Articulate and Exact: Being Precise about Emotions

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Abstract

Emotional awareness is the ability to recognize and describe emotions in oneself and others (Lane & Schwartz, 1987). The most commonly used measure of emotional awareness is the Levels of Emotional Awareness Scale (LEAS; Lane, Quinlan, Walker, Schwartz, & Zeitlin, 1990). Overall emotional awareness can be calculated from LEAS responses using hand scoring or Program for Open-Ended Scoring methods 334 and 3345 (Barchard et al., 2010). LEAS responses can also be used to measure six subcomponents of emotional awareness: specificity, complexity, granularity, perspective taking, breadth, and verbosity (Barchard, Contreras, & Picker, 2017; Barchard & Picker, in press). The purpose of this paper is to determine if these nine scores measure a single coherent construct (emotional awareness) or if they instead measure multiple constructs. The LEAS contains 20 open-ended items. Each item consists of a scenario involving the self and another person and was designed to elicit one of four emotions: anger, fear, happiness, or sadness. Participants describe how they and the other person would feel for each scenario. Three hundred forty-one undergraduates (198 females, 143 males) aged 18-50 (M 19.86, SD 3.32) completed the LEAS as part of a larger study. The Scree test, parallel analysis, and MAP test all indicated the presence of two factors. Factor 1 loaded emotional precision and the three overall measures of emotional awareness, and was labelled Emotional Exactness. Factor 2 loaded the remaining variables, most of which required the ability to use numerous and distinctive emotion words, and was therefore labelled Emotional Articulacy. Women scored significantly higher on both factors. These results reinforce conclusions from previous studies, demonstrating women's higher overall emotional awareness (Barrett, Lane, Sechrest, & Schwartz, 2000; Mancini, Agnoli, Trombini, Baldaro, & Surcinelli, 2013). Future research should replicate these results using confirmatory factor analysis to determine if Emotional Exactness and Emotional Articulacy are separable factors. If these results replicate, this may have implications for how the LEAS is usually scored and how it is used to help diagnose and treat emotion disorders. Future research should determine the genetic and environmental contributions to these sex differences.

Introduction

Emotional awareness encompasses many different aspects of emotional experience (Kashdan, Barrett, & McKnight, 2015). Emotional awareness is the ability to identify emotional experiences in oneself and others (Lane & Schwartz, 1987). Overall emotional awareness can be measured using the Levels of Emotional Awareness Scale (LEAS; Lane, Quinlan, Walker, Schwartz, & Zeitlin, 1990). The scale requires an individual to describe how they and another person would feel in 20 emotionally evocative situations. There is strong evidence supporting the construct validity of the LEAS as a measure of overall emotional awareness (Barchard et al., 2010). Overall emotional awareness scores are related to higher accuracy in perception of emotions and further lower scores for difficulties expressing feelings (Veirman, Brouwers, & Fontaine, 2011).

Examination of the LEAS scoring rules reveals that overall emotional awareness is influenced by several components, including emotional precision, complexity, granularity, perspective taking, breadth, and verbosity (Barchard, Contreras, & Picker, 2017; Barchard & Picker, in press). Precision is the tendency to use specific emotion words rather than vague ones (Barchard et al., 2017). Complexity is the tendency to use multiple distinct words to describe a single emotional response (Kashdan et al., 2015). Granularity is ability to make fine-grained distinctions between emotion labels (Kashdan et al., 2015). Perspective taking is the ability to recognize that other individuals feel different emotions from the self (Batson, Early, & Salvarani, 1997). Breadth is the number of different ways used to describe an emotion. Finally, verbosity refers to the tendency to talk about emotions at length. The purpose of this paper is all these scores are indicators of overall emotional awareness or if some of these subcomponents form separate factors.

Method

Participants

Three hundred forty-one undergraduate students (198 females, 143 males) participated in this study in return for course credit. Their ages ranged from 18 to 50 years (M 19.86, SD 3.32). Participants identified as 58.36% Caucasian, 12.32% Hispanic, 11.44% Asian, 8.50% African American, 5.57% Pacific Islander, 0.59% Native American, and 3.23% other.

Measures

The Levels of Emotional Awareness Scale (LEAS; Lane, 1991) contains 20 open-ended items. Each item is a short scenario that involves two people: the self and another person. Each item is designed to elicit one of four emotions: anger, fear, happiness, or sadness. For each item, participants describe how would they feel in the scenario and how would the other person feel. The items are divided into two forms: Form A and Form B.

Overall emotional awareness can be calculated for LEAS responses using either hand scoring or computer scoring. Hand scoring the LEAS is done in three steps (Barchard et al., 2010). First, each word in a response is given a score. Cognitions and non-emotion words are given a score of 0. Physical sensations are given a score of 1. Actions relating to emotion, general emotions, and personality characteristic are scored 2. Distinct emotion words are given scores of 3. The second stage is to calculate self and other scores (Barchard et al., 2010). Scorers decide whether each emotion word is ascribed to the self or to the other person. During this step, scorers also decide whether emotion words are synonymous. If a response has two non-synonymous level 3 emotion words attributed to the self, the self-score is 4. Otherwise, the self score is the maximum of the scores for emotions ascribed to the participant. The other score is calculated in a similar fashion. Lastly, an item score is calculated (Barchard et al., 2010). If the self and other scores both have scores of 4 and the self and other emotions are different, the item score is 5. Otherwise, the item score is the maximum of the self and other scores. Total scores are calculated by summing the items within each form of the test.

Program for Open-Ended Scoring (POES; Leaf & Barchard, 2010) scores typed LEAS responses using a Wordlist that provides the scores for specific words and phrases. Words and phrases that appear in both the responses and the Wordlist are put in a keys list, along with their associated values. The 334 method assigns higher scores to responses that consist of several, discrete emotions than responses that use the same words repetitively (Barchard & Picker, in press). Specifically, the 334 score equals the greatest word score in the keys list, unless there are two non-identical level 3 words, in which case then the 334 score is 4. The 3345 score 3345 is the most comparable to hand scoring (Barchard et al., 2010; Barchard & Picker, in press). Similar to hand scoring, item scores can range from 0 to 5 and differentiate between the self and the other. Specifically, 334 scores are calculated for keys lists for the self and other responses separately. The 3345 score is equal to the highest of the self and other scores, unless both of those are 4, in which case the 3345 score is a 5. The 3345 scores differ from hand scoring, however, in that they do not imitate the individual judgments that are made in hand scoring. Total scores for both 334 and 3345 are calculated as the sum of the item scores within each form of the LEAS.

Scores for the six subcomponents were calculated with the assistance of POES. Emotional precision was calculated as the maximum word score in the self-response for each item, and then item scores were summed to obtain the overall score (Barchard et al., 2017). Complexity was calculated as the number of unique emotion words in the self-response. (Barchard et al., 2017; Barchard & Picker, in press). Perspective taking was calculated as the number of unique emotion words that occur in the other response that are not present in the self response (Barchard et al., 2017; Barchard & Picker, in press). Breadth was calculated as the number of different types of emotion words that were used (e.g,. sensations, actions, feelings)Barchard & Picker, in press). Verboisity was calculated asthe number of words used in the response. For each of these five subcomponents, item scores were summed across all items within the form. Finally, Granularity was calculated as the specific number of unique emotion words from the entire form (Barchard et al., 2017; Barchard & Picker, in press).

Procedures

The LEAS was administered online as part of a larger study. The measures were divided into two testing sessions, which each took approximately 90 minutes.

Results

Table 1

First Principal Component

Item	Pattern Matrix Coefficient
Complexity Form B	**.91**
Complexity Form A	**.90**
POES 3345 Form A	**.90**
POES 3345 Form B	**.89**
Granularity Form B	**.90**
Granularity Form A	**.89**
Verbosity Form B	**.83**
Verbosity Form A	**.82**
Perspective Form A	**.83**
Perspective Form B	**.81**
POES 334 Form A	**.81**
POES 334 Form B	**.80**
Hand Scores Form A	**.74**
Hand Scores Form B	**.73**
Precision Form A	**.68**
Precision Form B	**.66**
Breadth Form A	**.35**
Breadth Form B	.26

Note. Salient pattern matrix coefficients are in boldface.

We extracted the first principal component to see if all measures tap the same general construct (see Table 1). All but one of the variables had salient coefficients on this first component.

To determine the number of factors, we used four criteria.. According to the Kaiser-Guttman rule, there are three factors. However, the Kaiser-Guttman rule generally overestimates the number of factors, and so we will only use it as a tool to keep in mind that the maximum amount of factors is three (Cliff, 1988; Velicer, Eaton, & Fava, 2000). The scree test, parallel analysis (Horn, 1965; Cota, Longman, Holden, & Rekken, 1993), and the Minimum Average Partial test (MAP test; Velicer, 1976) all suggested that there are two factors. We concluded that there are two factors.

We examined various rotations to select the one closest to the ideal of simple structure. We chose a promax rotation with a kappa value of 3.5 because there was a low number of complex variables and high number of hyperplanar loadings. This rotation had three complex variables and seven hyperplanar loadings (see Table 2).

Table 2

Rotated Pattern Matrix

	Factor		
Variable	1	2	h^2
Precision Form B	**1.00**	**-.30**	.68
Precision Form A	**.87**	-.14	.60
POES 334 Form B	**.94**	-.08	.78
POES 334 Form A	**.88**	-.01	.76
POES 3345 Form B	**.79**	.17	.84
POES 3345 Form A	**.70**	.28	.84
Hand Scores Form B	**.77**	.03	.61
Hand Scores Form A	**.76**	.03	.62
Verbosity Form A	-.07	**.98**	.87
Verbosity Form B	-.06	**.97**	.86
Granularity Form A	.19	**.78**	.85
Granularity Form B	.29	**.70**	.85
Complexity Form A	.26	**.72**	.85
Complexity Form B	**.37**	**.62**	.85
Perspective Form A	.23	**.68**	.73
Perspective Form B	.26	**.63**	.69
Breadth Form B	**-.38**	**.68**	.25
Breadth Form A	-.08	**.47**	.17
Factor Intercorrelations	1.00	2.00	
Factor 1	1.00	0.69	
Factor 2	0.69	1.00	

Note. h^2 = communality. Salient factor pattern matrix coefficients are in boldface. Factor 1 = Emotional Exactness. Factor 2 = Emotional Articulacy.

Factor 1 had salient positive coefficients for emotional precision and the three overall measures of emotional awareness: POES 334, POES 3345, and hand scoring. Use of higher-level emotion words leads to higher scores for each of the three overall measures of emotional awareness. We conclude that this factor measures ability to use precise, high-level words to describe emotions. We therefore named the factor Emotional Exactness.

Factor 2 had salient positive coefficients for emotional verbosity, granularity, complexity, breadth, and perspective taking. None of these scores take into account the word-level scores that are given in the LEAS Glossary. Instead, most of these variables (granularity, complexity, breadth, and perspective taking) measure the ability to use numerous, distinct emotion words to describe emotional reactions. Emotional verbosity is simply the number of words used in a response. We therefore named this factor Emotional Articulacy.

Next, we calculated factor scores using the regression method and compared the mean scores on each factor for men and women (Table 3). Women scored significantly higher on both Factor 1 (Emotional Exactness) and Factor 2 (Emotional Articulacy). Based on these results, women use more precise words to describe an emotional experience and tend to use a larger number of distinct words.

Table 3

Means (and Standard Deviations) for Men and Women

Factor	Men	Women	t-test
1	-0.28 (1.03)	0.20 (0.98)	$t(339) = 4.57$, $p < .001$
2	-0.26 (1.01)	0.19 (0.95)	$t(339) = 4.18$, $p < .001$

Note. Factor 1 = Emotional Exactness. Factor 2 = Emotional Articulacy.

Discussion

The primary purpose of this study was to determine if emotional awareness is a unitary construct or if it can be broken into multiple constructs. We found two factors: Emotional Exactness and Emotional Articulacy. These results are likely to be relatively stable, because our sample size (341) was above the recommended sample size (300) for an exploratory factor analysis Tabachnick and Fidell (2007).

In addition, we found that women had higher factor scores for both Emotional Exactness and Emotional Articulacy. These findings are consistent with multiple studies looking at sex differences in emotional awareness. For example, in a French study (Nandrino et al., 2013), 750 volunteers completed the LEAS. Women had higher levels of emotion awareness and greater ability to differentiate emotion in themselves and in others compared to men. In an Australian study, researchers found similar results (Ciarrochi, Hynes, & Crittenden, 2005). Barrett, Lane, Sechrest, and Schwartz (2002) measured the emotional awareness of individuals from various age groups, educational backgrounds, socioeconomic status, and cultures. Using the LEAS, they found that the female participants scored higher in emotional complexity and word differentiation compared to men, even when verbal intelligence was controlled for (Barrett, Lane, Sechrest, & Schwartz, 2000). In another study, sex and age differences in the levels of emotional awareness among children was examined. Seven hundred eighty-one children, ages 8 to 13, were given the LEAS-Children (LEAS-C). In all age groups, girls scored higher in verbal productivity, emotional facial recognition, and cognitive ability, demonstrating that sex differences in emotional awareness exist even in children (Mancini, Agnoli, Trombini, Baldaro, & Surcinelli, 2013). This current study demonstrates that sex differences are found both in the types of words used and in the number of words used.

Future research should reproduce these results to determine if emotional awareness can be divided into these two factors consistently. If these factors are found repeatedly, LEAS scoring should be revised and researchers should explore the usefulness of these two factors in diagnosing and treating emotion disorders. In addition, because sex differences in emotional awareness have been found in children as young as 8 years of age, future research should look at the causes of these sex differences in emotional exactness and emotional articulacy.