Comorbidity of Test Anxiety and Other Anxiety Disorders in Children

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Elementary school children with clinically significant test anxiety, as determined by self-report and a clinical interview, were assessed for the incidence of other fears and anxiety. The results indicated that test-anxious children reported more fears and general worries than their non-test-anxious peers. As expected, the test-anxious children experienced more negative cognitions and subjective distress when taking a test. Furthermore, the fear of negative evaluation was not limited to an actual test, since these children also reported identical symptoms when engaged in a second social-evaluative task. Finally, 60% of the test-anxious sample met DSM-III criteria for an anxiety disorder. The results are discussed in terms of the relationship of text anxiety to more complex social-evaluative dysfunctions, more pervasive anxiety conditions, DSM-III anxiety disorders, and the utility of test anxiety as an indicator of the presence of these more pervasive anxiety states.

INTRODUCTION

Childhood test anxiety has been the subject of empirical research for the past 30 years. The results of these investigations have indicated that test-anxious children were more likely to receive poorer grades, repeat a grade,

and perform more poorly on tasks requiring new learning and those administered in an evaluative manner (Campbell, 1986). Anxiety over test performance has been related to low self-esteem, dependency, and passivity, and may serve as an etiological factor in the development of school phobia (Ollendick & Meyer, 1984). Although these data suggest that test-anxious children are at significant risk for failure to cope with major developmental tasks, these findings may represent only one facet of the clinical picture of childhood test anxiety. There is increasing evidence to suggest that test anxiety is not a highly circumscribed condition but may serve as an indicator for the existence of more pervasive anxiety states.

The evidence for this contention stems from the topography of test anxiety and data from the adult literature, where this condition has been linked both to other social-evaluative states and to more pervasive anxiety disorders. First, the core fear of test-anxious individuals, fear of negative evaluation, is identical to that of individuals meeting criteria for social phobia as described in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III; American Psychiatric Association, 1980), and clinical consensus has included test anxiety as a type of social phobia (e.g., Spielberger, Pollans, & Worden, 1984; Trower & Turland, 1984). Likewise, I. G. Sarason (1975) hypothesized that test anxiety is one aspect of an overarching anxiety construct that also includes social anxiety, speech anxiety, and teaching anxiety, again suggesting the existence of a core fear of negative evaluation expressed across a range of different evaluative settings. These clinical inferences are buttressed by an empirical study where adults diagnosed as social phobics according to DSM-III criteria identified an average of 2.5 different social situations capable of producing significant distress (Turner, Beidel, Dancu, & Keys, 1986). Other data from this investigation revealed that 48% of the sample identified at least three different social situations capable of creating anxiety, with 19% of the social phobics specifically identifying test situations, though test anxiety was never the chief complaint. Thus, there is theoretical and empirical evidence that at least in some adults, test anxiety is often linked with the presence of a more complex socially anxious state.

Test anxiety may also be related to anxiety disorders not necessarily of an evaluative nature. I. G. Sarason (1975) noted that young adults with test anxiety could be divided into two groups. Persons with Type A test anxiety became upset before, during, and after a test. For this group, anxiety appeared limited to testing situations. Those with Type B test anxiety reported anxiety and worry in areas other than examinations, including concerns about social adjustment and health preoccupations. Sarason (1975) suggested that these two types stemmed from differing etiologies, and there is evidence of differential treatment response in an adult population (McMillan & Osterhouse, 1972). Individuals with Type A test anxiety reported decreased anxi-

ety after participation in a program of systematic desensitization, whereas the Type B's did not. These data suggest that not only may the prevailing tendency to view test anxiety as a purely circumscribed condition (e.g., a simple fear) be incorrect, but conceptualizing it in such a fashion could lead to the application of inadequate interventions.

Although the above studies are based on adult samples, the data hold implications for children as well. Gittelman (1984) suggested that children with clinically significant social-evaluative distress may meet DSM-III criteria for overanxious disorder. It is also possible that these children could meet criteria for social phobia. If a significant number of test-anxious children are found to have more pervasive anxiety states, then childhood test anxiety would no longer be considered innocuous. Given that testing is a common childhood event, complaints of test anxiety may have significant utility for early identification of children who might be suffering from more pervasive anxiety disorders. The purpose of this study was to examine the psychopathology of test anxiety and determine its relationship to other anxiety disorders, thus providing data on the comorbidity of these conditions and the utility of test anxiety as an indicator of more complex anxiety states.

METHOD

Subjects

Subjects were recruited through an elementary school in southwestern Pennsylvania. The parents of all students in the third through sixth grade were contacted to request consent for their child's participation. Seventy percent (83 children) gave consent for the preliminary screening. To determine initially the presence or absence of test anxiety, children were administered the Test Anxiety Scale for Children (TASC; Sarason, Davidson, Lighthall, & Waite, 1958). Children who scored above the established cutoff score for high test anxiety (a score of 12 for boys and 16 for girls) were tentatively designated as test-anxious. Children who scored below the cutoff for low test anxiety (7 for boys and 10 for girls) were tentatively designated as non-test-anxious. Thus, these two groups represented the upper and lower portions of the distribution. The different cutoffs for boys and girls are reflective of girls' overall higher scores on this inventory. Sixty of the original 83 subjects had scores within the designated ranges. These 60 children were then interviewed with the Child Assessment Schedule (CAS; Hodges, McKnew, Cytryn, Stern, & Kline, 1982) to determine the presence of DSM-III childhood psychiatric disorders in the two groups (see below). Children could not meet criteria for any DSM-III disorder except for the possibility of an anxie-

ty disorder in the test-anxious group. Additionally, the child's designation as test-anxious or non-test-anxious had to be confirmed during the interview. The interviewer was blind to the child's score on the TASC. Ten children were excluded from the study owing to the existence of DSM-III diagnoses of conduct disorders (2), depression (1), developmental reading disorder (2), and severe medical disorders such as asthma (2) and leukemia (1). The final sample size consisted of 50 children, 25 in each group. Subjects were enrolled in regular classroom settings and were of at least average intelligence, as determined by school records. All children were between the ages of 8 and 12 ($M = 9.1$), and the groups were equivalent with regard to age, sex, and grade level. There were 27 boys and 23 girls in the study, and the sample was entirely Caucasian.

Assessment Instruments

Psychiatric Interview. The CAS (Hodges et al., 1982) is a semistructured interview schedule designed to measure dysfunction in a number of content areas, including school, friends, activities, family, fears, worries, self-image, mood, somatic concerns, expression of anger, and thought disorder. A total score, based on verbal responses and behavioral observation, can also be computed. In addition, the information obtained through the interview can be used to determine DSM-III diagnoses. The CAS was administered by a master's-level clinician experienced in its use and blind to classification of subjects as test-anxious or non-test-anxious. Twenty-five percent of the interviews were randomly selected to be audiotaped and blindly scored by a second clinician to determine interrater reliability. Reliability was calculated by Pearson correlations for the content areas and by the Kappa Coefficient for diagnostic category. Reliabilities for the 11 content areas ranged from $r = .71$ to $r = .95$. Kappa coefficient for agreement on diagnostic category was .84, with diagnostic agreement occurring in 12 out of 13 cases.

Self-Report Inventories. To assess current state and trait anxiety, the child was administered the State-Trait Anxiety Inventory for Children (STAI-C; Spielberger, 1973). The STAI-C contains a 20-item state subscale and a 20-item trait (anxiety-proneness) subscale. The Fear Survey Schedule for Children-Revised (FSSC-R; Ollendick, 1983) was used to assess the range of fears.

Procedure

Psychophysiological and Cognitive Assessment. Each child participated in two behavioral tasks. One required completion of a vocabulary test

with the level of difficulty appropriate to the child's grade level. The appropriate vocabulary subtest from the Stanford Achievement Test was used. The children were given 10 minutes in which to complete as much of the test as possible and were told that their score would be compared with those of the other children participating in the experiment. The second was an oral reading task included to determine if anxiety during examinations was specific to a test or was also experienced in other performance-type situations as well. In front of three young adults, the child read aloud the story of Jack and the Beanstalk for a 10-minute period. No child appeared to experience problems with the reading-level difficulty of the story. Order of presentation of the vocabulary and oral reading tasks was counterbalanced.

Heart rate and blood pressure were monitored at 2-minute intervals throughout the tasks, and the results have been reported previously (Beidel, 1988). Following completion of each behavioral task, the children were requested to write down any thoughts experienced while engaged in the task. Thoughts were classified according to the classification scheme used by Last, Barlow, and O'Brien (1984) and were rated as positive, negative, or neutral. Two raters, blind to subject group, were used to classify the cognitions into the three categories. One-third of the listings (randomly selected) were rated by an alternate rater who was also blind to subject group in order to determine interrater reliability. Interrater reliability (Kappa) was .90.

Self-Rating of Anxiety. After each task, the children were asked to rate how anxious they felt while engaged in the task, using a procedure described by Lang and Cuthbert (1984). It consists of a pictorial device to quantify perceived level of anxiety, which has been named SAM (Self-Assessment Mannikin; Lang, 1980). This device is a series of five pictures illustrating increasing levels of experienced arousal. The pictures depict mainly somatic sensations of anxiety, and the child is asked to match their level of perceived arousal to one of the five pictures. The rating can then be requantified by conversion to a 5-point Likert scale. The children were instructed to rate how they felt during the just-completed interaction.

The children also completed the STAI-C state anxiety subscale after each task. They were instructed to answer the items in light of the way they felt during the just-completed interaction.

RESULTS

Preliminary analyses were conducted to determine the effects of sex and grade on the dependent variables. Two sets of analyses were conducted. Group × Sex and Group × Grade. Since there were no significant effects for either of these variables, the groups were collapsed across sex and grade for all subsequent analyses.

Interview Data

Scores for each of the 11 content categories of the CAS and the total score were analyzed with Hotelling's T^2 procedure. The overall F was highly significant ($F(12, 70) = 2.96, p < .005$). Significant differences were found for 4 of the 11 subcategories (friends, fears, worries, and mood states) as well as the total score. Test-anxious subjects reported significantly fewer friendships, fewer children they considered their "best friends," and more children whom they considered to be their enemies ($t(48) = 2.56, p < .01$). The test-anxious group reported fears across a wider range of situations than the non-test-anxious students ($t(48) = 6.37, df = 48, p < .0001$) and expressed more worries and concerns about their popularity, their physical competence, and their academic performance ($t(48) = 5.18, p < .001$). The content of the worries included concerns about their own health and safety, concerns about their parents' safety and health, and worries about being separated from their parents. Test-anxious children also reported more occurrences of anxious and depressive mood states than their non-test-anxious peers ($t(48) = 2.64, p < .01$). Finally, there was a significant difference in the CAS total score for the two groups ($t(48) = 5.68, p < .0001$). The mean scores for both groups on each of the 11 subcategories as well as the total score are listed in Table I.

Self-Report Inventories

Scores from the STAI-C state and trait subscale and the FSSC-R were analyzed with Hotelling's T^2 procedure, which resulted in an overall significant F value ($F(7, 56) = 2.78, p < .005$). There were significant univariate differences on the trait subscale of the STAI-C and on the FSSC-R. Test-anxious children reported higher trait anxiety ($t(48) = 5.50, p < .001$) and had significantly higher scores on the FSSC-R ($t(48) = 3.69, p < .001$). Even when the five items related to testing and grades were removed from the scale, there was still a significant difference between the groups ($t(48) = 2.6, p < .01$). Table I contains the mean scores for both groups on each of the self-report inventories.

Assessment of Cognitions During the Behavioral Tasks

Thoughts were categorized as positive, negative, and neutral in terms of their relationship to the specific task. Owing to the unequal variances between the groups, the number of thoughts reported by the test-anxious and non-test-anxious groups were analyzed with Mann-Whitney U tests. There

Table I. Scores on Interview and Self-Report Instruments

Measure	Test-anxious	Non-test-anxious	t^a
Child Assessment Schedule			
School	.76	.32	1.80
Friends	.96	.20	2.56[b]
Activities	.28	.04	1.86
Family	1.96	1.28	1.76
Fears	5.24	1.36	6.37[d]
Worries	3.64	.56	5.18[d]
Self-image	1.76	1.24	1.33
Mood states	.88	.00	2.64[b]
Somatic complaints	1.48	.68	1.62
Anger	3.44	2.36	1.48
Thought disorder	.04	.00	.32
Total score	21.52	8.64	5.68[d]
STAIC			
State subscale	30.84	28.16	1.56
Trait subscale	37.16	28.72	5.50[d]
FSSC-R	137.88	119.44	3.69[c]
(Without test items)	129.78	117.40	2.60[b]

[a]t values listed are univariate t scores. Hotellings t^2 F values can be found in the text.
[b]$p < .01$.
[c]$p < .001$.
[d]$p < .00001$.

was a significant difference in total number of thoughts produced by each of the two groups. During both tasks, the test-anxious children reported more thoughts than their non-test-anxious peers (vocabulary test: $Z = 2.09$, $p < .05$; oral reading: $Z = 2.31$, $p < .025$). This difference in total thoughts was due to a difference in the type of cognitions reported by the two groups. Specifically, although there were no differences in the number of positive and neutral thoughts, there was a significant difference in number of negative thoughts reported by the two groups. The test-anxious subjects reported significantly more negative thoughts during the vocabulary test and oral reading task ($Z = 2.81$, $p < .005$, and $Z = 2.17$, $p < .05$, respectively. Although the overall frequency of negative cognitions was quite low, only the test-anxious children reported the existence of negative thoughts. Table II contains the mean number of cognitions for each group.

Self-Rating of Anxiety During the Behavioral Tasks

Anxiety was assessed by the child's score on the STAI-C state subscale and ratings on the Self-Assessment Mannikin, both of which were completed immediately after the task. Differences between the two groups were analyzed with Hotelling's T^2 procedure. There were significant differences on

Table II. Cognitions and Self-Report of Anxiety During the Two Behavioral Tasks

Measure	Test-anxious	Non-test-anxious	Z or t	
Vocabulary test				
Positive thoughts	.32	.32	0	
Negative thoughts	.44	.04	2.81[c]	
Neutral thoughts	1.80	1.28	.86	
Total thoughts	2.50	1.64	2.09[a]	
SAM	2.52	2.00		2.49[b]
STAI-C state	33.72	30.20		2.20[a]
Oral reading				
Positive thoughts	.04	.04	0	
Negative thoughts	.44	.08	2.17[a]	
Neutral thoughts	1.68	1.08	1.11	
Total thoughts	2.10	1.20	2.31[a]	
SAM	2.48	1.68		3.19[c]
STAI-C state	33.72	27.84		3.63[d]

[a] $p < .05$.
[b] $p < .01$.
[c] $p < .005$.
[d] $p < .001$.

each of the two ratings of anxiety during both behavioral tasks. During the vocabulary test, the test-anxious children reported higher state anxiety than the non-test-anxious group on the STAI-C ($t(48) = 2.20, p < .01$) and on the SAM ($t(48) = 2.49, p < .01$). Similarly, during the oral reading, the test-anxious students scored significantly higher on the STAI-C ($t(48) = 3.63$, $p < .001$) and on the SAM ($t(48) = 3.19, p < .005$). Mean scores on each measure are given in Table II.

Correlational Analysis

Scores on the various dependent measures were correlated using the Pearson product-moment correlation; results are presented in Table III. These data indicate that the self-report and interview scores, which reflect general levels of anxiety and distress, are highly intercorrelated. However, there are few significant correlations between these general measures and the data collected during the behavioral tasks, suggesting the utility of including both procedures in the assessment of childhood anxiety states.

Multiple Discriminant Function Analysis

The following variables were entered into a discriminant function in order to assess their ability to predict group membership: CAS total score,

Table III. Intercorrelation of Self-Report and Behavioral Measures

	ASTATE	ATRAIT	FSSCR	PCSC cognitive	PCSC social	PCSC physical	PCSC general	Total thoughts (vocabulary test)	SAM (vocabulary test)	ASTATE (vocabulary test)	Total thoughts (oral reading)	SAM (oral reading)	ASTATE (oral reading)
CAS total score	-.01	.58[d]	.34[b]	-.35[b]	-.16	-.14	-.16	.06	.08	-.08	.28[a]	.46[d]	.29[a]
ASTATE		.51[d]	.49[d]	-.33[b]	-.20	-.11	-.41[d]	.12	.41[d]	.38[c]	.05	.10	.30[a]
ATRAIT			.61[d]	-.46[d]	-.25[a]	-.28[a]	-.39[c]	.07	.38[c]	.25[a]	.21	.30[a]	.30[a]
FSSCR				-.31[a]	-.25[a]	-.04	-.23[d]	.03	.18	.14	.03	.03	.11
Cognitive					.29[a]	.15[d]	.70[d]	.22	-.30[a]	-.15	-.08	-.14	-.11
Social						.41[d]	.44[d]	.21	-.14	-.03	-.09	-.20	-.08
Physical							.32	.05	.06	-.05	-.29[a]	-.07	-.06
General								.07	-.39[c]	-.26[a]	-.19	-.17	-.17
Vocabulary test													
Total thoughts									.14	.08	.43[d]	.16	.18
SAM										.69[d]	-.07	.46[d]	.41[c]
ASTATE											-.04	.31[a]	.60[d]
Oral reading													
Total thoughts												.21	.25[a]
SAM													.48[d]

[a] $p < .05$.
[b] $p < .01$.
[c] $p < .005$.
[d] $p < .001$.

STAIC (baseline), FSSC-R, PCSC cognitive, physical, social and general sub-scales, Vocabulary test (total number of thoughts, SAM rating, and STAIC state subscale scores), Oral Reading (total number of thoughts, SAM rating, and STAIC state subscale scores). The results indicated that 22 of the 25 test-anxious subjects and 24 of the 25 non-test-anxious subjects were correctly classified. This translated to correct classification per-centages of 88% and 96%, respectively, with a total classification accuracy of 92%.

Test Anxiety and DSM-III Anxiety Disorders

The assignment of DSM-III diagnosis was made by the clinician who administered the CAS. Of the 25 test-anxious children, 15 (60%) met criter-ia for one of four anxiety disorders. Specifically, 6 children met diagnostic criteria for social phobia, 1 met criteria for simple phobia, 2 met criteria for separation anxiety, and 6 met criteria for overanxious disorder. To pro-vide the most stringent test of the hypothesis regarding social phobia, chil-dren had to report significant distress and avoidance of social situations other than testing in order to be assigned this diagnosis. Forty percent of the test-anxious sample did not meet criteria for any diagnostic category. As noted in the subject section, no children in the non-test-anxious group met DSM-III criteria for an anxiety disorder.

The variables used in the previous discriminant analysis were again en-tered into a discriminant function to determine their ability in distinguishing the test-anxious children with additional DSM-III diagnoses from those test-anxious children who did not meet diagnostic criteria. The results of this anal-ysis indicated that 12 of the 15 test-anxious children with additional DSM-III diagnoses and all of the 10 test anxious children without an additional diagnosis were correctly classified. This yields a classification accuracy of 80% and 100%, respectively, with a total classification accuracy of 88%.

DISCUSSION

The results indicate that for many children, test anxiety is not a simple fear but one aspect of a more pervasive anxiety state. First, test anxiety can represent one component of a more complex social-evaluative disorder. In two different settings where evaluation by others could be a cause for con-cern, the test-anxious children consistently endorsed significantly more nega-tive cognitions and more severe subjective distress than their non-test-anxious peers. As reported earlier, the test-anxious children also had significantly

larger heart rate increases during both these tasks when compared with the non-test-anxious children (Beidel, 1988). This behavioral equivalency across tasks suggests that the distress experienced by at least some test-anxious children is not necessarily specific to usual "test" stimuli but can be triggered by other social-evaluative settings as well.

Second, test anxiety may be related to increased general anxiety as well as to more pervasive anxiety disorders. On the basis of interview responses and self-report data, the test-anxious group reported more fears and worries than their non-test-anxious counterparts — fears and worries not limited to testing situations, or even performance-evaluative situations. Rather, they included worries about their own health and safety, as well as that of their family and friends. Furthermore, these children also reported more anxious and depressed mood states. Again, these mood states were not test-situation-specific.

Perhaps more significant, however, was the finding suggestive of a difference in sociability between the two groups. The test-anxious children reported that they spent more of their free time engaged in solitary activities, such as reading or watching television. They were also more likely to name someone they considered their enemy. These data could be viewed as an early indication that at least some test-anxious children experience difficulty in sociability, although the etiology for this diminished interaction has yet to be identified.

Finally, there was a significant difference in trait anxiety between the two groups. The mean difference was rather large, suggesting clinical as well as statistical significance. One explanation is that test-anxious children may be more vulnerable to stressful events, including but not limited to testing situations. Higher anxiety-proneness also indicates that they may perceive a wider range of stressful events as dangerous and may be "primed" to respond to stressful situations in an anxious fashion (Spielberger et al., 1983). Therefore, one possible method for acquisition of this fear is that, owing to their "anxiety-prone" status, these children may be more easily conditionable to aversive stimuli, and that aversive testing experiences may trigger the onset of test anxiety (Sarason, 1975). The validity of this hypothesis, however, awaits empirical investigation.

This vulnerability hypothesis has some indirect support from the findings that a majority of the test-anxious sample (60%) endorsed anxiety symptoms that met DSM-III criteria for an anxiety disorder, including social phobia, overanxious disorder, simple phobia, and separation anxiety. These data support the test anxiety subtype distinction offered by Sarason (1975). Children without a DSM-III anxiety diagnosis are reminiscent of Sarason's Type A group, while those meeting criteria for an anxiety disorder seem to fall into the Type B category. Although the number of subjects within

each of the subtypes was too small to permit full statistical analyses, further studies directed at comparing these two subgroups may elucidate more clearly the nature of these subtypes.

Given the findings of this study, it appears that test anxiety does have some utility as an indicator for pervasive anxiety states and DSM-III disorders. Although it cannot be used as a de facto sign that more serious anxiety conditions exist, indication that a child is uncomfortable in testing situations should alert parents and professionals to the possibility that the child may be experiencing a more serious anxiety disorder that, if not recognized and treated, may limit academic and social adjustment. Furthermore, if such conditions remain untreated into adulthood, further impairment in academic, vocational, and social functioning may result (cf. Turner et al., 1986). In addition, even if the test-anxious children do not currently manifest a more pervasive anxiety state, the finding that they tend to be anxiety-prone suggests that they may be at future risk for the development of more pervasive anxiety states. Clearly, further studies are needed to confirm this suggestion and to address the mode of transmission of anxiety-proneness (biological, psychological, or some combination).

One limitation of the data obtained is that they were based on the child's self-report and behavior during two tasks. Future studies should utilize an expanded assessment paradigm and should include parent and teacher information as well as more direct observation of the parameters of test anxiety. Second, the data implicate the existence of a more pervasive anxiety disorder in some test-anxious children, but not necessarily one specific anxiety disorder. Future investigations using a larger sample of test-anxious children may identify more specific behavior patterns associated with each of the disorders.

In summary, the results demonstrate that in many instances test anxiety is not a highly circumscribed condition, but part of a pervasive and clinically significant anxiety state. Perhaps the most striking indication of this is that 60% of the children in the present sample with test anxiety meet DSM-III criteria for an anxiety disorder. The fact that such a large percentage of the sample met diagnostic criteria indicates that test anxiety may serve to indicate the presence of more pervasive anxiety states. Finally, the clinically significant degree of anxiety-proneness found in these children suggests that even those currently without an additional anxiety disorder may be at risk for the future development of childhood or adult anxiety states.

REFERENCES

American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorders* (3rd ed.). Washington, D.C,: Author.

Beidel, D. C. (1988). Psychophysiological assessment of anxious emotional states in children. *Journal of Abnormal psychology, 97,* 80-82.

Campbell, S. B. (1986). Developmental issues. In R. Gittelman (Ed.), *Anxiety disorders of childhood* (pp. 24-57). New York: Guilford Press.

Gittelman, R. (1984). Anxiety disorders in children. In L. Greenspoon (Ed.), *Psychiatry update* (Vol. 3, pp. 78-81). Washington, D.C.: American Psychiatric Association.

Hodges, K., McKnew, D., Cytryn, L., Stern, L., & Kline, J. (1982). The Child Assessment Schedule (CAS) Diagnostic Interview: A report on reliability and validity. *Journal of the American Academy of Child Psychiatry, 21,* 468-473.

Lang, P. J. (1980). Behavioral treatment and biobehavioral assessment: Computer applications. In J. Sidowski & T. Williams (Eds.), *Technology in mental health care delivery systems* (pp. 119-137). Norwood, New Jersey: Ablex.

Lang, P. J., & Cuthbert, B. N. (1984). Affective information processing and the assessment of anxiety. *Journal of Behavioral Assessment, 6,* 369-396.

Last, C. G., Barlow, D. H., & O'Brien, G. T. (1984). Cognitive changes during in vivo exposure in an agoraphobic. *Behavior Modification, 8,* 93-119.

McMillan, J. R., & Osterhouse, R. A. (1972). Specific and generalized anxiety as determinants of outcome with desensitization of test anxiety. *Journal of Counseling Psychology, 19,* 518-521.

Ollendick, T. H. (1983). Reliability and validity of the revised Fear Survey Schedule for Children (FSSC-R). *Behaviour Research and Therapy, 21,* 685-692.

Ollendick, T. H., & Meyer, J. A. (1984). School phobia. In S. M. Turner (Ed.), *Behavioral theories and treatment of anxiety* (pp. 367-411). New York: Plenum Press.

Sarason, I. G. (1975). Test anxiety, attention and the general problem of anxiety. In C. D. Spielberger & I. G. Sarason (Eds.), *Stress and anxiety* (Vol. 1, pp. 165-188). Washington, D.C.: Hemisphere/Wiley.

Sarason, S. B., Davidson, K. S., Lighthall, F. F., & Waite, R. R. (1958). A test anxiety scale for children. *Child Development, 29,* 105-133.

Spielberger, C. D. (1973). *Manual for the state-trait anxiety inventory for children.* Palo Alto: Consulting Psychologists Press.

Spielberger, C. D., Pollans, C., & Worden, T. J. (1984). Anxiety disorders. In M. Hersen & S. M. Turner (Eds.), *Handbook of adult psychopathology* (pp. 263-303). New York: Wiley.

Trower, P., & Turland, D. (1984). Social phobia. In S. M. Turner (Ed.), *Behavioral theories and treatment of anxiety* (pp. 321-364). New York: Plenum Press.

Turner, S. M., Beidel, D. C., Dancu, C. V., & Keys, D. (1986). The nature of social phobia and its relationship to avoidant personality disorder. *Journal of Abnormal Psychology, 95,* 389-394.