

## Trust, Distrust, and Interpersonal Problems: A Circumplex Analysis

Michael B. Gurtman  
University of Wisconsin—Parkside

This study examined the self-reported interpersonal problems of individuals characteristically high or low in interpersonal trust. The interpersonal circumplex served as a guiding framework for assessing and interpreting these problems. As expected, extreme distrust was generally related to a symmetrical pattern of distress, with a peak at the hostile-dominant octant. Extreme high trust, on the other hand, was not associated with gullibility or with related interpersonal difficulties, supporting arguments that trust is essentially distinct from gullibility and exploitability. The Interpersonal Trust Scale and the Mach IV scale, the study's principal measures of trust, tap varieties of trust differing in their blends of dominance and hostility, leading to different problem patterns for extreme scorers.

Defined interpersonally, trust is an individual's characteristic belief that the sincerity, benevolence, or truthfulness of others can generally be relied on (e.g., Rotter, 1967; Wrightsman, 1974). Although the capacity for trust in others is widely assumed to be the hallmark of social adjustment (e.g., Erikson, 1963), there has been surprisingly little research relating trust as an individual difference variable to personal difficulties (cf. Rotter, 1971, 1980; Wrightsman, 1974). Several studies of varying quality have indeed found modest relationships between measures of trust and those of maladjustment and distress (e.g., Comrey & Schiebel, 1983; Folkman, Lazarus, Gruen, & DeLongis, 1986; Garske, 1976; Grace & Schill, 1986; Rotter, 1971, 1980; Schill, Toves, & Ramanaiah, 1980; Wrightsman, 1974). However, for the most part, the interpersonal problems of individuals who are at the extremes of the trust continuum have been unexplored, and the trust construct itself has remained largely undifferentiated from seemingly similar interpersonal constructs, such as cynicism, gullibility, and misanthropy (Stack, 1978).

The purpose of the present research is to examine the interpersonal difficulties and complaints of individuals who are extreme for trust and for distrust, but to do so in the theoretically meaningful context of the interpersonal circumplex (e.g., Kiesler, 1983; Wiggins, 1979, 1982). The circumplex model offers a powerful, organizing framework for understanding interpersonal constructs, although, until recently, it was rarely

used to its full potential (e.g., Pincus & Wiggins, 1990a; Wiggins & Broughton, 1985; Wiggins & Pincus, 1989; Wiggins, Phillips, & Trapnell, 1989). Thus, before considering trust and distrust specifically, I will briefly discuss the domain of interpersonal problems and how interpersonal characteristics, including problems, are represented within a circumplex structure.

### Interpersonal Problems and Circumplex Measurement

Interpersonal problems refer to self-described difficulties that individuals have in relating to others and that cause or are related to significant distress (Horowitz, Rosenberg, Baer, Ureno, & Villasenor, 1988). Although the idea that personal difficulties often take interpersonal forms is not new (e.g., Horney, 1945; Leary, 1957; Sullivan, 1953), until the work of Horowitz and his colleagues (e.g., Horowitz, 1979; Horowitz et al., 1988; Horowitz & Vitkus, 1986) there was little effort to systematize such problems in a way that could be useful to researchers. However, through a careful analysis of complaints voiced during intake interviews, Horowitz and his co-workers have been able to identify, distill, and catalog a large set of self-reported problems having decidedly interpersonal themes (e.g., assertiveness, control, dependency, intimacy, and sociability). As problems in interpersonal inhibition and excess, these difficulties are often expressed, in their essential form, as "it is hard for me to do *X*" or "I do *Y* too much" (e.g., "It is hard for me to join in groups" or "I try to control other people too much"). The culmination of Horowitz et al.'s work has been the development of a 127-item Inventory of Interpersonal Problems, the IIP, that provides researchers with a tool for measuring the extent and nature of these self-reported difficulties (Horowitz et al., 1988). Table 1 shows the empirically derived problem categories of the IIP, along with sample items.

It is perhaps not surprising that a principal-components analysis of the IIP has yielded two major factors underlying the relationships among interpersonal complaints (Horowitz et al.,

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Correspondence concerning this article should be addressed to Michael B. Gurtman, Department of Psychology, University of Wisconsin—Parkside, Kenosha, Wisconsin 53141.

Table 1  
*Inventory of Interpersonal Problems (IIP): Scales and Sample Items*

Measure	Octant	Angle	Sample item
<b>IIP subscale</b>			
Hard to Be Assertive (21 items)			It is hard for me to say "no" to other people
Hard to Be Sociable (18 items)			I am too easily persuaded by other people
Hard to Be Submissive (10 items)			It is hard for me to join in on groups
Hard to Be Intimate (12 items)			I keep other people at a distance too much
Too Responsible (12 items)			It is hard for me to do what another person wants me to do
Too Controlling (10 items)			I argue with other people too much
			It is hard for me to have someone dependent on me
			It is hard for me to put somebody else's needs before my own
			I feel too responsible for solving other people's problems
			I put other people's needs before my own too much
			I try to control other people too much
			I manipulate other people too much to get what I want
<b>IIP-C subscale</b>			
Domineering	PA	90°	It is hard for me to take instructions from people who have authority over me
Vindictive	BC	135°	I am too independent
Cold	DE	180°	It is hard for me to be supportive of another person's goals in life
Socially Avoidant	FG	225°	I am too suspicious of other people
Nonassertive	HI	270°	It is hard for me to show affection to people
Exploitable	JK	315°	It is hard for me to feel close to other people
Overly Nurturant	LM	0°	It is hard for me to introduce myself to new people
Intrusive	NO	45°	I feel embarrassed in front of other people too much
			It is hard for me to let other people know what I want
			It is hard for me to be self-confident when I am with other people
			I am too gullible
			I let other people take advantage of me too much
			It is hard for me to set limits on other people
			I am overly generous to other people
			It is hard for me to keep things private from other people
			I tell personal things to other people too much

Note. IIP-C = Version of IIP scaled to produce a circle of interpersonal problems.

1988). These two factors, namely, Love (i.e., hostility vs. friendliness) and Dominance (i.e., dominance vs. submissiveness) are recurrent in most analyses of interpersonal behavior (e.g., Carson, 1969; Foa, 1961; Kiesler, 1983; Leary, 1957; Wiggins, 1982). Considerable evidence suggests that interpersonal characteristics, including behaviors and traits, can be meaningfully represented in a two-dimensional space bisected by the orthogonal factors of Love and Dominance and that the variety of interpersonal characteristics can, in some sense, be considered "blends" or combinations of these two basic factors (for reviews, see, e.g., Kiesler, 1983; Wiggins, 1982). When ordered by similarity, these characteristics assume a circular arrangement, or a *circumplex* (Guttman, 1954; Wiggins, Steiger, & Gaelick, 1981). Figure 1 shows a circumplex model of interpersonal traits, as proposed by Wiggins (1979; Wiggins et al., 1989), including the angular locations of each of the eight octants of the circle.

As a complement to Wiggins' interpersonal trait circumplex, Alden, Wiggins, and Pincus (1990) have recently developed a 64-item version of the IIP that is scaled to produce a circle of interpersonal problems (see also Wiggins et al., 1988). The bottom of Table 1 presents the eight octant categories of this measure, labeled the *IIP-C*, along with sample items. Note that the octants of this circumplex (e.g., PA, BC, and DE) are the interpersonal problem counterparts of the trait categories shown in Figure 1. Nevertheless, the problem circumplex differs from

the trait circumplex in an important respect not evident in the two-dimensional view afforded by Figure 1: Octant scores on the IIP-C are positively correlated with one another, even those that are interpersonally opposed. As noted by Horowitz et al. (1988), this reflects the presence of a General Distress/Complaint factor that pervades all problem categories and thus adds common variance.<sup>1</sup>

### Trust and the Circumplex

Because trust is an interpersonal construct, it should be possible to locate trust and its opposite, distrust, within the circumplex of the interpersonal domain. It is noteworthy that the theoretical locations of trust and distrust are not invariant across circumplex models. For example, both Kiesler (1983) and Wig-

<sup>1</sup> The distress factor can be removed by ipsatizing scores, as recommended by Alden, Wiggins, & Pincus (1990). However, whether ipsatized or nonipsatized scores are used does not affect the angular location of variables (persons or scales) on the circumplex. The distress component was not removed here because it was considered vital to the purposes of this study; it was analyzed separately, as an elevation component in a multivariate profile analysis. On a related note, it will be shown later that the circumplex structure of problems emerges even when scores are left in their raw form.

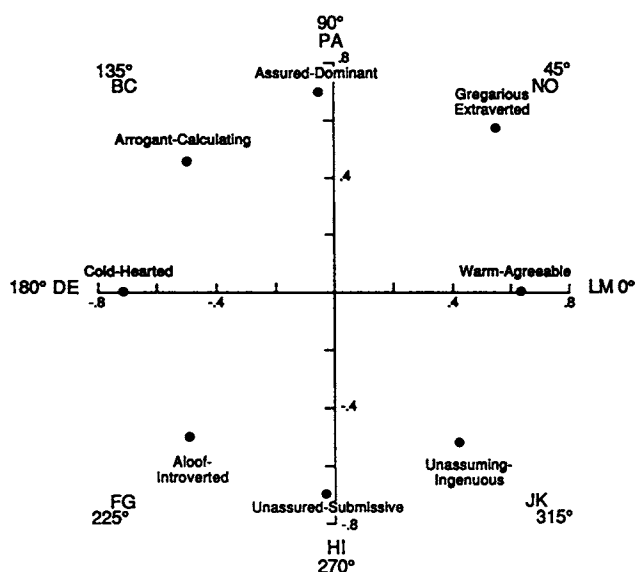


Figure 1. The interpersonal circumplex. (From "Circular Reasoning About Interpersonal Behavior: Evidence Concerning Some Untested Assumptions Underlying Diagnostic Classification" by J. S. Wiggins, N. Phillips, and P. Trapnell, 1989, *Journal of Personality and Social Psychology*, 56, p. 297. Copyright 1989 by the American Psychological Association. Adapted by permission.)

gins (1979) place distrust (or a close semantic relation) in the quadrant of Hostile-Dominance and trust in the opposing quadrant of Friendly-Submission. In contrast, Leary (1957), and models based on Leary's, such as Strong et al.'s (1988), place distrust in the Hostile-Submission quadrant, even though its logical opposite, trust, is placed in the adjacent (Friendly-Submission) rather than opposite quadrant. (For a comparison of how trust and distrust have been placed in other circumplex models, the table in Wiggins, 1982, p. 188, is informative). Differences in placement are important, because the location of a construct in the circumplex determines its predicted interpersonal correlates, including the kinds of interpersonal problems that might be expected (see, e.g., Carson, 1969, p. 110).

Assuming that the placements of Kiesler and Wiggins are correct, what then are the predicted interpersonal problems of high- and low-trusting individuals? First, I consider distrust. Because distrust theoretically reflects a blend of the factors of Dominance and Hostility, problems that include components of these factors are also likely to be co-occurrent (e.g., Horowitz, French, Gani, & Lapid, 1980).<sup>2</sup> The continuum of co-occurrence is based on the distance of a given trait from distrust on the circumplex, with distrust, following Kiesler (1983), at 135°. So, for example, problems in being domineering and cold would be moderately related on the basis of their displacements of 45° from distrust; more centrally related problems would be those that share the same octant space as distrust in the circumplex, such as being overly competitive, vindictive, and resentful. As a way of summarizing, then: In relation to the categories of the circumplex, the problems of the low truster are likely to be greatest in the Vindictive (BC) octant, somewhat less in the

adjoining octants of Domineering (PA) and Cold (DE), and less still in Intrusive (NO) and Socially Avoidant (FG).

Theoretically, the interpersonal difficulties of individuals who are at the positive extreme for trust (i.e., high trusters) could also be predicted from a circumplex analysis. If interpersonal theory is correct in its conceptualization of high trust, then high trust ought to be associated with problems in the Exploitable (JK) octant, somewhat fewer problems in the octants of Nonassertive (HI) and NO, and less again in Overly Nurturant (LM) and FG.

### Trust and Gullibility

The preceding discussion, then, suggests that extremes of either distrust or trust are likely to be associated with interpersonal difficulties. Indeed, this reflects a fundamental principle of most interpersonal theories, originating with Leary's (1957): More extreme, or "intense," expressions of interpersonal traits, regardless of the trait's initial value or functionality, are related to distress and to rigid and maladaptive behaviors (e.g., Carson, 1969; Kiesler, 1983; Wiggins et al., 1989). However, does the same apply to trust? Put more specifically, is gullibility the maladaptive extreme of high trust?

In an important review of the interpersonal trust literature, Rotter (1980) considered this issue. Although Rotter found considerable evidence to suggest that distrust is related to poorer adjustment and to antisocial tendencies, he found no support for the idea that high trust is associated with gullibility, that is, with what he called "naivete" or "foolish" trust (p. 1).<sup>3</sup> The persuasive arguments that he marshaled in support of his claim are beyond the scope of this article (see Rotter, 1980, pp. 4-6). Suffice it to say, however, that most of the evidence concerned the results of experimental studies in which subjects had the opportunity to trust under conditions (e.g., prior betrayal) in which continued trust would have been unwarranted; in those situations, high trusters were no more likely to behave gullibly than were low trusters. Rotter also presented some supporting evidence based on assessment of interpersonal traits. In a peer nomination study done originally to validate the Interpersonal Trust Scale (Rotter, 1967), he found that peer ratings of gullibility were unrelated to those of trust but were related to those of dependency. This raises the possibility that gullibility is not an expression of trust expectations; instead, it may emanate from some other trait or need, such as dependency. If so, then one would not expect high trusters, as a group, to have difficulties related to gullibility.

<sup>2</sup> Hostility is a generic term referring to the negative pole of the Love dimension. However, given the content of the IIP-C, this pole is probably better viewed as coldness or indifference to others. I am indebted to an anonymous reviewer for this interpretation.

<sup>3</sup> At first glance, it might appear that extreme high trust and gullibility are synonymous. However, keep in mind that trust, as it is both conceptualized and measured by Rotter (and here), is essentially a "generalized expectancy" about others, which may or may not be expressed in specific situations. Thus, one may strongly believe that others are trustworthy without being gullible (i.e., having unwarranted trust); the relation between trust and gullibility therefore becomes empirical, not semantic.

### Varieties of Distrust in the Circumplex

The idea that, interpersonally, distrust is a blend of Dominance and Hostility suggests that there are varieties of distrust definable in terms of the relative weights of these two factors. Assuming the conceptual domain to be the BC octant of the circumplex, then these varieties of distrust are located within a span of 45°, from 112.5° (more Dominance) to 157.5° (more Hostility). The possibility of a distrust *continuum* is important, because it implies that the interpersonal problems of low trusters will depend on the specific mix of Dominance and Hostility.

What are these varieties? On the hostile side, they would include misanthropy and cynicism.<sup>4</sup> Misanthropy is a distrust predicated on hatred or dislike of others, with the correlated belief that others are unkind and dangerous, and therefore untrustworthy. Cynicism is a close cousin to misanthropy but with less patent hostility; it can be defined as doubt in the sincerity and selflessness of others, a belief that others are basically hypocritical and phony. Both misanthropy and cynicism, then, are on the Hostility side of the midpoint (135°) of BC, with misanthropy presumably closer to DE (i.e., closer to 180°). As for the Dominance side of the BC octant, distrust constructs here are less easily identified or named. Presumably, such constructs would involve the perception that others are basically incompetent or unreliable (but with only minimal antagonism toward others), and hence would involve the need to maintain control and avoid dependence. Thus, dominance-distrust would probably best be characterized, indirectly, by its effects, which might include problems in competitiveness, arrogance, and autocratic dominance.

### Overview of Study

As stated earlier, the purpose of this study is to examine the interpersonal problems of high and low trusters from the perspective of the interpersonal circumplex. This model provides a set of testable hypotheses regarding the relationship of distrust and trust to interpersonal dysfunctions, and, thus, goes beyond the simple view that distrust, in particular, is globally associated with maladjustment.

Subjects completed a variety of personality scales assessing different parts of the trust domain. This included Rotter's (1967) Interpersonal Trust Scale (ITS; generic trust), Christie and Geis' (1970) Mach IV Scale (cynicism and misanthropy; see Hunter, Gerbing, & Boster, 1982; Wrightsman, 1991), Kanter and Mirvis' (1989) Survey of Cynicism (cynicism), and Janoff-Bulman's (1989) World Assumptions Scale (misanthropy). Because all of these scales are attitude measures and very similar in format, we also included a different kind of measure: a "construct accessibility" measure of trust and distrust predicated on the approach of Higgins (e.g., Higgins, King, & Mavin, 1982). Previous work (Gurtman & Lion, 1982) suggested that distrusters, in particular, have greater accessibility for negative trust concepts; the possibility that this could be used to provide an alternative measure of distrust has not been tested. In addition to these scales, subjects completed two personality measures selected to be either specific for interpersonal distress (shyness) or nonspecific (negative affect). The IIP was used to

assess interpersonal problems and was scored according to both the original (Horowitz et al., 1988) and circumplex (Alden et al., 1990) procedures.

In line with the previous discussion, three main hypotheses are offered: (a) low trusters will evidence a *predictable pattern* of interpersonal difficulties peaking at BC, but also secondary problems in adjacent octants of the circumplex; (b) high trusters, as a group, should be relatively free of interpersonal difficulties, reflecting the prosocial quality of high trust and its essential disconnection to gullibility (Rotter, 1980); and (c) hostile forms of distrust (e.g., Machiavellianism) and generic distrust should be distinguished by their specific patterns of difficulty, again predictable from the circumplex model.

### Method

#### Subjects and Procedure

The subjects were 163 undergraduates (87 women, 76 men) who participated in a study on "personality and attitudes" for course credit; subjects were run in groups (of 10 or less), but were sequestered from each other in the lab room. The first two measures (construct accessibility, Thematic Apperception Test story<sup>5</sup>) were timed and involved pencil and paper. The remainder of the scales were administered in a fixed order on microcomputers; the computers displayed instructions and items, and they checked and recorded responses.

#### Trust-Relevant Measures

The four scales measuring trust-related constructs were similar in format, each using a Likert-type format requiring subjects to indicate the extent to which they agreed or disagreed with various statements. So that the direction of subjects' response options was consistent across questionnaires (i.e., always scaled from *agree* to *disagree*), the response keys for the Mach IV and World Assumptions measures were reversed.

*ITS* (Rotter, 1967). The ITS is a 40-item scale (25 scorable and 15 filler) measuring interpersonal trust, defined as the "generalized expectancy that the verbal statements of others can be relied upon" (Rotter, 1967, p. 664). Items are scored on a 5-point scale. Sample items include: "Most people can be counted on to do what they say they will do," "In these competitive times one has to be alert or someone is likely to take advantage of you," and "Most salesmen are honest in describing their products." High scores indicate high trust. Rotter (1967, 1971, 1980) provided considerable data supporting the reliability and validity of the ITS in a variety of contexts (see also Wright & Tedeschi, 1975, for an analysis of the scale itself). Rotter (1967) reported an internal reliability of .76. The version of the ITS used here excluded filler items.

Rotter viewed trust as a continuous variable, with both the high and the low extremes being meaningful. In line with that, scores on the ITS (as well as the other trust measures) appeared normally distributed, with no compression of scores on either end.

<sup>4</sup> I am indebted to Webster's *Third International Dictionary* (1981) for what follows.

<sup>5</sup> We included the Thematic Apperception Test card—a picture of two acrobats in midair—to develop a protocol for scoring trust thematic stories; this measure of trust is preliminary and will not be discussed here. However, it should be noted that whether trust or distrust was simply mentioned in the story (which occurred in approximately 20% of the protocols) had no relation to any of the other measures used here.

*Survey of Cynicism* (Kanter & Mirvis, 1989). This 7-item scale measures cynical attitudes and includes items such as "Most people will tell a lie if they can gain by it" and "People pretend to care more about one another than they really do." Responses are on a 4-point scale. The authors reported a scale reliability of .78 and cited relationships to various demographic and attitudinal variables.

*Mach IV Scale* (Christie & Geis, 1970; Robinson & Shaver, 1973). The Mach IV Scale is a 20-item measure of Machiavellianism, the attitude that people are generally duplicitous and immoral and can be manipulated through cunning. In the present version, items were slightly reworded to make them gender neutral. Items include "The best way to handle people is to tell them what they want to hear," "Most people are basically good and kind," and "It is safest to assume that all people have a vicious streak and it will come out when they are given a chance." Responses are on a 6-point scale. In this study, high scores indicated low Machiavellianism (because of the scale reversal).

A wealth of studies have been done using the Mach IV Scale (see Christie & Geis, 1970). Robinson and Shaver (1973) summarized the psychometric properties of the scale, and reported satisfactory internal reliability (.79).

*World Assumptions Scale* (Janoff-Bulman, 1989). This 32-item scale measures people's basic assumptions about the world's benevolence and meaningfulness and about the worthiness of the self. For purposes of this study, only the 8 items concerning benevolence were administered. These include items involving beliefs about the goodness of people (e.g., "Human nature is basically good" and "People don't really care what happens to the next person") and goodness of the impersonal world ("There is more good than evil in the world"); according to the author's analyses, these items combine to form a single factor. Items are scored on a 6-point scale. The author reported a reliability for the Benevolence scale of .87. In the present study, a high score indicated more negative assumptions.

Table 2  
*Descriptive Statistics for Measures*

Variable	<i>M</i>	<i>SD</i>	$\alpha$
Predictor measures			
Trust	66.66	8.45	.665
Cynicism	15.28	3.81	.777
Mach IV	74.48	9.95	.646
World Assumptions	21.99	6.39	.836
Trust Accessibility	0.06	0.06	—
Distrust Accessibility	0.04	0.05	—
Negative Affect	23.07	7.49	.874
Positive Affect	34.86	6.13	.823
Shyness	17.54	6.40	.743
Sociability	14.26	4.16	.787
Interpersonal problems			
Total	1.18	64.82	.968
Hard to Be Assertive	1.33	0.68	.901
Hard to Be Sociable	1.29	0.78	.923
Hard to Be Submissive	1.13	0.71	.823
Hard to Be Intimate	0.79	0.51	.750
Too Responsible	1.47	0.72	.824
Too Controlling	1.03	0.64	.774
Domineering	0.88	0.62	.730
Vindictive	0.96	0.59	.722
Cold	0.85	0.67	.775
Socially Avoidant	1.29	0.90	.875
Nonassertive	1.32	0.74	.779
Exploitable	1.44	0.78	.792
Overly Nurturant	1.57	0.75	.768
Intrusive	1.18	0.72	.749

### *Construct Accessibility*

The general method developed originally by Higgins et al. (1982, Study 2) and adapted by others (e.g., Bargh & Thein, 1985) was used to identify subjects who were "chronically accessible" for the trust construct. Subjects were given 7 min to list up to 10 traits that best described the "type of person" they (a) "seek out," (b) "avoid," (c) "like," (d) "dislike," and (e) "frequently encounter," respectively. To establish scoring criteria, we examined the set of all descriptors used by subjects, and we compiled a list of scorable synonyms for trustworthiness and untrustworthiness (e.g., *sincere*, *genuine*, *honest*, *deceitful*, *dishonest*, and *liar*).

We found that only 4 of 163 subjects met the stringent criteria for chronicity used by Higgins and his co-workers. Rather than experiment with other ways of dichotomizing subjects, we chose to create a continuous measure of accessibility, based on the ratio of a subject's trust citations to his or her total. Subjects thus received two scores, one for trust accessibility (trustworthiness/total) and another for distrust (untrustworthiness/total); the correlation between the two was .52. Alternative versions of these ratio measures weighted appropriately by word position correlated with the simple measures above .96 and so were deemed an unnecessary adjustment (cf. Higgins et al., 1982).

### *Other Predictor Measures*

For comparison purposes, two additional scales were administered to assess distress considered interpersonally *specific* (shyness from the Shyness and Sociability Scales) and *nonspecific* (negative affect from the Positive and Negative Affect Schedule [PANAS]), respectively. The SSS (Cheek & Buss, 1981) contains 14 items, 9 for shyness (e.g., "I am often uncomfortable at parties and other social functions") and 5 for sociability (e.g., "I like to be with people"). These measures have reliabilities of .79 and .70, respectively. Subjects used a 5-point scale. The 20-item PANAS (Watson, Clark, & Tellegen, 1988) measures negative affect and positive affect; subjects respond to adjectives (e.g., "interested," "upset," "active," "nervous") using a 5-point scale. Reliabilities are .87 and .88, respectively, for the general instructions version used here.

### *Measure of Interpersonal Problems*

Horowitz et al.'s (1988) IIP was used to quantify interpersonal problems. This scale was developed through an analysis of the interpersonal complaints voiced by patients during intake interviews. By eliminating redundant and ambiguous items, a 127-item version of the IIP was created, sampling a wide variety of interpersonal problems. The scale is divided into two parts: The first 78 items begin with the phrase "It is hard for me to," and the remaining 49 items describe "things that you do too much." Subjects rate how distressing each problem is for them on a scale from 0 (*not at all*) to 4 (*extremely*).

The IIP can be scored for overall distress (across all 127 items), as well as for six empirically derived subscales based on an 84-item subset; these subscales are: "hard to be" Assertive, Sociable, Submissive, and Intimate, and "too" Responsible and Controlling. Reliabilities range from .82 to .94 in a psychiatric sample. Because subscales have different numbers of items, from 10 (Controlling, Submissive) to 21 (Assertive), they are scored by taking the mean rating across items.

Alden et al. (1990) have developed a scoring routine for the IIP that produces a circumplex arrangement of interpersonal problem categories (see also Wiggins et al., 1989). Based on the 8-category version of Wiggins' (1979) interpersonal circle, these scales each consist of 8 items selected to meet statistical and geometric criteria for circumplexity and are scored by taking the mean value. Reliabilities for the scales range from .72 (Intrusive) to .85 (Socially Avoidant and Nonassertive).

Table 3  
Correlations Among Inventory of Interpersonal Problems (IIP) Scales

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
IIP subscale														
1. Total														
2. Hard to Be Assertive	.764													
3. Hard to Be Sociable	.848	.534												
4. Hard to Be Submissive	.690	.235	.640											
5. Hard to Be Intimate	.704	.417	.607	.583										
6. Too Responsible	.857	.672	.650	.477	.455									
7. Too Controlling	.637	.267	.390	.589	.465	.573								
IIP-C subscale														
8. Domineering	.657	.191	.526	.790	.592	.492	.808							
9. Vindictive	.675	.225	.684	.757	.744	.446	.587	.711						
10. Cold	.683	.372	.767	.580	.771	.467	.286	.455	.654					
11. Socially Avoidant	.773	.541	.943	.545	.567	.568	.260	.415	.580	.728				
12. Nonassertive	.727	.891	.603	.277	.468	.571	.180	.184	.280	.460	.630			
13. Exploitable	.658	.880	.385	.122	.270	.649	.314	.159	.135	.187	.362	.643		
14. Overly Nurturant	.697	.660	.444	.268	.268	.809	.540	.321	.220	.279	.359	.460	.712	
15. Intrusive	.578	.295	.286	.456	.428	.524	.848	.682	.459	.199	.181	.207	.339	.470

Note. IIP-C = Version of IIP scaled to produce a circle of interpersonal problems.  $N = 163$ .  $r > .251$ ,  $p < .001$ ;  $r > .199$ ,  $p < .01$ ;  $r > .153$ ,  $p < .05$ .

Available data (Alden et al., 1990; Wiggins et al., 1989) reveal relationships among the scales that are in accord with circumplex predictions. Again, the bottom of Table 1 presents the categories of the IIP and IIP-C, along with sample items.

### Procedures for Scoring Circumplex Location

One of the advantages of a circumplex analysis is that a pattern of octant scores (vectors) can be reduced to a single point in the circular domain through vector arithmetic. This point has a distance from the origin equal to the magnitude of the sum of the vectors (*vector length*) and a direction specified by the *angular displacement* of this resultant. Formulas are provided in several sources, including Leary (1957), Carson (1969), and Wiggins et al. (1989) and will not be repeated here (see, especially, Wiggins et al., 1989, pp. 297–298). It should be noted that these formulas are actually highly general and can be applied to analyses both of persons and of scales. For analyses of persons, the magnitude of each vector is indexed by the person's (or group's) standardized octant score, whereas, for analyses of scales, a vector's magnitude is the scale's correlation with the octant (cf. Gurtman, 1991).<sup>6</sup> Both person- and scale-based analyses will be performed here and should yield complementary results.

## Results

### Analysis of Measures

Table 2 presents the means, standard deviations, and internal reliability estimates for the measures used.<sup>7</sup> As can be seen, reliabilities were generally adequate or good.

Table 3 presents the correlations among the categories of interpersonal problems. As in Horowitz et al. (1988), correlations among the six original scales of the IIP were positive and generally substantial; in part, this reflects the general distress and complaint factor mentioned earlier. The table also shows the relationships among the categories scored for the circumplex (PA through NO). Again, these are positive; nevertheless, the pattern of correlations is clearly in accord with a circumplex

structure, with the magnitude of correlation varying systematically as a function of intercategory distance on the circle.

Although Alden et al. (1990) have offered impressive evidence for the circumplexity of the IIP-C, I felt it important to provide independent confirmation in the present study. However, rather than performing a principal-components analysis of ipsatized scores as in Alden et al., I used multidimensional scaling to fit the obtained (raw) data to the circumplex model.

<sup>6</sup> It is important to realize, however, that the interpretation afforded to person-based and scale-based vector analyses will be different, and this mainly concerns the attribute of vector length. In the former case, vector length provides a measure of intensity and, according to interpersonal theory (e.g., Leary, 1957; Kiesler, 1983; Wiggins, Phillips, & Trapnell, 1989), is related to inflexibility and rigidity in a person's interpersonal tendencies. In the latter case, vector length can be thought of as one measure of a scale's "interpersonalness" (Gurtman, 1991), that is, the extent to which the scale loads in the interpersonal domain. Regardless, in the present instance, the vector's angular displacement was of main interest, and not its length. This further obviated the use of a correction factor in the formula (multiplication of vectors by .3 to maintain unit variance of resultant scores).

<sup>7</sup> As might be expected, men and women differed significantly on several measures, including Machiavellianism (though not trust); similarly, small but reliable differences obtained on the IIP and IIP-C, particularly in areas of functioning related to hostility and nurturance. Thus, differences in the problem profiles of extreme groups could conceivably be due to the disproportionate representation of one sex. To guard against this in the multivariate profile analyses described later, I analyzed male and female profiles separately; if a significant sex difference occurred, the analysis was repeated using scores standardized within sex. Only in the case of low trust did the problem of sex-related profile differences occur; however, this difference was not significant when scores were restandardized. Note, however, that because of the low power of the analyses (comparisons were between 16 women and 13 men in the latter case), sex differences cannot be ruled out. Further information on sex differences in this study can be obtained from me.

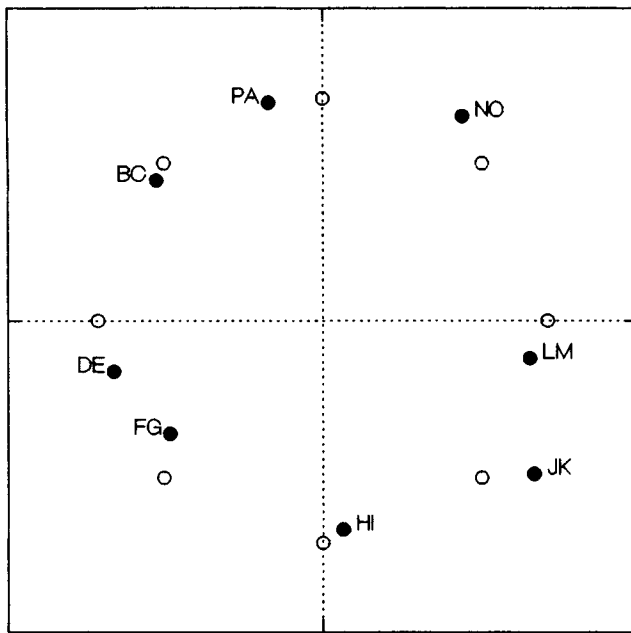


Figure 2. Empirical and theoretical locations of Interpersonal Problem categories. (Note that filled circles are empirical locations. PA = domineering; BC = vindictive; DE = cold; FG = socially avoidant; HI = nonassertive; JK = exploitable; LM = overly nurturant; NO = intrusive.)

Compared with principal-components analysis, multidimensional scaling may produce clearer and lower dimensional representations of the data structure, particularly when a circumplex structure is expected; moreover, its representations are less influenced by the existence of a large, general factor, which as noted earlier, pervades the IIP (see Davison, 1985; Fitzgerald & Hubert, 1987).

In the present analysis, an implementation of Kruskal's non-metric scaling method was applied to the correlation matrix (Wilkinson, 1990). Stress coefficients for 1-, 2-, and 3-dimensional solutions were .332, .001, and .001, respectively, indicating an excellent fit in 2 dimensions. Figure 2 shows the plot of

the eight problem categories, rotated to achieve maximum fit (by a least-squares distance criterion) to the theoretical coordinates. As can be seen, empirical placements were very close to the theoretical ones, with a mean discrepancy of only  $9.54^\circ$  ( $SD = 3.1^\circ$ ). The degree of agreement expressed as the average cosine of these discrepancies (an analogue to the correlation coefficient; see Fisher, Heise, Bohrnstedt, & Lucke, 1985, pp. 237–238) was a remarkable .985 out of a possible 1. Finally, vector lengths (distances from the origin) for the eight variables varied narrowly from .85 (FG) to 1.17 (JK), with a standard deviation of only .10, suggesting a circular rather than an elliptical or other noncircular arrangement of variables (see Wiggins et al., 1989). Overall, then, the data are a close fit to the theoretical model.

Table 4 shows the intercorrelations among the various personality scales. Of main interest are the relationships among the trust-related constructs. As the table indicates, with the exception of the construct accessibility measures, correlations among the trust scales were moderate to high. Construct accessibility had one significant correlation, with the Mach IV Scale ( $r = .220$ ); higher accessibility for trust was related to lower Machiavellianism.

As implied earlier, the four trust scales (Interpersonal Trust, Cynicism, Mach IV, and World Assumptions) purport to measure aspects of distrust that, according to the present analysis, vary in Dominance and Hostility. To test this, I subjected the four scales to a principal-components analysis. A two-factor solution was specified and rotated to a varimax criterion; the two rotated factors were nearly equal in size, accounting for 40.2% and 38.3%, respectively, of the total variance. The factor loadings, which are shown in Table 5 along with scale locations, are in line with the hypothesis. The first component, which is at  $92^\circ$  on the circumplex, is a Dominance factor, and the second component, at  $163^\circ$ , is close to Hostility. (This interpretation is bolstered by the pattern of factor-octant correlations, not shown). As can be seen in the factor loadings, the four scales are composites of the two factors in rough proportion to their theoretical mix of Dominance and Hostility; this is reflected as well in the scales' locations on the circumplex. Nevertheless, it appears that locations are somewhat off, in a clockwise direction, from the expected positions on the circle.

Table 4  
Intercorrelations Among Predictor Variables

Variable	1	2	3	4	5	6	7	8	9
1. Trust									
2. Cynicism	.616								
3. Machiavellianism	.369	.436							
4. Assumptions	-.319	-.401	-.512						
5. Trust accessibility	.047	.070	.220	-.092					
6. Distrust accessibility	.009	-.006	.188	-.028	.522				
7. Negative affect	-.306	-.239	-.348	.189	-.221	-.098			
8. Positive affect	-.108	-.087	.119	-.134	-.009	-.064	-.140		
9. Shyness	-.140	-.237	-.286	.162	-.170	-.054	.475	-.211	
10. Sociability	-.067	.080	.269	-.186	.123	.019	-.271	.261	-.434

Note.  $N = 163$ .  $r > .251$ ,  $p < .001$ ;  $r > .199$ ,  $p < .01$ ;  $r > .153$ ,  $p < .05$ .

Table 5  
Circumplex Locations and Factor Loadings for  
Measures of Distrust

Scale	Location	Factor I	Factor II	$h^2$
Trust	104°	.903	.153	.839
Cynicism	126°	.832	.310	.788
Machiavellianism	144°	.271	.810	.730
World Assumptions	166°	.164	.870	.784

Note.  $h^2$  = communality.

### Prediction of Interpersonal Problems

Table 6 shows the relationships between the various predictors and interpersonal problems. Of principal interest are the correlations involving the Interpersonal Trust and Mach IV Scales.<sup>8</sup> As hypothesized, lower levels of trust and higher Machiavellianism were associated with greater interpersonal distress ( $r_s = -.269$  and  $-.342$ , respectively,  $p_s < .001$ ) and with heightened negative affect ( $r_s = -.306$  and  $-.348$ , respectively,  $p_s < .001$ ). (Interestingly, a similar pattern of distress was obtained for trust, but not distrust, accessibility,  $r_s = -.181$  and  $-.221$ , respectively,  $p_s < .05$  and  $.01$ ). These problems are not global, however, but are related to specific areas of interpersonal functioning. For example, using the Horowitz (1979) categories, high Machiavellianism is related to greater problems in being intimate, submissive, and sociable, and in being too controlling; a similar, though attenuated, pattern is also evident with regard to low trust.

Relating trust and Machiavellianism to the circumplex, however, provides a clearer and more organized picture of the nature of interpersonal problems. As the table shows, correlations for both variables have a pattern predictable from a circumplex arrangement of variables. Specifically, the correlations peak at the BC octant, but, with one exception for trust (on DE), are also significant in adjacent or nearby octants (i.e., PA, DE, NO, and FG). On the other hand, correlations are negligible in octants that are opposed on the circumplex (i.e., HI, JK, and LM). This specific pattern of problems defines trust-related variables only. For contrast, the table also shows correlations between shyness and the eight circumplex categories. Here, as would be expected, correlations peak at FG and, again, gradually decline in magnitude as a function of displacement on the circle. Finally, the correlations between negative affect and the circumplex should be noted. Correlations are high for all categories, confirming that negative affect does not define a specific set of interpersonal problems, but instead reflects general distress (cf. Horowitz et al., 1988).

### Interpersonal Problems of High and Low Scorers

Although none of the correlations (or inspection of their respective scatterplots, not shown) suggested that high trust or low Machiavellianism is associated with any areas of interpersonal difficulty, the main hypotheses of the study require separate analysis of the problem profiles of high and low scorers. For the present purposes, high- and low-scoring groups were defined as one standard deviation above or below the mean. To provide a

visual representation of their respective interpersonal problems, I created polar coordinate plots from the mean standard scores for each group on the eight circumplex-defined scales; these plots convey the *extent* and *distribution* of problems by the *area* of the enclosed space and by its *shape*, respectively (for similar plots of interpersonal problems, see Leary, 1957, and, more recently, Pincus & Wiggins, 1990b, and Wiggins et al., 1989).

Figure 3 shows the respective plots for high and low scorers. These plots reveal a pattern of problems generally in accord with circumplex predictions. Low trusters, for example, report maximal interpersonal distress in BC, but also distress in the adjacent octants of NO and PA (though again not DE). High-Machiavellianism individuals also peak at BC and show a symmetrical complement of problems at NO, PA, DE, and FG. Other than the (nonsignificant) drop for high-Machiavellianism subjects in the JK octant, neither group is below the mean in any of the categories. Finally, as a comparison of the two plots suggests, the high-Machiavellianism group is on the DE side of BC at 147°, whereas, unexpectedly, the low-trust group falls at 73°, on the NO side of PA.<sup>9</sup>

As a contrast, the figure also presents plots for high-trust and low-Machiavellianism subjects. These persons, as a group, report little or no difficulty in any of the areas of the circumplex, and, indeed, are at or below the mean for each of the eight categories. Importantly, neither high-trust nor low-Machiavellianism subjects report experiencing problems in areas relating to gullibility (JK) or unassertiveness (HI), as might be predicted.

A one-group multivariate profile analysis was conducted on the data to test these results for significance (see Wilkinson, 1990). Because scales are standardized, group profiles were tested for elevation (or "level") and for deviations in flatness against a flat profile with a mean of 0. Flatness was tested by first computing successive differences between adjacent scales.

Consistent with the figures, low trusters were found to be significantly elevated in overall interpersonal distress (Wilks's  $\lambda = .442$ ),  $F(8, 21) = 3.308$ ,  $p = .013$ . The multivariate test for flatness revealed significant departure from flatness as well (Wilks's  $\lambda = .463$ ),  $F(7, 27) = 3.645$ ,  $p = .009$ . Similar findings were obtained for the high-Machiavellianism group on elevation (Wilks's  $\lambda = .348$ ),  $F(8, 20) = 4.681$ ,  $p = .002$  and flatness (Wilks's  $\lambda = .355$ ),  $F(7, 21) = 5.449$ ,  $p = .001$ . Turning to the high trusters, this group was significantly below the mean on interpersonal distress (Wilks's  $\lambda = .425$ ),  $F(8, 20) = 3.387$ ,  $p = .013$ ; their profiles were also not flat (Wilks's  $\lambda = .535$ ),  $F(7, 21) = 2.609$ ,  $p = .042$ . Low-Machiavellianism subjects' profiles were below the mean in elevation (Wilks's  $\lambda = .075$ ),  $F(8, 19) = 29.352$ ,  $p < .001$  but did not significantly depart from flatness (Wilks's  $\lambda = .634$ ),  $F(7, 20) = 1.651$ ,  $p > .15$ .

For comparison purposes again, similar analyses for high-

<sup>8</sup> Because of the redundancy in using all four trust measures, the Interpersonal Trust and Mach IV Scales will serve to represent the two major distinctions in distrust.

<sup>9</sup> Distrust's placement on the other side of PA from BC is due to the group's unexpectedly low score on DE and high score on NO, thus pulling the average away from the group's highest elevation at BC. The secondary elevation at NO is discussed later.



Table 6  
Correlations of Predictor Variables With Interpersonal Problems

Variable	Total	Ass	Soc	Sub	Int	Res	Con
Trust	-.269	-.112	-.225	-.256	-.263	-.211	-.306
Cynicism	-.254	-.094	-.239	-.229	-.265	-.200	-.239
Machiavellianism	-.342	-.043	-.383	-.424	-.468	-.158	-.330
Assumptions	.123	.029	.197	.158	.304	-.042	.022
Trust accessibility	-.181	-.133	-.135	-.061	-.232	-.149	-.171
Distrust accessibility	-.050	-.048	-.073	-.112	-.008	-.040	-.093
Negative affect	.637	.318	.654	.569	.390	.576	.469
Positive affect	-.216	-.267	-.212	-.081	-.192	-.125	.043
Shyness	.593	.441	.745	.400	.420	.441	.196
Sociability	-.245	-.161	-.453	-.202	-.255	-.067	.061

	PA	BC	DE	FG	HI	JK	LM	NO
Trust	-.291	-.445	-.155	-.149	-.065	-.130	-.135	-.292
Cynicism	-.276	-.399	-.218	-.201	-.056	-.086	-.070	-.241
Machiavellianism	-.416	-.569	-.442	-.374	-.104	.025	.026	-.293
Assumptions	.107	.347	.251	.199	.053	-.026	-.112	.015
Trust accessibility	-.176	-.184	-.114	-.155	-.112	-.098	-.070	-.111
Distrust accessibility	-.069	-.069	.033	-.093	-.074	-.033	.023	-.048
Negative affect	.501	.539	.443	.559	.371	.262	.359	.334
Positive affect	.004	-.055	-.222	-.227	-.310	-.178	-.053	.047
Shyness	.258	.444	.541	.730	.519	.267	.290	.115
Sociability	-.088	-.218	-.360	-.485	-.263	-.012	.014	.091

Note.  $N = 163$ .  $r > .251$ ,  $p < .001$ ;  $r > .199$ ,  $p < .01$ ;  $r > .153$ ,  $p < .05$ . Ass = hard to be assertive; soc = hard to be sociable; sub = hard to be submissive; int = hard to be intimate; res = too responsible; con = too controlling; PA = domineering; BC = vindictive; DE = cold; FG = socially avoidant; HI = nonassertive; JK = exploitable; LM = overly nurturant; NO = intrusive.

scoring subjects on shyness and on negative affect were performed. As would be expected, shy individuals are significantly elevated in interpersonal distress (Wilks's  $\lambda = .263$ ),  $F(8, 20) = 7.017$ ,  $p < .001$ , and their mean profile is appropriately varied across scales (Wilks's  $\lambda = .263$ ),  $F(7, 21) = 6.028$ ,  $p = .001$ ; for negative affect, which is presumably nonspecific for distress, high scorers have an elevated profile (Wilks's  $\lambda = .346$ ),  $F(8, 18) = 4.255$ ,  $p = .005$ , but one that is relatively flat (Wilks's  $\lambda = .632$ ),  $F(7, 19) = 1.578$ ,  $p > .20$ .

Perhaps a more difficult test of the circumplex model would involve predicting problems at the level of the *individual item* rather than the octant. Evidence at this level would be more compelling, because individual items are inherently unreliable, idiosyncratic, and, for the IIP as a whole, not preselected for circumplex properties. For this analysis, item means for each group were plotted against the items' angular locations on the circumplex (determined for each item from the present data); all 127 items of the IIP were included. To highlight the pattern of elevations, I used a nonlinear modeling procedure to fit the theoretical curve for a circumplex (i.e., a cosine curve) through the points.<sup>10</sup> Figures 4 and 5 show plots for the low-trust and high-Machiavellianism group, respectively, along with the best-fit curves. As the figure indicates, the fit for the high-Machiavellianism group ( $R^2 = .753$ ) was somewhat better than that for the low-trust group ( $R^2 = .667$ ). However, both groups have a patterning of problems consistent with their octant plots. Perhaps the most impressive evidence for this is the estimation of the groups' circumplex locations from their re-

spective best-fit curves (specifically, each curve's displacement from 0°, which corresponds to the curve's highest point); for the high-Machiavellianism group, displacement is 148° and for the low-trust group, 63°. These indices are remarkably close to the estimates (of 147° and 73°, respectively) derived from octant scores. In short, then, octant- and item-level analyses of each group's interpersonal problems are virtually identical.

#### Top Problems Analysis

A final way of looking at and contrasting the interpersonal problems of low-trust and high-Machiavellianism scorers is simply to identify those problems on which the respective groups are most deviant. Table 7 presents the top 15 interpersonal problems for low-trust and high-Machiavellianism subjects, respectively. The table offers two main surprises. First, the number of common items for the two groups is small (only 4), indicating that, at the item level, the difficulties that are most characteristic of each group are relatively distinct. Second, and more important, the list of problems for the low-trust subjects contains items that, on the surface, appear contradic-

<sup>10</sup> Three parameters—the curve's elevation, amplitude, and displacement—were estimated using SYSTAT's nonlinear estimation module (Wilkinson, 1990). The program defaults used were the Quasi-Newton minimization method and least-squares loss function. Note too that polar plots, though again feasible, were not used here, because, in this case, they do not reveal the patterning as well as a standard plot.

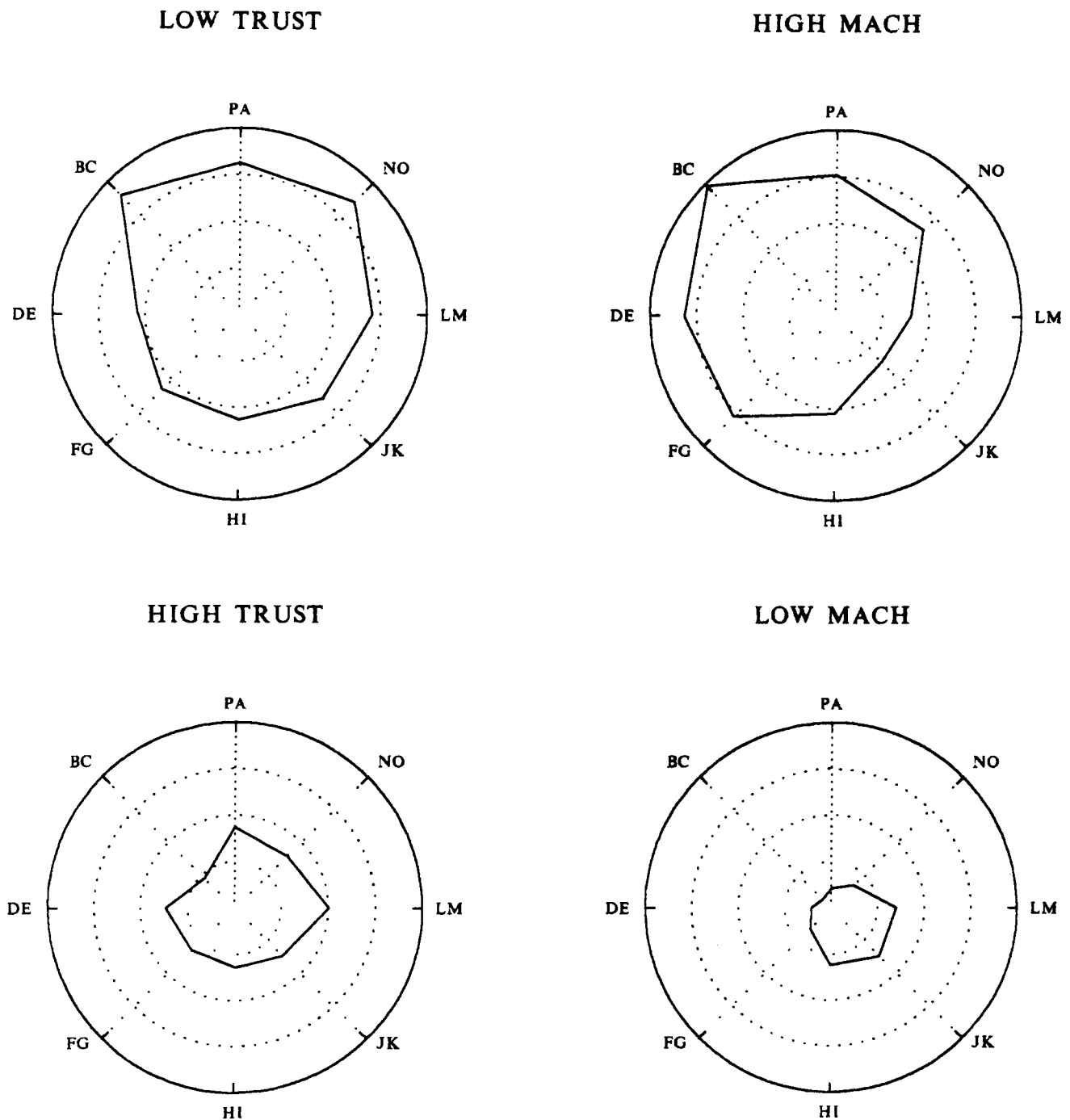


Figure 3. Mean octant scores for high and low scorers on Interpersonal Trust and Mach IV Scales. (PA = domineering; BC = vindictive; DE = cold; FG = socially avoidant; HI = nonassertive; JK = exploitable; LM = overly nurturant; NO = intrusive; Mach = Machiavellianism.)

tory. Specifically, not only do low-trust subjects, as a group, report difficulties in trusting others, but almost as strongly they report problems related to trusting others too much. However, these problems are not necessarily coexistent; a case-by-case analysis done on the low-trust group revealed that some subjects reported both sets of problems and others only one. Never-

theless, it is noteworthy that trusting too much differentiates low-trust and high-Machiavellianism groups better than any set of items in the IIP pool; unlike low-trust subjects, high-Machiavellianism subjects rarely report difficulty trusting too much. Indeed, of the four most discriminating items from the IIP, on the basis of mean group differences, three ("I trust other

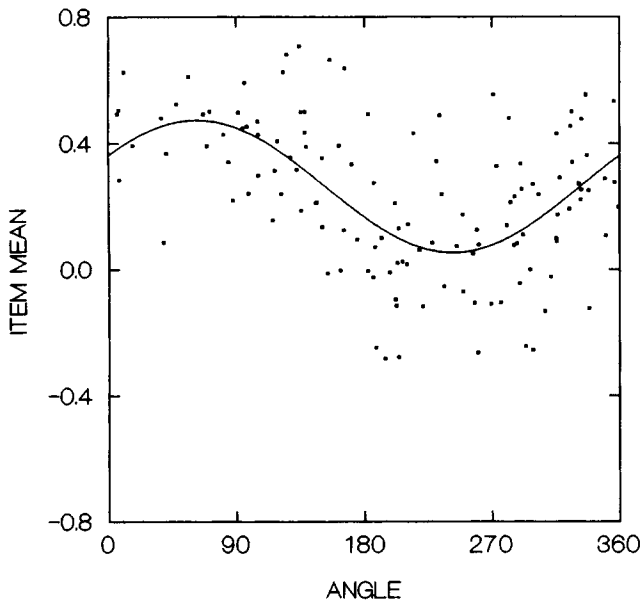


Figure 4. Plot of item means as a function of item locations (angle) for the low-trust group. (Note that the best-fit line is drawn through points.)

people too much," "I open up to people too much," and "I let other people take advantage of me too much") can be construed as reflecting trust-too-much problems; respective mean differences are .820, .689, and .671. These items are important for another reason as well: Low-trust subjects' elevations on trust-too-much items explain the group's secondary elevations on the NO and LM scales, and this explains the group's unexpected placement on the circumplex.

### Discussion

The results provide broad support for the hypotheses of the study and demonstrate the particular value of a circumplex analysis of interpersonal constructs. Moreover, in a complementary fashion, the study offers support for the construct validity of the two principal personality measures used—the Interpersonal Trust Scale and the Mach IV Scale—and highlights key differences in what these scales assess.

As hypothesized, distrusting individuals reported a variety of problems, not only in trusting others (as would be expected), but also in those interpersonal areas that are related to trust only insofar as they are co-occurrent in BC and adjoining octants of the circumplex. Thus, problems in competitiveness, envy, resentfulness, vindictiveness, and lack of feelings toward others were also expressed. Indeed, rather than being narrowly organized around the concept of distrust, problems were thematically organized (Horowitz et al., 1980) around a hostile-dominant intersection. Moreover, problems showed a generalization gradient predictable from intercategory distances. Similar results to these were obtained in a recent study by Pincus and Wiggins (1990b), who used the IIP circumplex to identify the problems of high-scoring individuals on measures of per-

sonality disorder. The profiles, again, were in accord with a circumplex analysis, with a symmetrical distribution of problems around a definable peak.

By reflection, the results of this study also support the construct validity of the Interpersonal Trust and Mach IV Scales, the two principal measures of the distrust domain. On the basis of their point locations on the circumplex, factor compositions, and respective octant and item-level profiles, the Trust Scale appears to measure a kind of *dominance-distrust*, and the Mach IV Scale, *hostility-distrust*, the latter related, conceptually, to cynicism and misanthropy. For the Mach IV Scale, in particular, this is in line with the findings of the two major factor analyses of the scale (Christie & Geis, 1970; Hunter et al., 1982).

Even though both the Interpersonal Trust Scale and the Mach IV Scale have interpersonal correlates, they do not appear to be equally good measures of interpersonal problems. Compared with the problem pattern obtained for trust, the pattern for Machiavellianism was nearly symmetrical around BC and so more closely mirrored the circumplex structure of the IIP. Moreover, the Mach IV Scale generally had higher correlations with the IIP categories and less idiosyncratic content in the "top problems" item list. These findings suggest that the Mach IV Scale is a better marker of interpersonal problems, either because it has greater interpersonal content or because it is structurally less complex than the Interpersonal Trust Scale. This finding complements previous research (Gurtman, 1991), indicating that the Mach IV Scale also has considerably more commonality with the two-dimensional domain of interpersonal *traits* than does the Interpersonal Trust Scale. Indeed, when compared with a quintessentially interpersonal variable, namely, shyness, Machiavellianism has almost the same inter-

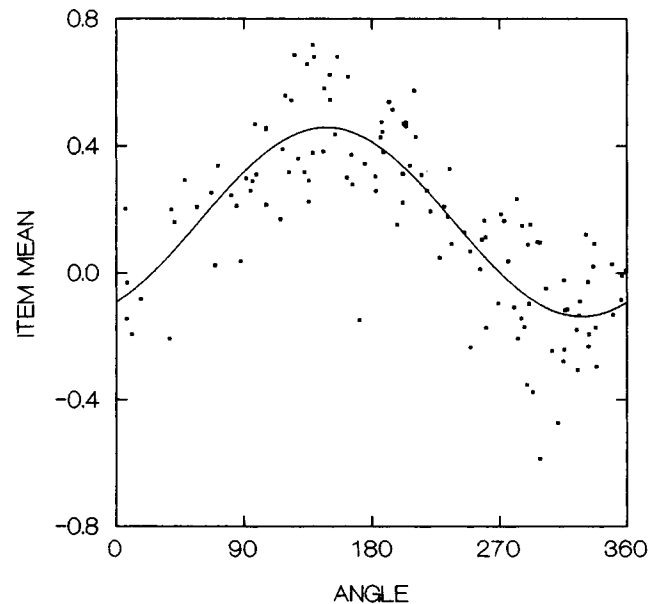


Figure 5. Plot of item means as a function of item locations (angle) for the high-Machiavellianism group. (Note that the best-fit line is drawn through points.)

Table 7  
*Top 15 Interpersonal Problems for Low-Trust and High-Machiavellianism Scorers*

<i>M</i>	Item
Low trust ( <i>N</i> = 29)	
.708	I am too suspicious of other people
.682	I feel competitive even when the situation does not call for it
.666	It is hard for me to trust other people
.640	I feel attacked by other people too much
.627	I am too envious and jealous of other people
.626	I trust other people too much
.612	It is hard for me to keep things private from other people
.594	I criticize other people too much
.556	I worry too much about disappointing other people
.556	I feel too guilty for what I have failed to do
.534	I am overly generous to other people
.526	I tell personal things to other people too much
.508	I worry too much about my family's reactions to me
.503	I clown around too much
.502	I am affected by another person's moods too much
High Machiavellianism ( <i>N</i> = 28)	
.717	I want to get revenge against people too much
.686	I feel competitive even when the situation does not call for it
.680	It is hard for me to put somebody else's needs before my own
.680	It is hard for me to trust other people
.658	I am too suspicious of other people
.623	It is hard for me to give credit to another person for doing something well
.618	It is hard for me to express my admiration for another person
.581	It is hard for me to really care about other people's problems
.574	It is hard for me to express my feelings to other people directly
.558	I lose my temper too easily
.545	It is hard for me to feel good about another person's happiness
.544	I am too envious and jealous of other people
.539	It is hard for me to relax and enjoy myself when I go out with other people
.514	It is hard for me to show affection to people
.476	It is hard for me to feel close to other people

*Note.* Means are of standardized scores. For trust: *Ms* > .611, *p* < .001; *Ms* > .478, *p* < .01; *Ms* > .364, *p* < .05. For Machiavellianism: *Ms* > .622, *p* < .001; *Ms* > .487, *p* < .01; *Ms* > .370, *p* < .05.

personal loading and defines a sphere of interpersonal problems nearly as well.

Perhaps not surprisingly, the construct accessibility measure stood apart from the other measures of trust. In general, there has been little research to indicate how individual differences in construct accessibility relate to more traditional personality measures (cf. Higgins & King, 1981, pp. 105–115). Although correlations were small, it is worth noting that greater trust accessibility, in particular, was related to less interpersonal distress and to lower Machiavellianism. However, given that trust and distrust accessibility were positively rather than negatively correlated, it appears that these are not ends of a bipolar variable, but instead are part of the same interpersonal “knowledge structure” (Higgins, 1990).

The circumplex scoring used to establish the point locations for the distrust variables produced results generally in accord with expectation: Locations varied depending on the hypothesized mix of Dominance and Hostility (cf. Leary, 1957; Strong et al., 1988). Nevertheless, placements for the underlying constructs—generic distrust, cynicism, Machiavellianism, and misanthropy—were slightly off, clockwise, from their ideal positions on the circumplex. This problem may be due, in part, to

a slight misalignment of the IIP-C, at least, relative to the coordinates for Dominance and Love as established by the Interpersonal Adjective Scales (IAS-R; Wiggins et al., 1989). Indeed, on the basis of the intercorrelations of IIP-C and IAS-R octants presented in Alden et al. (1990; their Table 3), it appears that, on average, IIP-C octants differ by 15° from their respective counterparts in the IAS-R. If variables are rotated counterclockwise by 15°, then, the scale locations given earlier become more concordant with theory. In future research, it might be useful to express person and scale locations both in terms of the IIP-C and the IAS-R; see Wiggins and Broughton (1991) for a cross-referencing.

As hypothesized, and consistent with Rotter (1980), high-trust subjects reported little interpersonal distress in any of the octants of the circumplex; thus, contrary to what might be expected, they were not gullible or exploitable. Of course, this finding is based on self-reported admissions of difficulty and may not necessarily be corroborated in the behaviors of high trusters. Nevertheless, when joined with the evidence cited by Rotter (1980), these results suggest a rethinking of the assumed relationship between trust and gullibility—a relationship that is either implicit or explicit in existing multilevel models of

interpersonal behavior (e.g., Kiesler, 1983; Leary, 1957; Strong et al., 1988). Although gullibility, by definition, involves unwarranted trusting behavior, high scores on the Interpersonal Trust Scale (or, comparably, low scores on the Mach IV Scale) do not seem to identify individuals who are gullible. Future research will need to show that these findings are true of the trust construct and not only of the measures used here.

Thus far, the discussion has suggested that distrust is associated with areas of interpersonal distress, but that high trust is associated with few, if any, interpersonal liabilities. However, are there any interpersonal capabilities that characterize distrusting individuals? Using the IIP, the present study found no support for this idea with respect to the Interpersonal Trust Scale, although some limited support is provided for the Mach IV Scale. Compared with the norm, high-Machiavellianism subjects reported somewhat less difficulty in the JK octant (overly exploitable), although not significantly so. In this case, the General Distress and Complaint factor that pervades scores on the IIP may have masked areas of genuine competence. This factor may also explain the discrepancy between the present findings and those from other studies (e.g., DePaulo & Rosenthal, 1979; Sheppard & Vidmar, 1980) that point to the high-Machiavellianism subjects' interpersonal astuteness and ability to manipulate and persuade, findings that coincide with Christie and Geis' (1970) oft-cited position that the Mach IV Scale assesses interpersonal "tactics," as well as "views" (however, see Hunter et al., 1982). Nevertheless, the interpersonal strengths of the high-Machiavellianism person should not be overstated. In the study most similar to this, Paulhus and Martin (1987) related Mach IV Scale scores to subjects' ratings of their functional capabilities in 16 areas of the interpersonal circumplex. Correlations with several categories of capability (i.e., being cold, calculating, and arrogant) were indeed positive and significant, but all were unimpressive in magnitude (less than .30) and were generally lower than those obtained with an alternative measure of interpersonal control.

In interpreting the present results, limitations of the methods and the analyses used should be kept in mind. Most importantly, interpersonal problems, as measured here, referred to areas of self-reported, subjective distress in interpersonal relationships. Although some preliminary evidence indicates that problems on the IIP converge with peer assessments (Bartholomew, 1989), the thrust of this study concerned subjectively defined and experienced problems. The translation of these into the objective deficits and excesses of interpersonal behavior has yet to be done.

Perhaps the brightest feature of this study concerns the IIP itself, which offers a new and largely uncharted road for future explorers of the interpersonal domain. Two applications are immediately apparent. First, researchers might want to use the IIP circumplex to establish or evaluate the validity of other interpersonal construct measures, such as dependency and narcissism; scale projections on the circumplex should be in accord with the scale's purported content (e.g., dependency should fall in the JK octant). Second, researchers could exploit the item pool of the IIP to develop interpersonal problem scales that have greater specificity than the broad categories now represented; for example, alternative, problem-based measures of distrust and gullibility could conceivably be devised from the

content of the existing IIP pool. In this respect, the circumplexical structure of problems offers researchers a tool for building scales with optimal interpersonal properties and having appropriate relationships to other problem categories of interest.

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