THE SPECIFIC TRAITS OF ANXIETY IN THE ANXIETY SITUATIONS AND RESPONSES INVENTORY (ASRI): CONSTRUCT VALIDITY AND RELATIONSHIP TO DEPRESSION*

Jesús SANZ**
Universidad Complutense de Madrid

The main purpose of this research was to gain information about the construct validity of Miguel and Cano's Anxiety Situations and Responses Inventory (ASRI; Miguel & Cano, 1988). Nine questionnaires completed by 157 undergraduate psychology students yielded 17 different psychological measures which enable one to obtain data about psychometric properties of specific traits of anxiety in the ASRI: convergent validity with other measures of the same specific traits of anxiety, and divergent validity with respect to other specific traits of anxiety and other personality constructs. The analysis of correlation matrices and the results of factor analyses indicated that: a) Factors I (evaluation anxiety) and II (interpersonal anxiety) of the ASRI showed an adequate convergent validity; b) the ASRI presented a good balance between a high cohesion and an adequate discriminant power among specific traits of anxiety; c) the subscales of the ASRI enable one to differentiate anxiety from other personality variables, and to better discriminate between anxiety (and its facets) and depression constructs. Finally, these

results are discussed with reference to validation of Endler's multidimensional interaction model of anxiety and to psychometric differentiation between anxiety and depression.

INTRODUCTION

Recently, the second edition of the *Inventario de Situaciones y Respuestas de Ansiedad* (*Anxiety Situations and Responses Inventory, ASRI;* Miguel & Cano, 1988) has been published. This edition includes, as an innovation, the possibility of assessing specific traits of anxiety. Following Endler and colleagues' works (Endler, Hunt & Rosenstein, 1962; Endler & Okada, 1975; Endler, 1978; Flood & Endler, 1980), the specific traits of anxiety refer to individual differences in anxiety proneness with respect to certain dimensions of situations; that is, they refer to the multidimensional interaction model of trait anxiety.

Two models guided the development of the ASRI: the neobehavioral model and the interaction model. The neobehavioral model is reflected in: 1) the emphasis on assessment of specific responses in specific situations, 2) the consideration of subjects' reponses as samples of their behavior, and 3) the independent assessment of three response systems (cognitive, physiological and motor systems), offering a different index for each one of them.

The ASRI has taken from the multidimension interaction model the S-R format and the basic theoretical assumption: all the signs of anxiety are determined by the interaction of individual predispositions (traits) and the features of situations where behavior occurs. This assumption implies that persons differ in their proneness to experiencing anxiety reactions, depending on the situation. The issue is to know whether there are as many dimensions of trait anxiety as situations or, on the contrary, situations are grouped shaping differential patterns of reactive proneness. That is, how many dimensions of trait anxiety can be identified? The question can be answered using two methodological strategies: 1) the factor analyses of the S-R inventories, and 2) the experimental testing of differential predictions obtained from the hypothetical dimensions of trait anxiety.

Concentrating on the factor-analytic approach, the results of such investigations have been relatively convergent. Endler et al. (1962), by means of their factor analyses of situations of the S-R Inventory of Anxiousness (S-R IA), identified three situational factors: *interpersonal anxiety, anxiety in situations where possibility of physical danger exists,* and *anxiety in new or ambiguous situations.* Lately, Endler & Okada (1975) developed the S-R Inventory of General Trait Anxiousness (S-R IGTA), an improved version of the S-R IA.

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The factor analyses of the SR-IGTA identified the above three facets of trait anxiety, plus a *daily-routines or innocuous facet*. Finally, Flood & Endler (1980) carried out new factor analyses of the SR-IGTA and added a fifth facet: *social evaluation anxiety*. On the other hand, Bermúdez (1983), working with a Spanish version of the SR-IGTA which added a sixth subscale, "important situations", proposed six specific traits: the five facets identified by Endler's group, plus a facet named *anxiety in important situations* (important situations for the subject now or in the future, such as academic tests, job interviews, and so on). However, the results of factor analyses conducted by Bermúdez (1983) did not suggest the independence of the sixth facet of anxiety in a conclusive way. Finally, the ASRI authors have obtained, by means of factor analysis, the following four factors: a) *Factor I: evaluation anxiety;* this includes situations where evaluation of oneself is done by others or situations that involve making decisions or accepting responsabilities. b) *Factor II: interpersonal anxiety;* this is defined by interpersonal situations such as those involving direct interactions with other persons or sexual relationships. c) *Factor III: phobic anxiety;* it is defined by situations in which typically phobic stimuli appear as central elements. d) *Factor IV: daily-routines anxiety;* it includes innocuous or daily routine situations.

In general, there is a content relationship between the factors obtained from the ASRI and those obtained by Endler's research group or by Bermúdez. Thus, all these researchers have found these dimensions: interpersonal anxiety, evaluation anxiety and daily-routines anxiety. The new contribution of the ASRI is the identification of Factor IV, phobic anxiety, which includes typically phobic situations such as airplane or boat trips, heights, going to the dentist, injections, crowds, enclosed places, and so on. The identification of Factor IV dependent upon the original situations, entered into the factor analytic solution. The ASRI was developed in a clinical and applied context in which the assessment of simple phobia disorders seems a duty, while the other S-R self-reports have their origin in personality basic research.

The second line of study of the multidimensional interaction model of trait anxiety has adopted an experimental methodology. The experimental studies have been designed to test the *differential or congruency hypothesis* (Endler, 1977). This hypothesis states that increases in the state of anxiety are the result of interactions between a specific dimension of trait anxiety (e.g., social evaluation) and a congruent stressful situation (e.g., a job interview). Endler (1983) reviewed 14 studies designed to directly test the differential hypothesis, and concluded that, out of 18 tests of the hypotheses, 13 came out as predicted. However, 13 of these studies were conducted by the same research team, that of Endler. Besides, at least in two of these studies there is a great confusion between an interpersonal situation and a social evaluation situation. There-

fore, the predictions of these studies, about which the anxiety facet is assessed, are subject to discussion and, hence, the results might not support the differential hypothesis. In Endler's review, 4 other studies, emphasizing the state-trait model of Spielberger (1972), which can be conceptualized in terms of the interaction model of anxiety, also supported the differential hypothesis. Finally, the generalization of these results is noteworthy, since they have been replicated on Canadian, Swedish, American (cfr. Endler, 1983) and Spanish samples. For instance, in Spain, Bermúdez (1983) and Bermúdez, Pérez, Merino and Soto (1986), in two studies which mixed correlational and experimental approaches, and Cano (1989), in a study with a typically experimental design, have found data supporting the differential or congruency hypothesis.

The purpose of this research was threefold. First, its main aim was to gather information about the construct validity of specific traits of anxiety derived from the ASRI. The manual for the ASRI (Miguel & Cano, 1988) does not give many data about the psychometric properties of specific traits of anxiety. It only gives information about the results obtained through the factorial analyses of situations in the ASRI and through the ANOVAs, showing the ASRI, in order to distinguish between normal subjects and persons with psychopathological disorders. Three different methodological procedures were used for deriving evidence for the construct validity of the ASRI: a) convergent validity with other measures of the same specific traits of anxiety; b) divergent validity with respect to measures of other specific traits of anxiety and with respect to other personality variables, especially regarding depression measures, and c) exploratory factorial analyses of all these measures. Given that the multidimensional interaction model of anxiety had guided the development of the ASRI, our second aim was to test that model of anxiety. Finally, our third goal was to examine the psychometric differentiation between the constructs of anxiety and depression. This last issue is relatively new. Although during the last two decades great attention has been paid to depression and anxiety, distinctive and overlapping features of these constructs have surprisingly been forgotten, in spite of the important implications of this issue to the theory, assessment, diagnosis, and treatment of anxiety and depression. However, this situation has changed in recent years.

The literature on the empirical relationship between both emotional disorders has unanimously found that self-report measures of depression and anxiety are highly correlated, with positive coefficients, not only in psychiatric patients (v.g., Mendels, Weinstein & Cochrane, 1972; Evanson, Holland Metha, & Yasin, 1980) but also in university students (v.g., Gotlib, 1984; Dobson 1985a; Tanaka-Matsumi & Kameoka, 1986) and normal adult samples (v.g., Orme, Reis, & Herz, 1986).

Dobson (1985b) carefully reviewed 16 reports of correlations between anxiety and depression, and computed an average correlation among anxiety scales of .66, an average of .69 among depression scales, and an average correlation of .61 between anxiety and depression scales. Moreover, Tanaka-Matsumi and Kameoka (1986) found that the Beck Depression Inventory (probably the most frequently used self-report method of assessing depressive symptomatology) correlated more highly with measurements of anxiety (the trait subscale of the State-Trait Anxiety Inventory or the Taylor Manifest Anxiety Scale) than it did with other measurements of depression. Besides, the Zung Self-Rating Depression Scale (ZSDS) and the Zung Self-Rating Anxiety Scale (ZSAS) correlated .71, more than the ZSDS's correlations with two other depression measurements and more than the ZSAS's correlations with other anxiety measurements. It is also illustrative that studies in which factor analyses have been conducted have been unable to differentiate empirically between the constructs of depression and anxiety (v.g., Mendels et al., 1972; Gotlib, 1984; Dobson, 1985a). For instance, Gotlib (1984) conducted a principal component factor analysis with a varimax rotation and found two factors. The first factor accounted for 50.8 % of the total variance and was composed of nearly all of the measures of depression and anxiety. The second factor accounted for 12.4 % of the total variance and represented method variance, since it was comprised, mainly, of one test made up of the three scales (the depression, anxiety and hostility scales of the Multiple Affect Adjective Check List). In summary, the relationship between anxiety and depression remains without a satisfactory explanation, at least from a psychometric perspective. Several strategies have been proposed for enhancing the discriminatory validity of self-report measurements of depression and anxiety (cfr. Gotlib & Cane, 1989). One possibility is the employment of more situationally specific anxiety and depression self-report measurements. Only one study has been found, that of Tanaka-Matsumi and Kameoka (1986), in which this possibility has been tested with a version of the S-R IA (only two situations, public speaking and course examination, were used), but with very positive results since correlations were as low as .40. Given the lack of empirical data on this issue and the promising results of Tanaka-Matsumi and Kameoka's study, a depression measurement was included in the present study in order to examine its relationship with specific factors of anxiety assessed by the ASRI.

METHOD

Subjects

A sample of 157 undergraduate psychology students at the Universidad Complutense de Madrid participated in this study as part of their training. They ranged in age from 20 to 31 but the mean age was 22 years, and the majority were female (86 %).

Measures

Nine self-reports, yielding 17 different psychological measures, were used in the present study.

(1) *Measures of Specific Dimensions of Trait Anxiety:* Four assessment instruments were used:

a) *Anxiety Situations and Responses Inventory* (ASRI; Miguel & Cano, 1988). This is an inventory with an S-R format which was developed to assess the intensity of 24 response indicators of anxiety felt in 23 specific anxiety-provoking situations. This format provides separate operational measurements of four specific traits of anxiety: Factor I or evaluation anxiety, Factor II or interpersonal anxiety, Factor III or phobic anxiety, and Factor IV or daily-routine anxiety. Besides, the ASRI provides a total score of trait anxiety and separate indexes for cognitive, physiologic and motor responses (the three last indexes were not used in the present study). Miguel and Cano (1988) reported test-retest reliability and cohesion estimates of the response indexes, but no data on reliability of specific factors are known. The physiological, cognitive and motor subscales had high correlations with the total score, ranging from .78 to .89, and high test-retest coefficients, ranging from .68 to .86 for 2-month periods. All the indexes of the ASRI have been reported to discriminate reliably between anxious (with clinical disorders) and normal subjects. When the physiological, cognitive and motor subscales and the total score were correlated with other anxiety measures (Taylor's Manifest Anxiety Scale and Spielberger and colleagues' State-Trait Anxiety Inventory), they showed high convergent validity. However, no data about convergent and divergent validity of specific factors of anxiety have been found.

b) *Test Anxiety Inventory* (TAI; Spielberger, González, Taylor, Anton, Algaze, Ross & Westberry, 1980). It is a self-report scale with 20 items and was developed to measure individual differences in test anxiety as a situation-specific personality trait. Miguel's (1985) review concluded that the TAI was

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the most carefully developed psychometric instrument available for measuring test anxiety.

c) *Brief Version of the Fear of Negative Evaluation Scale* (B-FNE; Leary, 1983). This scale is a shorter, 12-item form of the Fear of Negative Evaluation (FNE; Watson & Friend, 1969). The FNE was designed to measure one aspect of social anxiety; that is, the fear of receiving negative evaluations from others. The Spanish version of the FNE possesses adequate reliability and validity (Gil, 1981). The B-FNE is composed of the original FNE items wich correlated above .50 with the total FNE score on a sample of American undergraduate students. Since the B-FNE and the original FNE are highly correlated (.96) and the B-FNE is a less time-consuming measure than the FNE, the B-FNE was used in the present study.

d) *Personal Report of Confidence as a Speaker* (PRCS; Paul, 1966). This scale was developed to measure individual differences in proneness to feeling anxiety when persons are engaged in giving a speech. Gil (1981) has reported adequate reliability and validity for the Spanish version of the PRCS.

e) *Social Avoidance and Distress Scale* (SAD; Watson & Friend, 1969). This 28-item measure was developed to assess proneness to feeling anxiety in social situations. The reliability and validity of the Spanish version have been documented by Gil (1981). The SAD has perhaps the most extensive validity data of all the self-report inventories of social anxiety, and, in fact, the SAD and the FNE have been the most frequently used self-report measures for research and clinical purposes in the field of social anxiety (Glass & Arnkoff, 1988).

(2) *Depression Measurement:* Only the *Beck Depression Inventory* (BDI; Beck, Rush, Shaw & Emery, 1979) was used. It is a frequently used 21-item self-report measurement of the severity of depressive symptomatology. Its reliability and validity have been extensively documented both on American (cfr. Beck, Steer & Garbin, 1988) and Spanish samples (cfr. Vázquez & Sanz, 1991).

(3) *Other Personality Measures:* These measures were part of a wider research which was paralelly carried out.

a) *Interpersonal Discrimination Task* (IDT; Carr, 1980). It is based on Kelly's personal construct theory and was developed as a simpler, less time-consuming measure of cognitive structure than Kelly's Rep-Test. It allows one to see the effectiveness with which subjects discriminate among various social elements in the environment. The test provides four different quantitative measures of interpersonal discrimination: Overall Score (O-A), Other-Other Score (O-O), Self-Other Score (S-O), and Self-Distinctiveness Score (S-D).

b) *Self Semantic Differential.* It is a Semantic Differential version with three measures of the self: Actual ("I, the way I am"), Ideal ("I, the way I would like to be"), and Social ("I, the way others see me"). Additionally, an "Objective" measurement of the self was obtained by asking some significant other to the subject to fill out the same scale with the instruction to describe him/her. The four scales have the same 15 items, in the form of an adjective and its opposite, with 9-point Likert-type scales. Osgood's distance formula was computed as a measure of discrepancy between self-concepts, allowing us to obtain the following discrepancy indexes: Actual/Ideal (A/I), Actual/Social (A/S), Ideal/Social (I/S), and Actual/Objective (A/O).

c) *Self-Monitoring Scale* (SMS; Snyder, 1974). This is a 25-item true-false questionnaire, which measures the self-monitoring construct (SM). This construct is concerned with individual differences in the willingness or ability of persons to modify their own behaviour in accordance with norms of social appropriateness. The Self-Monitoring Scale has demonstrated having adequate psychometric properties on American (Snyder, 1974) and Spanish samples (Avia, Carrillo & Rojo, 1987).

Procedure

Subjects were tested in groups of 20-30 in various sessions throughout the course. Subjects filled out the BDI on two occasions with a three-month interval.

RESULTS AND DISCUSSION

Means and standard deviations for each measure of depression and anxiety are presented in Table 1.

TABLE 1

Means and Standard Deviations for Measures of Depression and Anxiety

	BDI1	BDI2	BFNE	PRCS	TAI	SAD	F1	F2	F3	F4	ANXTR
M	5.17	4.63	34.92	13.10	38.07	7.26	67.54	15.57	22.83	13.14	135.39
SD	4.18	4.29	8.36	6.51	10.80	5.72	31.23	11.03	18.52	11.33	46.45

Note: BDI1 and BDI2 = Beck Depression Inventory on Times 1 and 2; BFNE = Brief Version of the Fear Negative Evaluation Scale; PRCS = Personal Report of Confidence as a Speaker; TAI = Test Anxiety Inventory; SAD = Social Avoidance and Distress Scale; F1, F2, F3, and F4 = Factors I, II, III, and IV of the Anxiety Situations and Responses Inventory; ANXTR = Total score of the Anxiety Situations and Responses Inventory.

Intercorrelations Among the Factors of the ASRI

In order to assess the degree of cohesion of the ASRI, the intercorrelations among its specific factors and the correlations among the total measure of trait anxiety and each of the factors, were computed. It is supposed, from the multidimensional interaction model of anxiety, that the four factors would not correlate perfectly among themselves, although they would share a moderate amount of variance. The correlations are presented in Table 2. This table shows that all these correlations were positive and highly significant ($p <$ 0.001). The intercorrelations among the factors ranged from .40 between Factor III (phobic anxiety) and Factor IV (daily-routine anxiety) to .71 between Factor I (evaluation anxiety) and Factor II (interpersonal anxiety). This high degree of correlation is not surprising because there is great difficulty in differentiating interpersonal anxiety from evaluation anxiety (cfr., Schlenker & Leary, 1982; Schwarzer, 1986). The average intercorrelation[1] among the rest of pairs of factors was .50. These correlations are substantially lower than those found by Dobson (1985a,b) among scales of general trait anxiety. Dobson reported an average correlation among anxiety scales of .69 in his empirical research (Dobson, 1985a) and of .66 in his review of the literature (Dobson, 1985b). This difference is predictable from the multidimensional interaction model of anxiety. Finally, all the factors showed high correlations with the total measurement of trait anxiety, ranging from .63 to .88. To sum up, the ASRI shows a good cohesion which does not invalidate its theoretical assumptions because, although there are intercorrelations among the specific factors of anxiety (an average of .55), these are noticeably lower than correlations among measurements of general trait anxiety.

Convergent and Divergent Validities: Intercorrelations

Intercorrelations among anxiety and depression measurements are presented in Table 2. Estimates of convergent validity of Factor I (evaluation anxiety) are reflected in the correlation coefficients between this factor in the ASRI and each of the measurements of anxiety in evaluative situations (TAI, PRCS and B-FNE). The three correlations were all highly significant ($p < 0.001$), ranging from .47 between Factor I and the PRCS to .33 between Factor I and the B-FNE. On the other hand, estimates of convergent validity of Factor II (interpersonal anxiety) are represented by the correlation coefficient between

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[1] In the present study, all average correlations were computed through the process of r-to-z transformations, averaging, and z-to-r transformations.

TABLE 2

Intercorrelations of Measures of Anxiety and Depression

Measures	1	2	3	4	5	6	7	8	9	10	11
1. BDI1	–										
2. BDI2	.60a	–									
3. BFNE	.30b	.11	–								
4. PRCS	.23c	.11	.28b	–							
5. TAI	.45a	.35a	.20c	.29b	–						
6. F1	.48a	.30b	.33a	.47a	.46a	–					
7. F2	.46a	.40a	.30b	.42a	.35a	.71a	–				
8. F3	.27b	.25c	.10	.18	.25c	.51a	.50a	–			
9. F4	.40a	.37a	.26b	.15	.28b	.54a	.57a	.40a	–		
10. SAD	.26b	.33a	.23c	.53a	.16	.29b	.40a	.00	.22c	–	
11. ANXTR	.49a	.40a	.32a	.38a	.40a	.88a	.82a	.70a	.66a	.28b	–

$a = p < 0.001$ $b = p < 0.01$ $c = p < 0.05$

Note: BDI1 and BDI2 = Beck Depression Inventory on Times 1 and 2; BFNE = Brief Version of the Fear Negative Evaluation Scale; PRCS = Personal Report of Confidence as a Speaker; TAI = Test Anxiety Inventory; SAD = Social Avoidance and Distress Scale; F1, F2, F3, and F4 = Factors I, II, III, and IV of the Anxiety Situations and Responses Inventory; ANXTR = Total score of the Anxiety Situations and Responses Inventory.

this factor and the SAD. The magnitude of this coefficient was .40 ($p < 0.001$). These results provide empirical support for the convergent validity of the ASRI, at least for two of its subscales, Factor I and Factor II.

Table 2 also indicates the divergent validity of the ASRI subscales by observing the correlations 1) between the ASRI factors and the measures of different facets of anxiety, and 2) between the ASRI factors and the depression measurements.

1) Regarding Factor IV (daily-routine anxiety), this subscale correlated with the B-FNE, the TAI and the SAD, and ranged from .22 ($p < 0.05$) between Factor IV and the SAD to .28 (p. < 0.01) between Factor IV and the TAI. Although these coefficients were statistically significant, their magnitudes were moderately low, since they only involved an amount of shared variance that ranged from 4 % to 7 %. On the other hand, the correlation between Factor IV and the PRCS was not statistically significant. Factor III (phobic anxiety) had a higher discriminant power since it did not correlate significantly with the B-FNE, the PRCS and the SAD, and although the correlation between Factor III and the TAI was statistically significant, its size was moderately small ($r = .25$, $p < 0.05$). Factor I and Factor II showed significant and high correlation coefficients with other scales which measured different facets of trait anxiety. However, the discriminant validity of Factors I and II would be partially confirmed if such coefficients were lower than those among Factor I or II and the scales measuring the same specific trait

of anxiety. In order to test such a hypothesis, paired-sample t-tests for the correlation coefficient were computed. The results of these tests are presented in Table 3. In the case of Factor I, it was predicted that the correlations with the TAI, the PRCS and the BFNE would be significantly higher than that with the SAD. Table 3 shows that two out of three tests came out as predicted. Thus, in a statistically significant way, Factor I correlated more closely with the TAI or the PRCS than with the SAD. On the other hand, it was predicted that Factor II would correlate more closely with the SAD than with the BFNE, PRCS or the TAI. However, the results of t-tests did not allow the rejection of the null hypotheses of no difference among the correlation coefficients. Finally, as it was shown in the previous section, it is noteworthy that the ASRI factors highly correlated with each other. Moreover, with regard to Factors I and II, paired-sample t-tests for the correlation coefficient were calculated, which compared the correlation coefficients between these factors and other scales that measure the same specific trait of anxiety with coefficients between these same factors and the rest of factors of the ASRI (see Table 3). Out of 15 tests, 8 were not statistically significant, and 7 were, but in the opposite direction to the multidimensional interaction hypotheses. That is, the correlation coefficients between Factor I and the other factors of the ASRI were equal to or higher than the correlation coefficients of Factor I with the TAI, the PRCS or the BFNE. In the same way, the coefficients between Factor II and the other factors of the ASRI were equal to or higher than the correlation coefficient of Factor II with the SAD. In sum, Factors III, IV and I (named from greater to smaller validity) show an acceptable divergent validity with other specific traits of anxiety when these are assessed with other instruments; when they are assessed with other subscales of the ASRI, this is not the case, since their high intercorrelations obscure to a certain extent their discriminative power.

2) With regard to the divergent validity of the specific factors of the ASRI with depression measurements, the correlations coefficients of Table 2 show that there was a high correlation between anxiety and depression measurements. In fact, when the correlation coefficients between Factor I and the PRCS, the TAI, and the BFNE, or between Factor II and the SAD were compared to the correlation coefficients between the factors and the depression measurements (BDI1 and BDI2), the t-tests were not significant in five comparisons, but they were in three. Out of three significant t-tests, two were in the directions of the multidimensional interaction model and one was in the opposite direction. However, it is important to point out, in favour of the specific traits of anxiety of ASRI, that their average correlation with the BDI (.37) was notably lower than the average correlation between measures of general trait anxiety and the BDI (.64 in Dobson's study, 1980; .70 in Tanaka-Matsumi & Kameoka's study, 1986; .62 in Dobson's study, 1985a; .64 in Luteijn &

TABLE 3

T-tests among Correlations of the ASRI Factors with Depression and Anxiety Measures

Variable X	Variable Y	Variable Z	r_{xy}	r_{xz}	$t_{(154)}$
F1	TAI	SAD	.46	.29	1.94[d]
		BDI1		.48	−0.35
		BDI2		.30	2.03[c]
		F2		.71	−4.88[a]
		F3		.51	−0.72
		F4		.54	−1.08
	PRCS	SAD	.47	.29	2.94[b]
		BDI1		.48	−0.09
		BDI2		.30	1.92[d]
		F2		.71	−5.12[a]
		F3		.51	−0.50
		F4		.54	0.81
	BFNE	SAD	.33	.29	0.51
		BDI1		.48	−1.88[d]
		BDI2		.30	0.32
		F2		.71	−6.22[a]
		F3		.51	−2.07[c]
		F4		.54	−2.62[b]
F2	SAD	TAI	.40	.35	0.16
		PRCS		.42	−0.28
		BFNE		.30	1.24
		BDI1		.46	−0.67
		BDI2		.40	0.02
		F1		.71	−5.30[a]
		F3		.50	−1.04
		F4		.57	−2.28[c]

a = p < 0.001   b = p < 0.01   c = p < 0.05   d = < 0.10

Note: BDI1 and BDI2 = Beck Depression Inventory on Times 1 and 2; BFNE = Brief Version of the Fear Negative Evaluation Scale; PRCS = Personal Report of Confidence as a Speaker; TAI = Test Anxiety Inventory; SAD = Social Avoidance and Distress Scale; F1, F2, F3, and F4 = Factors I, II, III, and IV of the Anxiety Situations and Responses Inventory; ANXTR = Total score of the Anxiety Situations and Responses Inventory.

Bouman's study, 1988), and comparable to the correlation coefficients found by Tanaka-Marsumi and Kameoka (1986) between the BDI and two subscales of the S-R IA, public speaking (.40) and course examination (.42).

Moreover, the average correlation between the ASRI factors and the BDI is lower than that obtained by Dobson (1985c) with two scales explicitly developed to discriminate anxiety and depression responses in different situations. Dobson generated, with rational criteria, 140 items which described the

relevant aspects of anxiety and depression and then created anxiety and depression scales whose items correlated more closely with their own scale than that of the other construct (that is, he chose the items with the highest item-total scale correlations and with the lowest cross-construct correlations). In spite of this selection criterion, correlations between anxiety and depression scales were .41 (Study 4) and .39 (Study 6) for males, and .44 (Study 4) and .54 (Study 6) for females.

In summary, the subscales of specific traits of anxiety in the ASRI allow better discrimination between anxious and depressive individuals than self-reports of general traits of anxiety. In any case, it appears that, in order to gain discriminant validity, self-report measures of anxiety and depression must take into account situational variables. In fact, the other situational scales of anxiety used in the present study (SAD, BFNE, PRCS, and TAI) showed correlations with the BDI (see Table 2) ranging from .11 to .45, with a mean correlation (.27) even lower than that between the BDI and the ASRI factors.

Of course, these conclusions are tentative to a certain extent because, in the present study, only one instrument of depression measurement, the BDI, was used. Besides, the BDI is a state measurement, whereas the ASRI factors are trait measurements. However, it is noteworthy that the BDI is the most frequently used instrument of assessing depressive symptomatology and mood (Gotlib & Cane, 1989).

Factorial Validity

Nunnally (1978) placed the factor analysis in the core of the construct validity since it allows the clarification of the internal structure of an instrument and to study, as in the present investigation, the relationships among the constructs supposedly measured by the instrument and other psychological variables. Although confirmatory factor analysis appears to be the most suit-able method for the processes of construct validity, exploratory factor analysis has been chosen, since it is the recommended procedure in basically exploratory approaches, and produces more conservative results which are not biased by researcher's hypotheses.

First, a maximum-likelikood factor analysis of scores on all the measurements cited above (see Method) was conducted. These measurements included emotional distress measures (anxiety and depression measurements), measurements of discrepancy among self-concepts (Self Semantic Differential), measurements of interpersonal discrimination aptitude (IDT), and measurements of interpersonal orientation (SMS). Given the nature of the measurements, the construct validity of the ASRI would require that the ASRI factors were

grouped together with emotional distress measurements. Since the heterogeneity of the variables did not lead one to expect, a priori, a high correlation among the factors which were extracted, an orthogonal method (varimax) was chosen for factor rotation. In the present study, all the factor analyses were computed using the 4M program of the BMDP (Dixon, 1984).

The factorial analysis yielded four factors with eigenvalues greater than one, together accounting for 51 % of the total variance (see Table 4). The first factor (28.6 % of the variance accounted for by the four factors) was composed of all of the depression and anxiety measurements, reflecting the overlap between anxiety and depression self-reports. This first factor is similar to that found in previous studies (v.g., Gotlib, 1984; Dobson, 1985a) where self-report measurements of anxiety and depression loaded heavily on the same factor. It has been suggested that these results indicate the existence of one construct, a common underlying dimension, and that both measurements of depression and anxiety might be tapping this construct, which has been labeled dysphoria, general psychological distress. We will return to this point later. However, it is important to note that in the present study, the anxiety measurements of the ASRI had the highest loadings in that first factor. The second factor (27.7 % of the variance accounted for by the four factors) was composed of the IDT indices and pointed to a dimension related to interpersonal discrimination skills. The variables with the highest loadings on the third factor (25.7 % of the variance) were the indices of congruency among self-concepts, but the SAD, the PRCS, Factor II of the ASRI and, with a negative sign, the SMS had also certain projections on that dimension. These projections confirm an old issue of personality psychology: persons who show discrepancy or incompatibility among diverse facets of self-concept, experience symptoms of psychological distress (v.g., Allport, 1955; Festinger, 1957). It is noteworthy that the symptoms of psychological distress, in this study, are specific symptoms of social or interpersonal anxiety (the SAD, the PRCS, and Factor II of the ASRI), and they are related with poorly-developed repertories of self-presentational skills and with less attention to social comparison information about the social appropriateness of one's self-presentation (self-monitoring construct loaded negatively on the third factor). This pattern is easily explained from Goffman's theatrical metaphor (Goffman, 1959). This metaphor states that the core of the personality, the self, is a theatrical effect that emerges diffusely from performance of different selves in different social interactions. In this line, Schlenker and Leary (1982) presented a self-presentation approach to social anxiety. They argued that social anxiety is produced by a discrepancy between an ideal self-presentation and a low expectation that the ideal self-presentation will be constructed and/or maintained (real self-presentation). Finally, the two depression measurements had the highest loadings in the

TABLE 4

Rotated Factor Matrix (maximum-likelihood Extraction and Orthogonal Rotation)
of All of Personality Variables

Measure	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
F1	0.867	–	–	–	–
F2	0.763	–	0.298	–	–
F4	0.590	–	–	0.299	–
F3	0.543	–	–	–	–
O-O	–	0.931	–	–	–0.360
O-A	–	0.912	–	–	–
S-O	–	0.796	–	–	–
S-D	–	0.778	–	–	0.625
I/S	–	–	0.912	–	–
A/I	0.299	–	0.733	–	–
A/S	–	–	0.629	–	–
SAD	0.271	–	0.502	–	–
BDI2	0.251	–	–	0.762	–
BDI1	0.463	–	–	0.567	–
TAI	0.448	–	–	0.295	–
SM	–	–	–0.335	–	–
A/O	–	–	0.426	–	–
PRCS	0.495	–	0.389	–	–
BFNE	0.411	–	–	–	–
Eigenvalues	3.072	2.985	2.766	1.330	0.585

Note: No loadings less than 0.25 in absolute value are displayed.
O-A, O-O, S-O, and S-D = Overall, Other-Other, Self-Other, and Self-Distinctiveness Scores of the Interpersonal Discrimination Task; A/I, A/S, I/S, and A/O = Actual/Ideal, Actual/Social, Ideal/Social, and Actual/Objective Indices of the Self Semantic Differential; SM = Self-Monitoring Scale; BDI1 and BDI2 = Beck Depression Inventory on Times 1 and 2; BFNE = Brief Version of the Fear Negative Evaluation Scale; PRCS = Personal Report of Confidence as a Speaker; TAI = Test Anxiety Inventory; SAD = Social Avoidance and Distress Scale; F1, F2, F3, and F4 = Factors I, II, III, and IV of the Anxiety Situations and Responses Inventory; ANXTR = Total score of the Anxiety Situations and Responses Inventory.

fourth factor (12.3 % of the variance). The TAI and Factor IV of the ASRI had projections in the fourth factor, but these were almost insignificant.

Second, a principal component factor analysis of anxiety and depression measurements was conducted. Since a high correlation among anxiety and depression measurements was expected, an oblique method (minres) was chosen for factor rotation.

This analysis yielded three factors, which together accounted for 65 % of the total variance (see Table 5). The amount of total variance explained by

each factor was of a similar proportion. The first factor was composed of the ASRI factors, and represented, to a certain extent, method variance since the ASRI is the only self-report with an S-R format in the present study. On the other hand, certain correlation among specific traits of anxiety is expected, although they are relatively independent. In fact, the facet of phobic anxiety had the highest loading on this first factor, while the remaining facets had substantially lower loadings and, in addition, are loaded on the other two factors. Therefore, and bearing in mind the method variance, it is even possible to safeguard the multidimensionality of trait anxiety, in spite of the presence of this first factor.

The depression measurements, BDI1 and BDI2, had the highest loadings on the second factor. With notably lower loadings, the SAD, the TAI and Factor 4 were also represented in this second factor. This second factor, the same as the pattern of the fourth factor presented in Table 4, seems to show that it is possible to discriminate between depression and anxiety constructs, although the depression construct includes features common to anxiety, at least in the self-reports developed to measure it, such as the BDI. In effect, Gotlib and Cane (1989) showed that an average of 17 % of the items on the measurements of depression and 11 % of the items on the anxiety question-naires assessed symptoms common to both constructs. Not only is there an overlap of symptoms in self-reports, but also the DSM-III-R (APA, 1987) includes irritability, fatigue, insomnia, concentration difficulties and agitation or restlessness as symptoms common to both anxiety and depression. In addition, certain covariance between depression and anxiety symptoms is expected because depression is one of the easiest consequences of a chronic anxiety disorder. Therefore, it would be strange not to find a certain correla-tion between anxiety and depression measurements. But, obviously, discrimin-ant validity may be enhanced by an assessment that puts greater emphasis on the distinctive features of each disorder, such as loss of interest and pleasure, in depression and excessive worry, in anxiety. In addition, different kinds of anxiety disorders (social anxiety, phobic anxiety, etc.) show different sympto-matic features, thus, in some, autonomic hyperactivity predominates (v.g., blood anxiety) whereas in others, excessive cognitive rumination is more important (v.g., test anxiety, social anxiety; cfr. Sarason, Sarason, Keefe, Hayes & Shearin, 1986; Wine, 1982). For this reason, the ASRI, which allows the assessment of separately different facets of anxiety and different response systems, represents a new and promising tool for discriminating between anxiety and depression disorders.

Finally, the third factor was defined, mainly, by the SAD and the PRCS. Factors I and II and the BFNE had important projections on this factor. This factor appears to represent a construct, which might be labeled *social evalua-*

TABLE 5

Rotated Factor Matrix (Principal Components Extraction and Oblique Rotation)
of Anxiety and Depression Measures and Factor Correlation Matrix

Measure	Factor 1	Factor 2	Factor 3
F3	0.885	–	–
F1	0.668	–	0.350
F4	0.591	0.280	–
F2	0.582	–	0.352
BDI2	–	0.942	–
BDI1	–	0.800	–
TAI	–	0.503	–
PRCS	–	–	0.885
SAD	–0.292	0.389	0.796
BFNE	–	–	0.514
Eigenvalues	2.077	1.987	1.965
	Factor 1	Factor 2	Factor 3
Factor 1	1.000		
Factor 2	0.364	1.000	
Factor 3	0.276	0.345	1.000

Note: No loadings less than 0.25 in absolute value are displayed.
BDI1 and BDI2 = Beck Depression Inventory on Times 1 and 2; BFNE = Brief Version of the Fear Negative Evaluation Scale; PRCS = Personal Report of Confidence as a Speaker; TAI = Test Anxiety Inventory; SAD = Social Avoidance and Distress Scale; F1, F2, F3, and F4 = Factors I, II, III, and IV of the Anxiety Situations and Responses Inventory; ANXTR = Total score of the Anxiety Situations and Responses Inventory.

tion anxiety. The emergence of this third factor and the high loading of the subscale of phobic anxiety on the first factor provide more support for the multidimensional interaction model of anxiety. This two-factor solution with respect to anxiety is not a new finding. For instance, Bermúdez (1983), in conducting a factor analysis of a modified Spanish version of the SR-IGTA (Inventario de Actitudes hacia Situaciones Generales, or IASG), found two factors. The first factor especially involved the facets of interpersonal anxiety (B1) and daily-routine anxiety (B4). The second factor was defined by the facets of anxiety in ambiguous situations (B3) and physical danger anxiety (B6). The facets of evaluation anxiety (B5) and anxiety in important situations (B6) loaded significantly on both factors. From both two-factor solutions, that found by Bermúdez and that obtained in the present study, a relatively independent dimension of anxiety emerges which might best be labeled *social evaluation anxiety,* and that involves situations in which people have direct interactions with others (Factor II of the ASRI, B1 of the IASG, SAD) or

situations in which people are the focus of attention, evaluation or suspervision of others (Factor I of the ASRI, B5 of the IASG, BFNE, PRCS). In this sense, the stressful situations that Bermúdez labeled "anxiety in important situations" as, for example, an academic test, a job interview or an appointment with a person who can influence one's future, are simply evaluation situations, with many interpersonal elements in the last two examples.

It might be concluded, following Bermúdez, that all these factorial results point out that the different facets of trait anxiety are not totally independent, but they appear to form two or three groups. Tentatively, the following groups could be distinguished: social evaluation anxiety, physical danger anxiety and phobic anxiety. Future research must regard these groups as working hypotheses. Thus, the finding of a social evaluation anxiety dimension might require that the different kinds of social anxiety which have been theoretically defined – shyness, embarrassment, shame and audience anxiety (Schwarzer, 1986), or interaction anxiety and audience anxiety (Schlenker & Leary, 1982) – not be empirically differentiated. On the other hand, such a finding supports Wine's hypothesis, which states that the construct of evaluation anxiety underlies and is shared by test anxiety and social anxiety constructs, and their self-report measurements (Wine, 1982). Moreover, it seems that test anxiety involves a social aspect; that is, a social evaluation aspect. This is less explicit, perhaps, in written exams, but it is present in oral exams and any other tests performed in public (Schwarzer, 1986).

Implicitly, the ASRI manual (Miguel & Cano, 1988) showed the conceptual and empirical difficulties in differentiating between evaluation anxiety and interpersonal anxiety. The ASRI manual reported a high correlation coefficient (.59) between Factors I and II, which was higher than any others among factors. The ASRI, then, assumes the existence of overlap between both facets of anxiety, but it chooses to emphasize the differentiating elements (J. J. Miguel Tobal, personal communication, February, 1990). In fact, the importance of these differentiating elements allowed, in Cano's experimental work (1989), to empirically contrast differential predictions starting from scores of Factors I and II.

In summary, the issue of the differentiation between evaluation anxiety and interpersonal anxiety remains unresolved. Conceptual confusion coexists with empirical discrepancy between data of convergent-divergent validity studies (e.g., Bermúdez's work or the present investigation) and experimental data confirming the differential hypothesis (e.g., Cano's study).

CONCLUSIONS

The main aim of the present research was to gain information on the construct validity of the specific traits of anxiety of the ASRI. There is not only one construct validity coefficient, but the construct validity must be conceptualized as a process that tries to give meaning to the scores obtained from a measurement instrument. It is, therefore, a process of never-ending research. Nunnally (1978) modestly stated that the researchers only have incidental evidences about the utility of an instrument, and that its repeated use, providing interesting results, is the fact that really validates an instrument. In this line, the present study has confirmed that the specific factors of anxiety in the ASRI give really interesting and useful information.

In summary, empirical evidence has been presented in support for convergent validity of Factors I and II in the ASRI. It has been documented that the ASRI subscales, especially Factors III, IV and I, possess an acceptable divergent validity with respect to other specific traits of anxiety when the latter are assessed with other instruments; when they are assessed with other scales of the ASRI, this is not the case, since their high intercorrelations obscured to a certain extent their discriminant power. However, these high intercorrelations do not invalidate the theoretical assumptions of the ASRI, given that, although there are significant correlations among their factors, these were notably smaller than the correlations among measurements of general trait anxiety. That is, the ASRI shows a difficult balance between a good cohesion and a good discriminant power among facets of anxiety. The ASRI seems to be a useful instrument to detect and assess individual differences in the presence of anxiety states under different situational dimensions.

Besides, both the analysis of the correlations and the results from the factorial analyses indicate that the ASRI subscales discriminate anxiety from other personality variables which do not have theoretical relations with the anxiety construct. Moreover, the ASRI factors allow better differentiation between the constructs of anxiety (and their different facets) and depression than self-reports of general trait anxiety; therefore, they must be seen as a valid alternative to these measurements in order to discriminate between anxious and depressive individuals in normal populations and, potentially, between people suffering anxiety and affective disorders. Of course, replication of these results on clinical populations is necessary if any type of clinical usefulness is possible.

In any case, the results of this investigation confirm that, in order to improve self-report measurements of anxiety and depression, especially concerning discriminant validity, they must take into account the assessment in more situationally-specific contexts. In addition, other strategies have been

suggested for enhancing the discriminant validity of self-report measurements of anxiety and depression (cfr. Gotlib & Cane, 1989). For instance, given that the present-day available instruments only assess the dimensions of frequency and severity of the symptoms, it could be useful to assess other dimensions such as the time and the context in which symptoms were developed, the course of their evolution or their duration. About this matter, it appears especially interesting to distinguish between state and trait. This distinction is very frequent in anxiety research, but it has not been sufficiently developed with regard to assessment in depression research. Discriminant validity may also be enhanced by ensuring that self-report measurements are sensitive to etiological differences. In fact, self-report instruments do not assess etiology, but rather they measure symptoms of anxiety and depression. However, it is possible that different etiological processes lead to similar symptoms. Thus, it would be useful, although a potentially difficult task, to include items reflecting etiological differences between anxiety and depression. That is, the items must ask respondents not only *how* they feel, but also *why* they feel that way.

Probably, discriminant validity may also be enhanced by making sure that the content of self-report measures reflects accurately all the diagnostic criteria used to define depression and anxiety and, at the same time, emphasizes the distinctive features of these syndromes. Finally, the selection of items must be guided by a careful examination of the discriminant validity of individual items. This can be facilitated, for instance, through use of the Differential Reliability Index (Jackson, 1970), which allows the comparison of the correlation of an item with both its intended scale and with scales assessing other constructs.

Validity is not a feature of the tests and scales, but of the interpretations and inferences drawn from them. In this case, the interpretations and inferences drawn from the ISRA factors are those arising from the multidimensional interaction model of trait anxiety. Therefore, the process of validating an assessment instrument is the process of validating the theory that underlies that instrument. Altogether, the results of the present study and the findings of previous researchers (cfr. Endler, 1982; Cano, 1989), provides empirical support for Endler's multidimensional interaction model of anxiety. However, it is noteworthy that the results also raise doubts about the possibility of empirically discriminating the facets of anxiety as clearly as it is done in Endler's model, especially in respect to evaluation anxiety and interpersonal anxiety.

Finally, it must be noted that the size and nature of the sample of this study may limit the generalization of its conclusions, and, therefore, further work on the construct validity of the ASRI factors, and on the relationship between anxiety and depression, is needed.

Síntesis

El objetivo de esta investigación es triple. Primero, aportar información sobre la validez de constructo de los rasgos específicos de ansiedad del Inventario de Situaciones y Respuestas de Ansiedad, ISRA, de Miguel Tobal y Cano Vindel (1988). Los resultados de este proceso de validación cubrirán nuestro segundo objetivo: poner a prueba el modelo interactivo multidimensional de ansiedad de Endler (1983), ya que este modelo ha sido el que ha inspirado la construcción del ISRA. Finalmente, se aborda el tema de la diferenciación psicométrica de los constructos ansiedad y depresión. Los autores del ISRA han obtenido, mediante análisis factorial, los siguientes cuatro factores o rasgos específicos de ansiedad: a) factor I: ansiedad ante la evaluación; b) factor II: ansiedad interpersonal; c) factor III: ansiedad fóbica, y d) factor IV: ansiedad ante situaciones habituales o de la vida cotidiana.

Se han seguido tres acercamientos metodológicos distintos en el proceso de validación realizado en la presente investigación: a) Validez convergente con otras pruebas que miden el mismo rasgo específico de ansiedad, mediante el análisis de las correlaciones (ver Tabla 2) entre el factor I del ISRA y las escalas Test Anxiety Inventory de Spielberger y cols. (1980), Brief Version of the Fear of Negative Evaluation Scale de Leary (1983) y Personal Report of Confidence as a Speaker de Paul (1966), y entre el factor II del ISRA y la Social Avoidance and Distress Scale de Watson y Friend (1969). b) Validación divergente. Primero, respecto a instrumentos que miden otros rasgos específicos de ansiedad distintos, para lo cual se realizó un análisis de las correlaciones entre sí de los factores del ISRA, y de las correlaciones entre estos factores y aquellas escalas de las antes citadas que no miden el mismo rasgo específico de ansiedad (ver Tablas 2 y 3). Segundo, respecto a un instrumento que mide sintomatología depresiva, el Beck Depression Inventory de Beck y cols. (1979), para lo cual se analizaron las correlaciones entre ambos instrumentos (ver Tablas 2 y 3). c) Un doble acercamiento a las relaciones de los factores del ISRA con terceras variables mediante análisis factoriales exploratorios. Primero, en relación a un conjunto amplio de variables de personalidad (ver Tabla 4) que incluía las medidas de ansiedad y depresión ya citadas, junto con índices de capacidad de discriminación interpersonal (Interpersonal Discrimination Task de Carr, 1980), un índice de orientación interpersonal (Self-Monitoring Scale de Snyder, 1974), e índices de congruencia entre autoconceptos (un diferencial semántico denominado 4 Medidas del Self). Segundo, en relación únicamente a las medidas de ansiedad y depresión (ver Tabla 5).

Se aplicaron los instrumentos antes enumerados a una muestra de 157 estudiantes de cuarto curso de Psicología (86 % mujeres, cuya media de edad era de 22 años). El análisis estadístico de sus datos confirma, en términos generales, la validez de constructo de los factores específicos del ISRA:

1) Validez convergente: Los factores I y II muestran una moderada validez convergente (coeficientes de correlación con un rango entre .33 y .47).

2) Validez divergente: En primer lugar, los factores III, IV y I del ISRA (por este orden, de mayor a menor validez) muestran una aceptable validez divergente con respecto a otros rasgos específicos de ansiedad cuando éstos son evaluados con otros autoinformes, pero no cuando lo son con otras subescalas del ISRA ya que la alta cohesión del instrumento oscurece en gran medida su poder discriminativo. Esta alta cohesión no invalida, sin embargo, los supuestos teóricos en que se fundamenta el ISRA, ya que, aunque existe una moderada correlación entre sus diversos factores (r media = 0.54), ésta es notablemente inferior a la que muestran entre sí instrumentos que evalúan la ansiedad como rasgo general (v.g., r media = 0.69, Dobson, 1985a). En segundo lugar, la correlación media de los factores del ISRA con las medidas de depresión (r = 0.37) es notablemente inferior a la que muestra el BDI con medidas de ansiedad de rasgo general (v.g., r = 0.70 en el estudio de Tanaka-Matsumi y Kameoka, 1986).

3) Relación con otros constructos: Los rasgos específicos del ISRA aparecen relacionados con constructos que indican desajuste psicológico, pero no con otras variables psicológicas que teóricamente poco tienen que ver con la ansiedad. Finalmente, la multidimensionalidad de la ansiedad se manifiesta en la aparición de al menos dos factores específicos: ansiedad fóbica y ansiedad a la evaluación social, este último con un gran respaldo empírico.

Concluyendo, los resultados de esta investigación indican que es válido interpretar las puntuaciones obtenidas del ISRA como índices de la tendencia del sujeto a presentar estados de ansiedad en diferentes áreas situacionales. La validación del ISRA supone además un fuerte apoyo empírico a la teoría que lo sustenta, el modelo interactivo multidimensional de ansiedad. Sin embargo, hay que señalar que los resultados también plantean algunas objeciones a este modelo y al ISRA, las cuales tienen que ver con la incapacidad de separar empíricamente las diversas facetas de ansiedad de forma tan tajante como ambos, instrumento y modelo, asumen, en especial respecto a los factores ansiedad a la evaluación y ansiedad interpersonal.

Finalmente, en relación a la diferenciación psicométrica entre ansiedad y depresión, las subescalas de rasgos específicos de ansiedad del ISRA se configuran como instrumentos de elección a la hora de discriminar entre sujetos ansiosos y depresivos frente a las tan utilizadas medidas de rasgo general de ansiedad. En cualquier caso, se confirma que el refinamiento de las medidas de autoinforme de ansiedad y depresión, en especial en cuanto a su validez divergente, pasa, entre otras soluciones, por la evaluación en contextos situacionales más específicos. De hecho, la inclusión de medidas de rasgo específico de ansiedad permite que la depresión aparezca en los análisis factoriales como un constructo relativamente independiente y discernible de la ansiedad.

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