Differences Between Self- and Peer Ratings of Interpersonal Problems

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ABSTRACT

Interpersonal problems are frequently a source of distress for individuals and the focus of psychotherapeutic interventions. A self-report circumplex measure, the Inventory of Interpersonal Problems-Circumplex (IIP-C), was modified for this investigation to acquire peer report data on interpersonal problems to help assess the validity of self-reported problems. The peer report data replicated the circumplex model of the IIP-C and when general interpersonal distress was removed (by ipsatizing), the data suggested that peers observed more domineering, vindictive, and emotionally cold types of problems than self-report (ipsatized) data. Individuals reported more other-pleasing, overly nurturant types of problems than peers observed. The findings both support the validity of the IIP-C and describe discrepancies in self- versus peer reported interpersonal problems. The results also describe differences in the general interpersonal distress factor accounted for by ipsatizing versus removing the general factor from unipsatized data. The results describe implications for clinicians and others assessing interpersonal problems.

Interpersonal problems are difficulties a person has when interacting with others that result in social relationship problems and personal distress. Interpersonal problems are often the reason individuals seek psychotherapy (Gurtman, 1996; Horowitz, Rosenberg, & Bartholomew, 1993; Horowitz & Vitkus, 1986), and maladaptive interpersonal characteristics are involved in all personality disorders described in the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV;* American Psychiatric Association, 1994). A self-report measure, the Inventory of Interpersonal Problems (IIP; Horowitz, Rosenberg, Baer, Ureno, & Villasenor, 1988) was developed as a tool to help clinicians objectively assess social relationship difficulties. The IIP was designed to help identify the most common interpersonal problems for which individuals seek psychotherapeutic help, to provide an objective measure of therapeutic progress with interpersonal problems, and to differentiate interpersonal distress from distress due to noninterpersonal concerns (e.g., obsessions, somatic symptoms, eating problems; Horowitz et at, 1988).

Items for the IIP were derived from intake interviews of a large sample of psychotherapy patients who described complaints involving interpersonal problems (Horowitz, 1979). Some of the 127 items begin with the phrase "It is hard for me to" (e.g., trust people), and the rest of the items begin with the phrase "These are things I do too much" (e.g., I fight with other people too much). All items are rated on a Likert scale ranging from 0 *(not at all)* to 4 *(extremely).*

The IIP was found to be helpful in distinguishing interpersonal distress from noninterpersonal distress (identified using the Symptom Checklist-90-Revised, SCL-90-R; Derogatis, 1994; an inventory of primarily psychiatric symptoms; Horowitz et al., 1988). Interpersonal problems with assertiveness identified on the IIP were found to be more responsive to psychotherapy than problems with intimacy (Horowitz et al., 1988). Problems with assertiveness were discussed as involving more observable, overt behaviors that might more readily become a focus of therapy, "whereas intimacy involves covert private experience" (e.g. feelings of closeness, trust and commitment;

Horowitz et al., 1988, p. 891). Observers (including clinicians) may readily detect problems with assertiveness while problems with intimacy requiring trust and emotional vulnerability may be more difficult to observe.

Factor analyses of the IIP have resulted in the identification of a general *complaint* factor on which all items load positively (Alden, Wiggins, & Pincus, 1990; Horowitz et al., 1988), although Gurtman (1996) suggested that this general factor needed to be more carefully conceptualized, perhaps as interpersonal distress, competence, or adjustment. A study examining the IIP general factor found significant associations with negative affect, self-deception, and symptom severity as well as the IIP total score, supporting a substantive interpretation of general interpersonal distress (Tracey, Rounds, & Gurtman, 1996). The general factor was not confounded by social desirability or other biasing aspects of responding (Tracey et al., 1996).

When this general factor is removed, two interpersonal factors (or bipolar dimensions) that have been described as dominance (versus submission) and affiliation (versus emotional coldness) were identified (Alden et al., 1990). These two factors matched the principal axes of circumplex models of interpersonal characteristics that have a well established tradition in personality assessment described by theorists such as Leary (1957), Kiesler (1983, 1996) and Wiggins (1979). The identification of these orthogonal factors led to the development of a circumplex version of the IIP using circumplex methodologies and factor analysis (Alden et al., 1990).

The circumplex version of the IIP (the IIP-C; Alden et al., 1990) resulted in a 64-item measure with the same item format as the IIP and with eight subscales arrayed in a circle consistent with the geometric properties of the circumplex. The eight subscales of the IIP-C assess a broad array of interpersonal difficulties described as domineering, vindictive, cold, socially avoidant, nonassertive, exploitable, overly nurturant, and intrusive. Although interpersonal circumplex measures and their interpretation have been described in detail elsewhere (Gurtman, 1992a; 1993; Wiggins, Phillips, & Trapnell, 1989), the order of the 8IIP-C

problem scales around the principal axes of dominance and affiliation is such that those scales immediately adjacent to each other on the circumplex are well correlated, scales at right angles to each other are uncorrelated, and scales at opposite sides of the circumplex describe a negatively correlated bipolar dimension. The IIP-C scales displayed adequate internal consistency (with coefficient alpha's ranging from .72 to .85), were factorially convergent with other circumplex models of interpersonal behavior, and were stable in content and structure across three university samples (Alden et al., 1990).

The circumplex factor structure of the IIP-C has been replicated and construct validity has been supported through demonstrating convergent and discriminant associations with a number of interpersonal constructs, including dependency (Pincus & Gurtman, 1995), empathy and narcissism (Gurtman, 1992a), trust (Gurtman, 1992b), loneliness and nonassertiveness (Gurtman, 1993), and perfectionism (Hill, Zrull, & Turlington, 1997). In addition to the construct validity derived from self-report data, the IIP-C was also associated with therapist report indexes of therapeutic alliance, therapists' ratings of client assets, liabilities, and maladaptive personality functioning (Gurtman, 1996). The IIP-C has also been used in a number of other investigations of clinical issues and other personality constructs (Alden & Capreol, 1993; Alden & Philips, 1990; Horowitz et al., 1993; Pincus & Wiggins, 1990; Soldz, Budman, Demby, & Merry, 1993).

Experiences of interpersonal problems measured by the IIP-C rely on self-report data. The present investigation involved the modification of the IIP-C to create a peer-report version of the measure in order to compare self-reports with observer reports of interpersonal problems. The authors of the original IIP developed an observer version of the measure used by clinicians to rate psychotherapy patients, but no comparison between self- and observer ratings was reported (Horowitz et al., 1988). Another study (Bartholomew & Horowitz, 1991) sampled self- and friend IIP ratings and found them both associated with attachment style but did not compare the self- and observer IIP data directly. One study that assessed self- and peer IIP-C ratings as a part of an investigation of a

model of interpersonal interactions found both self- and peer ratings fit the theoretical circumplex model, and that self- and peer ratings were convergent with each other with respect to the circumplex angular locations of the eight scales (Wagner, Kiesler, & Schmidt, 1995). However, direct comparisons of self- and peer ratings have not been described and rater agreement remains an unexplored concern with IIP (Wagner et al., 1995).

This investigation was designed to extend evidence regarding the validity of self-reported interpersonal problems using the IIP-C through comparisons with peer reported interpersonal problems. The accuracy of self-reports of interpersonal problems has implications for the use of the IIP-C (and IIP) by both clinicians and researchers. By sampling both self- and peer reports, we were interested in assessing the fit of peer report data to the circumplex model and in identifying any interpersonal problems that might be minimized or exaggerated through self-report. There were significant differences in self- and peer reports of interpersonal problems and the authors wish to contribute to the validity data for the IIP-C by describing the nature of these differences.

Method

Participants and Procedure

The study involved 214 pairs of undergraduates (150 women, 64 men). The mean age of the sample was 19.1 years $(SD = 1.6$ years). Of the sample, 95% were Caucasian, and 10 participants were African American, Asian, or Other. Participants were recruited through a psychology department volunteer pool. Self-report participants responded to a set of questionnaires in groups of 20 to 30. After completing questionnaires, each self-report participant was asked to recruit a roommate or friend known for at least 6 months as a peer observer participant. Self-report participants were given the peer IIP-C measure to take to their friend along with an addressed envelope for returning the questionnaire. Data were collected in the middle of the second semester of the academic year so that roommates of participants would be expected to have ample opportunity to observe

the interpersonal patterns measured by the peer version of the IIP-C. The peers were acquainted with self-report participants for an average of 38.3 months *(SD =* 46.5 months). Self-report participants were given credit for participation only if their peer returned the peer report measure anonymously by campus mail.

IIP-C

The IIP-C is a 64-item, self-report inventory reflecting a wide range of interpersonal problems. The eight scales and sample items are described in Table 1.

Peer IIP-Circumplex

A peer report version of the IIP-C was developed in order to obtain observer ratings of the interpersonal problems experienced by participants in the study. The peer version used the same 64 items as the original IIP-C. However, with the peer version the respondents were asked to rank each item in terms of how distressing each problem was for their friend (rather than for themselves). Examples of items include the following: "It is hard for my friend to trust other people," and "My friend fights with other people too much." The authors of the IIP and the IIP-C recommended *ipsatizing* data derived from these instruments to remove the influence of the *general interpersonal distress factor* by expressing scores as a deviation from the respondent's mean score across all items. However, for this investigation both unipsatized and ipsatized data sets were analyzed to consider some interesting difficulties encountered when attempting to remove the general factor through the procedure of ipsatizing.

Table 1
Inventory of Interpersonal Problems Circumplex Scales

Scale	Description of problem	Sample
PA	Controlling, manipulating, expressing aggression toward, and trying to change others.	"I am too aggressive toward other people."
BC	Distrust and suspicion of others. Inability to care about others' needs and happiness.	"I want to get revenge against other people too much."
DE	Inability to express affection toward and to feel love for another person, difficulty in making long term commitments to others, and an inability to be generous to and forgive others.	"It is hard for me to feel close with people."
FG	Feeling anxious and embarrassed in the presence of others and difficulty initiating social interactions.	"It is hard for me to ask others to get together socially with me."
HI	Difficulty making needs known to others, and an inability to be firm and assertive.	"It is hard for me to tell a person to stop bothering me."
JK	Difficulty in feeling and expressing anger for fear of offending others, gullible, and readily taken advantage of.	"I am too easily persuaded by other people."
LM	Trying too hard to please others, too generous, trusting, caring, and permissive in relationships.	"I try to please other people too much."
NO	Inappropriately self-disclosing, attention-seeking, find it difficult to spend time alone.	"I want to be noticed too much."

Note. Adapted from "Construction of Circumplex Scales for the Inventory of Interpersonal Problems" by L. E. Alden, J. S. Wiggins, and A. L. Pincus, 1990, *Journal of Personality Assessment, 55*, p. 528. Copyright © 1990 by Erlbaum. Adapted by permission. PA = Domineering; BC = Vindictive; DE = Cold; FG = Socially Avoidant; HI = Nonassertive; JK = Exploitable; LM = Overly Nurturant; NO = Intrusive.

Results

The means and standard deviations for raw unipsatized self- and peer ratings of the eight IIP-C subscales are presented in Table 2. In order to facilitate comparisons with normative data on interpersonal problems, the IIP-C scale scores were standardized using sample means and standard deviations provided by J. S. Wiggins (personal communication, November 10, 1991) from the large sample used to create the IIP-C scales (Alden et al., 1990). The standardized IIP-C selfand peer report scale scores, along with ipsatized scale scores are reported in Table 3. In the present sample, average self-rated scores for the IIP-C scales were not significantly different *(p > .05)* from the norms derived by Alden and colleagues (1990). Zero-order correlations between self- and peer-rated unipsatized and ipsatized IIP-C subscales as well as internal consistency estimates for the ipsatized data are presented in Table 4. The patterns of intercorrelations among the subscales within self- and peer data sets approximated expected correlations of scales within a circumplex

structure with adjacent scales correlated, scales at right angles essentially uncorrelated, and scales opposite each other on the circumplex inversely correlated (see Alden et al., 1990; Gurtman, 1992a, 1996).

Table 2

Raw Means (M) and Standard Deviations (SD) of Unipsatized Self- and Peer Ratings for the Inventory of Interpersonal Problems–Circumplex (IIP-C) Scales

Scale	IIP-Self		IIP-Peer	
	M	SD	M	SD
LM	12.35	5.41	8.25	5.67
NO	9.08	5.52	6.32	5.03
PA	7.22	5.48	5.94	5.30
BC	6.90	5.27	6.17	5.25
DE	7.25	5.80	6.51	5.90
FG	9.68	5.82	7.62	6.15
HI	11.81	6.81	9.55	6.98
JK	12.12	5.86	9.29	6.01

Note. $N = 214$. LM = Overly Nurturant; NO = Intrusive; PA = Domineering; BC = Vindictive; DE = Cold; FG = Socially Avoidant; HI = Nonassertive; JK = Exploitable.

Circumplex analyses and analyses of differences among the self- and peer rated IIP items were conducted in three phases. Initially, data from self and peer ratings of the IIP scales (IIP-Self and IIP-Peer) were evaluated separately to assess the fit of each response set to the theoretical circumplex structure. Next, the two response sets were analyzed together to assess the convergence of IIP-Self and IIP-Peer scales to a single circumplex structure. Finally, differences between IIP-Self and IIP-Peer ratings were examined using multivariate analysis of variance (MAN OVA) and canonical discriminant analyses. For each phase of the analyses, both unipsatized scale scores (standardized) and ipsatized scale scores (which reflected individual item deviations from scale means within each respondent) were used. Both unipsatized and ipsatized scores were examined to compare the general components extracted from IIP-Self and

IIP-Peer data, to show that the circumplex structure from unipsatized data is similar to that of ipsatized data, and to point out the different self and peer IIP rating differences observed for unipsatized and ipsatized responses.

Table 3
Standardized Means (M) and Standard Deviations (SD) of Unipsatized and Ipsatized Self- and Peer Ratings for the Inventory of Interpersonal Problems–Circumplex (IIP-C) Scales

| | Unipsatized | | | | Ipsatized | | | |
| | IIP-Self | | IIP-Peer | | IIP-Self | | IIP-Peer | |
Scale	M	SD	M	SD	M	SD	M	SD
LM	0.06	1.00	−0.70	1.05	2.57	3.36	0.79	3.88
NO	0.06	1.09	−0.49	0.99	−0.43	4.06	−1.09	3.84
PA	0.07	1.08	−0.18	1.05	−2.17	3.85	−1.42	3.98
BC	−0.02	1.13	−0.18	1.13	−2.37	3.73	−1.25	3.52
DE	−0.06	1.05	−0.19	1.07	−2.16	3.96	−0.97	3.82
FG	−0.17	0.96	−0.49	0.95	0.11	3.86	0.03	3.74
HI	−0.02	1.32	−0.46	1.35	2.04	4.51	2.00	4.41
JK	−0.01	1.02	−0.50	1.05	2.57	3.96	1.91	3.92

Note. N = 214. IIP-C data were standardized (to Z-score scale) using means and standard deviations provided from normative data gathered by Alden, Wiggins, and Pincus, 1990. LM = Overly Nurturant; NO = Intrusive; PA = Domineering; BC = Vindictive; DE = Cold; FG = Socially Avoidant; HI = Nonassertive; JK = Exploitable.

Table 4
Correlations and Internal Consistency of Self- and Peer Ratings for the Inventory of Interpersonal Problems–Circumplex (IIP-C) Scales

| | | r[a] | | Coefficient alpha[b] | |
Scale	Angle	Unipsatized	Ipsatized	IIP-Self	IIP-Peer
LM	0	.23	.21	.81	.81
NO	45	.20	.44	.75	.77
PA	90	.33	.52	.79	.83
BC	135	.28	.38	.80	.83
DE	180	.29	.42	.82	.85
FG	225	.39	.54	.82	.86
HI	270	.36	.38	.87	.90
JK	315	.29	.36	.78	.80

Note. N = 214. LM = Overly Nurturant; NO = Intrusive; PA = Domineering; BC = Vindictive; DE = Cold; FG = Socially Avoidant; HI = Nonassertive; JK = Exploitable.
[a]r = correlation of IIP-Self and IIP-Peer. [b]Ipsatized.

Separate Analyses of IIP-Self and IIP-Peer

Unipsatized Data

Using principal components analyses, a general component and two interpersonal components were extracted from the unipsatized IIP-Self and IIP-Peer data (using interscale correlation matrixes with all principal components analyses). The components of the self-rated IIP accounted for 82% of the variability in responses, and the components of the peer rated data accounted for 87% of the variability in responses. In each case, the initial components were subjected to a Procrustes procedure so that the general component was left unrotated and the interpersonal components (affiliation and dominance) were rotated to minimize the difference between the empirical and theoretical circumplex structure of the IIP (e.g., Wagner et al., 1995). This procedure produced three essentially uncorrelated components from each data set with only minimal correlations between the interpersonal components of the liP-Self data, $r = -.14$, and IIP-Peer data, $r = -.18$. For IIP-Self data, the general component accounted for 37% and the interpersonal components accounted for 45% of the variability. In comparison, the general component of the IIP-Peer data accounted for 54%, and the interpersonal components accounted for 33% of the response variability. Scores for the rotated components were produced for each respondent in each data set, and intercorrelations of the general and interpersonal components from the two data sets were computed. The general components showed a small intercorrelation, $r = .16$, and the IIP-Self and IIP-Peer components reflecting the Cold-Overly Nurturant (DE-LM; affiliation) and Domineering-Nonassertive (PA-HI; dominance) interpersonal dimensions showed expected relationships, $r = .48$, and $r = .54$, respectively. Figure 1 shows the circumplex structure of the interpersonal components of the unipsatized IIP-Self and IIP-Peer response sets.

The fit of the interpersonal components from each unipsatized data set was assessed using methodology suggested in previous reports (e.g., Fisher, Heise, Bohnrstedt, & Lucke, 1985; Wagner et al., 1995). Table 5 shows the actual angle of placement, discrepancy from the ideal angle of placement, and vector length for each subscale of

the IIP-Self and IIP-Peer. For self-rated subscales, the average magnitude of angular discrepancy was *4.4°* with $A^* = 0.9763$, where A^* reflects the average cosine of angular discrepancy between actual and ideal subscale placement (see Fisher et al., 1985). A test of the null hypothesis that the actual and ideal circumplex structures are independent yielded $X^2(1) = 3.81$, $p <: .051$, indicating that it is reasonably unlikely that the actual angular placement of IiP-Self subscales differs from the ideal IIP circumplex (note that $X^2(1) = (2n)^{.5}(A^*)^2$, where $n = 8$; see Fisher et al., 1985, for discussion). The coefficient of variation (computed as the ratio of vector length SD of .07 to average vector length of .67) for IIP-Self vector lengths was 0.10, which is reasonably small indicating the relative circularity of scale placement (see Figure 1; see Fisher et al., 1985). For peer rated subscales, the average magnitude of angular discrepancy was *3.6°,* with $A^* = 0.9799$, which yielded $X^2(1) = 3.84$, $p < .050$, indicating that it is unlikely that the actual angular placement of IIP-Peer subscales differs from the ideal IIP circumplex. The coefficient of variation for IIP-Peer vector lengths was 0.06 (average vector length .58, $SD = .03$) indicating the relative circularity of scale placement (see Figure 1).
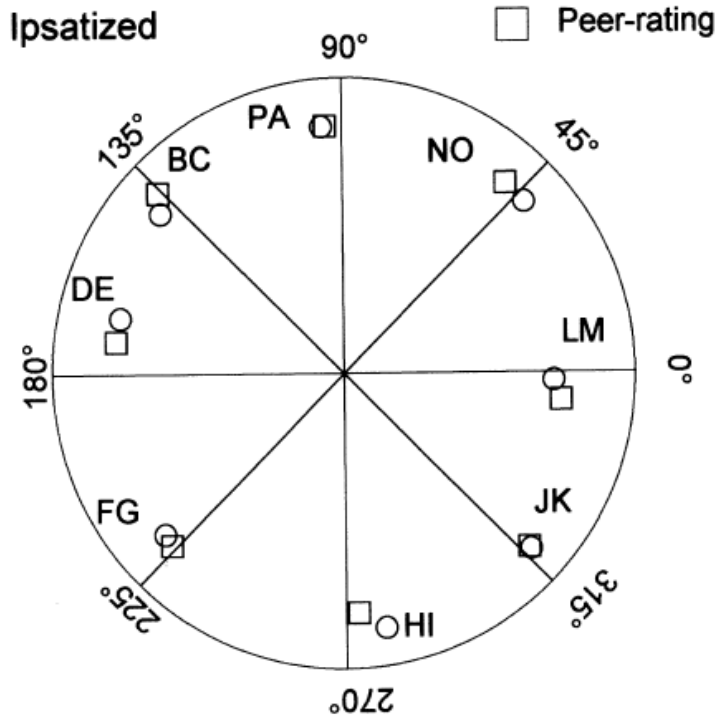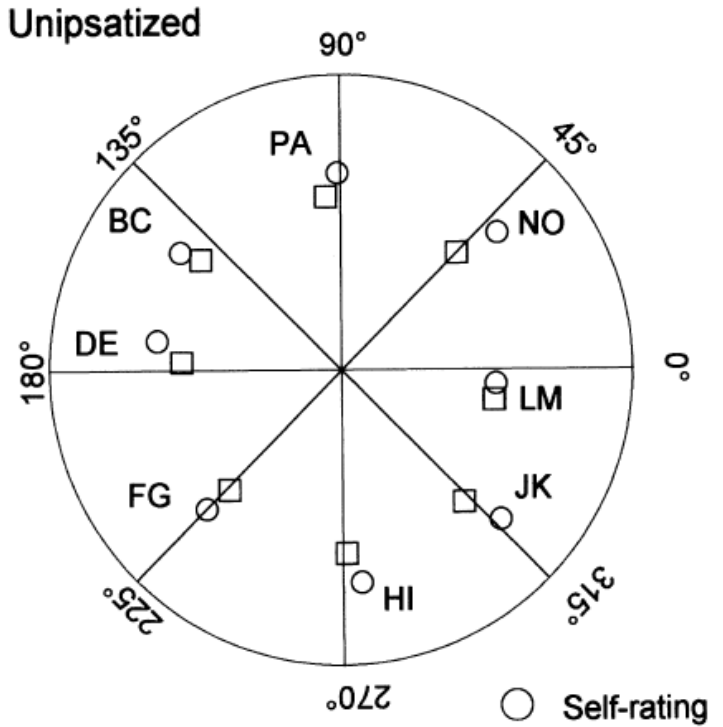
Figure 1. Component plots of the separate interpersonal components of the unipsatized and ipsatized Inventory of Interpersonal Problems as rated by individuals (liP-Self) and their peers (liP-Peer). Note that the analyses that yielded the component locations and vector lengths were conducted separately for liP-Self and liP-Peer data. LM = Overly Nurturant; NO = Intrusive; PA = Domineering; BC = Vindictive; DE = Cold; FG = Socially Avoidant; HI = Nonassertive; JK = Exploitable.

Table 5

Target and Actual Angles and Vector Length From Separate Analyses for Circumplex Components of Unipsatized Ratings of the Inventory of Interpersonal Problems (IIP) Scales

	Self-rating				Peer rating		
Scale	Target angle	Actual angle	Discrepancy	Vector length	Actual angle	Discrepancy	Vector length
LM	0	355	−5	.67	349	−11	.53
NO	45	41	−4	.68	45	0	.56
PA	90	91	1	.64	95	4	.60
BC	135	144	9	.66	142	7	.60
DE	180	171	−9	.72	177	−3	.55
FG	225	225	0	.74	226	1	.56
HI	270	275	5	.53	271	1	.62
JK	315	317	2	.71	313	−2	.61

Note. Circumplex components are the second and third components extracted by analyses of IIP-Self and IIP-Peer data; in each case the first component was general. The vector lengths are the square root of the communality of each scale with the two circumplex components. LM = Overly Nurturant; NO = Intrusive; PA = Domineering; BC = Vindictive; DE = Cold; FG = Socially Avoidant; HI = Nonassertive; JK = Exploitable.

Ipsatized Data

Separate principal components analyses of the ipsatized self- and peer rated IIP subscales each yielded two components that were subjected to a Procrustes rotation to minimize deviation from the theoretical circumplex structure. For both the IIP-Self data and IIP-Peer data, the interpersonal components accounted for 68% of response variability, and intercorrelations of the components for the DE-LM (affiliation) and PA-HI (dominance) components were -0.09 for self-ratings and -0.17 for peer ratings. IIP-Self and IIP-Peer components reflecting the DE-LM and PA-HI interpersonal dimensions showed relationships identical to those observed for unipsatized data, $r = .49$, and, $r = .54$, respectively. Figure 1 shows the circumplex structure of the interpersonal components of the ipsatized IIP-Self and IIP-Peer response sets.

Statistics reflecting the fit of the ipsatized data sets to the ideal IIP circumplex are shown in Table 6. For self-rated subscales, the average magnitude of angular discrepancy was 5.20 with $A^* = 0.9708$, which yielded $X^2(1) = 3.77$, $P < .052$, indicating that it is relatively unlikely that the actual angular placement of IIP-Self subscales differs from the

ideal IIP circumplex. The coefficient of variation for IIP-Self vector lengths was 0.06 (average vector length .82, $SD = .05$) indicating the relative circularity of scale placement (see Figure 1). For peer rated subscales, the average magnitude of angular discrepancy was 3.80 with $A^* = 0.9792$, which yielded $X^2(1) = 3.84$, $P < .050$, indicating that it is unlikely that the actual angular placement of IIP-Peer subscales differs from the ideal IIP circumplex. The coefficient of variation for IIP-Peer vector lengths, from the ipsatized data, was 0.05 (average vector length .83, $SD = .04$) indicating the relative circularity of scale placement (see Figure 1).

Table 6

Target and Actual Angles and Vector Length From Separate Analyses for Circumplex Components of Ipsatized Ratings of the Inventory of Interpersonal Problems (IIP) Scales

	Self-rating				Peer rating		
Scale	Target angle	Actual angle	Discrepancy	Vector length	Actual angle	Discrepancy	Vector Length
LM	0	358	−2	.72	353	−7	.75
NO	45	43	−2	.85	49	4	.85
PA	90	95	5	.84	94	4	.84
BC	135	139	4	.83	136	1	.88
DE	180	166	−14	.79	172	−8	.79
FG	225	221	-4	.82	224	−1	.83
HI	270	279	9	.87	273	3	.81
JK	315	317	2	.87	317	2	.86

Note. Circumplex components are the only two components extracted from the ipsatized IIP-Self and IIP-Peer data. The vector lengths are the square root of the communality of each scale with these components. LM = Overly Nurturant; NO = Intrusive; PA = Domineering; BC = Vindictive; DE = Cold; FG = Socially Avoidant; HI = Nonassertive; JK = Exploitable.

Overall, the circumplex structure of the ipsatized IIP-Self and ipsatized IIP-Peer response sets was very similar to the circumplex structure of the interpersonal components of the respective unipsatized response sets (see Figure 1). The only notable difference between the circumplex structures extracted from the ipsatized and unipsatized data was reflected by the average vector lengths. Unipsatized IIP-Self vector length averaged 0.16 shorter than the average ipsatized vector length, and the average unipsatized IIP-Peer vector length was 0.25 shorter than the ipsatized IIP-Peer vector length (see Tables 4 and 5). The short vector lengths for placement of unipsatized scales on the

circumplex coincide with the large proportion of variability accounted for by the general component ofthe IIP-Self (37%) and IIP-Peer (54%) data.

Combined Analyses of IIP-Self and IIP-Peer

Unipsatized Data

The convergence of the self- and peer rated IIP subscales was examined for unipsatized data by analyzing the IIP-Self and IIP-Peer response sets together. Using principal components analyses, an initial attempt was made to extract and rotate three components; however, this extraction yielded an unacceptable solution with highly inter-correlated, $r > .50$, components that were devoid of theoretical meaning. The best principal components solution for the present data yielded two general and two interpersonal components, which together accounted for 76% of the variability in responses. These four components were subjected to a Procrustes procedure so that the general components were left unrotated and the interpersonal components (DE-LM, affiliation and PA-HI, dominance) of both self- and peer rated scales were rotated to minimize the difference between the empirical and theoretical circumplex structure of the IIP (e.g., Wagner et al., 1995). This procedure produced a self, general component and a peer, general component that exhibited a small intercorrelation, $r = .16$, and the rotation yielded two expected interpersonal components that were relatively orthogonal, $r = .09$; neither general component was appreciably intercorrelated with the interpersonal components, $r = -.02$ to $-.11$. The peer, general component accounted for 27% and the self, general component accounted for 19% of the variability, whereas the interpersonal components, formed from both self- and peer subscales, accounted for 14% (affiliation, DE-LM) and 16% (dominance, PA-HI) of the response variability. Figure 2 shows the circumplex structure of the interpersonal components of the convergence analysis of unipsatized IIP-Self and IIP-Peer response sets.
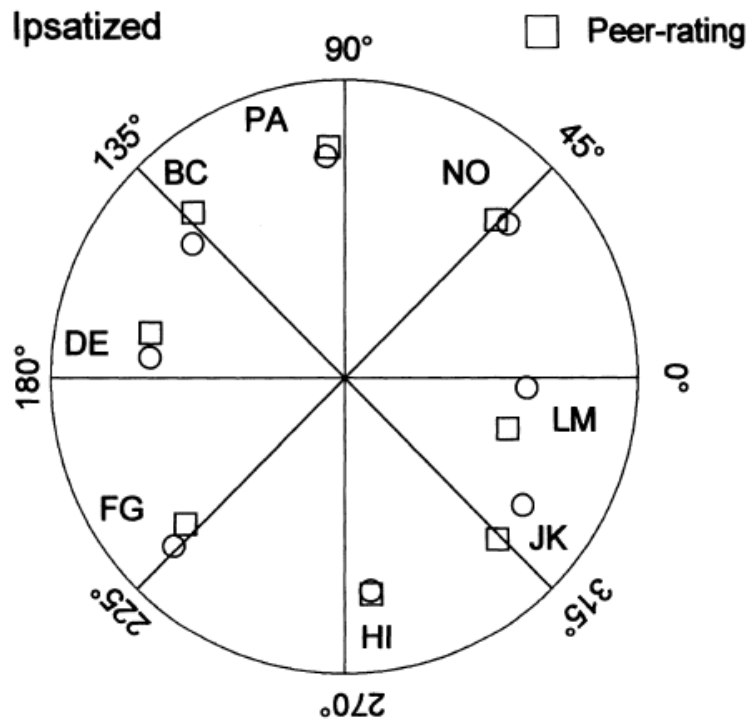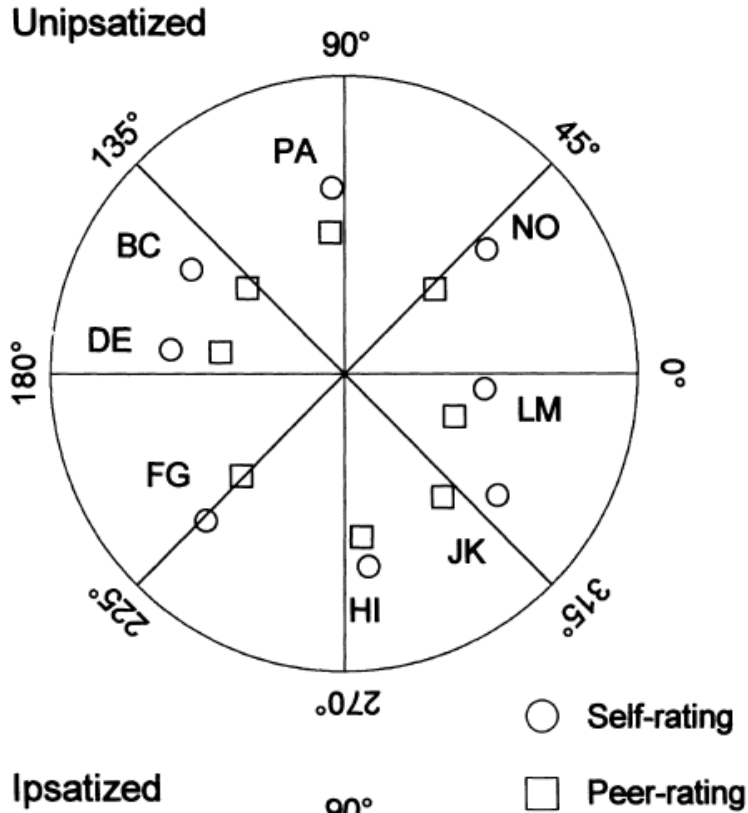
Figure 2. Component plots of the combined interpersonal components of the unipsatized and ipsatized Inventory of Interpersonal Problems as rated by individuals (IIP-Self) and their peers (IIP-Peer). Note that the IIP-Self and IIP-Peer data were combined for the analyses that yielded the component locations and vector lengths. LM = Overly Nurturant; NO = Intrusive; P A = Domineering; BC = Vindictive; DE = Cold; FG = Socially Avoidant; HI = Nonassertive;JK = Exploitable.

Statistics reflecting the fit of the interpersonal components from the combined self- and peer rated unipsatized data sets to the ideal IIP circumplex are shown in Table 7. For self-rated subscales, the average magnitude of angular discrepancy was 6.0 °with $A^* = 0.9667$, which yielded $X^2(1) = 3.74$, $p < .053$, indicating that it is relatively unlikely that the actual angular placement of IIP-Self subscales differs from the ideal IIP circumplex. The coefficient of variation for IIP-Self vector lengths of 0.10 (average vector length .62, $SD = .06$) is small, indicating the relative circularity of scale placement (see Figure 2). For peer rated subscales, the average magnitude of angular discrepancy was 7.0°, with $A^* = 0.9611$, which yielded $X^2(1) = 3.69$, $p < .055$, indicating that it is relatively unlikely that the actual angular placement of IIP-Peer subscales differs from the ideal IIP circumplex. The coefficient of variation for IIP-Peer vector lengths, from the unipsatized data, of 0.12 (average vector length .4 7, $SD = .05$) is small, indicating the relative circularity of scale placement (see Figure 2). Overall, the convergent circumplex structure of the combined unipsatized IIP-Self and IIP-Peer response sets was similar to the circumplex structure derived separately for each data set (see Tables 4 and 6).

Ipsatized Data

A single principal components analysis of the combined self- and peer rated IIP subscales yielded two components that were subjected to a Procrustes rotation to minimize deviation from the theoretical circumplex structure. The interpersonal components of the combined ipsatized data accounted for 52% of the response variability in the response set and produced components for the DE-LM (affiliation) and PA-HI (dominance) dimensions with an intercorrelation of -.12. Figure 2 shows the circumplex structure of the interpersonal components of the ipsatized IIP-Self and IIP-Peer response sets from a single analysis.

Statistics reflecting the fit of the combined ipsatized data set to the ideal IIP circumplex are shown in Table 7. For self-rated subscales, the average magnitude of angular discrepancy was 4.70 with $A^* = 0.9736$, which yielded $X^2(1) = 3.79$,

$p < .052$, indicating that it is relatively unlikely that the actual angular placement of IIP-Self subscales differs from the ideal IIP circumplex. The coefficient of variation for IIP-Self vector lengths of 0.08 (average vector length .72, $SD = .06$) is small indicating the relative circularity of scale placement (see Figure 2). For peer rated subscales, the average magnitude of angular discrepancy was 6.0°, with $A^* = 0.9667$, which yielded $X2(1) = 3.74$, $p < .053$, indicating that it is also fairly unlikely that the actual angular placement of IIP-Peer subscales differs from the ideal IIP circumplex. The coefficient of variation for IIP-Peer vector lengths, from the combined ipsatized data, of 0.09 (average vector length .72, $SD = .06$) is small, indicating the relative circularity of scale placement (see Figure 2). Overall, the circumplex structure of the combined ipsatized IIP-Self and IIP-Peer response set was similar to the circumplex structure of the interpersonal components of the unipsatized response set (see Figure 2). As with the separate analyses of IIP-Self and IIP-Peer data, the only notable difference between the interpersonal structures of unipsatized and ipsatized responses was reflected in average vector lengths, with the unipsatized lengths 0.10 and 0.25 shorter for the unipsatized subscales when compared with the ipsatized IIP-Self and IIP-Peer subscale placements, respectively (see Tables 6 and 7).

Table 7

Target and Actual Angles and Vector Length From Single Analysis for Circumplex Components of Unipsatized Self and Peer Ratings of the Inventory of Interpersonal Problems (IIP) Scales

	Self-rating				Peer rating		
Scale	Target angle	Actual angle	Discrepancy	Vector length	Actual angle	Discrepancy	Vector length
LM	0	354	−6	.48	339	−21	.48
NO	45	41	−4	.64	43	-2	.44
PA	90	94	4	.63	96	6	.43
BC	135	146	11	.63	139	4	.49
DE	180	172	−8	.60	170	−10	.55
FG	225	226	1	.68	224	−1	.53
HI	270	277	7	.65	276	6	.40
JK	315	322	7	.66	309	-6	.42

Note. Circumplex components are the third and fourth components extracted from IIP-Self and IIP-Peer data; the first two components were general. The vector lengths are the square root of the communality of each scale with the two circumplex components. LM = Overly Nurturant; NO = Intrusive; PA = Domineering; BC = Vindictive; DE = Cold; FG = Socially Avoidant; HI = Nonassertive; JK = Exploitable.

Table 8
Target and Actual Angles, and Vector Length From Single Analysis for Circumplex Components of Ipsatized Self- and Peer Ratings of the Inventory of Interpersonal Problems (IIP) Scales

Scale	Self-rating				Peer rating		
	Target angle	Actual angle	Discrepancy	Vector length	Actual angle	Discrepancy	Vector length
LM	0	357	-3	.62	343	-17	.58
NO	45	43	-2	.76	46	1	.74
PA	90	95	5	.68	94	4	.78
BC	135	139	4	.73	133	-2	.76
DE	180	174	-6	.73	167	-13	.68
FG	225	224	-1	.75	222	-3	.73
HI	270	277	7	.58	277	7	.73
JK	315	325	10	.74	314	-1	.75

Note. Circumplex components are the only two components extracted from the ipsatized IIP-Self and IIP-Peer data. The vector lengths are the square root of the communality of each scale with these components. LM = Overly Nurturant; NO = Intrusive; PA = Domineering; BC = Vindictive; DE = Cold; FG = Socially Avoidant; HI = Nonassertive; JK = Exploitable.

Canonical Discriminant Analyses of IIP-Self and IIP-Peer

Although separate and combined analyses of IIP-Self and IIP-Peer data sets indicate similar fit of these rating sets to the theoretical circumplex structure of the IIP as well as convergence of the self- and peer ratings of interpersonal problems, there were differences in the mean level of the IIP subscales that depended upon the rater in the present data set. The differences in ratings for the IIP subscales were also dependent upon the nature of the data that was analyzed. Specifically, IIP subscales that were endorsed at different levels by self- and peer raters were not the same for unipsatized and ipsatized data when analyzed using a MAN OVA followed by canonical discriminant analysis.

For unipsatized data, which ostensibly retains individual differences in the form of a general complaint component, results of the MANOVA indicated that individuals rated interpersonal problems differently than their peers, $F(8, 206) = 10.88, p < .0001$ (see Figure 3). A canonical discriminant analysis revealed that the five IIP subscales important to this difference were LM (.92 correlation with the canonical variable), NO (.56), FG (.44), HI (.58), and JK (.74) (see Table 9 for

separate IIP-Self and IIP-Peer correlations with the canonical variable). For each of these scales, self-reported ratings of measured problems were higher than peer reported ratings (see Figure 3), and the self-ratings yielded a higher mean value on the canonical variable (-0.01, $SD = 1.23$) than the peer ratings ($M = -0.93$, $SD = 1.22$). The overall mean for the canonical combination of the IIP subscales was -0.47 ($SD = 1.31$), and reported levels of PA, BC, and DE problems did not contribute appreciably to the difference between self- and peer ratings.
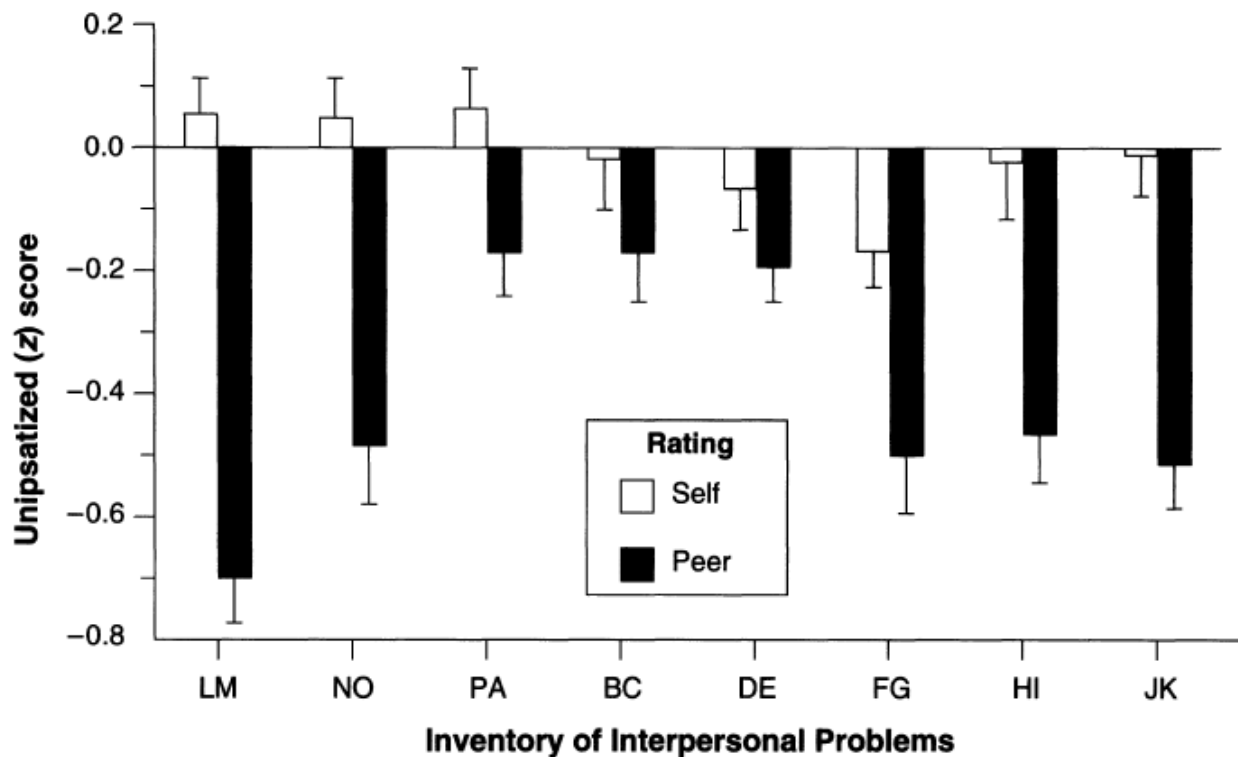

Figure 3. Unipsatized (standardized M = 0, $SD = 1$) means for self- and peer ratings of the subscales of the Inventory of Interpersonal Problems (IIP). There is a significant multivariate difference between self- and peer ratings (p " .0001), which is driven primarily by the LM, NO, FG, HI, and JK subscales. The error bars show the standard error of the mean $(N = 214)$. LM = Overly Nurturant; NO = Intrusive; PA = Domineering; BC = Vindictive; DE = Cold; FG = Socially Avoidant; HI = Nonassertive; JK = Exploitable.

Table 9

Correlations of Self- and Peer Ratings for the Inventory of Interpersonal Problems–Circumplex (IIP-C) Scales With the Canonical Variable Capturing the Difference Between the Rating Sets

	Unipsatized r^a		Ipsatized r^a	
Scale	IIP-Self	IIP-Peer	IIP-Self	IIP-Peer
LM	.90	.93	−.76	−.81
NO	.50	.55	−.32	−.20
PA	.00	.09	.51	.59
BC	−.12	.09	.64	.73
DE	−.15	.13	.66	.63
FG	.34	.48	.02	−.01
HI	.54	.60	−.28	−.31
JK	.68	.76	−.48	−.52

Note. N = 214. LM = Overly Nurturant; NO = Intrusive; PA = Domineering; BC = Vindictive; DE = Cold; FG = Socially Avoidant; HI = Nonassertive; JK = Exploitable.
[a] r = Correlation with canonical variable for each data set.

For ipsatized data, from which individual differences in the form of a general complaint component have been removed, MANOVA results indicate that individuals rated interpersonal problems differently than their peers, $F(7, 207) = 7.20$, $p < .0001$ (see Figure 4). A canonical discriminant analysis revealed that the five IIP subscales important to this difference were LM (-.80 correlation with the canonical variable), PA (.55), BC (.69), DE (.65), and JK (-.50); see Table 9 for separate IIP-Self and IIP-Peer correlations with the canonical variable}. For the LM and JK subscales, self-reported ratings were higher than peer reported ratings; however, self reported levels of problems related to the PA, Be, and DE octants were lower than those reported by peers (see Figure 4). Overall, the self-ratings yielded a lower mean value on the canonical variable (-1.00, SD = 1.22) than the peer ratings (M = -0.31, SD = 1.34). The overall mean for the canonical combination of the ipsatized IIP subscales was -0.65 (SD = 1.32), and reported levels of NO, FG, and HI problems did not contribute appreciably to the difference between self- and peer ratings.
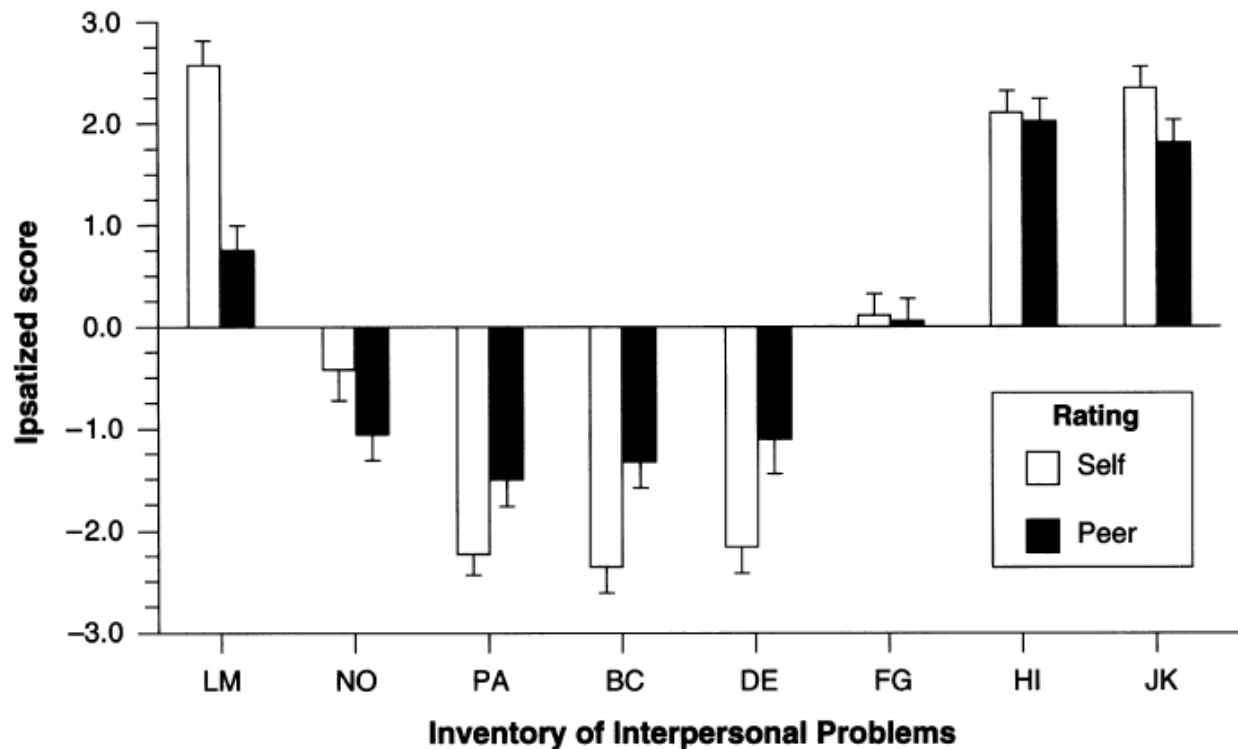
Figure **4.** Ipsatized (standardized within subjects) means for self- and peer ratings of the subscales of the Inventory of Interpersonal Problems (IIP). There is a significant multivariate difference between self- and peer ratings (p <: .0001), which is driven primarily by the LM, PA, BC, DE, and JK subscales. The error bars show the standard error of the mean *(N* = 214). LM = Overly Nurturant; NO = Intrusive; PA = Domineering; BC = Vindictive; DE = Cold; FG = Socially Avoidant; HI = Nonassertive; JK = Exploitable.

Discussion

The results of this investigation support the fit of both self- and peer report IIP-C data to the theoretically expected circumplex model and also describe differences between the interpersonal problems endorsed by individuals and their peers. Principal components analyses of self-report data produced a general component (with unipsatized data) and two interpersonal components (with both unipsatized and ipsatized data), which replicated the principal circumplex axes of affiliation and dominance. When these components were plotted, they reflected the evenly spaced circumplex array of eight interpersonal scales expected from the circumplex model (Alden et al., 1990; Gurtman, 1995; Horowitz et al., 1988). Peer report IIP-C data also fit the circumplex model well,

whether ipsatized or not, consistent with the results of Wagner and colleagues (1995).

When the unipsatized self- and peer report scales were combined for principal components analyses, two separate general components were produced: one for self-report and the other for peer report data. The lack of correlation between these two general components reflected orthogonal variance in the self- and peer response sets. The substantive interpersonal distress reflected in the general component appeared independent for self- versus peer observations of interpersonal problems. Peers also generated more variance accounted for in the general component in both the combined and the separate principal components analyses.

The combined self- and peer report components analyses (both unipsatized and ipsatized) also resulted in two interpersonal components that replicated the principal circumplex axes of affiliation and dominance and the well spaced array of interpersonal scales expected with a circumplex measure. All of the principal components analyses, regardless of ipsatization, indicated that both self- and peer report data fit the circumplex model well, although self-reported interpersonal distress appeared independent of peer reported interpersonal distress.

When examining the relative variance accounted for in the principal components analyses of unipsatized compared with ipsatized data, we found that the interpersonal components accounted for 23% (self-report) and 35% (peer report) more variance for the separate ipsatized components than the unipsatized components. Similarly, the combined ipsatized self- and peer interpersonal components accounted for 22% more variance than the combined unipsatized self- and peer interpersonal components. We suggest the interpersonal components accounted for more variance in the ipsatized data because ipsatizing removed less general interpersonal distress variance than is removed by extracting a general interpersonal distress component from the unipsatized data. Vector lengths for the interpersonal scales in the unipsatized data were also shorter than the ipsatized scales (see Figures 1 and 2) due to the removal of the general component variance, some of which

contributed to the interpersonal scales in the ipsatized data. The ipsatized interpersonal components included some mix of the general component of interpersonal distress and the specific interpersonal problems measured. The unipsatized interpersonal components accounted for less variance after the general interpersonal distress component was removed but may reflect more specific indexes of interpersonal problems.

Although both self- and peer report data fit the circumplex model, significant mean differences between self- and peer ratings of interpersonal problems were observed. The specific interpersonal scales reflecting differences varied according to whether the data were unipsatized or ipsatized. The differences in mean IIP-C scale scores between unipsatized and ipsatized data reflect the mingling of general interpersonal distress, which differs for self- versus peer reports, with the interpersonal problem scales for the unipsatized data (the general interpersonal distress component is included in these scales). The ipsatized and unipsatized results were both reported, in part, to illustrate the differences in results using the different data formats. Future researchers may also wish to consider the nature of self- and peer report differences for both data formats as investigators using the IIP have reported some inconsistency by using both ipsatized (in many studies, as recommended by Alden et al., 1990, and Horowitz et al., 1988) and unipsatized data.

The differences in self- versus peer reported IIP-C scales for unipsatized data were found in lower peer ratings on the following five IIP-C scales: LM, NO, FG, HI, and JK (see Figure 3). Examples of these problems included the following; trying too hard to please others, attention-seeking, socially avoidant, nonassertive, and submissive interpersonal problems. The raw (unipsatized) IIP-C data were difficult to interpret as they reflected some combination of general interpersonal distress and specific interpersonal problems in scale scores. The differences indicated that peers reported fewer of these interpersonal problems (and some accompanying general distress) than individuals reported for themselves.

After ipsatizing the data and removing a portion of variance due to general interpersonal distress, individuals reported more LM and JK and fewer PA, BC, and DE interpersonal problems than their peers reported (see Figure 4). Because these data were ipsatized, the self- versus peer report differences could be interpreted to reflect the specific interpersonal problems involved with less dilution from general interpersonal distress. The LM and JK problems that individuals endorsed more than their peer observed included the following; being taken advantage of by others, being gullible, having difficulty feeling angry at others, trying too hard to please others, trusting others too much, and being overly concerned with the welfare of others. Individuals appeared to be more self-conscious of, or more willing to disclose, these more other-pleasing, approval-seeking, friendly submissive interpersonal difficulties than peers reported. These problems also involve more private, less observable experiences that an individual may be more self-conscious of than a friend would have the opportunity to observe.

Unlike the raw data, the ipsatized results also indicated that peers reported more DE, BC, and PA interpersonal problems, relative to other problems, than self-report ipsatized data. These IIP-C scales reflected the following kinds of problems or difficulties: being close to others, showing affection, getting along with others, trusting others, not caring about others' problems, fighting with others, trying to control others, being aggressive with others, and being too independent. When general interpersonal distress was removed, peers appeared to be more aware of, or more willing to report, these more antagonizing, emotionally distancing, hostile-dominant behaviors than individuals reported for themselves. These behaviors were not flattering or socially desirable and might have been more difficult for individuals to recognize or endorse when reflecting upon their own interpersonal experience.

To summarize the self- and peer report differences, the peer report IIP-C data suggested that individuals may underreport hostile-dominant kinds of interpersonal problems. Individuals also appeared to be more aware of their other-pleasing, approval-seeking, submissive behaviors than peers observe. These findings may reflect meaningful

differences in the experience of interpersonal problems from the perspective of self-report versus peer observation. Individuals may be truly less aware of the impact of their more domineering, vindictive, and emotionally distancing behaviors on others. Clinicians may need to be alert to this potential blind spot in the self-awareness some individuals may experience with hostile-dominant kinds of interpersonal problems. Conversely, individuals may be more acutely concerned with their other-pleasing, approval-seeking interpersonal behaviors than peers (and clinicians) appreciate.

The validity of the self-report IIP-C measure was supported through correlations with the peer report IIP-C scales and through the replication of the circumplex structure with the peer report scales. Although the findings of this investigation are limited in generalizability due to the restricted demographic characteristics of the sample, these data might alert future investigators using the IIP-C to be aware of the possibility of individuals under-representing hostile-dominant kinds of problems and perhaps being more self-conscious of their friendly submissive interpersonal problems. Future research might be directed to further explore the nature of the general interpersonal distress and specific interpersonal problem differences observed between self- and peer ratings. Additional research might also explore the clinical validity of ipsatizing IIP-C data to remove general interpersonal distress and further consider differences observed in accounting for general interpersonal distress by ipsatizing data versus removing the general component from unipsatized data.

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