

RUNNING HEAD: LEAS ITEM ANALYSIS

Examining LEAS Items to Improve Internal Consistency and Convergent Validity

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### Abstract

The Levels of Emotional Awareness Scale (LEAS; Lane & Schwartz, 1987) is a 20-item open-ended test of one aspect of Emotional Intelligence. Unlike other measures of Emotional Intelligence, though, the LEAS uses defined structural criteria to determine respondents' scores: items are scored according to the structure of the response, not the specific content. The LEAS therefore represents a novel approach to the measurement of Emotional Intelligence.

Although the LEAS was first created over a decade ago, extensive scale refinement has not yet taken place. Research on the quality of individual items is therefore needed. As well, the LEAS is long: many respondents take more than half an hour to complete the measure. It would be useful to identify any weak items, which could then be removed from future versions of the LEAS. This would reduce both administration and scoring time, and might make the LEAS more useful to both researchers and clinicians.

The purpose of this study was to examine the individual items on the LEAS, to determine if some items are performing poorly in terms of their contributions to internal consistency or convergent validity. A total of 107 undergraduate students participated in this study. For each LEAS item, two statistics were calculated. First, to assess the contribution of the item to internal consistency, alpha-if-item-deleted was calculated. Second, to assess the convergent validity of the item, correlations with each of the four O'Sullivan and Guilford Social Intelligence tests were calculated. Several items were identified as weak according to one or both of these criteria.

A shorter form of the LEAS with strong reliability and validity would make a useful contribution to the measurement of Emotional Intelligence. However, before final decisions can be made regarding scale revisions, additional research is needed to examine the quality of the LEAS items according to other reliability and validity criteria.

## Introduction

Emotional Intelligence includes the ability to perceive, understand, and manage one's own emotions and those of other people. Designing measures of Emotional Intelligence has been challenging. The most common approach to measuring Emotional Intelligence is to use self-report questionnaires. However, it would be preferable to use an actual test, when assessing a cognitive ability like Emotional Intelligence, because respondents may be unable or unwilling to accurately report their abilities.

The most common approach to creating a maximum-performance test of Emotional Intelligence is to present a word, phrase, picture, or scene and have the subject rate the intensity or frequency of possible emotions. Designing such measures has been difficult, however, because it is not clear how the scoring keys should be created. It is not clear which answers should be marked as right and which as wrong. Typically, the test designer specifies which answers will be marked as correct. Thus, scores on such tests represent the level of agreement between the test taker and the test designer. Lane and his associates (Lane, Quinlan, Schwartz, Walker, Zeitlin, 1990) claim that this approach fails to capture the variability between individuals in both the ability to monitor internal states and the organizational complexity of experience.

The Levels of Emotional Awareness Scale (LEAS; Lane & Schwartz, 1987) was created using a different approach. This cognitive scale of emotional awareness was designed to focus on "the structural organization of emotional experience without regard to the associated representations of significant relationships or enduring personal qualities" (Lane et al., 1990, p. 125). It uses structural criteria to determine

respondents' scores. Higher scores reflect a greater awareness and differentiation of emotional experience, rather than agreement between the respondent and test designer.

The LEAS therefore represents a novel and promising approach to the measurement of Emotional Intelligence. However, the LEAS is a relatively new measure, and extensive scale refinement has not yet taken place. As well, completion of the LEAS takes a long time. Because the LEAS has 20 items, many participants take more than half an hour to complete the measure. Therefore, it would be useful to identify any items that are not performing well. Weak items might be removed from future versions of the LEAS. The purpose of this study was to examine the individual items on the LEAS to determine if some items are performing poorly in terms of internal consistency or convergent validity.

## Method

### *Participants*

A total of 107 undergraduate students (73 females and 34 males) completed this study in return for course credit. Ages ranged from 18 to 47 with a mean of 20.1 and a standard deviation of 4.3. Participants predominately identified themselves as White (65%), Black (13%), and Asian (11%).

### *Measures*

*Levels of Emotional Awareness Scale.* The LEAS (Lane & Schwartz, 1987) is a written behavioral measure of Emotional Intelligence that asks the participant to describe their anticipated feelings and those of another person in each of twenty

situations. Each scenario is described in two to four sentences, and one item is presented per page.

Scores on the LEAS are based on Lane and Schwartz's (1987) five "levels of emotional awareness." The five levels in ascending order are physical sensations, action tendencies, single emotions, blends of emotions, and blends of blends of emotional experience (the capacity to appreciate complexity in emotional experience). Each item receives a score of 0 to 5 corresponding to the five levels of emotional awareness, so that higher scores reflect greater differentiation in emotion and greater awareness of emotional complexity. For each item, separate scores are first given for the "self" and "other" responses. Then, total scores for each item are calculated based on the Self and Other scores.

*Expression Grouping.* Expression Grouping (O'Sullivan & Guilford, 1976) is a 30-item multiple-choice test. Each item consists of two sets of illustrations of facial expressions, gestures, or body postures. The first set consists of the same emotion being conveyed in three different ways. Participants must choose from the four other illustrations the one that conveys the same emotion as the first three illustrations.

*Cartoon Predictions.* Cartoon Predictions (O'Sullivan & Guilford, 1976) is a 30-item multiple-choice test. Each item shows a cartoon illustration of a scenario. Participants are asked to choose from three illustrations the one that shows the most likely outcome, given the characters' intentions and feelings.

*Missing Cartoons.* Missing Cartoons (O'Sullivan & Guilford, 1976) is a 28-item multiple-choice test. Each item contains a comic strip consisting of four illustrations with

one of the segments missing. Participants select from four separate drawings the one that best completes the comic strip's story.

*Social Translations.* Social Translations (O'Sullivan & Guilford, 1976) is a 24-item multiple-choice test. Each item contains a statement made by one of two people with a defined relationship. Participants choose from among three sets of people the one set in which the statement will have a different meaning.

### *Procedures*

Participants completed the LEAS and the four O'Sullivan and Guilford tests in two one-and-a-half hour sessions held one week apart. The LEAS was given in the first session along with other measures and the four O'Sullivan and Guilford tests were given in the second session along with other measures. No time limits were given for any of these measures.

## Results

### *Internal Consistency*

The internal consistencies of the Self, Other, and Total scores over the 20 items were .74, .71, and .81 respectively. These are all acceptable. Deleting item 5 would increase the internal consistency of the Total scores just slightly. See Table 1 for all of the item analysis results.

### *Convergent Validity*

Self, Other, and Total LEAS scores were correlated with each of the four O'Sullivan and Guilford Social Intelligence tests (Expression Grouping, Cartoon Predictions, Missing Cartoons, and Social Translations) to evaluate the convergent validity of each item (see Table 2). Only one item had a significant negative correlation with any of the O'Sullivan and Guilford (1976) measures. If all of the population

correlations were actually zero, given that 240 correlations were calculated, a total of 6 statistically significant negative correlations would be expected by chance alone. Therefore, this one significant negative correlation can be interpreted as a Type I error.

Although it may be that no items have negative relationships with the O'Sullivan and Guilford tests, many items did fail to demonstrate convergent validity with any of the four tests. These items (2, 5, 7, 8, 10, 11, 12, 13, and 14) must be considered weaker than the remaining items.

### Discussion

The purpose of this paper was to determine how the internal consistency and convergent validity of the Levels of Emotional Awareness Scale (LEAS) could be improved. From these analyses, it appears that items 2, 5, 7, 8, 10, 11, 12, 13, and 14 are weaker than the remaining items. Before decisions can be made regarding scale revisions, however, additional research is needed to examine the quality of the LEAS items according to other reliability and validity criteria, such as test-retest reliability, inter-rater reliability, and convergent and discriminant validity with other criterion measures. The LEAS represents a unique and powerful approach to the measurement of Emotional Intelligence; such additional research is warranted in order to create a shorter version of the test with strong reliability and validity.



References

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Table 1

*Alpha If Item Deleted for LEAS Self, Other, and Total Scores*

LEAS Item	Alpha if Item Deleted		
	Self Scores	Other Scores	Total Scores
1	.74	.69	.81
2	.74	.70	.81
3	.73	.70	.81
4	.73	.70	.81
5	.74	.70	.82
6	.73	.71	.81
7	.73	.70	.80
8	.72	.69	.80
9	.73	.70	.81
10	.73	.70	.81
11	.72	.70	.81
12	.72	.69	.80
13	.74	.69	.81
14	.72	.68	.80
15	.73	.71	.81
16	.72	.69	.80
17	.72	.67	.79
18	.73	.69	.80
19	.72	.68	.79
20	.73	.69	.80
Coefficient Alpha	.74	.71	.81

*Note.* Alpha if item deleted for any particular item is the value of coefficient alpha when the item in question has been deleted and there are only 19 items remaining on the scale.

Table 2

*Convergent Validity Correlations of LEAS Self, Other, and Total Scores with the four O'Sullivan and Guilford Social Intelligence Tests*

LEAS Item	Criterion Measures											
	Expression Grouping			Cartoon Predictions			Missing Cartoons			Social Translations		
	Self	Other	Total	Self	Other	Total	Self	Other	Total	Self	Other	Total
1	.16	.22*	.30**	.10	.06	.06	.11	.11	.18	.20*	.25**	.30**
2	.04	.13	.06	-.01	.02	.05	-.01	-.06	-.05	.15	-.06	.02
3	.22*	.05	.14	.07	-.02	.03	.08	-.09	.02	.06	-.06	.03
4	-.05	.22*	.09	-.02	.11	.01	.10	.22*	.23*	.10	.14	.16
5	.08	-.01	.10	.09	.09	.14	.12	-.08	.11	.10	-.04	.03
6	.15	.06	.21*	.13	.11	.22*	.15	.01	.11	.02	.14	.06
7	.04	-.02	.10	.03	.10	.10	.04	.11	.07	-.06	.13	.01
8	.05	-.02	.02	.06	.06	.06	-.01	-.02	-.03	.11	-.01	.06
9	.06	.05	.04	.06	-.04	.03	.07	-.06	.03	.20*	-.02	.23*
10	.01	.06	.02	.09	.01	.05	-.03	-.05	-.06	.12	.05	.06
11	.03	.09	-.03	-.16	-.98	-.21*	-.02	-.02	-.15	.11	-.01	.07
12	.10	-.05	.04	.06	.10	.09	.07	.03	.04	.04	-.06	.02
13	.04	.01	.12	.12	.04	.14	.09	.01	.11	.06	.00	.02
14	.14	.07	.03	.09	.03	.09	.18	.08	.10	.11	.11	.12
15	.10	.18	.10	.15	.30**	.25*	.15	.17	.34**	-.03	.01	.10
16	.00	.01	.01	.10	.03	.16	.17	.16	.26**	.14	.19*	.24*
17	.05	.10	.03	.12	.10	.15	.09	.08	.11	.27**	.17	.21*
18	-.01	-.05	-.05	.04	.14	.14	.30**	.21*	.27**	.15	.20*	.15
19	.06	.11	.07	.04	.12	.11	.22*	.21*	.19	.08	.11	.09
20	.10	.01	.07	.24*	.14	.22*	.21*	.20*	.18	.19*	.03	.09

\* $p < 0.05$ . \*\* $p < 0.01$ .