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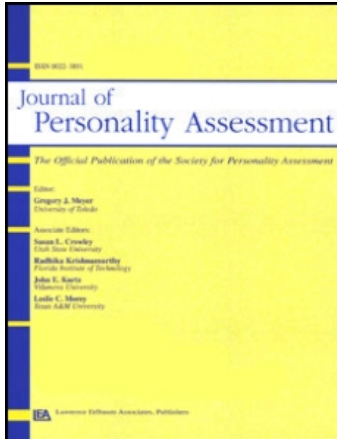
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SPECIAL SERIES: Integrating Personality, Psychopathology, and Psychotherapy Using Interpersonal Assessment

Interpersonal Subtypes in Social Phobia: Diagnostic and Treatment Implications

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Interpersonal assessment may provide a clinically useful way to identify subtypes of social phobia. In this study, we examined evidence for interpersonal subtypes in a sample of 77 socially phobic outpatients. A cluster analysis based on the dimensions of dominance and love on the Inventory of Interpersonal Problems–Circumplex Scales (Alden, Wiggins, & Pincus, 1990) found 2 interpersonal subtypes of socially phobic patients. These subtypes did not differ on pretreatment global symptom severity as measured by the Brief Symptom Inventory (Derogatis, 1993) or diagnostic comorbidity but did exhibit differential responses to outpatient psychotherapy. Overall, friendly-submissive social phobia patients had significantly lower scores on measures of social anxiety and significantly higher scores on measures of well-being and satisfaction at posttreatment than cold-submissive social phobia patients. We discuss the results in terms of interpersonal theory and the clinical relevance of assessment of interpersonal functioning prior to beginning psychotherapy with socially phobic patients.

Social phobia has been reported to be the most common anxiety disorder in the United States (Hofmann & Barlow, 2002), with a lifetime prevalence rate of 13.3% (Kessler et al., 1994). The disorder is characterized by a “marked and persistent fear of one or more social or performance situations in which the person is exposed to unfamiliar people or possible scrutiny by others” (American Psychological Association, 1994, p. 416). Individuals with social phobia live in constant fear of embarrassing themselves, appearing foolish, or appearing less intelligent than others. Social phobia often follows a chronic course resulting in substantial impairments in vocational and social functioning. Due to their significant distress, individuals with social phobia often engage in avoidance behaviors that allow them to stay away from feared social or performance situations.

A common critique of the social phobia diagnosis is the inclusion of a generalized subtype. According to the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)*; American Psychological Association, 1994), the generalized specifier should be used “when the [individual’s] fears are related to *most* [emphasis added] social situations” (p. 451). Individuals whose symptoms do not meet the definition of generalized social phobia have been described as “a heterogeneous group that includes persons who feared a single performance situation as well as those who feared several, but not most, social situations” (American Psychological Association, 1994, p. 413).

Although the research has consistently shown that generalized social phobia represents the more severe manifestation of the disorder (e.g., Hofmann, Heinrichs, & Moscovitch, 2004), there are a number of problems with the current *DSM-IV* criteria for subtyping social phobia. In particular, the *DSM-IV* does not explicitly define the number and type of social situations that comprise the generalized subtype. As a result, various research groups have developed slightly different operational definitions for generalized social phobia, making it difficult to compare results across empirical studies. In fact, one study found that existing heterogeneous definitions lead to the formation of different subgroups when applied to the same sample (Newman, Kachin, Schut, & Constantino, 1998). A subtype division based on number or commonality of feared situations provides no differential central characteristic around which each of the subgroups is organized. This has led several researchers to criticize the *DSM-IV*-symptom-based classification for failing to create qualitatively different subgroups (Turner, Beidel, & Townsley, 1992; Vriends, Becker, Meyer, Michael, & Margraf, 2007).

Interpersonal assessment may provide a more clinically useful way to identify qualitatively different subgroups of socially phobic individuals by identifying patients based on their distinct ways of responding to social situations. From an interpersonal perspective, it could be argued that the *DSM-IV* criteria do not fully capture the range of maladaptive responses to social situations that may be exhibited by the socially phobic individual such as compliant, hostile, dominant, and/or submissive reactions (Kachin, Newman, & Pincus, 2001; Kashdan, McKnight, Richey, & Hofmann, 2009). Additionally, the ability to interact successfully with others is a particularly relevant psychotherapy

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goal for individuals with social phobia, making the assessment of interpersonal functioning essential (Alden & Capreol, 1993; Alden & Phillips, 1990; Hofmann et al., 2004; McLemore & Benjamin, 1979).

INTERPERSONAL CLASSIFICATION OF SOCIAL PHOBIA

Applying interpersonal theory to diagnosis, McLemore and Benjamin (1979) argued that interpersonal functioning is an essential component of the diagnostic process in addition to the assessment of symptoms. McLemore and Benjamin pointed out that quite often the most useful aspects of psychiatric diagnoses are psychosocial in nature and that most diagnoses of functional mental disorders are made on the basis of observed interpersonal behavior. Empirical studies have demonstrated that many forms of pathology are associated with interpersonal impairment including depression (Joiner, 2002), bipolar disorder (Miklowitz, 2001), substance abuse and dependence (Fals-Stewart, Birchler, & O'Farrell, 1999), and personality disorders (Pincus & Wiggins, 1990; Russell, Moskowitz, Zuroff, Sookman, & Paris, 2007). Empirical studies have also demonstrated that interpersonal characteristics are associated with therapeutic alliance (e.g., Muran, Segal, Samstag, & Crawford, 1994) and therapeutic outcome (e.g., Alden & Capreol, 1993; Blatt, Zuroff, Quinlan, & Pilkonis, 1996; Ruiz et al., 2004).

One method for deriving an interpersonal classification is to use the Inventory of Interpersonal Problems—Circumplex Scales (IIP-C; Alden, Wiggins, & Pincus, 1990). The IIP-C is based on interpersonal theory, which provides a nomological framework for articulating both adaptive and maladaptive dynamic interpersonal processes. The instrument was created to measure recurrent interpersonal themes identified in the clinical material of patients receiving outpatient psychotherapy (Horowitz, Rosenberg, Baer, Urëno, & Villaseñor, 1988).

The original IIP was revised using a circumplex model that can be conceptually organized in a circular manner along the dimensions of dominance and affiliation (Alden et al., 1990). The IIP-C contains 64 items divided into eight subscales. These dimensions provided the basis for Leary's (1957) interpersonal circumplex (see Figure 1) and are considered to be the basic elements of interpersonal behavior (Wiggins, 1979, 1991). Circumplex quadrants are often described as representing a mixture of the underlying dimensions (i.e., hostile dominance or friendly submissiveness) and are useful summary descriptors of interpersonal behavior (Pincus & Gurtman, 2006). The IIP-C allows for the location of individual or group data within the interpersonal problem space. By computing scores on each axis, a set of Cartesian coordinates can be generated to define the location of the predominant interpersonal problem pattern. The IIP-C also contains a general factor, which is equivalent to mean level of reported interpersonal distress (Tracey, Rounds, & Gurtman, 1996).

PATHOPLASTICITY

Using the IIP-C to form interpersonally based subtypes of socially phobic individuals is based on a theory of pathoplasticity. Pathoplasticity is characterized by a mutually influencing, nonetiological relationship between psychopathology and another psychological system (Klein, Wonderlich, & Shea, 1993; Widiger & Smith, 2008; Widiger, Verheul, & van den Brink, 1999). In other words, psychopathology and another psycho-

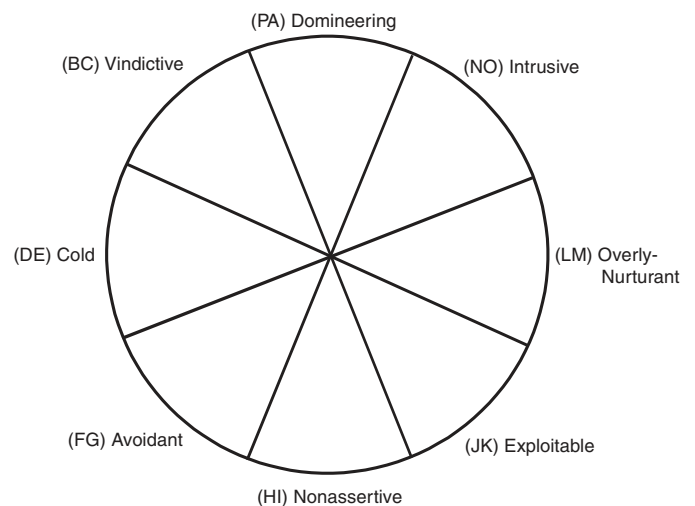


FIGURE 1.—Interpersonal problems circumplex. An example of the eight octants found in the interpersonal problems circumplex.

logical system influence the expression of each other, but neither one is the exclusive direct causal agent of the other, as might be the case in an etiological or spectrum relationship (Widiger et al., 1999). Although initially conceptualized as a model relating personality and depression, its scope has been broadened to include personality and psychopathology in general. Pathoplasticity recognizes that the expression of certain maladaptive behaviors, symptoms, and mental disorders all occur in the larger context of an individual's personality (Millon, 1996, 2005) and points out that it would be unreasonable to assume that the expression of pathology would not be influenced by one's characteristic manner of perceiving, thinking, feeling, behaving, and relating to the environment. Personality also has the potential to influence the content and focus of a disorder and will likely shape the responses and coping strategies individuals employ when presented with a psychological stressor (Millon, 2000).

The interpersonal paradigm asserts that maladaptive self-concepts and disturbed interpersonal relations are key elements of the phenotypic presentation of all psychopathology. Pincus, Lukowitsky, and Wright (2010) suggested that using an interpersonal paradigm to systematically account for these elements provides additional and valuable information beyond diagnosis itself for both treatment planning (e.g., Benjamin, 2005; Pincus & Cain, 2008) and developing testable hypotheses regarding the etiology and maintenance of psychopathology (Horowitz, 2004; Schechtman & Horowitz, 2006). Interpersonal pathoplasticity can describe the observed heterogeneity in the phenotypic expression of psychopathology (e.g., Barrett & Barber, 2007), predict variability in response to psychotherapy within a disorder (e.g., Alden & Capreol, 1993; Borkovec, Newman, Pincus, & Lytle, 2002; Maling, Gurtman, & Howard, 1995), and account for a lack of uniformity in regulatory strategies displayed by those who otherwise are struggling with similar symptoms (e.g., Wright, Pincus, Conroy, & Elliot, 2009). Differences in interpersonal diagnosis will affect the manner in which patients express their distress and will influence the type of interpersonal situation they feel is needed to regulate their self, affect, and relationships (Pincus et al., 2010).

Kachin et al. (2001), Salzer et al. (2008), and Wright, Pincus, Conroy, & Elliot (2009) have described procedures to determine the presence of a pathoplastic relationship using the IIP-C. If patients with a particular disorder are not defined by a uniform interpersonal profile on the IIP-C, nor are they defined by a complete lack of systematic interpersonal expression, then it is necessary to examine whether a pathoplastic relationship exists. Individuals with a particular disorder are subjected to cluster analyses based on their responses to the IIP-C to confirm the existence of distinct groups with characteristic interpersonal problem profiles. If the data support these clusters, this provides necessary but not sufficient evidence for a pathoplastic relationship. Important additional evidence for pathoplasticity is that the identified groups should not differ in their level of reported interpersonal distress and other psychological variables, such as symptom severity or comorbid psychopathology, which could serve as alternative explanations for their distinct patterns of interpersonal problems. Both results combine to provide the necessary and sufficient evidence to support pathoplasticity.

A number of investigations have found that individual differences in interpersonal problems exhibit pathoplastic relationships with mental disorders (e.g., Kasoff & Pincus, 2002; Pincus & Borkovec, 1994; Przeworski et al., 2010; Salzer et al., 2008), pathological symptoms (e.g., Ambwani & Hopwood, 2009; Hopwood, Clarke, & Perez, 2007), and maladaptive traits (e.g., Slaney, Pincus, Uliaszek, & Wang, 2006; Wright, Pincus, Conroy, & Elliot, 2009). For example, Kachin et al. (2001) examined interpersonal pathoplasticity in 60 undergraduates diagnosed with social phobia using the Anxiety Disorders Interview Schedule-IV (Brown, DiNardo, & Barlow, 1994). Using the IIP-C, Kachin et al. found two distinct subtypes of socially phobic undergraduates with distinct interpersonal features suggesting qualitatively different responses to feared interpersonal situations. One subtype reported difficulties with anger, hostility, and mistrustfulness (the cold-dominant group), whereas the other subtype reported difficulties with unassertiveness, exploitability, and overnurturance (the friendly-submissive group). There were no significant differences between the two subtypes on level of interpersonal distress (i.e., IIP-C elevation), and the subtypes were not significantly different on depression or other disorders comorbid to social phobia, thus providing evidence for pathoplasticity. One potential limitation of the study was the use of an undergraduate sample. Kachin et al. acknowledged that their sample might be functioning at a higher level than a sample of individuals who are currently in treatment for social phobia and suggested that these subtypes should be replicated in a clinical sample.

THIS STUDY

Based on previous research, we had three main goals. First, we aimed to replicate the results of Kachin et al. (2001) by using an interpersonally based approach to subtype socially phobic individuals using the IIP-C in a clinical sample at an outpatient psychotherapy clinic. We predicted that socially phobic outpatients would be classified into two subtypes (friendly-submissive, cold-dominant) based on a cluster analysis of their responses to the IIP-C. Second, we aimed to provide evidence for the pathoplasticity of social phobia and predicted that interpersonal subtypes of social phobia would not differ on pre-

treatment measures of demographics, symptom severity, and comorbidity, thus showing necessary and sufficient evidence for pathoplasticity. Third, we examined subtype differences on posttreatment measures of general symptom severity, level of social anxiety, psychological well-being, level of optimism, and satisfaction with social functioning. Extensive research using the IIP-C has shown that friendly-submissive interpersonal problems are positively related to psychotherapy outcome, whereas hostile-dominant problems are negatively related to outcome (e.g., Gurtman, 1996; Horowitz et al., 1992; Horowitz, Rosenberg, & Bartholomew, 1993; Kasoff & Pincus, 2002; Muran et al., 1994). Therefore, we predicted that socially phobic patients with friendly, exploitable, and submissive interpersonal problems would respond more positively to psychotherapy than socially phobic patients with avoidant, cold, and hostile interpersonal problems. This would be reflected in the interpersonally warmer patients reporting lower levels of general symptom severity and social anxiety as well as higher levels of psychological well-being, optimism, and social satisfaction at posttreatment than the patients with avoidant, cold, and hostile interpersonal problems. We also examined differential rates of therapy attendance and early termination. We predicted that socially phobic patients with avoidant, cold, and hostile interpersonal problems may attend fewer psychotherapy sessions and may have a higher early termination rate than patients with friendly, exploitable, and submissive interpersonal problems due to their colder and more hostile ways of responding to interpersonal situations such as therapy.

METHOD

Patients and Therapists

We collected the data for this naturalistic study at the University of Bern, Switzerland, in their outpatient psychotherapy clinic. This clinic accepts patients suffering from a wide range of problems and disorders, with the exception of psychotic disorders and substance use disorders. The first three to four psychotherapy sessions are devoted to a detailed assessment that includes clinical interviews, a structured diagnostic interview, and standardized questionnaires. At the end of the assessment phase, the assessors choose the therapist that they judge to be best suited to the patient's needs. The available therapists in this clinic are trainees, at various stages of their 4-year training course in psychotherapy, and experienced therapists who are also involved in the weekly supervision of the trainees (Grosse Holtforth & Gawe, 2003). In this study, we used data from 20 different therapists. Therapists at this clinic participated in ongoing supervision and/or consultation with experienced colleagues.

In this study, we analyzed the data of 77 patients diagnosed with *DSM-IV* social phobia according to the German-language version of the Structured Clinical Interview for *DSM-IV* (Spitzer, Williams, Gibbon, & First, 1994; Wittchen, Zaudig, & Fydrich, 1997). The assessors at the clinic did not specify generalized social phobia; therefore, we were not able to analyze data on the diagnostic-based subgroups of social phobia. There were 44 male and 33 female patients with a mean age of 32.78 years ($SD = 11.35$). The overall ethnic composition of this sample was predominately White. The overall mean education level of the participants was 14.55 years of education ($SD = 2.10$). With regard to marital status, 77.9% indicated that they were

single, 18.2% indicated that they were married, and 3.9% indicated that they were divorced. Finally, 63.6% of the participants indicated that they were employed either full-time or part-time, 22.1% indicated that they were full- or part-time students, and 14.3% indicated that they were currently unemployed.

In this sample, 100% of the patients met criteria for at least one Axis I disorder, and 55.8% of the patients met criteria for more than one Axis I disorder. These diagnoses included social phobia (100%), major depressive disorder (mild, moderate, or severe; 22.1%), specific phobia (0.06%), depressive disorder not otherwise specified (0.04%), adjustment disorder with depressed mood (0.04%), dysthymia (0.03%), hypochondriasis (0.03%), panic disorder with agoraphobia (0.01%), agoraphobia (0.01%), panic disorder without agoraphobia (0.01%), alcohol dependence (0.01%), cannabis dependence (0.01%), polysubstance dependence (0.01%), alcohol abuse (0.01%), cannabis abuse (0.01%), generalized anxiety disorder (0.01%), and pain disorder (0.01%). There was no systematic assessment of Axis II pathology in this sample.

Treatment

The treatment model at the University of Bern outpatient clinic draws on empirical findings from basic psychology, neuropsychology, and various theoretical models as the basis for an integrative framework for empirically supported psychotherapy (Grawe, 1997, 2004). Therapists in this study differentially combined interventions (i.e., cognitive behavioral therapy [CBT], interpersonal, process experiential, systemic) following a case formulation based on consistency theory (Grawe, 2004). Consistency theory is an integrative therapy approach based on empirically supported general change mechanisms. Grawe (1997) articulated the following five change mechanisms that are necessary for psychotherapy: (a) the therapeutic bond, (b) problem activation, (c) resource activation, (d) mastery, and (e) motivational clarification. Accordingly, a variety of empirically validated treatment procedures were used in the therapy as long as their use was justified by the individual needs of the patient to whom the treatment plan was tailored. Due to the naturalistic design of this study, we did not conduct adherence checks; but all therapists in this study received extensive training in Grawe's (2004) treatment and received ongoing supervision and/or consultation from experienced colleagues.

Interpersonal Measures

IIP-C (Alden et al., 1990). Interpersonal problems were assessed using the German version of the IIP-C (Horowitz, Strauss, & Kordy, 1994). The IIP-C assesses interpersonal problems across eight scales emerging around the dimensions of dominance and love: Domineering, Vindictive, Cold, Socially Avoidant, Nonassertive, Exploitable, Overly-Nurturant, and Intrusive (see Figure 1). Respondents are asked to indicate their degree of distress associated with the problem on a 5-point scale ranging from 0 (*not at all*) to 4 (*extremely*). The 64 items are divided into two sections with different stems followed by various interpersonal behaviors. The first stem "It is hard for me to . . ." followed by items describing interpersonal behaviors. Similarly the second stem, "Things you do too much, . . ." is followed by interpersonal behaviors. The alpha coefficients in this sample ranged from .76 for the Intrusive scale to .88 for the Nonassertive scale. The validity of the IIP-C has been sup-

ported in investigations of its relations with various forms of psychopathology (e.g., Kachin et al., 2001; Pincus & Wiggins, 1990; Soldz, Budman, Demby, & Merry, 1993), therapeutic alliance (e.g., Muran et al., 1994), and psychotherapy outcome (e.g., Grosse Holtforth, Lutz, & Grawe, 2006; Maling et al., 1995; Ruiz et al., 2004).

Symptom and Outcome Measures

Bern Subjective Well-Being Inventory (BFW; Grob et al., 1991). The BFW is a 39-item self-report measure that assesses two separate aspects of subjective well-being: satisfaction and ill-being. The components of satisfaction are "positive attitude towards life," "self-value," "depressive mood," and "joy in living." The components of ill-being are "problem awareness" and "somatic complaints and reactions." The BFW uses a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) and has shown adequate test-retest reliability at 2-week follow-up (.75 for total score) and at 2-year follow-up (.50 for total score). The alpha coefficients in this sample ranged from .77 to .91.

Brief Symptom Inventory (BSI; Derogatis, 1993). The BSI is a 53-item abbreviated form of the Symptom Checklist-90 (Derogatis, Lipman, & Covi, 1973) that was designed to assess common psychological symptoms. Each item represents a problem, with respondents indicating the extent to which each item has distressed them over the past week. The BSI uses a 5-point response scale ranging from 0 (*not at all*) to 4 (*extremely*). The measure assesses nine symptom dimensions and includes a global symptom severity index (GSI). We limited our examination to the GSI, as it has better reliability and validity than the nine symptom dimensions. The alpha coefficient in this sample was .92.

Taylor Manifest Anxiety Scale (MAS; Taylor, 1953). The items of the MAS were originally drawn from the Minnesota Multiphasic Personality Inventory (Hathaway & McKinley, 1943). These items were judged by clinicians to be indicative of manifest anxiety. It was developed as a device for selecting subjects for experiments in human motivation and is comprised of 50 true-false questions that assess manifest anxiety. The alpha coefficient in this sample was .84.

Insecurity Questionnaire (U-Bogen; Ullrich & Ullrich, 1990). The English translation of *Unsicherheitsfragenbogen* (U-Bogen) is Insecurity Questionnaire. It was designed to measure six different facets of social anxiety and social competence: fear of failure and critique, fear of contact, being able to demand, not being able to say "no," guilt feelings, and excessive norm orientation. Ratings are made on a 6-point scale ranging from 0 (*strongly disagree*) to 5 (*strongly agree*). This questionnaire is widely used in German-speaking countries (Germany, Switzerland, Austria) for the assessment of social skills and social fears, especially in clinical settings. It has been used to show significant differences between normal controls and socially anxious individuals. The Insecurity Questionnaire, referred to as the U-Bogen, has demonstrated good test-retest reliability at 6-month follow-up with the scales ranging from .71 to .85 (Ullrich & Ullrich, 1990). In this sample, alpha coefficients ranged from .79 to .92 for the six scales.

Retrospective Outcome Measures

Changes in Life Domains Questionnaire (VLB; Itten, 2004). This measure is a change-sensitive instrument constructed to evaluate changes in life satisfaction (e.g., satisfaction with family of origin, current family satisfaction, current social satisfaction, and current therapy satisfaction) over time in psychotherapy. Global ratings range from -4 (*deterioration*) to 4 (*improvement*). We analyzed the current social satisfaction scale at posttreatment. The alpha coefficient in this sample was .82.

Revised Questionnaire of Changes in Experiencing and Behavior (VEV-VW; Willutzki, 1999; Zielke & Kopf-Mehnert, 1978). This measure is a change-sensitive instrument constructed to evaluate change in optimism over time in psychotherapy. For 27-items, the participant is requested to imagine a given point of time (usually pretreatment) and then to rate the changes experienced since then on a 7-point scale ranging from 7 (*significant change*) to 1 (*significant negative change*). An example of an item on the VEV is "In comparison to the beginning of my therapy, I feel more self-confident now." Scores on this measure can range from 27 (maximal change to the worse) to 189 (maximal change to the better). This measure has demonstrated adequate internal consistency and good test-retest reliability (Zielke, 1980). The alpha coefficient in this sample was .87.

RESULTS

Interpersonal Problem Profiles for Social Phobia

Structural summary method for group-level circumplex data. We examined the level and structure of interpersonal problems in patients with social phobia using the structural summary method for circumplex data (Gurtman, 1994; Pincus & Gurtman, 2003; Wright, Pincus, Conroy, & Hilsenroth, 2009). This circumplex analytic approach involves creating a structural summary of the IIP-C profile by modeling the pattern of octant scores to a cosine-curve function. Accordingly, the profile is "decomposed" into two parts: a structured component (cosine function) reflecting the prototype for a circumplex and a deviation component. As shown in Figure 2, the parameters of this curve are its (a) angular displacement, or the peak-shift of the curve, from 0° ; (b) amplitude, or peak value; and (c) elevation, or mean level. The coordinates in the analysis are the polar angles of the octant scales, as shown in the earlier Figure 1; for example, PA (Domineering) at 90° , BC (Vindictive) at 135° , and so forth. The goodness of fit of the modeled curve to the actual scores can be also calculated by an R^2 value, which essentially indicates the degree to which the profile conforms to prototypical circumplex expectations. Gurtman and Balakrishnan (1998) and Wright, Pincus, Conroy, and Hilsenroth (2009) have provided detailed descriptions of the structural summary, procedures for solving for the various parameters, and interpretive guidelines that relate each of these summary features to clinical hypotheses.

The *angular displacement* of the curve indicates the person's interpersonal "central tendency," signifying the individual's "typology" (Leary, 1957) or predominant interpersonal "theme" (Kiesler, 1996). For example, based on the circumplex of Figure 1, an angle of 135° suggests the central interpersonal qualities of distrust, exploitativeness, and vindictiveness (broadly, hostile-dominance); 180° suggests lack of warmth and interpersonal

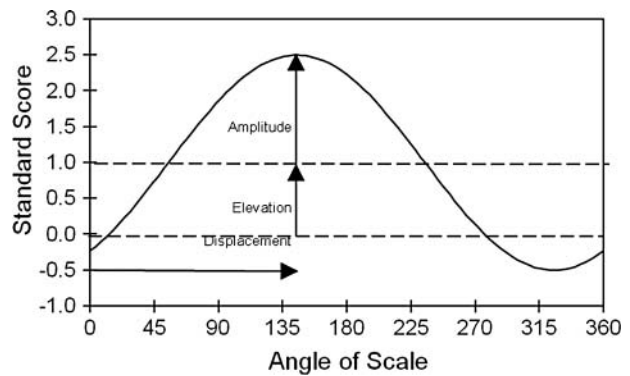


FIGURE 2.—An example of a circumplex structural summary. X-axis = circumplex angle in degrees; Y-axis = standard (z) score on the Inventory of Interpersonal Problems—Circumplex Scales; angular displacement = predominant interpersonal problem; elevation = an index measure of interpersonal distress; amplitude = a measure of profile differentiation.

distance; and so on. *Amplitude* is a measure of profile differentiation. It is viewed as a measure of the profile's "structured patterning," or degree of differentiation, indicating the extent then to which the predominant trend "stands out." An amplitude value of 0 indicates a flat (i.e., undifferentiated) profile; high amplitude indicates a profile with a clear interpersonal peak (and trough). *Elevation*, or the mean level of the curve, is an index of global level of interpersonal distress that an individual reports across all types of interpersonal problems, with high values indicating high overall distress or maladjustment. To the extent that a group's profile exhibits nontrivial amplitude (i.e., is differentiated) and conforms well to circumplex expectations (i.e., $R^2 \geq .70$), the group may be distinctively characterized by the prototypical interpersonal problem pattern indicated by the profile's angular displacement and the level of distress associated with that interpersonal problem pattern as indexed by the profile's elevation (Wright, Pincus, Conroy, & Hilsenroth, 2009).

Using the structural summary method, we calculated an interpersonal profile for the sample of 77 socially phobic patients (see Table 1). The interpersonal profile of this sample indicated that, on average, they are located in the Nonassertive (HI) octant (265.11°), reflecting a submissive interpersonal style. The profile elevation for the whole sample of socially phobic patients was high (1.28), indicating significant levels of interpersonal distress. The structural summary parameters of amplitude (0.82) and R^2 (.85) indicated that this group of socially phobic patients may exhibit interpersonal prototypicality. However, previous research by Kachin et al. (2001) and Kashdan et al. (2009) has suggested that socially phobic individuals may form smaller and more prototypical groups, creating multiple circular distributions with offsetting interpersonal profiles.

Cluster analysis. To test the possibility that multiple profiles exist, we cluster analyzed the socially phobic outpatients' scores on the two dimensions of the IIP-C (dominance and love). We examined two, three, and four cluster solutions. A two cluster solution exhibited the most robust replication across Ward's (1963) hierarchical clustering method and an agglomerative clustering method (SPSS K-Means [KM]; SPSS Inc., 2007) using squared Euclidean distances: 81.2% of Ward's Cluster 1

TABLE 1.—Comparison of the interpersonal subtypes in social phobia on structural summary parameters.

Group	N	Angle	Elevation	Amplitude	R ²
Whole Sample	77	265.11°	1.28	0.82	.85
Cluster 1 (Friendly-Submissive)	32	308.22°	1.27	1.40	.88
Cluster 2 (Cold-Submissive)	45	258.75°	1.45	1.29	.91

Note. Angle = circumplex location of the predominant interpersonal problem in degrees; Elevation = an index measure of interpersonal distress; Amplitude = a measure of profile differentiation; R² = interpersonal prototypicality.

(n = 27) were grouped into KM Cluster 1 (n = 32) and 97.8% of Ward's Cluster 2 (n = 50) were grouped into KM Cluster 2 (n = 45). A chi-square analysis indicated similarity of groups across cluster algorithms, $\chi^2(1) = 51.23, p < .001$. Because SPSS K-Means is especially sensitive to outliers, we examined our data for extreme or highly discrepant cases in each cluster. There were no highly discrepant cases in either cluster; therefore, we did not exclude any cases from subsequent analyses. The KM clusters were retained for all subsequent analyses.

The interpersonal problem profile for Cluster 1 (n = 32) had an elevated peak at 308.22° on the interpersonal circumplex, indicative of friendly-submissive interpersonal problems, and had an elevation of 1.27, indicative of high interpersonal distress (see Table 1). Cluster 2 (n = 45) fell at 258.75° on the interpersonal circumplex, with an elevated peak indicative of cold-submissive interpersonal problems, and had an elevation of 1.45, also indicative of high levels of interpersonal distress. Additionally, both clusters exhibited highly prototypical circumplex profiles (Cluster 1 R² = .88, Amplitude = 1.40; Cluster 2 R² = .91, Amplitude = 1.29). A visual representation of the structural summary is provided in Figure 3. Figure 4 depicts the circumplex locations of the predominant interpersonal problem reported by the whole sample, the friendly-submissive cluster, and the cold-submissive cluster.

Empirical comparisons of clusters using circular statistics. The structural summary method does not allow for between-group statistical comparisons of interpersonal data. Following the methods and guidelines recommended by Wright, Pincus, Conroy, Hilsenroth, et al. (2009), circular means, circular vari-

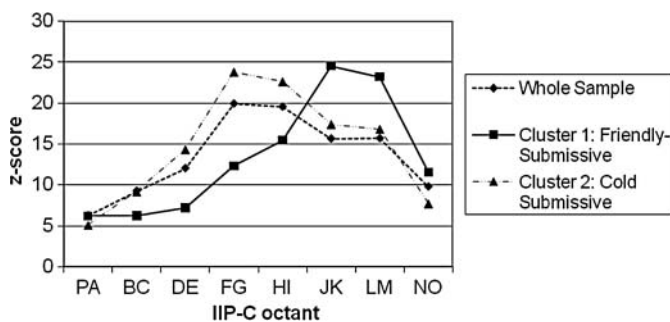


FIGURE 3.—Circumplex structural summary profiles of the interpersonal subtypes in social phobia. Inventory of Interpersonal Problems–Circumplex Scales = IIP-C; X-axis = IIP-C octant; Y-axis = standard (z) score on the IIP-C. PA (Domineering), BC (Vindictive), DE (Cold), FG (Avoidant), HI (Nonassertive), JK (Exploitable), LM (Overly Nurturant), NO (Intrusive).

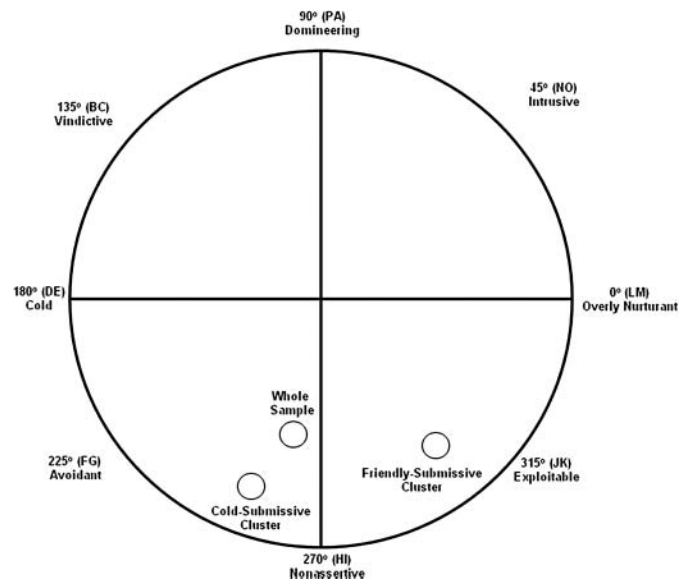


FIGURE 4.—Circumplex locations of the predominant interpersonal problem reported by the interpersonal subtypes in social phobia. Circumplex locations for the whole sample of socially phobic patients (n = 77) located at 265.11°, the Friendly-Submissive cluster (n = 32) located at 308.22°, and the Cold-Submissive cluster (n = 45) located at 258.75°. All circumplex locations are approximate.

ances, and 95% circular confidence intervals (CI) were calculated for each group. The circular mean represents the average of the angular displacements for each individual within the group.¹ The circular variance refers to the dispersion of the angular displacements of individuals within a given group around the circular mean. Circular CIs are calculated as a way of identifying reliable differences in a group's circular means, allowing for a statistical comparison between each corresponding cluster, with the expectation that each pair of CIs will not overlap.

Table 2 presents the circular means, variances, and 95% CIs for the two clusters. The circular mean for the friendly-submissive cluster was 305.68°, with a 95% confidence interval of 282.83° to 328.53°. The circular mean for the cold-submissive cluster was 259.34°, with a 95% confidence interval of 252.10° to 266.58°. Figure 5 provides a visual representation of the circular confidence intervals. It is important to note that the CIs of the two interpersonally based clusters do not overlap, providing further evidence that individuals within each of these clusters are reporting distinct interpersonal problems.

¹ It is important to note that the angular locations of each group as defined by a circular mean will differ slightly from the angular displacement given by the structural summary method. The reason is that circular means are calculated using only angular locations and not the vector length from the origin of the circle. By not taking vector length into account, all angles are accorded equal weight in the equation. The structural summary method accounts for data that not only differ in angular location but also vector length, thus according differing weights to each subject's angle when calculating the overall displacement for the group. In defining groups based on circular statistics, some of the information given by the structural summary method is lost; but what is gained is the ability to statistically compare separate groups (Wright, Pincus, Conroy, Hilsenroth, et al., 2009).

TABLE 2.—Empirical comparisons of the interpersonal subtypes in social phobia using circular statistics.

	Cluster 1 (n = 32)	Cluster 2 (n = 45)
Circular M	305.68°	259.34°
Circular variance	65.96°	24.78°
95% circular CIs	282.83°–328.53°	252.10°–266.58°

Note. CI = confidence interval. All values reported in degrees; circular mean = the average of the angular displacements for each individual within the cluster; circular variance = the dispersion of the angular displacements of individuals within a cluster around the circular mean; 95% circular CIs = 95% circular CIs that identify reliable differences in circular means.

Further Evidence for Interpersonal Subtypes in Social Phobia

As noted earlier, the presence of two interpersonally based clusters provides necessary, but not sufficient, evidence of pathoplasticity in social phobia. We performed additional analyses comparing the interpersonally based clusters to determine the presence of a pathoplastic relationship.

IIP-C means. We conducted a between-subjects multivariate analysis of variance (MANOVA) to determine if there was a main effect for cluster membership on the IIP-C octants, axes, amplitude, and elevation. There was a multivariate effect for cluster membership, $F(1, 75) = 20.40, p < .001, \eta^2 = 0.75$; therefore, we conducted univariate follow-up analyses to examine the differences between individuals in the two interpersonal clusters (see Table 3). Individuals in the cold-submissive cluster reported significantly more interpersonal problems that were

cold, avoidant, and nonassertive; whereas individuals in the friendly-submissive cluster reported significantly more interpersonal problems that were exploitable, overly nurturant, and intrusive. Eta-squared effect sizes for these octant differences ranged from 0.13 to 0.44. Friendly-submissive social phobia patients scored significantly higher on both the dominance, $F(1, 75) = 118.05, p < .001, \eta^2 = 0.61$; and love, $F(1, 75) = 10.42, p = .003, \eta^2 = 0.12$, axes. Importantly, there were no significant differences on the IIP-C parameter of elevation, $F(1, 75) = 7.75, p = .343, \eta^2 = 0.09$, which provides necessary evidence for pathoplasticity.

Pretreatment symptom comparisons. To further provide evidence of interpersonal pathoplasticity, there should be no differences between the two clusters on measures of pretreatment symptom severity. We conducted a between-subjects MANOVA using the BSI GSI and the MAS. There was no main effect for cluster membership, $F(1, 66) = 2.91, p = .231, \eta^2 = 0.02$, on these two measures, thus providing support for interpersonal pathoplasticity in social phobia in this sample.

Gender and diagnostic comorbidity. Finally, the two interpersonally based clusters should not differ in gender composition or diagnostic comorbidities. We conducted chi-square analyses to examine any differences between the clusters on these variables. Chi-square analyses indicated no significant differences in percentage of men and women in each cluster. $\chi^2(1) = 0.11, p = .739$; Cramer’s phi = 0.05. Similarly, chi-square analyses indicated no significant differences in percentage of overall comorbid diagnoses in each cluster, $\chi^2(15) = 18.78, p = .714$; Cramer’s V = 0.29; as well as no significant differences in percentage of major depressive disorder in each cluster, $\chi^2(3) = 1.33, p = .250$; Cramer’s V = 0.24.

Taken together, the identification of two distinct, prototypical interpersonal clusters of social phobia patients that do not differ on pretreatment symptom severity, comorbid diagnoses, interpersonal distress, and gender provides necessary and sufficient evidence supporting interpersonal pathoplasticity in social phobia in this clinical sample. To demonstrate the value of assessing interpersonal problems along with a DSM-IV diagnosis, we compared the friendly-submissive and cold-submissive clusters on a number of relevant outcome variables.

Posttreatment Comparisons of the Interpersonally Based Clusters

Due to the difficulties associated with collecting follow-up data at posttreatment in a naturalistic design, our sample size was significantly reduced to 35 socially phobic patients at posttreatment. There were a comparable number of patients in each cluster to allow for meaningful posttreatment analyses to be conducted (friendly-submissive cluster = 19; cold-submissive cluster = 16). We examined whether there were any systematic differences between socially phobic patients who completed the posttreatment assessments compared to those patients who were not assessed at posttreatment. Chi-square analyses indicated there were no significant differences between assessed and nonassessed patients in terms of gender, $\chi^2(1) = 0.21, p = .644$; Cramer’s phi = 0.05; diagnostic comorbidity, $\chi^2(23) = 24.66, p = .368$; Cramer’s V = 0.13; interpersonal distress,

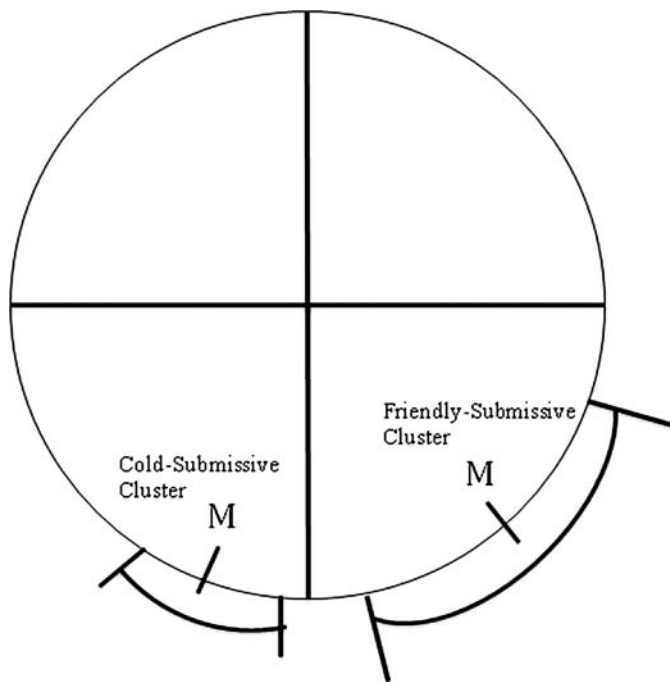


FIGURE 5.—Circular confidence intervals of the interpersonal subtypes in social phobia. Capital Ms indicate circular means for each cluster. Brackets indicate upper and lower bounds of 95% circular confidence intervals. All circumplex locations are approximate.

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TABLE 3.—Mean comparisons of the interpersonally subtypes in social phobia on the IIP-C.

IIP-C	Cluster 1: Friendly-Submissive (n = 32) M (SD)	Cluster 2: Cold-Submissive (n = 45) M (SD)	F(1, 75)	η ²
IIP-C octants				
(PA) Domineering	6.22 (4.28)	5.09 (3.15)	1.03	0.03
(BC) Vindictive	6.26 (4.09)	9.16 (3.75)	0.09	0.00
(DE) Cold	7.22 (5.02)	14.31 (4.94)	22.51**	0.23
(FG) Avoidant	12.34 (5.99)	23.76 (4.58)	57.81**	0.44
(HI) Nonassertive	15.45 (6.12)	22.60 (4.20)	38.15**	0.34
(JK) Exploitable	24.52 (5.93)	17.38 (4.89)	11.15**	0.13
(LM) Over-Nurturant	23.22 (5.45)	16.79 (5.03)	14.74**	0.16
(NO) Intrusive	11.56 (5.96)	7.71 (3.63)	20.94**	0.22
IIP-C axes				
Dominance	-0.19 (0.50)	-1.26 (0.36)	118.05**	0.61
Love	0.18 (0.57)	-0.25 (0.59)	10.42*	0.12
IIP-C profile				
Amplitude	0.72 (0.34)	0.84 (0.34)	4.35	0.06
Elevation	1.04 (0.75)	1.14 (0.45)	7.75	0.09

Note. IIP-C = Inventory of Interpersonal Problems-Circumplex Scales; η² = measure of effect size in analysis of variance.
*p < .01. **p < .001.

χ²(76) = 77.12, p = .446; Cramer's V = 0.24; or cluster membership, χ²(1) = 0.01, p = .942; Cramer's V = 0.18.

Some of the posttreatment outcome measures were completed at both pretreatment and posttreatment (i.e., BSI, MAS, U-Bogen, BFW), and others assessed change retrospectively and were completed only once at posttreatment (i.e., VEV-VW, VLB). As noted earlier, there were no significant pretreatment

differences between the two clusters on the BSI GSI and the Taylor MAS, which provided evidence of pathoplasticity; therefore, we were able to conduct a MANOVA comparing the two clusters on the BSI GSI and the MAS at posttreatment. There was a significant multivariate effect for cluster membership at posttreatment, F(2, 31) = 4.28, p = 0.02, η² = 0.36. Univariate follow-up analyses were conducted (see Table 4). There were

TABLE 4.—Analysis of covariance and analysis of variance comparisons of the interpersonally based clusters on posttreatment measures.

Measure	Cluster 1: Friendly-Submissive (n = 19) M (SD)	Cluster 2: Cold-Submissive (n = 16) M (SD)	F	df	η ²
BSI					
General severity index	0.73 (0.53)	0.49 (0.32)	3.63	1, 33	0.12
MAS					
Total Score	7.58 (5.47)	10.65 (2.63)	4.71*	1, 32	0.13
U-Bogen					
Fear of Failure & Critique	16.58 (3.50)	30.90 (12.23)	21.18***	1, 26	0.45
Fear of Contact	11.74 (11.73)	27.06 (9.87)	6.87**	1, 26	0.21
Not Being Able to Demand	28.11 (7.60)	33.00 (8.85)	5.59*	1, 26	0.18
Not Being Able to Say "No"	14.00 (8.85)	31.94 (8.23)	6.28**	1, 26	0.20
Guilt Feelings	5.42 (4.91)	5.77 (5.00)	0.27	1, 26	0.10
Excessive Norm Orientation	6.00 (4.35)	9.94 (3.75)	6.77**	1, 26	0.21
BFW					
Positive Attitude Toward Life	-3.57 (1.20)	-4.28 (0.96)	4.68*	1, 33	0.12
Problem Awareness	2.38 (0.79)	2.53 (0.71)	0.33	1, 33	0.01
Somatic Complaints & Reactions	1.96 (0.61)	1.72 (0.48)	1.59	1, 33	0.05
Self-Value	-4.09 (0.93)	-4.75 (0.80)	4.98*	1, 33	0.13
Depressive Mood	2.39 (1.10)	2.36 (1.14)	0.01	1, 33	0.00
Joy in Living	-3.92 (1.29)	-4.35 (1.06)	1.18	1, 33	0.04
Total Score	-0.64 (0.61)	-1.13 (0.62)	12.31**	1, 33	0.31
VEV-VW Total Score	160.11 (10.09)	138.19 (21.99)	15.14***	1, 33	0.32
VLB					
Current Social Satisfaction	3.33 (1.26)	1.44 (1.52)	18.53**	1, 19	0.34
IIP-C Elevation	0.09 (0.52)	0.75 (0.80)	8.49**	1, 33	0.21
No. Sessions Attended	24.11 (17.24)	27.13 (18.87)	0.25	1, 33	0.01

Note. BSI = Brief Symptom Inventory; MAS = Taylor Manifest Anxiety Scale; U-Bogen = Insecurity Questionnaire; BFW = Bern Subjective Well-Being Inventory; VEV-VW = Revised Questionnaire of Changes in Experiencing and Behavior; VLB = Changes in Life Domains Questionnaire; IIP-C = Inventory of Interpersonal Problems-Circumplex Scales; Elevation = interpersonal distress as measured by the IIP-C; η² = measure of effect size in analysis of variance.
*p < .05. **p < .01. ***p < .001.

no significant differences between the two clusters on the BSI GSI at posttreatment, $F(1, 33) = 3.63$, $p = .221$, $\eta^2 = 0.12$. On the MAS, friendly-submissive social phobia patients scored significantly lower than cold-submissive social phobia patients at posttreatment, $F(1, 22) = 4.71$, $p = .01$, $\eta^2 = 0.13$.

There were no significant differences between the two clusters at pretreatment on the BFW subscales; therefore, we conducted one-way analyses of variance (ANOVAs) comparing the two clusters on this measure at posttreatment (see Table 4). On the BFW, friendly-submissive social phobia patients reported significantly higher scores on the Positive Attitude Toward Life subscale, the Self-Value subscale, and the total well-being score than cold-submissive social phobia patients at posttreatment. Eta-squared effect sizes for the BFW subscale differences ranged from 0.12 to 0.31.

There were significant differences between the two clusters on the Insecurity Questionnaire (U-Bogen) at pretreatment; therefore, we conducted a between-subjects MANCOVA, entering the posttreatment scores on the six U-Bogen subscales as the dependent variables and entering the pretreatment scores on the six U-Bogen subscales as covariates. There was a significant multivariate effect for cluster membership at posttreatment when controlling for pretreatment scores, $F(7, 20) = 3.50$, $p < .01$; $\eta^2 = 0.55$. Univariate follow-up analyses for each U-Bogen subscale indicated that friendly-submissive social phobia patients scored significantly lower than cold-submissive social phobia patients on the U-Bogen subscales measuring Fear of Failure and Critique, Fear of Contact, difficulties being able to demand (Not Being Able to Demand), difficulties being able to say "no" (Not Being Able to Say "No") and Excessive Norm Orientation (see Table 4). Eta-squared effect sizes for the U-Bogen subscale differences ranged from 0.18 to 0.45.

Table 4 also presents the results of the one-way ANOVAs that were conducted for the two retrospective outcome measures, IIP-C interpersonal distress (e.g., elevation) and the number of psychotherapy sessions attended. On the retrospective measure of optimism (VEV-VW), friendly-submissive social phobia patients reported higher levels of optimism at posttreatment than cold-submissive social phobia patients: $F(1, 33) = 15.14$, $p < .001$, $\eta^2 = 0.32$. Similarly, on the retrospective measure of social satisfaction (VLB), friendly-submissive social phobia patients reported significantly more satisfaction with current social environment at posttreatment than cold-submissive social phobia patients: $F(1, 19) = 18.53$, $p = .003$, $\eta^2 = 0.34$. Friendly-submissive social phobia patients also reported significantly less interpersonal distress at posttreatment than cold-submissive social phobia patients, $F(1, 33) = 8.49$, $p = .004$, $\eta^2 = 0.21$. Finally, there were no significant differences between the two clusters in number of psychotherapy sessions attended: $F(1, 33) = 0.25$, $p = .451$, $\eta^2 = 0.01$.

Overall, the results of the posttreatment analyses indicate that friendly-submissive social phobia patients exhibited significantly lower scores on measures of social anxiety and interpersonal distress and significantly higher scores on measures of well-being and satisfaction at posttreatment than cold-submissive social phobia patients in this clinical sample.

DISCUSSION

In this study, we addressed three major aims. The first aim was to replicate the results of Kachin et al. (2001) in a clinical

sample. When scores on the dimensions of dominance and love on the IIP-C were cluster analyzed, two distinct subgroups of socially phobic patients emerged: a friendly-submissive cluster and a cold-submissive cluster. These two subgroups exhibited highly prototypical circumplex profiles and nonoverlapping circular confidence intervals, suggesting that patients within each of the clusters were reporting distinct interpersonal problems. This result generally replicated the results of Kachin et al. As noted earlier, Kachin et al. found a friendly-submissive cluster and a cold-dominant cluster. In this study, we did replicate the finding of a friendly-submissive cluster, but we found a cold-submissive cluster, suggesting that social phobia patients in this treatment-seeking clinical sample reported more submissive interpersonal problems overall rather than problems associated with dominance. One limitation of the Kachin et al. study was their use of a nonclinical student sample, which may have been higher functioning than a treatment-seeking sample. In this study, we had the distinct advantage of using data from socially phobic outpatients seeking psychotherapy, which suggests that the friendly-submissive cluster and the cold-submissive cluster best represent socially phobic patients who may be exhibiting more psychopathology than their student counterparts.

Once we identified the interpersonally based subgroups, a second aim of this study was to provide evidence for interpersonal pathoplasticity in social phobia. The formation of two interpersonally distinct subtypes of socially phobic patients provides necessary but not sufficient evidence of interpersonal pathoplasticity. Additional analyses revealed that there were no significant differences between the two subtypes on gender, diagnostic comorbidity, interpersonal distress (i.e., IIP-C elevation), as well as on pretreatment symptom measures. These results rule out prominent alternative explanations (i.e., moderators), providing sufficient evidence for interpersonal subtypes in social phobia in this sample.

The third aim of this study was to compare the two interpersonally based subtypes at posttreatment on several outcome measures. The posttreatment comparisons indicated that friendly-submissive social phobia patients exhibited significantly lower levels of social anxiety and significantly higher levels of well-being and satisfaction at posttreatment than cold-submissive social phobia patients. In particular, on a measure of social anxiety (the U-Bogen), friendly-submissive social phobia patients demonstrated lower levels of fear of failure, fear of critique, and fear of contact with others than cold-submissive social phobia patients. Similarly, friendly-submissive social phobia patients were better able to assert themselves through being able to demand and being able to say "no," and they were less likely to excessively adhere to social norms than cold-submissive social phobia patients at posttreatment. The reduced levels of social anxiety found in friendly-submissive social phobia patients were also supported by their significantly lower level of trait anxiety (the MAS) when compared to cold-submissive social phobia patients at posttreatment. On a measure examining psychological well-being (the BFW), friendly-submissive social phobia patients reported significantly more positive attitudes toward life, higher self-value, and higher total well-being than cold-submissive social phobia patients at posttreatment. In addition, friendly-submissive social phobia patients reported higher levels of optimism as well as more satisfaction with current social environment than cold-submissive social phobia patients at posttreatment.

Interestingly, on a measure of general psychopathology (the BSI GSI), there were no significant differences between the two subtypes at posttreatment, suggesting that what might matter the most in the treatment of social phobia is targeting social fears and maladaptive interpersonal behaviors rather than overall level of psychopathology. Similarly, whereas both subtypes reported decreased interpersonal distress at posttreatment, friendly-submissive social phobia patients reported significantly less interpersonal distress at posttreatment than cold-submissive social phobia patients, again suggesting that targeting interpersonal functioning may be especially important in the treatment of social phobia. In addition, there were no restrictions on the number of psychotherapy sessions that patients could attend in this sample; and we found no significant differences in the number of psychotherapy sessions attended by individuals in each cluster, indicating that friendly-submissive social phobia patients achieved significantly more gains over their psychotherapy course than their cold-submissive counterparts while receiving the same amount of treatment. Although it is possible that friendly-submissive social phobia patients in this sample inflated or exaggerated their posttreatment gains to please the therapist and/or assessor, our results indicate that targeting social fears and interpersonal functioning in the treatment of social phobia may be more critical than addressing general psychopathology.

Interpersonal Complementarity and Interpersonal Motives

The posttreatment differences demonstrated by the two subtypes of socially phobic patients might be attributed to interpersonal complementarity and differences in interpersonal motivation. Kiesler (1983) defined *interpersonal complementarity* as the following: “a person’s interpersonal actions tend (with a probability significantly greater than chance) to initiate, invite, or evoke from an interactant complementary responses” (pp. 200–201). These complementary responses are organized around the dimensions of agency and communion. Research on complementarity has shown that typically a behavior and its complement are (a) similar with respect to communion—hostility pulls for hostility and friendliness pulls for friendliness, and (b) reciprocal with respect to agency—dominance pulls for submission and submission pulls for dominance (Carson, 1969; Kiesler, 1983, 1996). Kiesler (1983) suggested that in a self-fulfilling manner, certain types of rigid, maladaptive interpersonal behaviors actually increase the probability that an individual will elicit the type of response from others that reinforces their fears and maladaptive behaviors. Thus, according to this theory, the maladaptive interpersonal behavior of the socially phobic patient would tend to pull others into a restricted range of complementary responses. For example, in this study, friendly-submissive social phobia patients reported problems with being exploitable and overly nurturing toward others. It is likely that others may respond to these patients by being controlling and intrusive. On the other hand, cold-submissive social phobia patients reported problems with being overly cold, avoidant of social interactions, and unable to assert themselves. It is likely that others will respond to these patients by being cold and vindictive.

However, empirical studies of complementarity have found that people often do not exhibit the expected behavioral complementarity (e.g., Horowitz et al., 2006). In particular, these studies

have shown that hostile dominant behavior often begets friendly behavior in response. Horowitz et al. (2006) noted that reactions to behavior are not only guided by the interactional quality of the person’s behavior but also by the suspected motives of the person. For example, a significant other might suspect that their partner wants to protect himself/herself by being hostile and thus continually responds in a warm manner. It is important to note that interpersonal behavior is often ambiguous, and the same behavior can have different underlying motives, thus making it difficult to understand what is “behind” the hostile behavior (Horowitz et al., 2006).

To address the motivational dimension of interpersonal behavior, Horowitz (2004) expanded the principle of complementarity by describing that individuals have interpersonal motives that influence their behavior during interpersonal situations and that these interpersonal motives are also organized around the dimensions of agency and communion. An agentic motive is related to a need for autonomy, whereas a communal motive is related to a need for intimacy. Horowitz argued that over time, individuals develop strategies to satisfy their agentic and communal motives; however, the chronic frustration of interpersonal motives leads to the development of interpersonal problems and distress. Horowitz noted that interpersonal problems and distress can be developed either by excessive reliance on rigid interpersonal strategies or by the development of self-protective interpersonal motives. In their recent reformulation of the interpersonal motivation model, Horowitz et al. (2006) proposed that the desired response to interpersonal behavior is the complementary response; however for a person to perform the desired response, they would need to understand the interpersonal motives that underlie the person’s behavior. This is complicated by the finding that the same interpersonal behavior may serve several motives and that different people may employ different behaviors to satisfy the same motive (Caspar, 2007).

Grosse Holtforth, Pincus, Grawe, and Mauler (2007) sought to clarify the relationship between interpersonal problems and possible underlying interpersonal motivations. Grosse Holtforth et al. (2007) found that high scores on friendly-submissive interpersonal problems were associated with highly valuing interpersonal recognition and dreading separations from others, accusations from others, and being hostile. In contrast, Grosse Holtforth et al. (2007) found that high scores on cold-submissive interpersonal problems were associated with dreading to make oneself vulnerable. Applying these findings to this study, friendly-submissive social phobia patients may be seeking more interpersonal recognition from others by employing rigid and maladaptive interpersonal strategies that focus on being excessively compliant and overly friendly. Friendly-submissive social phobia patients seem to fear displeasing others and fear being ignored or disliked in social situations; therefore, they may strive to be excessively pleasing toward others and may allow others to take charge to be recognized or well liked. On the other hand, cold-submissive social phobia patients seem to be attempting to avoid vulnerability in social situations by employing self-protective interpersonal behaviors that are cold and socially avoidant. Cold-submissive social phobia patients seem to fear being hurt in social situations; therefore, they may be trying to minimize social contact and avoid intimacy and relationships with others as a way of protecting themselves from rejection. However, by rigidly adhering to these maladaptive and self-protective strategies, socially phobic patients often frustrate

the very motive that they are trying to satisfy, thus leading to the creation of interpersonal problems (Grosse Holtforth, Thomas, & Caspar, 2010; Horowitz, 2004; Horowitz et al., 2006). For example, the excessive compliance of friendly-submissive social phobia patients can lead to disrespect, exploitation, boundary crossings, and unwanted intrusion by others; whereas the self-protective minimization of social contact by cold-submissive social phobia patients can lead to a lack of meaningful relationships and rejection by others.

Clinical Implications

The results of this study suggest that using the IIP-C to assess interpersonal functioning may provide additional information to the current *DSM-IV* approach and that traditional psychotherapy may need to be modified to better address specific interpersonal problems and interpersonal motives. As noted earlier, previous research has shown that the *DSM-IV* subtyping system for social phobia based on number of feared situations often leads to subgroups with few qualitative distinctions and little clinical relevance (Turner et al., 1992; Vriends et al., 2007). In this study, we found two distinct subgroups of socially phobic patients who shared a common Axis I diagnosis but differed qualitatively in the types of interpersonal problems reported. Using the IIP-C to subgroup socially phobic patients may represent a potential first step for improving diagnostic classification for this disorder by providing clinically relevant information to augment the current *DSM-IV* approach. It is important to note that in this study, we did not directly compare the validity and utility of the *DSM-IV* approach to the interpersonal approach; therefore, we are not suggesting that the interpersonal approach is better than the *DSM-IV* approach. However, the results of this study do suggest that an interpersonal classification for social phobia may help improve diagnostic clarity and inform treatment conceptualization and planning.

Incorporating an interpersonal problem component in the diagnostic assessment process may lead to a better assessment of interpersonal distress and maladaptive behaviors. For example, interpersonal problems influence the development of the therapeutic alliance, with friendly-submissive patients being able to form an alliance much easier than cold-dominant patients (Muran et al., 1994). Similarly, several research studies have also shown that friendly-submissive interpersonal problems are positively related to psychotherapy outcome, whereas cold-dominant interpersonal problems are negatively related to outcome in both cognitive-behavioral and psychodynamic therapy (Borkovec et al., 2002; Horowitz et al., 1993). The results of this study using Grawe's (1997, 2004) integrative psychotherapy also found differential posttreatment results between two interpersonally based social phobia subgroups. Friendly-submissive social phobia patients reported lower levels of social anxiety and higher levels of psychological well-being than cold-submissive social phobia patients at posttreatment. These differential responses to CBT, psychodynamic therapy, and an integrative treatment may be due to differing interpersonal problems and interpersonal motives (Grosse Holtforth et al., 2010).

Taken together, these results suggest that it may be useful to begin developing and testing guidelines to more effectively treat patients who have similar Axis I pathology but differing interpersonal problems. Pincus and Cain (2008) documented that interpersonal psychotherapy intervention strategies are pluralis-

tic, employing relational, cognitive, behavioral, and interpretive techniques depending on the nature of the patient's interpersonal distress. Anchin (1982) stated that the variable use of intervention techniques should be guided by considerations such as "the precise nature of the patient's maladaptive style, the stage of therapy, the quality of the therapist-patient relationship at any point in treatment, the interpersonal issues thus far examined, and the therapist's own personality characteristics" (p. 322).

Based on the interpersonal tradition, specific interventions could be tailored to target the therapeutic relationship, the patient's interpersonal problem areas, and the patient's interpersonal motivations more effectively (e.g., Alden & Capreol, 1993; Borkovec et al., 2002; Grosse Holtforth & Castonguay, 2005). As noted earlier, the maladaptive interpersonal behavior of the socially phobic patient tends to pull others into a restricted range of complementary responses, which will affect therapist-patient interactions. Therapists might need to avoid responding to patients in complementary ways to avoid reinforcing their maladaptive relational patterns and to stimulate new social learning opportunities within the therapeutic transaction (Anchin & Pincus, 2010; Pincus & Cain, 2008). For example, the aloofness and passivity exhibited by the cold-submissive social phobic may pull for the therapist to respond by being controlling and feeling irritated. However, if the therapist were aware of the cold-submissive patient's maladaptive interpersonal behavior and intense self-protective motivation, then he/she would be able to offer a more empathic and therapeutic response to the patient's maladaptive behavior to avoid reinforcing the patient's fears that others will react with rejection and hostility. On the other hand, the exploitability of the friendly-submissive social phobic may pull the therapist to take advantage of the patient's willingness to please him/her to develop intimacy and receive recognition. If the therapist were aware of the friendly-submissive patient's maladaptive interpersonal behavior, then he/she would avoid a pseudo alliance and instead respond in a way that will facilitate the patient's self-confidence and autonomy.

Similarly, modifications or adjuncts to traditional cognitive-behavioral treatment for social phobia may be needed to target specific interpersonal problem areas (e.g., Alden & Capreol, 1993; Newman, Castonguay, Borkovec, Fisher, & Nordberg, 2008; Newman, Castonguay, Borkovec, & Molnar, 2004). The importance of modifications or adjuncts to traditional CBT for anxiety disorders has been shown in the recent research conducted by Newman et al. (2008, 2004) that has examined the efficacy of an integrative psychotherapy for generalized anxiety disorder (GAD). Their integrative treatment combines traditional CBT with techniques addressing interpersonal problems and emotional avoidance. Newman et al. (2008) found that their integrative treatment resulted in clinically significant change in GAD symptomatology as well as reported interpersonal problems with continued gains during the 1-year follow-up. These results highlight the importance of designing treatment modifications or adjuncts that address interpersonal problems to improve treatment outcome for all patients.

The results of this study further underscore the importance of assessing interpersonal problems as part of the treatment planning process to ensure that the interpersonal problems being experienced by the patient, as well as their symptoms on Axis I, are being adequately targeted in the treatment. For example, based on the previous research of Alden and Capreol (1993),

it is likely that both friendly-submissive and cold-submissive social phobia patients would benefit from exposure to feared social situations. However, greater attention must be given to how each subgroup of socially phobic patients would respond to other important CBT interventions such as social skills and intimacy skills training. Given their motives to achieve intimacy and gain interpersonal recognition, friendly-submissive social phobia patients may be more responsive to relational skills training. In contrast, cold-submissive socially phobic patients who are using self-protective motives to avoid being hurt by others may initially react poorly to interventions that are aimed at maximizing social closeness. These patients may be more prone to treatment noncompliance or dropout to protect themselves from rejection by others. Treatment with cold-submissive socially phobic patients may need to initially focus on interventions that increase treatment compliance and decrease fears about social rejection before a more skills-based approach could be useful.

Limitations and Future Directions

One major limitation of our study was the use of a naturalistic design, which limits our available data and the conclusions that we can draw about psychotherapy outcome between the two clusters of socially phobic patients. We were fortunate in this study to collect data as part of the day-to-day functioning of an outpatient psychotherapy clinic; however, we were not able to systematically assess Axis II pathology or compare pretreatment Axis II pathology between the interpersonal subtypes, which may have been particularly relevant to our investigation of interpersonal pathoplasticity. We were also unable to assess adherence to Grawe's (2004) integrative treatment; therefore, we are not able to make any conclusions about the consistency of the therapy in this study. However, as noted earlier, therapists in this study were experienced with Grawe's (2004) treatment model and received ongoing supervision and/or consultation. Although the naturalistic design of our study does limit the internal validity of our treatment outcome data, we believe that we were given the unique opportunity to examine treatment as usual at an outpatient psychotherapy clinic, thus maximizing our external validity and the generalizability of our results to other clinics that follow an integrative treatment approach for social phobia.

A second limitation was our small sample size and our significant reduction of patients from pretreatment to posttreatment, which limits our statistical power and external validity. As noted earlier, over 50% of the patients in this study did not complete the posttreatment assessments due to a number of factors. As such, caution should be used when interpreting our posttreatment results due to limited statistical power. However, although this reduction of patients does limit our statistical power and the external validity of our results, we believe that we had the unique opportunity to examine clinical data from an outpatient psychotherapy clinic, thus maximizing the generalizability of our results to other clinics treating socially phobic patients. Future studies should include a larger sample of patients to ensure adequate statistical power and employ more stringent methods of collecting follow-up data. A third possible limitation of our study is our reliance on an exclusively German and Swiss population, which may restrict the generalizability of our results to other cultures, given our use of interpersonal constructs. However, Heinrichs et al. (2006) noted that the clinical presentation

of social phobia is often consistent between German-speaking cultures and the United States as well as other European countries. Similarly, interpersonal subtypes in GAD have been replicated across both English- and German-speaking populations (e.g., Salzer et al., 2008). Taken together, these findings suggest that our results may generalize across the United States and Europe; however, future research should examine interpersonal subtypes in social phobia across cultures.

A fourth possible critique of our study is our use of the more traditional forms of cluster analysis (Ward's, 1963, method and SPSS K-Means). These more traditional procedures are not based on a statistical model and do not use model fit coefficients, leaving the possibility that our number of clusters may not be the best fit to the data. Future replication of this study should use more advanced methods such as latent profile analysis. In addition, our small sample size is problematic for SPSS K-Means. The K-Means procedure assumes a large sample size (usually > 200), and we analyzed 77 outpatients; therefore, our cluster analysis results should be interpreted with caution. However, despite these limitations, it is important to note that our cluster analysis did generally replicate Kachin et al. (2001); and although we did not use latent profile analysis, we did examine the robustness of the cluster solution across multiple algorithms and determined that our classification was consistent across methods. Finally, although this study was limited to self-report data, future research on interpersonal pathoplasticity should employ methods that code for interpersonal processes in vivo during psychotherapy sessions to assess how the two subtypes may be responding to their therapist and the therapy over the course of psychotherapy.

In conclusion, our results generally replicated Kachin et al. (2001) by finding two interpersonally distinct subtypes of socially phobic patients in a clinical sample. We found that the subtypes's distinct interpersonal problems were not due to other moderators such as gender, symptom severity, and diagnostic comorbidity. Our results suggested that the two distinct subgroups of socially phobic patients differentially responded to the same treatment; therefore, future research should begin to investigate psychotherapy techniques that will effectively target the maladaptive interpersonal behavior of both friendly-submissive and cold-submissive social phobia patients. Accounting for distinct interpersonal motives underlying maladaptive behavior patterns may improve diagnosis, treatment planning, and therapeutic outcome.

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