THE DEVELOPMENT AND INITIAL VALIDATION OF A SCALE TO MEASURE SOCIAL FEAR[1]

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Developed a true-false scale to measure Social Fear, which Meehl argues is a sign of schizotypy, using procedures to maximize reliability and minimize response set bias (N = 910). Interviews with selected *S*s (N = 44) confirm that the scale measures social fear, and the scale was found to correlate with previously developed schizotypy scales (N = 252).

One of the most widely held theories in the field of schizophrenia today is the diathesis-stress model. Meehl was one of the first to elaborate such a model in detail (Meehl, 1962, 1973). Meehl suggested that there existed a genetic predisposition for developing schizophrenia, which he termed schizotaxia. An individual who possesses this disposition is labelled schizotypic, but only a portion of those who are schizotypic ever decompensate into clinical schizophrenia. If one accepts Meehl's model for schizophrenia, then the accurate identification of the schizotype becomes a major priority; identifying schizotypes is essential if Meehl's model is to be tested. Over the last few years, several scales have been developed to measure symptoms that Meehl (1964), among others, argues are signs of schizotypy. Scales for Physical and Social Anhedonia (Chapman, Chapman, & Raulin, 1976), Perceptual Aberration (Chapman, Chapman, & Raulin, 1978), Intense Ambivalence (Raulin, 1984), Somatic Symptoms, Magical Ideation (Eckblad & Chapman, 1983) and Noncomformity already have been developed and are now in the process of construct validation. This paper details the development of yet another scale—a Social Fear Scale.

The term "interpersonal aversiveness" has been used to describe the discomfort that many schizophrenic patients experience in social situations, and this discomfort has some clear behavioral referents. It has been observed widely that the premorbid life of the schizophrenic patient frequently is characterized by social inadequacy and a dearth of interpersonal relationships. The importance of premorbid social development in predicting prognosis has been appreciated for at least three decades (Phillips, 1953), and recent data (Kessler, 1980) suggest that it also may indicate which schizophrenics possess a genetic predisposition for the disorder. Given these data, it seems apparent that measuring some aspect of social behavior might be a valid way to identify the schizotype in the general population.

We specifically focused on social fear because several writers have indicated that it is characteristic of the preschizophrenic. Hoch (1909) coined the highly evocative term "shut in" personality to characterize the withdrawn, seclusive, apathetic, and asocial traits found in the schizophrenic and preschizophrenic. Kraepelin (1913/1919) described the early childhood personality of schizophrenics as consisting of quiet, shy, and retiring behavior, and an absence of friends. Bleuler (1911/1950) noted that preschizophrenics frequently manifested "character anomolies" including a tendency toward seclusion and withdrawal. Similar observations were made by Kasanin (1945), Phillips (1953), Meehl (1962, 1964), Lehmann (1967), and Will (1967). Several of these authors (Lehmann,

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1967; Meehl, 1962; Will, 1967) also gave social fear a prominent role in their particular theory of schizophrenia.

METHOD

Subjects

Three separate samples of college students were used in the scale development. The first sample included 137 female and 173 male students. The second sample (labelled standardization) included 105 female and 81 male students, and the third sample (labelled cross-validation) included 257 female and 157 male students. *S*s were dropped from any analysis if they skipped more than four items or if their score on an Infrequency Scale, modeled after Jackson's (1974) Infrequency Scale from the Personality Research Form, exceeded 2 (out of a possible 13).

In the interview validation of the scale, *S*s were selected from a pool of 300 college *S*s (139 female, 161 male) who completed the 36-item Social Fear Scale and the Infrequency Scale. *S*s were selected randomly from each of three Social Fear Scale categories: The top 25% (high scorers), the middle 50% (middle scorers), and the bottom 25% (low scorers). Overall, 104 potential *S*s were identified and contacted, 64 agreed to interviews, and 49 actually showed up for the interview. By prior design, we eliminated foreign students, which left a final sample of 44 *S*s. This relatively poor overall response rate can be attributed to a high demand for *S*s over the period in which the study was conducted and was comparable to the response rates and no-show rates of other laboratories that used the same *S* pool. The proportion of people who chose to participate was not significantly different across the three Social Fear categories χ^2 (2) = 1.79.

In a second validational study, the Social Fear Scale was given to 98 male and 154 female college students together with items from four other schizotypy scales and the Infrequency Scale used in the previous study. *S*s with high Infrequency Scores were excluded from the analysis.

Procedure

Scale development. The first step in scale development was the preparation of an initial pool of items. A detailed description of Social Fear based on Meehl's elaboration of the symptom was given to eight different item writers, who together produced an item pool of about 120 items. Item writers were instructed to construct items in a true/false format, to word items in an unambiguous manner, to use simple sentence structures in the active voice, to avoid negatives in the items (which can be very confusing in a true/false format instrument), and to word the items as specifically as possible to avoid acquiescence response set. To reduce further the effects of acquiescence response set, an effort was made to balance the number of true-keyed and false-keyed items. Finally, given that the trait of social fear is not socially desirable, an effort was made to construct items in such a way as to play down the undesirable facets of the trait. Certain tactics were used to reduce social desirability, such as, for example, focusing on behaviors rather than feelings ("I stay away from people whenever possible") and broadening the subject of the sentence ("Honest people will admit that socializing is a burden").

The first sample of students were given the initial pool of Social Fear items intermixed with items from a Social Desirability Scale (Crowne & Marlowe, 1964), an Acquiescence Scale (DY-3; Jackson & Messick, 1962), and the Infrequency Scale described previously. Item statistics were computed based on these data, and items were dropped, added, or rewritten based on the information provided by these statistics. Ideal items had high item-scale correlations and low correlations with the Social Desirability and Acquiescence Scales. We also wanted items with a relatively low frequency of endorsement, on the theory that items endorsed by large numbers of students probably would not be measuring the social fear that would distinguish the schizotype from the non-schizotype.

Although no absolute cut-offs on these item statistics were used during the scale development, items generally were considered acceptable when the item-scale correlation was greater than .30 and when the correlations with social desirability and acquiescence each accounted for less than half of the variance of the item-scale correlation. We wanted items with a frequency of endorsement averaging about 15% and only very rarely would we accept items with endorsement frequencies that exceeded 30%. Items were retained only when they were satisfactory for both sexes. The scale was revised on the basis of the data from this first sample and given to the second (standardization) sample, and the 36 best items were selected for inclusion in the final scale. Finally, this 36-item scale was cross-validated on a third sample of students. Table 1 presents the reliability and discriminant validity coefficients (correlations with social desirability and acquiescence) for the Standardization and Cross-Validation samples. The final version of the scale contained 36 items and had an internal consistency reliability of .85 for men and .88 for women. Approximately 5% of the variance of Social Fear Scores was shared with the Social Desirability Scale and less than 2% with the Acquiescence Scale in the cross-validation sample.

TABLE 1

Psychometric Properties of the Social Fear Scale for both the Standardization and Cross-validation Samples

	Standardization sample Male/female	Cross-validation sample Male/female
Sample size	81/105	157/257
Coefficient Alpha	.86/.88	.85/.88
Correlation with social desirability	−.09/−.20	−.22/−.23
Correlation with acquiescence	.16/.23	.11/.14

Interview validation. The scale was validated as a measure of social fear by briefly interviewing *S*s who scored at various levels on the scale about various aspects of their social life. Ratings of the *S*'s social behavior that were derived from the interview then were compared with the *S*'s Social Fear Scale score.

Each *S* selected for this part of the study was given a brief (10-20 minute) structured interview that dealt primarily with social situations. Questions about the *S*'s social life were intermixed with other questions so as to dilute the concentration of questions that might be stressful for the socially fearful individual. Each interview transcript was rated on both a social fear scale and a sociability scale, which were conceptualized as representing two extremes on a hypothetical social activity scale. On the one end of the scale was social fear and a tendency to restrict social activity. On the other end of the scale was sociability, which focused on the active attempts of the *S* to engage in social behavior. We had predicted that our Social Fear Scale not only would identify *S*s who engaged in less social behavior, but also *S*s who actively restricted their social activity. Each rating scale was behaviorally oriented and based on the *S*'s response to at least seven separate questions in the interview. These scales were independent of one another in that different questions were used to gather the data for rating the *S* on each scale. Interrater reliabilities for the two rating scales were .86 and .89. All interviews and ratings, including the interrater reliability ratings, were done by people blind to *S*s' scores on the Social Fear Scale.

Relationship to other schizotypy scales. In addition to the interview study, the Social Fear Scale, along with four other schizotypy scales (Physical Anhedonia, Perceptual Aberration, Intense Ambivalence, and Somatic Symptoms), was given to 252 *Ss*, and correlations with those scales were computed.

Results

Interview study. Table 2 presents the mean scores for the social fear and sociability ratings based on the interview. The differences between groups on the social fear rating was highly significant, $F(2, 41) = 17.60, p < .001$. The differences on the sociability rating were also significant, $F(2, 41) = 5.32, p < .01$.

TABLE 2

Interview Ratings of Social Fear and Sociability in High, Medium, and Low Scoring Ss

	Social Fear Scale score		
	High scorers ($N = 14$)	Medium scorers ($N = 12$)	Low scorers ($N = 18$)
Interview ratings			
Social fear	5.07	3.25	1.44
Sociability	3.93	5.33	6.16

Exploratory analyses were conducted to assess the individual factors that made up the total social fear and sociability ratings. From these analyses, it was clear that many different behavioral components contributed to the large differences noted in the three groups.

Relationship to other schizotypy scales. Table 3 shows the correlations between the Social Fear Scale and four other schizotypy scales for both male and female *Ss*. Consistent and substantial correlations between Social Fear and the other schizotypy scales were found, with the exception of the Physical Anhedonia Scale, even though the content of these scales shows virtually no conceptual overlap and the level of method variance is very low in all of the scales. The Physical Anhedonia Scale generally shows low, sometimes even negative, correlations with almost all of the schizotypy scales developed so far. These data are consistent with the hypothesis that Social Fear is yet another sign of the underlying taxonomy of schizotypy as originally hypothesized by Meehl.

TABLE 3

Correlation of Social Fear Scale with Four Other Schizotypy Scales

	Males ($N = 98$)	Females ($N = 154$)
Physical Anhedonia	.16	.32
Perceptual Aberration	.58	.62
Intense Ambivalence	.62	.61
Somatic Symptoms	.52	.54

Discussion

The data suggest that the Social Fear Scale is a reliable self-report measure that yields the same information about a *S*'s social behavior and feelings in approximately 3 minutes that a trained interviewer could elicit in 15 minutes. The scale shows good internal consistency reliability and excellent response set bias characteristics, and it shows the predicted relationship with other schizotypy scales. Of course, further validational studies must investigate actual behavior of *Ss* in social situations.

Several lines of research now are being pursued. The relationship of the Social Fear Scale to other previously developed schizotypy scales is being studied in a schizophrenic population. One would expect Social Fear to be related strongly to premorbid social development in schizophrenics, and we are gathering data on that issue as well. But the ultimate validation of this scale and the other schizotypy scales will be the demonstration that these scales identify subsets of the population who show increased risk for developing schizophrenia. This can be accomplished only by a longitudinal investigation of individuals who score highly on the schizotypy scales. Although that work has begun, results are many years away.

References

Bleuler, E. (1950). The fundamental symptoms. In E. Bleuler (Ed.), *Dementia praecox: Or the group of schizophrenias.* (J. Ziskin, Trans.). New York: International University Press. (Originally published 1911.)

Chapman, L. J., Chapman, J. P., & Raulin, M. L. (1976). Scales for physical and social anhedonia. *Journal of Abnormal Psychology, 85,* 374-382.

Chapman, L. J., Chapman, J. P., & Raulin, M. L. (1978). Body-image aberration in schizophrenia. *Journal of Abnormal Psychology, 87,* 399-407.

Crowne, D. P., & Marlowe, D. (1964). *The approval motive: Studies in evaluative dependence.* New York: John Wiley.

Eckblad, M., & Chapman, L. J. (1983). Magical ideation as an indicator of schizotypy. *Journal of Consulting and Clinical Psychology, 51,* 215-225.

Hoch, A. (1909). A study of the mental make-up in the functional psychoses. *Journal of Nervous and Mental Disease, 36,* 230-236.

Jackson, D. N. (1974). *Manual for the Personality Research Form.* Goshen, NY: Research Psychologists Press.

Jackson, D. N., & Messick, S. (1962). Response styles on the MMPI: Comparison of clinical and normal samples. *Journal of Abnormal and Social Psychology, 65,* 285-299.

Kasanin, J. S. (1945). Developmental roots of schizophrenia. *American Journal of Psychiatry, 101,* 123-125.

Kessler, S. (1980). Schizophrenia: A review. *Schizophrenia Bulletin, 6,* 404-416.

Kraepelin, E. (1919). *Dementia praecox and paraphrenia.* (B. M. Barclay, Trans.). Edinburgh, Scotland: E. & S. Livingstone. (Originally published 1913.)

Lehmann, H. E. (1967). Schizophrenia IV: Clinical features. In A. E. Freedman & H. I. Kaplan (Eds.), *Comprehensive textbook of psychiatry.* Baltimore: Williams & Wilkins.

Meehl, P. E. (1962). Schizotaxia, schizotypy, schizophrenia. *American Psychologist, 17,* 827-838.

Meehl, P. E. (1964). *Manual for the use with checklist of schizotypic signs.* Minneapolis: University of Minnesota Medical School, Psychiatric Research Unit.

Meehl, P. E. (1973). *Psychodiagnosis: Selected papers.* Minneapolis: University of Minnesota Press.

Phillips, L. (1953). Case history data and prognosis in schizophrenia. *Journal of Nervous and Mental Disease, 117,* 1-18.

Raulin, M. L. (1984). Development of a scale to measure intense ambivalence. *Journal of Consulting and Clinical Psychology, 52,* 63-72.

Will, O. A. (1967). Schizophrenia V: Psychological treatment. In A. M. Freedman & H. I. Kaplan (Eds.), *Comprehensive textbook of psychiatry.* Baltimore: Williams & Wilkins.