosch, 2009) and in intrapersonal emotion regulation, that is how an individual regulates their own emotions in response to cultural norms (e.g. Tsai & Lau, 2013). The topic of interpersonal emotion regulation, examining how cultural norms might impact how a person attempts to manage the emotions of other members of their cultural group has been relatively neglected.

Taking as a starting point, the observation that emotion expression is more expected and accepted in Western than in Eastern cultures (Markus & Kitayama, 1991), and that emotion displays by one or both parties are likely to occur when one person (the actor) attempts to regulate the emotions of another (the target), the existence of cultural differences in interpersonal emotion regulation seems probable. For example, the tendency of the actor to encourage the target to express negative emotions would be expected to be governed by cultural display rules relating to emotion expression versus self-control. Similarly, the likelihood of the use of an emotional display such as happiness or anger by the actor to induce an emotion in the target, and the target’s response, would be expected to depend on cultural norms for the display of the relevant emotion.

An example of cultural differences in displaying emotions is provided by a study in which female Asian American and European American participants were placed in a staged interpersonal situation that was likely to induce anger. The Asian Americans reported less anger and also showed less behavioural display of anger compared to the European Americans, although the groups did not differ in physiological response to the anger-provoking situation (Mauss, Butler, Roberts, & Chu, 2010). As an example of cultural differences in response to emotion displays, anger expression by one party in a negotiation was found to elicit larger concessions from European American negotiation partners but smaller concessions from Asian American partners compared to a condition with no anger expression (Adam,
Such results show that culture plays an important role in interpersonal emotional interactions.

In this article, we examine the functioning and psychometric properties of a scale that assesses the dimensions of individual differences in interpersonal emotion management, the Managing the Emotions of Others scale (MEOS; Austin & O’Donnell, 2013). Interpersonal emotion management is studied by researchers interested in the broad area of emotion regulation (e.g. Zaki & Williams, 2013) and also as a facet of emotional intelligence (EI, e.g. Petrides, Pita, & Kokkinaki, 2007).

The MEOS was developed in English and validated using Western samples. The scale was found to have a six-factor structure including two prosocial factors (Enhance, Divert) and two non-prosocial factors (Worsen, Inauthentic) that captured the core features of managing another’s emotions. The item content of the two prosocial factors, which both relate to improving another’s mood, describes Enhance as comprising approaches such as offering help or reassurance, showing understanding of the other person’s feelings, and allowing the other person to express their feelings, whereas Divert comprises approaches to improving another’s mood that are more action-oriented, for example, the use of humour and arranging an enjoyable activity or treat for the other person. The item content of the Worsen factor contains strategies for making another’s mood worse such as making negative or undermining comments and displaying anger. The Inauthentic factor contains items related to the use of emotional displays that might improve (inauthentic niceness, flattery) or worsen (sulking, inducing guilt) another’s mood. Factors relating to Concealing one’s own emotions and self-rated Poor emotion skills were also found. The Enhance and Divert scales were found to be strongly correlated with Agreeableness (A), whereas Worsen and Inauthentic were strongly correlated with the Dark Triad traits of Machiavellianism, narcissism and psychopathy (Austin & O’Donnell, 2013; Austin, Saklofske, Smith, & Tohver, 2014).

From the description of the MEOS item content and the preceding discussion, it can be seen that there is scope for cultural differences in responding to this scale to emerge. Thus, it is important to examine its psychometric properties in non-Western cultures, and to determine whether its factor structure is culturally invariant. Results from this type of study will allow for a more in-depth characterisation of cross-cultural similarities and differences in interpersonal emotion management. This study examined the factor structure of a Mandarin version of the MEOS in a Chinese sample and the correlations of the obtained factors with personality, the Dark Triad and trait EI. The study used translations of the personality and EI measures employed in the initial study of the MEOS (Austin & O’Donnell, 2013).

**METHOD**

All scales were translated into Mandarin by Chinese psychologists fluent in both English and Mandarin following the procedure outlined by Hambleton and Lee (2013). While every effort was made to ensure that the items were congruent with the intent of the original MEOS scale, some adaptations were required in the content to reflect the cultural and linguistic norms of the Chinese university student participants.

**Participants**

A total of 277 participants (224 female; 53 male) were recruited from a large university in Beijing, China. Participants averaged 21.02 years of age (SD = 4.16). The majority of participants were undergraduate students (83.2%).

**Measures**

**MEOS scale**

The MEOS scale is comprised of 58-items providing scores on six subscales relating to managing the emotions of others (enhance, divert, worsen, conceal, inauthentic and poor). Preliminary research supports the reliability and validity of the MEOS (Austin & O’Donnell, 2013; Austin et al., 2014).

**Trait EI**

Trait EI was assessed with the 30-item short form of the trait emotional intelligence questionnaire (TEIQue-SF; Petrides & Furnham, 2006). This scale has been extensively used in research, including that conducted in China (Gökçen, Furnham, Mavrovelli, & Petrides, 2014; Shao, Ji, & Yu, 2013).

**Dark triad**

The Dirty Dozen Scale (Jonason & Webster, 2010) was selected to assess the dark triad. It is among the most widely used scales to measures the three-factor dark triad constellation (e.g. Aghababaei, Mohammadtabar, & Saffarina, 2014). This 12-item measure is comprised of three 4-item subscales assessing Machiavellianism, Psychopathy and Narcissism.

**Personality**

Personality was assessed using the 20-item short form of the International Personality Item Pool-Five-Factor model (Mini-IPIP; Donnellan, Oswald, Baird, & Lucas, 2006). The factor structure of this scale has been replicated together with the demonstration of

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TABLE 1
Means, standard deviations and internal reliabilities (coefficient alphas) for the MEOS using the factor structure obtained from Western samples

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Enhance</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Worsen</td>
<td>−.59*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Divert</td>
<td>.90*</td>
<td>−.55*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Inauthentic</td>
<td>.10</td>
<td>.30*</td>
<td>.14</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Conceal</td>
<td>.28*</td>
<td>−.25*</td>
<td>.28*</td>
<td>−.05</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>6. Poor</td>
<td>−.53*</td>
<td>.32*</td>
<td>−.50*</td>
<td>−.01</td>
<td>.03</td>
<td>1</td>
</tr>
<tr>
<td>α</td>
<td>.96</td>
<td>.87</td>
<td>.92</td>
<td>.72</td>
<td>.73</td>
<td>.74</td>
</tr>
<tr>
<td>M</td>
<td>53.50</td>
<td>26.58</td>
<td>25.06</td>
<td>32.49</td>
<td>21.96</td>
<td>13.64</td>
</tr>
<tr>
<td>SD</td>
<td>13.37</td>
<td>7.55</td>
<td>6.30</td>
<td>6.12</td>
<td>4.76</td>
<td>3.76</td>
</tr>
</tbody>
</table>

*p < .01.

adequate reliability across the extraversion, neuroticism, agreeableness, conscientiousness and openness factors.

Procedure
The established research protocol at a large university in Beijing China was followed. Participation in the study was voluntary. The students completed a paper-and-pencil version of the scales during regular class periods. Following completion of the scales, participants were debriefed.

RESULTS

Descriptive statistics, bivariate correlations and alpha reliabilities
Full information maximum likelihood estimation showed that less than 5% of data points were missing. Means, standard deviations, alpha reliabilities and bivariate correlations for the translated 58-item MEOS are presented in Table 1.

Exploratory factor analysis
An exploratory factor analysis was performed to investigate dimensions underlying the translated MEOS. Based on the scree plot, eigenvalues and past research (Austin & O’Donnell, 2013), six factors were extracted from the translated 58-item MEOS using principal axis factor analysis with promax rotation. The KMO statistic was .93. The eigenvalues for these six factors were 17.776, 4.698, 2.509, 1.695, 1.492 and 1.073 and collectively explained 55.87% of the variance.

An examination of the loadings of items on the six-factor structure, and their high bivariate correlation (r = .90) led to the decision to merge the “enhance factor” and “divert factor” into a single factor. In addition, the “poor” subscale was dropped from further analysis due to low item loadings. A total of 11 items were subsequently dropped from the original scale. Exploratory factor analysis with promax rotation was then repeated with the 47 item, four-factor version of the translated MEOS. The KMO statistic was .94 and four factors collectively explained 49.51% of the variance with eigenvalues of 16.416, 4.426, 2.586 and 1.994. The items loading on the four factors of the modified MEOS are presented in Table 2. Means, standard deviations, coefficient alphas and bivariate correlations for the modified four-factor Mandarin MEOS and other scales used in this study are presented in Table 3.

Confirmatory factor analysis
A confirmatory factor analysis framework, analysed in Mplus 6.0 was subsequently conducted to evaluate the fit of the four-factor translated MEOS. Full information maximum likelihood estimation was used as an estimator. Items loading onto factors 1–4 were combined into three parcels per factor by assigning items to parcels in order of loading size using balanced allocation (Austin & O’Donnell, 2013). A comparative fit index (CFI) and Tucker Lewis Index (TLI) in the range of .95 and a root mean square error of approximation (RMSEA) in the range of .06 suggests excellent model fit (Byrne, 2012), whereas moderate model fit is indicated by a CFI and TLI in the range of .90 and a RMSEA in the range of .10 (Byrne, 2001). Following Cheung and Rensvold (2002), the comparative fit index difference test (ΔCFI) was used to compare nested models, noting that research suggests a ΔCFI ≤ .01 provides strong support that the nested models being compared do not differ significantly (Byrne, 2012; Kline, 2005).

The initial model allowed all factors to be correlated. However, the Wald test indicated that the association between the “inauthentic factor” and the merged “emotional enhancement/divert factor” (p = .09), as well as the association between the “inauthentic factor” and the “conceal factor” (p = .09) were non-significant. Constraining these associations to 0 did not result in a significant loss of fit (ΔCFI = .001). The fit statistics for the final
The MEOS factor structure was obtained, and the factor correlations with personality, the Dark Triad and trait EI were compared with the results from previous reported research on managing the emotions of others (Austin & O’Donnell, 2013; Austin et al., 2014) in Western samples. In contrast to the six-factor structure found in these previous studies, a four-factor structure was derived for the Mandarin MEOS. This structure arose from the merging of the Enhance and Divert scales, together with the Poor Skills scale being dropped from the analysis due to being poorly defined (low item loadings) in an exploratory factor analysis.

The reasons for the merging of the previously found Enhance and Divert factors are clearly of interest. The factor structure of a scale depends on how respondents mentally classify its items as similar or dissimilar and it is possible that this classification process could be influenced by cultural views on emotions in interpersonal interactions. Given the greater value assigned to emotional self-control in Eastern cultures (Markus & Kitayama, 1991), the objective of reducing another’s negative feelings and associated emotional displays might acquire greater salience compared to the actual means of achieving this, leading to less perceived differentiation of the enhancement and diversion strategies. A similar example of the merging of two factors of an EI scale in an Eastern sample that are distinct in Western samples is the combined sociability/emotionality factor that resulted from a factor analysis of the adolescent version.
the Enhance/Worsen correlations ranged from .22 to .18 in the English-language MEOS. In the previous studies, the Worsen factor was strongly negatively correlated with Narcissism (.77) and Divert factor with Agreeableness (.77) in the Chinese group, in the sense that they are less likely to be part of the behavioural repertoire of a particular individual. Previous Enhance/Inauthentic (range from −.15 to −.04) and Divert/Inauthentic correlations (range from −.01 to −.10) were also weaker than in the current data (.22 for the correlation of Enhance/Divert with Inauthentic); the positive sign here is difficult to interpret.

When considering the correlations of the MEOS subscales with personality, the Dark Triad and trait EI, it is most appropriate to consider results for the English-language versions of the same scales (Austin & O’Donnell, 2013). From Table 3 it can be seen that Psychopathy and Conscientiousness have low internal reliabilities, suggesting that the translations of these scales did not function well. Comparing the remaining correlations shows a general pattern of weaker associations compared to the English-language MEOS. Some features of the pattern observed with the English-language scale are however seen, with the Enhance/Divert factor being positively associated with Agreeableness and the Worsen and Inauthentic factors being positively associated with Machiavellianism and narcissism. The associations of the MEOS subscales with trait EI were also found to be weaker than for the English-language MEOS, with only the Enhance/Divert factor being significantly (positively) correlated with EI.

Thus, the general pattern of associations provides some validity evidence for the Mandarin version of the MEOS, but further validation will be required using personality and Dark Triad scales that have been validated in the Chinese population, as it is not possible from the current results to establish whether the observed weaker association pattern arises from cultural differences associated with the MEOS itself, or differences relating
to the short personality and Dark Triad scales used in the study. In addition to the use of different personality measures, the MEOS factor structure requires further examination in samples more representative of the general Chinese population.

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