An Observer Scale to Measure Alexithymia

MARK G. HAVILAND, PH.D.
W. LOUISE WARREN, PH.D.
MATT L. RIGGS, PH.D.

The authors developed a relatively brief observer alexithymia measure that can be used by patients' acquaintances and relatives. Items corresponding to the defining features of alexithymia (California Q-Set Alexithymia Prototype) were written, and the new instrument's psychometric properties were evaluated in 3 lay-rater samples. The 33-item Observer Alexithymia Scale (OAS) is internally consistent (coefficient alphas = 0.88 and 0.89) and stable (2-week test-retest reliability = 0.87). Moreover, it has an interpretable five-factor structure (based on exploratory and confirmatory factor analyses): distant, uninsightful, somatizing, humorless, and rigid. The OAS is a reliable instrument with a stable factor structure and good conceptual coverage and thus, it appears to be a useful tool for collecting observer data on the clinically relevant expressions of alexithymia that receive minimal attention.   (Psychosomatics 2000; 41:385–392)

Alexithymia is a term used most commonly to describe people who have difficulties recognizing, processing, and regulating emotions.[1] It is a unique personality trait[2,3] that places individuals at great risk for several medical and psychiatric disorders (e.g., substance related, panic, post-traumatic stress, somatoform, and eating) and reduces the likelihood that these individuals will respond to conventional treatments for these disorders.[1] Therefore, alexithymia assessment is important, given the prevalence, severity, intractability, and costliness of these problems; the association of alexithymia with these disorders; and the need for modified treatment plans with alexithymic patients.

The most widely used method to measure alexithymia is self-report, and the most popular instrument is the self-report 20-item Toronto Alexithymia Scale (TAS-20).[4] The test authors recommend that TAS-20 scores be evaluated in the context of other relevant information, such as clinical observations and reports from people who know the patient well (e.g., acquaintances and family members).[1] Despite this recommendation and the availability of observer alexithymia tools [e.g., the 12-item modified Beth Israel Hospital Psychosomatic Questionnaire (modified BIQ)[1] and the California Q-Set Alexithymia Prototype (CAQ-AP)],[3] observer methods are not in widespread use. The

modified BIQ requires a professional rater, and typically, it is completed after a clinical interview. The CAQ-AP, on the other hand, can be used by lay or professional raters, but the procedure takes 45–60 minutes to complete.

A patient's acquaintances' and relatives' viewpoints are important for two reasons. First, acquaintances and relatives are in a position to see a wide range of the patient's behaviors in real-life contexts beyond those ordinarily available to a therapist or other professional. Second, one of the primary factors that makes alexithymia important is its potential effect on the patient's interpersonal relationships. The impression of an alexithymic person formed by acquaintances and relatives may be a useful characterization of his or her social environment.

Therefore, the purpose of our research is to develop a relatively brief observer-based alexithymia scale phrased in terms of ordinary language accessible to acquaintances

and relatives. The scale offers the potential to tap into an unexplored source of data about the alexithymic patient, derived from the patient's daily interpersonal world and depictive of the nature of the patient's "social stimulus values" upon the individuals with whom the patient comes into contact.

METHODS

Alexithymia Definition

We derived the scale's content from the CAQ-AP definition of the construct,[3] which is consistent both with original formulations and with modern, comprehensive descriptions.[1] The prototypic alexithymic person, generally, is constricted, anxious, rigid, and withdrawn. Specifically, the patient has difficulties experiencing and expressing emotion; lacks imagination; and is literal, socially conforming, and utilitarian. The patient is not insightful, is humorless, and has not found personal meaning in life. Finally, in the prototypic alexithymic person, anxiety and tension find outlet in bodily symptoms.

Scale Construction

Item Pool   We began with the 26 defining features (13 characteristic and 13 uncharacteristic items) from the CAQ-AP[3] and wrote 51 new items in lay language. For example, 1 characteristic item, "anxiety and tension find outlet in bodily symptoms," was rewritten as "has physical reactions to stress (headaches, sweating, stomach problems, muscle pain)," and one uncharacteristic item, "he or she has warmth, compassion, and the capacity for close relationships," was rewritten as 3 items, "is a warm person," "has compassion," and "is good at relationships."

In writing items, we were guided by the following principles: 1) to eliminate passively constructed, double negative, and ambiguous items; 2) to maintain a reading ease index in the "easy" range; 3) to preserve as much as possible the balance between characteristic and uncharacteristic items; and 4) to maintain good conceptual coverage (by writing items to cover the defining features of alexithymia and having all items reviewed by an independent alexithymia expert). The final set consisted of 44 items, 20 characteristic and 24 uncharacteristic of alexithymia.

Rating Scale   We used the following 4-point Likert scale: 0 = never, not at all like the person; 1 = sometimes, a little like the person; 2 = usually, very much like the person; 3 = all of the time, completely like the person.

Pilot Test and Scale Revision   We gave the 44-item scale to 203 students at a health sciences university (from the graduate school and the schools of allied health professions, dentistry, and medicine—73% of the raters were women, and 27% were men) and asked them to rate people (other than themselves) who they knew very well. Those that the students rated included parents, spouses, girlfriends/boyfriends, friends, adult children, and siblings—42% of the targets were women, and 58% were men, and their ages ranged from 17 to 90 (mean ± SD = 32 ± 13).

To evaluate reliability, we used coefficient alpha,[5,6] an internal consistency estimate that generally is thought to be a lower reliability boundary. Coefficient alpha for the 44-item scale was 0.80, suggesting good internal consistency and reliability. Three of the items, however, had low-to-moderate negative item-total correlations. Moreover, preliminary factor analytic results revealed that these 3 items and a few others appeared not to measure what we had intended. Thus, we revised the scale by dropping or replacing items. The new item set consisted of 46 items, 20 characteristic and 26 uncharacteristic of alexithymia.

Sample Characteristics and Procedures

Exploratory Factor Analysis (Sample 1)   We gave the 46-item scale to 467 students at a health sciences university (from the graduate school and the schools of allied health professions, dentistry, medicine, nursing, and public health—61% of the raters were women, and 39% were men). Students rated parents, spouses, girlfriends/boyfriends, friends, adult children, siblings, aunts/uncles, cousins, and in-laws—54% of the targets were women, and 46% were men, and their ages ranged from 18 to 78 (mean ± SD = 26 ± 6). We used principal axis factoring and rotated the factors to a promax solution.

Confirmatory Factor Analysis (Sample 2)   We gave the same 46-item scale to 352 students enrolled in psychology courses at a comprehensive (master's degree granting) state university—79% of the raters were women, and 21% were men. These students also rated parents, spouses, girlfriends/boyfriends, friends, adult children, siblings, aunts/uncles, cousins, and in-laws—43.5% of the targets were women, and 56.5% men, and their ages ranged from 18 to 76 (mean ± SD = 28 ± 11). In this sample, we also collected the following target race/ethnicity and education

level data: African American (11%), American Indian/Alaska Native (1%), Asian or Pacific Islander (12%), Hispanic (25%), and White (50%); grade school (2%), some high school (5%), high school graduate (16%), some college (42%), associate's degree (9%), bachelor's degree (17%), and post-graduate degree (9%).

On the basis of the best exploratory solution, we tested a confirmatory model using EQS for Windows, version 5.6.[7] To evaluate model fit, we used the conventional chi-square test[8] and comparative fit index (CFI).[9] The chi-square test evaluates discrepancies between the model and the data. A nonsignificant ($P>0.05$) chi-square is desirable and suggests that the model is an adequate representation of the data. The CFI is an estimate of the proportion of sample information that has been explained by the model. It ranges from 0 to 1 (1 = perfect fit), and values in the 0.9 to 1 range are considered adequate. The distributions of the CFI and other commonly used fit indices are not known, so probabilities are not associated with their values.

Test-Retest Reliability (Sample 3)

We evaluated test-retest reliability with correlation (r_{tt}). We gave the final scale to a sample ($N = 46$) of graduate and undergraduate students at a health sciences university. Each student rated an acquaintance or a relative twice (2-week interval).

Sociodemographic Correlates

Bivariate We evaluated target sample (sample 1 vs. sample 2) and gender differences in total scale and subscale scores with *t*-tests for independent samples. Difference magnitudes are expressed in standard deviation units (Cohen's *d*; the mean difference divided by the pooled standard deviation).[10] Values of 0.2, 0.5, and 0.8 correspond to small, medium, and large effects, respectively. We examined the effect of target race/ethnic background on OAS responses by using one-way analysis of variance (and Tukey's honestly significant difference post-hoc test). We investigated the effects of target age and education on OAS responses by examining correlations between these variables and OAS scale and subscale scores. For all tests of statistical significance, alpha was set at 0.05.

Multivariate Lane et al.[11] have suggested controlling for age and socioeconomic status (SES) when evaluating gender differences in alexithymia scores. To evaluate gender differences while controlling for age and education level

(our SES proxy), we used hierarchical multiple regression. Age and years of education were entered in the first block and gender in the second. For these analyses, we set alpha at 0.05.

RESULTS

Exploratory Factor Analysis

After evaluating item frequency distributions, item-total correlations, conceptual coverage, and various factor solutions in the first sample ($n = 467$), we retained 33 items, extracted five factors (principal axis factoring), and rotated the factors to a promax solution. The results are shown in Table 1. We named the scale the Observer Alexithymia Scale (OAS) and labeled the factors (eigenvalues and percent of variance from the rotated solution are given in parentheses): distant (5.6, 17.0%), uninsightful (4.7, 14.2%), somatizing (3.2, 9.7%), humorless (4.5, 13.6%), and rigid (3.7, 11.1%). This structure verifies that our efforts at maintaining coverage of the defining features of alexithymia (CAQ-AP definition) were successful.

Reliability-Internal Consistency

OAS and subscale alpha coefficients are shown in Table 2. All are satisfactory and stable. In the first sample, alpha for the OAS was 0.88, and subscale alphas ranged from 0.73 to 0.85 (median = 0.78). In the second sample, the alphas were similar (full scale alpha = 0.89; subscale alpha range = 0.69 to 0.86; and median = 0.75).

OAS and Subscale Intercorrelations

OAS and subscale intercorrelations are shown in Table 3. Correlations of the OAS subscales with the total scale score ranged from 0.63 (humorless) to 0.72 (distant) in the first sample and from 0.54 (somatizing) to 0.79 (distant) in the second. Correlations among the OAS subscales ranged from 0.16 to 0.56 (median = 0.35) in Sample 1 and from 0.16 to 0.65 (median = 0.34) in Sample 2. These results suggest that a total score can be meaningfully interpreted but that separate scoring and interpretation of the subscales also is appropriate.

Confirmatory Factor Analysis

We tested the 33-item, five-factor model with a confirmatory factor analysis (maximum likelihood solution).

TABLE 1.   Exploratory factor analysis: principal axis and promax rotation

Subscales and Items	Factor Loadings				
	1	2	3	4	5
Subscale 1: Distant					
Is a warm person*	**0.75**	0.25	0.09	0.30	0.20
Has compassion*	**0.73**	0.25	0.15	0.29	0.20
Is good at relationships*	**0.71**	0.48	0.18	0.40	0.27
Is sensitive to other people*	**0.68**	0.19	0.00	0.19	0.06
Likes to be close to people*	**0.58**	0.12	−0.07	0.32	0.22
Likes to have close friends*	**0.56**	0.20	0.03	0.38	0.19
Likes to explore his or her feelings*	**0.56**	0.22	−0.14	0.27	0.11
Likes to touch or be touched*	**0.50**	0.09	−0.05	0.33	0.19
Is flexible*	**0.49**	0.41	0.28	0.43	0.44
Is imaginative; creative*	**0.48**	0.23	0.07	0.47	0.30
Subscale 2: Uninsightful					
Falls apart when things are really tough	0.21	**0.70**	0.37	0.29	0.20
Becomes confused when things are very stressful	0.19	**0.69**	0.37	0.20	0.16
Becomes frustrated in the face of uncertainty	0.12	**0.62**	0.42	0.24	0.30
Has strong emotions that he or she cannot explain	0.12	**0.52**	0.36	0.13	0.24
Has trouble finding the right words to describe his or her feelings	0.20	**0.51**	0.14	0.20	0.15
Seems to lack a sense of purpose	0.36	**0.50**	0.16	0.22	0.11
Knows himself or herself well*	0.49	**0.50**	0.04	0.37	0.20
Understands his or her needs very well*	0.42	**0.47**	0.02	0.34	0.12
Subscale 3: Somatizing					
Worries too much about his or her health	0.06	0.29	**0.74**	0.10	0.33
Talks a lot about physical pain or discomfort	0.12	0.41	**0.70**	0.24	0.27
Spends a lot of time worrying about his or her body	0.03	0.24	**0.58**	0.01	0.30
Has physical problems that are hard to treat	0.08	0.25	**0.54**	0.22	0.15
Has physical reactions to stress (headaches, sweating, stomach problems, muscle pain)	0.00	0.43	**0.53**	0.29	0.25
Subscale 4: Humorless					
Has a good sense of humor*	0.44	0.34	0.17	**0.79**	0.34
Tells jokes and makes funny remarks*	0.22	0.27	0.11	**0.69**	0.25
Is playful*	0.48	0.17	0.11	**0.65**	0.31
Is unexciting; boring	0.41	0.40	0.26	**0.56**	0.40
Is colorless; uninteresting	0.37	0.41	0.30	**0.52**	0.43
Subscale 5: Rigid					
Is too self-controlled	0.16	0.18	0.27	0.28	**0.74**
Must "go by the book"	0.02	0.08	0.24	0.17	**0.63**
Is stiff; rigid	0.50	0.37	0.23	0.45	**0.59**
Sees things only as black or white	0.33	0.28	0.22	0.21	**0.53**
Puts off enjoying the good things in life, even when it is not necessary to do so	0.14	0.18	0.19	0.28	**0.52**

Note: Highest loadings shown in boldface type; *reverse scored.

TABLE 2.   Observer Alexithymia Scale (OAS) and subscale alphas

Scale	Alpha	
	Sample 1 (*n* = 467)	Sample 2 (*n* = 352)
OAS (33)	0.88	0.89
Subscale 1: Distant (10)	0.85	0.86
Subscale 2: Uninsightful (8)	0.78	0.75
Subscale 3: Somatizing (5)	0.75	0.69
Subscale 4: Humorless (5)	0.78	0.81
Subscale 5: Rigid (5)	0.73	0.72

Note: Number of items given in parentheses.

We created within-dimension item parcels (2 to 4 items in each parcel and 2 or 3 parcels for each dimension).[12,13]

The proposed hierarchical second-order model is presented in Figure 1. We hypothesized the first-order factors—distant, uninsightful, somatizing, humorless, and rigid— to be products of the single, second-order construct, alexithymia. Item parcels are represented by the boxes labeled P11, P12, and so forth. In the initial run, the parameters significantly contributing to model misfit (Lagrange Multiplier test)[7] included six parcel-level error covariances and one first-order factor level disturbance covariance. The model subsequently was relaxed[14] and rerun. The model

had an excellent fit to the data: (χ^2 with 41 degrees of freedom = 54.52, $P = 0.08$; CFI = 0.988). The paths among all first-order factors and their item parcels were large and significant ($P<0.05$). Moreover, all paths between the second-order construct and the first-order dimensions were large and significant ($P<0.05$).

Reliability–Test-Retest

Total OAS scores were relatively stable over the 2-week time interval. The test-retest reliability coefficient (r_{tt}) was 0.87. The largest change from time 1 to time 2 was a 16-point increase, which included an 8-point gain on the somatizing subscale. Without this outlier, $r_{tt} = 0.90$. Test-retest correlations for the OAS subscales averaged 0.74, ranging from 0.87 (humorless) to 0.61 (somatizing). We made no attempt to control for intervening experiences.

OAS and Subscale Means and Standard Deviations

There were no substantial or statistically significant mean differences between the two samples on OAS or subscale scores (women to women, men to men, or all subjects to all subjects). OAS and subscale means and standard deviations for the combined sample by gender ($N = 819$) are shown in Table 4. Among all subjects, OAS scores ranged from 4 to 88 (possible range: 0 to 99), 5 to 88 among women and 4 to 82 among men.

Sociodemographic Correlates—Bivariate

Gender Differences (Combined Sample) The relatively small mean differences between target women and men on OAS scores and scores on subscales 1 (distant), 2 (uninsightful), 3 (somatizing), and 4 (humorless) were statistically significant ($P<0.05$) with women receiving higher ratings (more alexithymic) than men on the total scale and on subscales 2, 3 and 4 (respective effect sizes $d = 0.21$,

0.14, 0.57, and 0.32). Men received higher ratings than women on subscale 1 ($d = 0.16$).

Age Correlations (Combined Sample) The correlation between the OAS total score and the age of the person being rated was 0.18. The correlations of age with scores on subscales 1 (distant), 2 (uninsightful), 3 (somatizing), 4 (humorless), and 5 (rigid) were 0.11, 0.01, 0.15, 0.22, and 0.22, respectively. Although these correlations were small in magnitude, four were statistically significant ($P<0.05$). The age-uninsightful correlation was the exception.

Race/Ethnicity Differences (Sample 2) American Indians and Alaska Natives ($n = 3$) were not included in the target race/ethnicity analyses. Among African American, Asian, Hispanic, and White women, mean differences were seen on subscales 1 and 2, distant and uninsightful ($P<0.05$). None of the subscale 1 pair-wise comparisons were significant; however, mean scores for Hispanic women were higher (more uninsightful) than those for African American and White women on subscale 2 ($P<0.05$, respective effect sizes = 0.75 and 0.56). For men, there were no significant race/ethnicity differences.

Education Correlations (Sample 2) The correlation between the OAS total score and education level was -0.21 ($P<0.05$). The correlations of education with distant, uninsightful, and somatizing were statistically significant ($P<0.05$; -0.17, -0.34, and -0.12, respectively); the correlations with humorless (-0.03) and rigid (-0.01) were not ($P>0.05$).

Sociodemographic Correlates—Multivariate

After first entering target age and education level, target gender was a significant predictor of OAS total score and scores on the somatizing and humorless subscales (women received higher ratings than men in each instance). Gender accounted for approximately 1% of the variance in

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TABLE 3. Observer Alexithymia Scale (OAS) and subscale correlations

| Scale	OAS	1	2	3	4	5
OAS		0.72	0.68	0.64	0.63	0.68
Subscale 1: Distant	0.79		0.16	0.56	0.51	0.33
Subscale 2: Uninsightful	0.69	0.33		0.25	0.17	0.37
Subscale 3: Somatizing	0.54	0.16	0.40		0.46	0.21
Subscale 4: Humorless	0.77	0.65	0.31	0.25		0.39
Subscale 5: Rigid	0.70	0.40	0.35	0.32	0.54	

Note: Sample 1 correlations are shown above the diagonal and Sample 2 below.

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total and humorless scores and 9% of the variance in somatizing scores. Age was a significant positive predictor of all but uninsightful scores, and education was a significant negative predictor of all but humorless and rigid scores.

DISCUSSION

Our results suggest that the OAS is a reliable instrument with a reasonably stable across-sample factor structure. The demonstrated internal consistency, stability, and fac-

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FIGURE 1. Diagram of the five-factor confirmatory model for the Observer Alexithymia Scale.
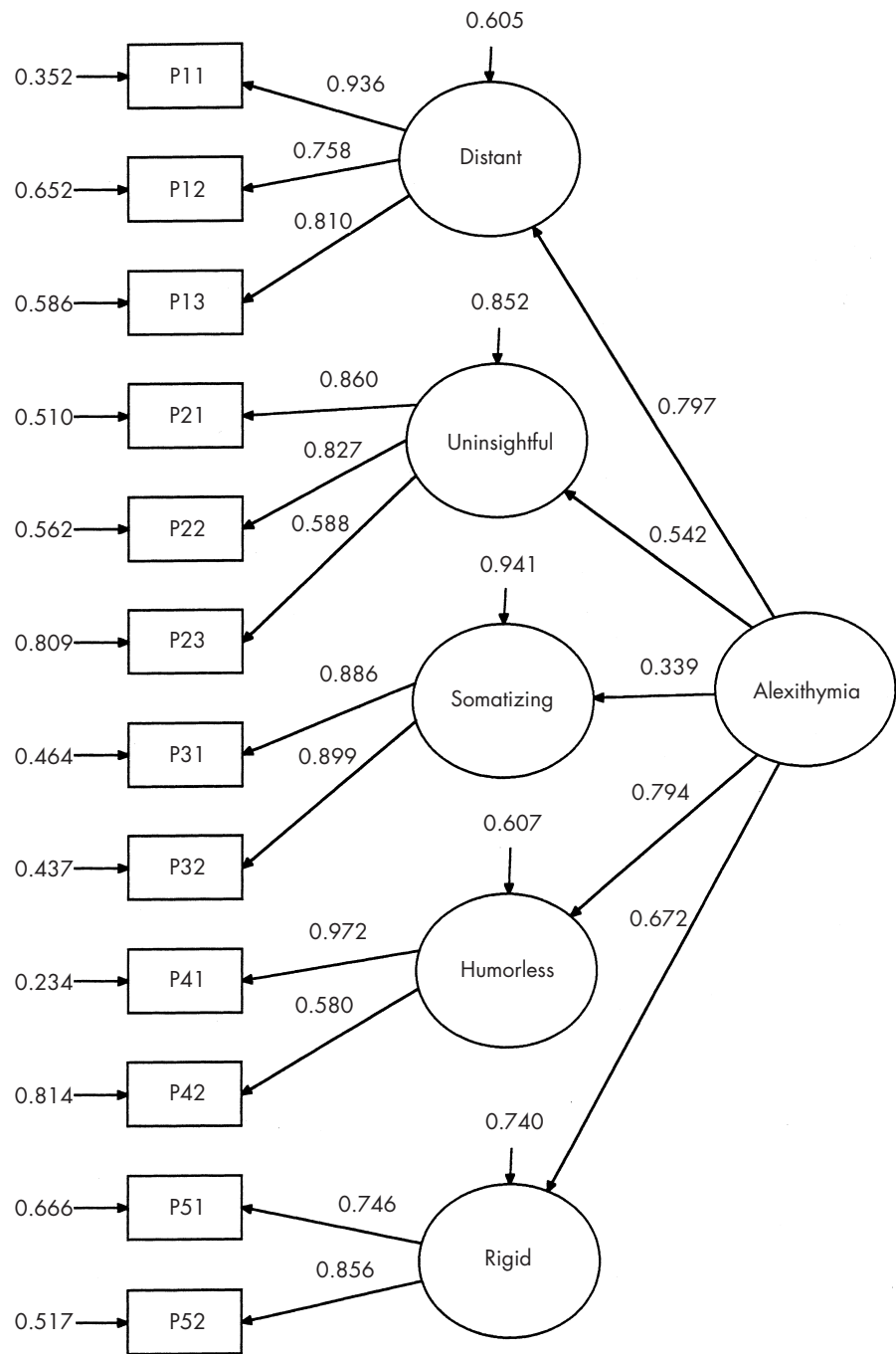
torial invariance provide initial support for OAS's construct validity. Thus, the instrument is offered here to stimulate and facilitate further research efforts to clarify the relationship between self and observer ratings of alexithymic characteristics. We hope that such research ultimately will enrich the pool of resources available to clinicians for identifying alexithymic individuals in clinical settings.

At this juncture, we recommend that the OAS be used with other direct and indirect alexithymia measures [e.g., the TAS-20, the modified BIQ, and the Levels of Emotional Awareness Scale (LEAS[15])] and that total and subscale scores be evaluated. Clearly, there are challenges to interpreting personality data from multiple sources; however, Funder[16] and McCrae[17] have made good suggestions for evaluating accuracy and correspondence and for dealing with self-observer and observer-observer disagreements. Finally, although acquaintances tend to agree in ratings of personality,[16,18] which by extension suggests that the same would be true about the OAS, we recommend obtaining, whenever possible, OAS responses from more than one rater.[18]

Our results agree with Lane et al.'s[11] findings that alexithymia is weakly, but significantly, correlated with age (positively) and years of education (negatively), but not with their finding that men are more alexithymic than women. The gender effect (after controlling for age and SES) in the Lane et al. study (men scoring higher than women), however, was small as was the gender effect (after controlling for age and education) in the present study (women scoring higher than men on total and on subscales 3 and 4). Clearly, more studies are needed to clarify the effects of gender and other moderator variables (e.g., race/ethnicity, gender of rater, and rater relationship to target) on OAS scores.

The OAS appears to have several strengths: it is brief but has good conceptual coverage, it uses several everyday expressions of alexithymia that have received little attention, and it can be used easily by lay (or professional) raters. We assumed, however, that the CAQ-AP was an appropriate starting point for the development of the OAS, that the common sense items and subscales (distant, uninsightful, somatizing, humorless, and rigid) are relevant to alexithymia assessment, and that human judgments, particularly lay ratings, of personality are valid data sources. These assumptions require further comment.

Were the original 100 California Q-set descriptors adequate for constructing the CAQ-AP? Although the 100 descriptors ostensibly cover the domain of personality, this has not been tested, for no universally accepted conceptualization of personality exists.[19] Despite this potential limit and the uniqueness of alexithymia,[2,3] the CAQ-AP definition of alexithymia (summarized earlier)[3] appears to be reasonably complete. Moreover, agreement among the expert judges contributing Q-sorts to the prototype was very good, and the prototype's reliability (Spearman-Brown formula) was 0.99.[3]

How well do OAS total and subscale scores capture alexithymia? If we accept the CAQ-AP alexithymia definition, then OAS scores may adequately capture the construct. Do OAS scores, however, correspond to other present-day formulations of the construct? Taylor et al.,[1] for example, believe the core features of alexithymia to be the three factors of the TAS-20: 1) difficulty identifying feelings, 2) difficulty describing feelings to others, and 3) externally oriented thinking. Lane et al.[20] define alexithymia as having a deficit in the conscious experience of emotion. We see these characteristics as likely underlying the characteristics and behaviors tapped by the OAS.[21] Convergent validity studies, however, are needed, and we must begin by evaluating the correspondence between OAS, TAS-20,

TABLE 4. Observer Alexithymia Scale (OAS) and subscale scores, means, and standard deviations			
Scale	**Combined Sample** (*N* = 819) Mean ± SD	**Women** (*n* = 402) Mean ± SD	**Men** (*n* = 415) Mean ± SD
OAS (33)	29.8 ± 13.2	31.3 ± 13.6	28.5 ± 12.8
Subscale 1: Distant (10)	9.1 ± 5.6	8.6 ± 5.6	9.5 ± 5.5
Subscale 2: Uninsightful (8)	8.6 ± 4.4	9.0 ± 4.4	8.3 ± 4.4
Subscale 3: Somatizing (5)	4.9 ± 3.1	5.8 ± 3.3	4.0 ± 2.6
Subscale 4: Humorless (5)	2.9 ± 2.8	3.4 ± 2.8	2.5 ± 2.7
Subscale 5: Rigid (5)	4.3 ± 3.1	4.5 ± 3.0	4.1 ± 3.2

Note: Number of items given in parentheses.

modified BIQ, and LEAS scores. Such studies may help us answer the question, "Is alexithymia a taxon (latent class) or is it dimensional (a latent trait)?" Despite the availability of methods to answer that question,[22] we do not yet have an answer. Alexithymia's underlying latent structure may be taxonic, and it may underlie (or even cause) its manifest dimensions. For now, however, we suggest thinking of alexithymia as taxonic-dimensional (versus dimensional only) and OAS scores as imperfect indicators of the underlying structure.

Are target ratings by lay judges valid data sources? We believe that lay ratings by raters who know their targets well are valid data sources. In fact, as Funder[18] has argued, lay conceptions of personality go to the heart of what makes personality important. For example, in the case of a person with a very high TAS-20 score or a person with a deficit in the conscious experience of emotion, the evaluator might want to know whether the person is having difficulties in interpersonal relationships, troubles coping with stress, or persistent somatic complaints. Reports from acquaintances or relatives may be useful in answering these questions at intake and also in evaluating the effectiveness of the modified treatment protocols recommended for alexithymic patients.

To conclude, considerable and impressive progress, clearly, has been made in rarefying the alexithymia construct.[1,20] In fact, we eventually may learn, as Lane et al.[20] suggest, that alexithymia is "simply" an impairment in the capacity to consciously experience emotion. Even so, the many, varied, and striking expressions of alexithymia (e.g., the disturbances in self and object relations, poor stress tolerance, vulnerabilities to medical and psychiatric problems, anhedonia, and rigidity) will still be important to study. We believe that both lay and "scientific" conceptualizations are useful[16] and that it is important to study alexithymia with varied methods (e.g., Q-methodology[19] and combinations of the more-traditional self and observer rating scales).

References

1. Taylor GJ, Bagby RM, Parker JDA: Disorders of Affect Regulation: Alexithymia in Medical and Psychiatric Illness. Cambridge, UK, Cambridge University Press, 1997
2. Luminet O, Bagby RM, Wagner H, et al: Relation between alexithymia and the five-factor model of personality. J Pers Assess 1999; 73:345–358
3. Haviland MG, Reise SP: A California Q-set alexithymia prototype and its relationship to ego-control and ego-resiliency. J Psychosom Res 1996; 41:597–608
4. Bagby RM, Parker JDA, Taylor GJ: The Twenty-Item Toronto Alexithymia Scale—I. Item selection and cross-validation of the factor structure. J Psychosom Res 1994; 38:23–32
5. Cronbach LJ: Internal consistency of tests: analyses old and new. Psychometrika 1988; 53:63–70
6. Rajaratnam N, Cronbach LJ, Gleser GC: Generalizability of stratified-parallel tests. Psychometrika 1965; 30:39–56
7. Bentler PM, Wu EJC: EQS for Windows User's Guide. Encino, CA, Multivariate Software, 1995
8. Bollen KA: Structural Equations with Latent Variables. New York, Wiley, 1989
9. Bentler PM: Comparative fit indices in structural models. Psychol Bull 1990; 107:238–246
10. Cohen J: A power primer. Psychol Bull 1992; 112:155–159
11. Lane RD, Sechrest L, Riedel R: Sociodemographic correlates of alexithymia. Compr Psychiatry 1998; 39:377–385
12. Floyd FJ, Widaman KF: Factor analysis in the development and refinement of clinical assessment instruments. Psychol Assess 1995; 7:286–299
13. Kishton JM, Widaman KF: Unidimensional versus domain representative parceling of questionnaire items: an empirical example. Educ Psychol Measurement 1994; 54:757–765
14. Byrne BM: Structural Equation Modeling with EQS and EQS/Windows. Thousand Oaks, CA, Sage, 1994
15. Lane RD, Quinlan DM, Schwartz GE, et al: The Levels of Emotional Awareness Scale: a cognitive-developmental measure of emotion. J Pers Assess 1990; 55:124–134
16. Funder DC: Personality Judgment: A Realistic Approach to Person Perception. San Diego, CA, Academic Press, 1999
17. McCrae RR: The counterpoint of personality assessment: self-reports and observer ratings. Assessment 1994; 2:159–172
18. Funder DC, Colvin CR: Friends and strangers: acquaintanceship, agreement, and the accuracy of personality judgment. J Pers Soc Psychol 1988; 55:149–158
19. Block J: The Q-Sort Method in Personality Assessment and Psychiatric Research (reprint edition). Palo Alto, CA, Consulting Psychologists Press, 1978
20. Lane RD, Ahern GL, Schwartz GE, et al: Is alexithymia the emotional equivalent of blindsight? Biol Psychiatry 1997; 42:834–844
21. Haig BD: From nuisance variables to explanatory theories: a reformulation of the third variable problem. Educ Philos Theory 1992; 24:78–97
22. Waller NG, Meehl PE: Multivariate Taxometric Procedures: Distinguishing Types From Continua. Thousand Oaks, CA, Sage, 1998