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## Situational Domains of Social Phobia

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### Abstract

Although social phobia is defined as severe anxiety in social situations, little is known about the range or prevalence of social situations that elicit anxiety in social phobic individuals. The present study developed the concept of situational domains, groups of similar situations that may provoke anxiety in subsets of social anxious persons. Four conceptually derived situational domains were examined: formal speaking/interaction, informal speaking/interaction, observation by others, and assertion. Ninety-one social phobic patients were classified as anxiety-positive or anxiety-negative within each situational domain, varying inclusion criteria of anxiety experienced in each situation and the number of anxiety-producing situations within a domain. Patients were highly likely to be classified to the formal speaking/interaction domain, regardless of inclusion criteria employed or presence of anxiety within other domains. Support was also found for previous findings that most social phobics experience anxiety in more than one social situation, even under conservative classification criteria. Implications for the current diagnostic nosology and directions for future research are discussed.

The prevailing diagnostic nosology for social phobia evokes a situational emphasis, but little is known about the range of situations a clinician must sample to make the diagnosis. The essential feature of social phobia in DSM-III-R is “a persistent fear of one or more situations (the social phobic situations) in which the person is exposed to possible scrutiny by others and fears that he or she may do something or act in a way that will be humiliating or embarrassing” (American Psychiatric Association, 1987, p. 243). Similarly, DSM-III-R

includes a generalized subtype of social phobia in which the person experiences anxiety in "most" situations. In neither the DSM-III (American Psychiatric Association, 1980) nor its revision has there been explicit discussion of the range of social situations to be used in diagnosis. Although this deficiency has been addressed on a conceptual level (Liebowitz et al., 1985), there has been no empirical investigation into the range or prevalence of social situations that elicit a social phobic response.

DSM-III regarded social phobia primarily as a disorder involving a single social situation. Persons with greater impairment (and likely greater cross-situational involvement) became candidates for an exclusionary diagnosis of avoidant personality disorder. Liebowitz et al. (1985) called attention to the lack of an empirical basis for this hierarchical arrangement and suggested that patients with more generalized social phobic symptoms should also be included under the diagnosis of social phobia. Along with the addition of a generalized subtype, avoidant personality disorder is a possible comorbid diagnosis of social phobia in DSM-III-R. But even among patients diagnosed as social phobic by DSM-III criteria (Turner et al., 1986), 90% (19/21) identified at least two common social situations that were associated with significant distress. Similar but less dramatic findings were obtained by Amies et al. (1983). The very high prevalence of formal speaking anxiety (over 80% in the Turner et al. sample) suggests that most social phobics may have public speaking anxiety in addition to any other social situational anxieties. Distress in social situations also appears common in the general population (Pollard & Henderson, 1988) and across other anxiety disorders (Rapee et al., 1988), and public speaking anxiety was the most frequently feared social situation in both of these samples.

In addition, nothing is known about what constitutes most social situations for the generalized subtype of social phobia. Although the generalized social phobic has been reliably distinguished from the public speaking phobic on a variety of assessment measures (Heimberg et al., 1990; Levin et al., 1989; McNeil & Lewin, 1986) and by response to treatment (Heimberg, 1986; Holt et al., 1989), the concept of "generalized social phobia" is still in its infancy. The only homogeneous group contrasted with generalized social phobics has been public speaking phobics, representing by proxy all persons with a more limited number of feared social situations, often termed discrete social phobics (Heimberg, 1986; Heimberg et al., 1991; Levin et al., 1989). Studies using persons diagnosed with other discrete social phobias are lacking; this may be due both to the apparent ubiquitous nature of public speaking phobia and to the low prevalence for fears of other discrete phobic situations mentioned as examples in DSM-III and DSM-III-R, such as anxiety concerning urination in public restrooms, eating in public, or writing in public (Pollard & Henderson, 1988). Dating and attendance at parties appear to be frequently feared situations in social phobia (Rapee et al., 1988; Turner et al., 1986), but may not constitute discrete social phobias.

The present study assesses the relative frequency of social anxiety in different situations in a sample of patients with social phobia, and examines the degree to which conceptually different social situations co-occur as phobic stimuli. Individually assessing every possible social situation is unwieldy, and many situations may be similar enough to be considered functionally equivalent. Thus, the concept of *situational domain* was developed to investigate the pervasiveness of social phobia (assessed as anxiety) among similar situations (i.e., a domain). Four conceptually different situational domains of social phobia were defined

on the basis of previous research (e.g., Pollard & Henderson, 1988; Turner et al., 1986) and clinical considerations: formal speaking and interaction, informal speaking and interaction, observation by others, and assertion. The concept of situational domain indicates the extent to which anxiety has generalized among like situations and can serve as a heuristic for reducing the number of classification categories, and may allow a more stable and generalizable classification of situational anxiety. For example, public speaking and reporting at a meeting are conceptually similar instances of formal interaction and might be best considered as variations on the same type of situation.

In examining the prevalence of anxiety in different situational domains, this study varied the rules for classification as anxiety-positive for a domain in two ways. To test the utility of the domain concept, separate classifications were conducted varying the proportion of similar situations required to be classified as anxious for a given domain of situations (the domain criterion: "partial" or "full" domain involvement). Second, different classifications were made by varying the severity of anxiety needed to be classified as anxious in a given situation (the significant distress criterion: mild, moderate, or severe anxiety). We were interested in how change in the significant distress criterion (e.g., requiring higher or lower levels of anxiety per situation) would change the prevalence of situational anxiety. The prevalence rates for specific social phobias fluctuated dramatically in a community sample (Pollard & Henderson, 1988) as the threshold criterion for significant distress was varied. This underscores the importance of refining the concept of significant distress to differentiate common distress from the more extreme distress indicative of social phobia.

As a related question, this study also explored the co-occurrence of situational anxiety across the four domains (conjoint classification). In other words, do social phobics experience anxiety across domains in predictable patterns? Patterns of co-occurrence across situational domains could suggest constellations of social situational anxiety, and, in turn, offer a better understanding of the situational mechanisms of social phobia.

## **Method**

### ***Subjects***

Subjects in the present study were 91 patients (65.9% male, mean age = 34.9 years,  $SD = 9.0$ ) who participated in pretreatment assessment for a study evaluating the effectiveness of phenelzine and atenolol for the treatment of social phobia (Liebowitz et al., 1988). All subjects met DSM-III criteria for social phobia as the primary diagnosis, were medically healthy (to the extent it was safe to administer treatment by monoamine oxidase inhibitor [MAOI] or beta blocker), and were between the ages of 18 and 55. Exclusion criteria for the study were: (a) previous MAOI or beta-blockade treatment; (b) current major depressive episode by DSM-III criteria; and (c) positive history of schizophrenia, organic mental disease, or bipolar I disorder. Contrary to DSM-III, patients meeting criteria for avoidant personality disorder were not excluded from the sample if they also met criteria for social phobia (in line with the later acceptance of concurrent diagnoses of social phobia and avoidant personality disorder in DSM-III-R.) Sixty-nine of the 91 subjects (75.8%, 47 male, 22 female) were considered to have a pervasive social phobia and likely met the DSM-III-

R criterion for generalized subtype of social phobia (24.2% of the sample [15 male, 7 female] did not meet the subtype criterion). The distributions of gender and subtype were not related ( $\chi^2 < 1$ ).

### *Measure*

The present study used items selected from the Liebowitz Social Phobia Scale (LSPS; Liebowitz, 1987), a clinician-administered scale of social situational anxiety and avoidance. The LSPS has been used as an outcome measure in studies of the pharmacological treatment of social phobia (e.g., Liebowitz et al., 1988; Munjack et al., 1991; Reich & Yates, 1988). Although further validation studies of the LSPS are underway (e.g., Slavkin et al., 1990), the present focus is on individual item ratings and not on overall scale scores. The LSPS consists of 24 situations varying from more situationally specific ("giving a report to a group") to more global ("being center of attention"). Each situation is rated using a 0 to 3 scale for intensity of anxiety (none, minimal, moderate, or severe anxiety), and again for frequency of avoidance (never; occasionally, 1% to 33% of instances; often, 34% to 67% of instances; or usually, 68% to 100% of instances).

Only LSPS anxiety ratings were employed. Avoidance of social situations is not necessary for a diagnosis of social phobia under either DSM-III or DSM-III-R criteria. In addition, the meaning of avoidance ratings from self-report or clinical interview is problematic (Leary, 1983; Mannuzza et al., 1990). For example, people who report that they seldom talk in small groups could be actively avoiding the situation, not have such an opportunity based on constricted lifestyles (passive avoidance), or simply not have lifestyles in which these situations present themselves; knowing that the person would be anxious if required to talk in small groups cannot clarify the avoidance rating. On an empirical level, the avoidance ratings in the present sample were redundant with the corresponding anxiety ratings on the LSPS. Item-by-item correlations of anxiety and avoidance ratings produced a Fisher's normalized mean correlation of  $Mr = .848$  across the 24 items; the lowest correlation was  $r = .744$ . This suggests that (at least for the purpose of the present study) separate analyses for avoidance ratings are not necessary.

### *Domain Specification*

Seventeen of the LSPS items were selected as appropriate for one of the four conceptually derived situational domains: Formal Speaking/Interaction, Informal Speaking/Interaction, Assertion, or Observation by Others (shown in Table 1; to distinguish domains from specific situations, domain titles are capitalized.) Each domain was represented by four situations with the exception of the Informal domain, represented by five.<sup>1</sup> Each of four judges, blind to the purpose of the study, assigned the 17 situations to the correct domain without error.

**Table 1.** Social Situational Domains, Item Composition, and Descriptive Statistics by Item

Domain	Liebowitz Social Phobia Scale Items	LSPS Anxiety Rating		Percent of Sample with Rating <sup>b</sup>		
		Mean	(SD) <sup>a</sup>	≥ 1	≥ 2	= 3
Formal speaking and interaction	Acting, performing or giving a talk in front of audience	2.51	(0.90)	93.4	85.7	71.4
	Giving a report to a group	2.32	(0.98)	91.2	81.3	59.3
	Speaking up at a meeting	2.20	(0.97)	92.3	76.4	50.5
	Participating in small groups	1.66	(1.05)	83.5	56.1	26.4
Informal speaking and interaction	Trying to pick up someone <sup>c</sup>	2.00	(1.09)	84.6	72.6	42.9
	Going to a party	1.77	(1.04)	84.6	62.7	29.7
	Giving a party	1.75	(1.11)	82.4	58.3	34.1
	Meeting strangers	1.36	(1.04)	73.6	47.3	15.4
	Calling someone you don't know very well	1.18	(1.03)	67.0	38.5	12.1
Assertive interaction	Talking to people in authority	1.68	(1.00)	84.6	60.5	23.1
	Expressing a disagreement or disapproval to people you don't know very well	1.54	(1.01)	80.2	55.0	18.7
	Returning goods to a store	0.97	(0.96)	58.2	33.0	5.5
	Resisting a high-pressure salesperson	0.81	(1.01)	48.4	23.1	9.9
Observation of behavior	Working while being observed	1.65	(1.12)	79.1	56.1	29.7
	Writing while being observed	1.03	(1.13)	52.7	36.3	14.3
	Eating in public places	0.79	(1.06)	42.9	25.3	11.0
	Drinking in public places	0.76	(1.06)	40.7	13.2	11.0

a. Anxiety/Fear Rating: 0 = None; 1 = Mild; 2 = Moderate; 3 = Severe

b. Percentage of respondents rating anxiety at or above the specified level.

c. Coded as 0 on both ratings for married respondents, unless endorsed otherwise.

Note:  $n = 91$

### ***Categorization Procedure***

Patients were classified by the presence of anxiety within situational domains (termed "anxiety-positive"). To be classified as anxiety-positive for a situational domain, a patient had to endorse the specified number of situations within the domain, and each situation-based rating had to exceed the specified anxiety threshold. Criteria for classification as anxiety-positive for a domain were varied in two ways. First, *minimum intensity of anxiety* experienced in each situation was varied as either minimal anxiety (requiring a LSPS rating  $\geq 1$ ), moderate anxiety (requiring a LSPS rating  $\geq 2$ ), or severe anxiety (requiring a LSPS rating = 3). Table 1 shows the percentage of patients who met each anxiety threshold for each situation. As can be seen, a higher threshold of anxiety required for classification is more restrictive and decreased the frequency of patients classified as anxiety-positive.

Second, the amount of *domain involvement* necessary for classification was varied. Domain involvement was defined as the number of situations within a domain that exceeded

threshold level of anxiety. As such, domain involvement was viewed as an indicator of the pervasiveness of social anxiety within a domain. Full domain involvement reflects self-report of threshold anxiety in at least three out of four situations within a domain (four out of five for the Informal domain). Partial domain involvement reflects threshold anxiety in at least two situations within a domain. Full domain involvement is the more restrictive classification criterion and decreased the frequency of patients classified as anxiety-positive for a domain. Partial domain involvement allows patients to be classified as anxious within a given domain based on anxiety experienced in similar situations (rather than a more stringent situation-by-situation match), but still requires that more than one situation be anxiety-positive for the domain.

## Results

### *Classification by Situational Domain*

Table 2 shows the classification of patients as anxiety-positive for the four situational domains when threshold level of anxiety and degree of domain involvement were varied. Each row in Table 2 represents a separate set of classification criteria varying minimum anxiety per situation and number of situations within a domain. For both the full and partial involvement criteria for situational domains, increasing the required threshold for anxiety (i.e., proceeding to the second and third rows of the same column) reduced classification frequency for each domain, as expected. Requiring at least minimal anxiety and full domain involvement, 90% of the sample reported formal speaking/interaction anxiety. Allowing only severe anxiety (third row), 50% of the sample still reported formal speaking/interaction anxiety. Anxiety due to observation by others (fourth column), generally the least frequently endorsed situational domain, varied from almost 40% of the sample using minimal anxiety and full domain involvement (first row) to less than 10% of the sample when ratings of severe anxiety (third row) were required.

**Table 2.** Frequency of Social Phobic Anxiety Rating by situational Domain and LSPS Intensity Level

LSPS Intensity Rating	Situational Domain—Full Involvement <sup>a</sup>							
	Formal		Informal		Assertion		Observation	
1, 2 or 3	82	(90.1)	63	(69.2)	55	(60.4)	36	(39.6)
2 or 3	64	(70.3)	42	(46.2)	28	(30.8)	20	(22.0)
3 only	46	(50.5)	10	(11.0)	4	(4.4)	9	(9.9)
LSPS Intensity Rating	Situational Domain—Partial Involvement <sup>b</sup>							
	Formal		Informal		Assertion		Observation	
1, 2 or 3	88	(96.7)	81	(89.0)	76	(83.5)	59	(64.8)
2 or 3	79	(86.8)	63	(69.2)	45	(49.5)	39	(42.9)
3 only	60	(65.9)	35	(38.5)	14	(15.4)	18	(19.8)

a. Frequency of respondents endorsing at least three of four items in each domain (four of five for Informal) at specified level of intensity.

b. Frequency of respondents endorsing at least two items in each domain at specified level of intensity.

**Note:** Number in parentheses is percentage of respondents,  $n = 91$ . Row classification is neither mutually exclusive nor exhaustive.

Clearly, classification criteria had an impact on the percentage of patients classified as anxiety-positive for any domain, but one of the most interesting findings in Table 2 was the consistency of ordering for situational domain frequency across varying classification criteria. For any threshold of anxiety intensity and domain involvement (a row in Table 2), the most common situational domain among social phobics was formal speaking/interaction; the least common domain was observation by others for most combinations of classification criteria. For less stringent classification criteria (lower anxiety threshold and/or partial domain involvement), both informal speaking/interaction and assertion domains appeared as common situational domains in social phobia. Upon requiring strict classification criteria (severe anxiety threshold and full domain involvement), however, the percentage for both domains dropped quickly and in line with the observation by others domain.

**Classification by Number of Situational Domains**

Except for the most restrictive classification criteria, the percentages across domains summed to more than 100%. This suggests many patients experience situational anxiety within more than one situational domain. Obviously, the frequency with which patients are classified as anxious across domains is dependent on the classification criteria employed. Thus, patients were reclassified by the number of situational domains that met threshold criteria (see Table 3) to determine the impact of classification criteria on the number of patients classified as anxious across situational domains; the criteria for domain involvement and intensity of anxiety were varied as before. Patients were counted once for each set of classification criteria (i.e., per row) in this analysis, yielding mutually exhaustive and exclusive classification of patients.

**Table 3.** Frequency of Social Phobic Anxiety Rating by Number of Situational Domains and LSPS Intensity Level

LSPS Intensity Rating	Number of Situational Domains—Full Involvement <sup>a</sup>									
	0		1		2		3		4	
1, 2, or 3	7	(7.7)	14	(15.4)	12	(13.2)	34	(37.4)	24	(26.4)
2 or 3	19	(20.9)	19	(20.9)	30	(33.0)	17	(18.7)	6	(6.6)
3 only	39	(42.9)	40	(44.0)	8	(8.8)	3	(3.3)	1	(1.1)
LSPS Intensity Rating	Number of Situational Domains—Partial Involvement <sup>b</sup>									
	0		1		2		3		4	
1, 2, or 3	2	(2.2)	4	(4.4)	7	(7.7)	26	(28.6)	52	(57.1)
2 or 3	7	(7.7)	15	(16.5)	20	(22.0)	25	(27.5)	24	(26.4)
3 only	22	(24.2)	33	(36.3)	18	(19.8)	14	(15.4)	4	(4.4)

a. Frequency of respondents endorsing at least three or four items in each domain (four of five for Informal) at specified level of intensity.

b. Frequency of respondents endorsing at least two items in each domain at specified level or intensity.

**Note:** Number in parentheses is percentage of respondents, n = 91. Rows sum to unity.



In general, the experience of social anxiety across situational domains was considerable. As shown in Table 3, however, moving to more restrictive criteria decreased the number of domains in which a patient was classified as anxiety-positive. Examining the number of situational domains to which patients were classified also revealed some patients who were not classified to any of the four situational domains (see Table 3, column 1). Using the least restrictive criteria—minimal anxiety threshold and partial domain involvement (row 4)—only two patients were not domain-positive; interestingly, both were males who had specific anxiety around urination in public restrooms. Using partial domain involvement and requiring moderate intensity of anxiety for each item (row 5) left seven patients who were not domain positive; two were the restroom urination phobics and the other five were patients with more diffuse situational concerns that did not follow a particular pattern. Using minimal anxiety threshold but requiring full domain involvement (row 1), seven patients again were not classified to a domain; two were the previously mentioned urination phobics and the other five were public speaking phobics who did not meet the breadth of full domain involvement to be classified as domain positive for formal speaking/interaction. Raising the threshold to moderate anxiety for full domain involvement (row 2), fully 20% of the sample was not classified to a single domain. These patients had diverse concerns that either did not group into domains or did not meet the moderate anxiety threshold for any domain; almost all the patients in this group, however, had at least some formal speaking/interaction anxiety related to public speaking in addition to other situations.

Viewed in a positive light, the joint criteria of full domain involvement and threshold of moderate anxiety classified almost 80% of the sample to at least one of the four domains. In contrast, the use of severe anxiety as the threshold criterion under full domain involvement appeared to isolate one primary phobic concern or none at all. (Under the criterion of severe anxiety, 24% of the sample was not classified to any domain under partial domain involvement, and this increased to 42% of the sample under the criterion of full domain involvement.) Thus, the concept of full domain involvement appears to be useful in allowing most patients to be classified to at least one situational domain (using a more rigorous criterion than single situations). Further, the use of a moderate anxiety threshold provides a meaningful operational definition of significant distress criterion. At least while concurrently employing the domain concept, the requirement of severe anxiety isolated the most anxiety-producing situations (if any at all) and excluded a large percentage of patients who did not have severe and pervasive anxiety within a domain.

#### ***Classification by Conjoint Occurrence of Situational Domains***

To investigate more specifically the occurrence of social anxiety across domains, patients were classified as to which domains were anxiety-positive when all four domains were considered simultaneously (termed *conjoint domains*; e.g., a patient may be anxiety-positive for formal speaking/interaction and observation by others but anxiety-negative for informal speaking/interaction or assertion). This was done for both partial and full domain involvement, holding constant a threshold of moderate anxiety for each situation. The results are shown in Table 4. For ease of interpretation, the underlined headings and values in

Table 4 are identical to those for moderate anxiety threshold in Table 3 and, for each column in Table 4, represent mutually exclusive and exhaustive classification categories. Under each heading are the possible combinations of conjoint domains for the specified number of anxiety-positive domains.

**Table 4.** Conjoint Frequencies across Situational Domains

Domains <sup>a</sup>	Partial Domain Involvement <sup>b</sup>		Full Domain Involvement <sup>c</sup>	
No Domains	7	(7.7)	19	(20.9)
One Domain Only	15	(16.5)	19	(20.9)
FORMAL Speaking/Interaction	12	(13.2)	14	(15.4)
INFORMAL Speaking/Interaction	3	(3.3)	3	(3.3)
ASSERTION	—		—	
OBSERVATION by Others	—		2	(2.2)
Two Domains Only	20	(22.0)	30	(33.0)
Formal & Informal	12	(13.2)	15	(16.5)
Formal & Assertion	4	(4.4)	6	(6.6)
Formal & Observation	4	(4.4)	7	(7.7)
Informal & Assertion	—		2	(2.2)
Informal & Observation	—		—	
Assertion & Observation	—		—	
Informal & Observation	—		—	
Three Domains Only	25	(27.5)	17	(18.7)
Formal, Informal & Assertion	14	(15.4)	12	(13.2)
Formal, Informal & Observation	8	(8.8)	3	(3.3)
Formal, Assertion & Observation	1	(1.1)	1	(1.1)
Informal, Assertion & Observation	2	(2.2)	1	(1.1)
All four domains	24	(26.4)	6	(6.6)

a. Domain intersections are mutually exclusive and exhaustive. For each column, underlined entries sum to 91 (100%, with rounding error). Specific intersections under each subheading sum to the subheading frequency and percentage.

b. At least two items from each domain endorsed at an anxiety intensity rating of two or three.

c. At least three of four items (four of five for Informal) from each domain endorsed at an anxiety intensity rating of two or three.

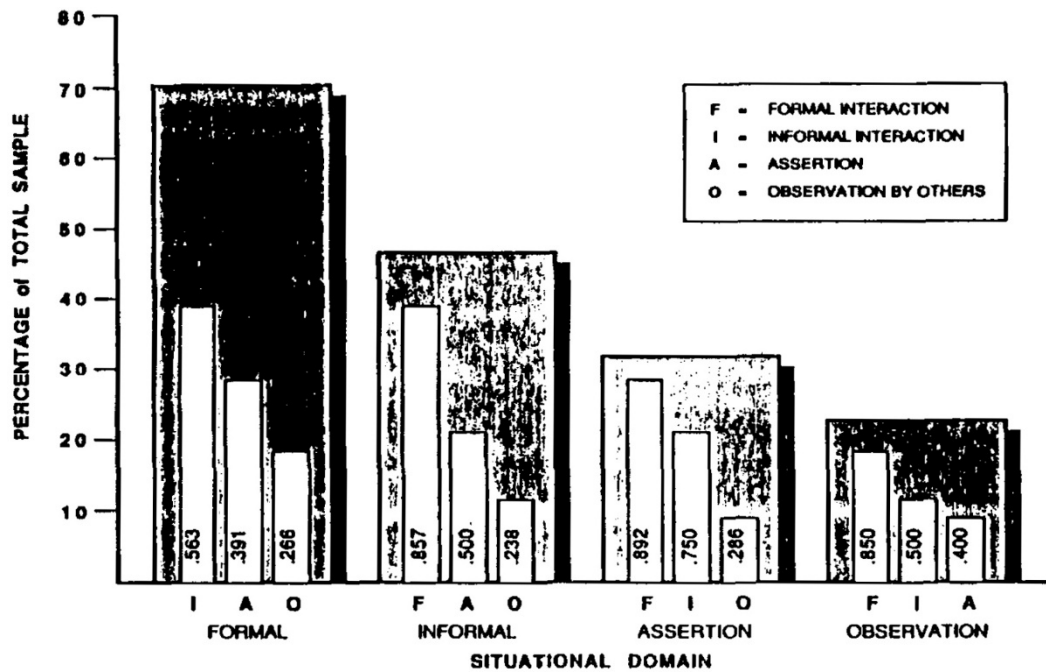
**Note:** Number in parentheses is percentage of respondents,  $n = 91$ .

Of the 19 patients (20.9% of the overall sample) classified as having exactly one situational domain of anxiety under full domain involvement, 14 patients were classified to the formal speaking/interaction domain (73.6% of patients classified to exactly one domain), 3 patients to the informal speaking/interaction domain, and 2 patients to the observation by others domain. Of particular note, no patients were anxiety-positive for the assertion domain without also having another situational domain involved. For the 30 patients (33% overall) classified to exactly two situational domains, the most noteworthy result was that 28 patients (30.8% overall, 93.3% of those patients with exactly two situational domains) were classified to formal speaking/interaction as one of the two domains. Additionally, of the 17 patients classified to exactly three of the four situational domains, all but one patient had anxiety in formal speaking/interaction as one of the three domains.

Using the partial domain involvement criterion, the pattern of anxiety across domains was very similar to that for the full domain involvement criterion. In general, patients were classified to more domains using the less restrictive criterion of partial domain involvement, and the presence of formal speaking/interaction anxiety was even more prevalent for partial domain involvement than it was for full involvement. This suggests that many of the patients who were not classified to the formal speaking/interaction domain under the full involvement criterion did in fact have anxiety in the formal speaking/interaction domain that met the less restrictive criterion of partial domain involvement. In addition, for either partial or full domain involvement, no patients reported assertion anxiety without other domain involvement. For patients classified conjointly to two domains, no patients reported anxiety across observation by others and either informal speaking/interaction or assertion. Further, the conjoint occurrence of informal speaking/interaction and assertion was infrequent, as was the three-domain classification of informal speaking/interaction, assertion, and observation by others.

#### *Conditional Probabilities of Conjoint Occurrence*

Conditional probabilities of conjoint occurrence can yield important information regarding the co-occurrence of social anxiety across situational domains. A conditional probability is the probability of the conjoint occurrence of anxiety in two domains, adjusted for the probability of base rate occurrence of anxiety in one of the domains (the referent). Stated another way, given that the patient reports anxiety in one domain, what is the probability of a patient reporting anxiety within a second situational domain. Conditional probabilities can be calculated directly from the information presented in Table 2 (domain base rates) and Table 4 (conjoint domain occurrence). The conditional probabilities of situational domain conjoint occurrence are presented in Figure 1, employing a threshold of moderate anxiety and full domain involvement. The height of each gray bar represents the base rate probability for a domain (the percentage of the sample that was classified as anxiety-positive in a given situational domain), and is the same value as indicated in Table 2 for full domain involvement with moderate anxiety (row 2). Each white bar within the gray bar represents the conjoint occurrence of anxiety within the gray domain and the second domain. (The height of the white bars within each gray bar is the percentage of patients in the sample who had anxiety within both domains regardless of the two excluded domains. That is, the conjoint occurrence of two domains is the sum of all patients who reported anxiety across both domains.) The conditional probability, then, is the ratio of the conjoint anxiety across two domains (white bar) to the base rate for anxiety within one domain (the surrounding gray bar); the resultant conditional probability is noted within the corresponding white bar.



**Figure 1.** Base rate prevalence of social anxiety by situational domain and conditional probabilities for social anxiety across two situational domains. Gray bars indicate base rate prevalence; white bars indicate percentage of sample with anxiety across base rate domain and a second domain indicated by the letter under the white bar. The number within the white bar is the conditional probability of two-domain occurrence given occurrence of base rate domain.

The probability that a patient in the present sample had anxiety within the formal speaking/interaction domain is  $P = .703$  overall (base-rate probability), and increased to at least  $P = .850$  when the patient was also anxiety-positive for one of the other three domains (the conditional probability that a patient is anxiety-positive for formal speaking/interaction given that the patient is anxiety-positive for another domain; i.e., white bars labeled 'F'). If a patient was anxiety-positive for the formal speaking/interaction domain, however, the conditional probability of anxiety within a second domain was not much greater than the base rate probability for the second domain. Similarly, the probability that a patient had anxiety within the observation by others domain was  $P = .220$  overall and changed little when the patient was anxiety-positive for one of the other three domains. Further, if a patient was classified as anxiety-positive for assertion, the probability was  $P = .892$  that the patient was also anxiety-positive for formal speaking/interaction and  $P = .150$  that the patient was also anxiety-positive for informal speaking/interaction. Finally, the probability of classification as anxious within observation by others changed very little from the base rate when the conditional probabilities were considered, regardless of which domain was used as the referent. Similarly, the conditional probability of a patient being anxious within informal speaking/interaction with other domains serving as referents changed little from

the base rate, with the exception of assertion as referent, which produced a much higher conditional probability.

In sum, the pattern of conditional probabilities showed that a patient was likely to be anxiety-positive for formal speaking/interaction if the patient was anxiety-positive for another domain, suggesting again that the formal speaking/interaction domain situations were anxiety producing for most social phobics. In addition, patients were likely to be anxiety-positive for either formal speaking/interaction or informal speaking/interaction if they were also anxiety-positive for assertion, suggesting assertion may be a subordinate domain unlikely to occur without anxiety in at least one of the other situational domains as well. Further, anxiety within the domains of informal speaking/interaction or observation by others appeared to occur independently of each other (although the two domains are not mutually exclusive).

## Discussion

This study provides support for previous findings that many social phobics experience anxiety in more than one social situation (Amies et al., 1983; Liebowitz et al., 1985; Turner et al., 1986). Eighty percent of the sample experienced anxiety in at least one situational domain, classified using full domain involvement and moderate anxiety, and almost 60% of the sample experienced significant anxiety in more than one domain. Using the partial domain criterion, more than 90% of the sample experienced anxiety in at least one situational domain, and more than 75% of the sample experienced anxiety in more than one domain. Restrictive criteria tended to isolate a single domain as the focus of situational anxiety but also left as much as 42% of the sample unclassified. On the other hand, the least restrictive criteria (minimal anxiety threshold and partial domain involvement) classified almost 60% of the sample as anxiety-positive for all four domains. There was no clear bimodal distribution of patients experiencing anxiety in "few" situations or in "most" situations, and this lack of an empirical boundary separating distinct subtypes by number of domains (or situations) was evident across liberal or restrictive classification criteria. This suggests that a single generalized subtype of social phobia, defined as anxiety in most situations, may be inadequate to describe individual differences in the presence of anxiety across a range of social situations (Heimberg et al., 1991).

The patterning of social anxiety across domains in the present study suggests that a discrete social phobia typically involves the formal speaking/interaction domain (and perhaps urination in public restrooms in rare instances). Patients were most often classified to the formal speaking/interaction domain regardless of the inclusion criteria employed. When anxiety was present in at least two domains, the formal speaking/interaction domain was most often one of them. This finding was even stronger under partial domain involvement, and suggests that formal speaking/interaction, and specifically public speaking, may be ubiquitous within social phobia. The ranking of classification rates of patients to the other three domains was dependent primarily on the anxiety threshold criterion. Observation by others was consistently among the lowest base rate domains across inclusion criteria, and informal speaking/interaction and assertion were also low base rate domains under more restrictive inclusion criteria. Using anxiety in a subset of domain situations

(i.e., partial involvement) and a moderate anxiety threshold, informal speaking/interaction and assertion domains obtained much higher base rates, suggesting that clinically important interactional anxiety is common among most social phobics in this sample.

The present study was descriptive and employed an archival data set. Thus, a number of design limitations temper conclusions that might be drawn. First, we conceptually defined four situational domains from an existing measure. Situational domains might be represented by more prototypic situations, or the *a priori* grouping may not have produced domains with the greatest heuristic value. Also, there may be more situational domains than were assessed by the LSPS items.

Second, the construct validity of specific domains must be examined empirically. The situational domains concept assumes that both the situations comprising a given domain and the categorization of patients as domain anxious should be stable across time. The domains concept further assumes that there are features of similar situations (e.g., types of social threats, situationally specific cognitive schemata) that can be identified as psychological mechanisms that evoke a common social phobic response.

Third, the domains concept needs to demonstrate clinical utility. Twenty percent of the current sample was not assigned to any domain under the criteria of full involvement and moderate anxiety, and the nature of this failure suggests the need for further study. Some individual social phobic situations may also retain nosological validity. Candidate situations, not represented in the present study but available from the LSPS, involve urination in public restrooms, and examinations or writing projects that may be evaluated at a later time (noninteractionally). There may also be specific situations that cause significant life disruption that have better clinical utility as single items even though they could be grouped empirically into domains, such as asking for a date or calling acquaintances on the phone.

Finally, the exclusion criteria of the present study may have produced a sample that is not representative of all social phobic patients, resulting in biased prevalence rates and patterns of situational anxiety. The present study explicitly excluded subjects with a comorbid major depression due to the nature of the medication under investigation, and other diagnoses (not purposely excluded) were not available in sufficient numbers for analysis. Comorbid diagnoses, such as depression, agoraphobia, or Axis II disorders, may be associated with specific situational domains. Comparing agoraphobia and social phobia, Mannuzza et al. (1990) argued that the study of anxiety across specific situations must take into account the focus of the fear (i.e., social versus nonsocial targets of fear or anxiety) within ostensibly social or nonsocial situations. For example, the presence of observation anxiety may also be related to agoraphobic situations, such as malls or waiting in lines, or to paranoid personality disorder. Similarly, assertion anxiety might be higher in individuals with a comorbid depressive disorder or Cluster C personality disorder.

Use of psychiatric and community control groups would be an important extension of the current study, particularly defining the significant distress criterion. The assessment of anxiety across a broad range of social situations followed a two-step procedure in this study, first anchoring anxiety judgments to a rating scale of mild-moderate-severe and then using moderate anxiety as the operationally defined threshold of significant distress. Several studies, however, have demonstrated that defining features of specific anxiety disorders are also present across other anxiety disorders and depression (Barlow et al., 1985,

1986). Comparison of significant distress across a range of social situations using comparison groups will be important in separating clinically significant social anxiety from less acute (i.e., normative) anxiety experienced by the general population, and comparing patterns of social anxiety to those of patients with other anxiety disorders (Rapee et al., 1988).

Most importantly, individual differences in situational anxiety within social phobia need further examination. Anxiety assessed across situational domains may be useful in developing more rigorous subtype criteria. DSM-III-R generalized subtype does not offer an explicit range of situations in which anxiety must be present. Although the majority of patients in the present sample may have received a generalized subtype diagnosis using DSM-III-R, analyses were not conducted separately because the veridicality of the subtype diagnosis could not be supported in the present sample. Another study is currently underway comparing the prevalence and pattern of situational anxiety between patients with DSM-III-R generalized subtype of social phobia and those without the subtype diagnosis.

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#### Note

1. “Trying to pick someone up” was included because it has a high rate of endorsement by single patients (and by some married patients as well). The item was coded as “no anxiety/avoidance” for married persons reporting no current anxiety or avoidance.

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