

MANUAL FOR
THE CHECK LIST OF INTERPERSONAL TRANSACTIONS-REVISED (CLOIT-R)
and
THE CHECK LIST OF PSYCHOTHERAPY TRANSACTIONS-REVISED (CLOPT-R)

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The Checklist of Interpersonal Transactions-Revised (CLOIT-R)
and
The Checklist of Psychotherapy Transactions-Revised (CLOPT-R)

The Check List of Interpersonal Transactions (CLOIT) and its companion versions, the Check List of Psychotherapy Transactions (CLOPT), were constructed by Kiesler (1984, 1987b) to measure the interpersonal behavior of target persons on dimensions corresponding to the 16 categories of the 1982 Interpersonal Circle (Kiesler, 1983, 1985).

The 1982 Interpersonal Circle was constructed as a comprehensive taxonomy of the domain of two-dimensional interpersonal behavior by integrating and expanding the content of four major adult interpersonal measures: the Interpersonal Check List (ICL; LaForge and Suczek, 1955; Leary, 1957), the Interpersonal Behavior Inventory (IBI; Lorr and McNair, 1965, 1967), the Interpersonal Adjective Scales (IAS; Wiggins, 1979, 1981), and the Impact Message Inventory (IMI; Kiesler, Anchin, Perkins, Chirico, Kyle and Federman, 1985; Kiesler, 1987a). The sixteen 1982 interpersonal categories--labeled A to P counterclockwise around the circumference of the Circle--are: DOMinant, COMpetitive, MIStrusting, COLd, HOStile, DETached, INHibited, UNAssured, SUBmissive, DEFerent, TRUsting, WARM, FRIendly, SOCiable, EXHibitionistic, and ASSured.

CLOIT and CLOPT are rationally, in contrast to empirically, derived inventories that have identical item content. CLOPT items were derived systematically from the 1982 Circle taxonomy (Kiesler, 1983, 1985) to characterize the interpersonal behaviors of either patient or therapist in the individual psychotherapy context through use of observer ratings. CLOPT items were then translated into CLOIT form to characterize the interpersonal behaviors of dyadic interactants as perceived and rated by each, or self-reported by each.

Each check list consists of the same 96 items descriptive of overt interpersonal behaviors that are checked as present or absent by the subject, interactant, or observer. The inventory is available in five versions: three forms of CLOIT and two forms of CLOPT. The CLOIT: Self-Report version is used by subjects to describe their own typical behaviors with others. The CLOIT: Transactant version is used in the situation in which one interactant (respondent) rates the interpersonal behavior of another interactant (target person) within the context of their previous interactions. The CLOIT: Observer version is used by external observers to rate the behavior of interactants after observation of their live or transcribed transactions. The CLOPT is available in two versions for observer ratings of live or videotaped samples of psychotherapy sessions, with either the patient (CLOPT: Client Form) or the therapist (CLOPT: Therapist Form) as the target person.

All five versions have identical item content and differ only in (a) pronoun form to match the appropriate context and (b) the sentence stem listed at the top of the inventory pages--CLOIT: Self-Report Form: "When with others, I . . ."; CLOIT: Transactant Form: "When in my company, this person. . ."; CLOIT: Observer Form: "When with this interactant, person A. . ."; CLOPT: Client Form: "When with the therapist, the client. . ."; and the CLOPT: Therapist Form: "When with the client, the therapist. . .". In short, the check lists are rating instruments designed to characterize a target person's interpersonal behavior from the perspective of the target person or a particular interactant, or from the intersubjective perspective of a group of observers.

Since the CLOIT and CLOPT items are in the format of descriptions of overt interpersonal actions, the inventories are in the tradition of action (Lorr and McNair, 1965, 1967) or act-frequency (Buss and Craik, 1983), in contrast to adjective check list or descriptive (LaForge and Suczek, 1955; Leary, 1957; Wiggins, 1979, 1981), approaches to measurement of interpersonal behavior. The CLOIT-CLOPT approach also measures interpersonal actions of a target person by respondent ratings, in contrast to respondents' self-reporting of their covert engagements as used by the Impact Message Inventory (Kiesler et al., 1985; Kiesler, 1987a).

ADMINISTRATION

Depending on the nature of a particular study, one or more of the five versions of the inventory can be used. Each version consists of six pages of items and an accompanying cover sheet of instructions designed for the respective version. Respondents check (or leave blank) each of the 96 items by recording their checks either directly on the inventory or directly on its corresponding Scoring Sheet. Item checks, then, can either be hand-scored directly on the Scoring Sheet or can be entered directly into computer storage for subsequent computer scoring.

When self-reports are sought, inventories are distributed to subjects who read the instructions and then respond to the items as to whether each is an accurate representation of their typical behavior with others. For transactant ratings, an inventory is distributed to each member of the dyad who, then, separately rate each item as to whether or not the interpersonal action described was performed by the other person during their particular interaction -- either for a specified time period, such as during a particular therapy session; or over some longer period of their transactions with each other (e.g. since being married to each other, or since you first met each other).

In the case of observer ratings, a group of observers fill out the inventory after witnessing a live transaction, or some transcription (videotape, audiotape, etc.) of a transaction, between two individuals. If the transaction being observed is of a psychotherapy or clinical interview, observers fill out the CLOPT inventory (either Client or Therapist forms); if of a non-clinical transaction, they use the CLOIT: Observer Form. In studies to date of clinical transactions, observers have been presented with as little as 5 to 10 minutes of a session and as much as an entire 50-minute session.

SCORING

Scales (Sixteenths) : Each of the 16 Circle categories is measured by 6 items: 3 designated at the mild-moderate level of behavioral intensity (each receiving a score of 1 when checked), and 3 designated at an extreme level of intensity (each receiving a score of 2 when checked). The range of possible scores for each category scale is 0 (no items checked) to 9 (all 6 items checked).

In each version of the inventory the 96 items are arranged identically on 6 separate pages. Each page contains 16 items, one item for each of the 16 category scales. The order of the items on each page is the same, with category items ordered by a counterclockwise progression around the Circle with a two-category gap (i.e., A:DOM, D:COL, G:INH, J:DEF, M:FRI, P:ASS, C:MIS, F:DET, etc.) to minimize possible bias in respondents' successive responses to the items.

The six columns on the Scoring Sheet are arranged to reflect the same item order. Each column provides spaces to record checks for 16 items, with item numbers ordered by the identical counterclockwise progression around the Circle with a two-category gap. A seventh column records the sum score for each category Scale: across a given row, each check found in columns 1, 3, and 5 (mild-moderate level items) receives a score of "1"; each check found in columns 2, 4, and 6 (extreme level items) receives a score of "2." The 16 Scale sum scores, then, are obtained directly from the Scoring Sheet from the column of row sum scores at the far right of the sheet.

Profile Summary Sheets are available for depicting the 16 Scale scores of a particular individual or means scores of a group of target persons on the 1982 Interpersonal Circle. Lines drawn to connect the 16 scores provide a visual summary of the interpersonal behavior pattern which is useful for interpretation, especially in the context of psychotherapy diagnosis and treatment. The resulting linear patterns can usefully be considered as pictorial displays of the interpersonal "force field" that a particular target person "projects" in his or her interactions with others in specific contexts.

NIC : Two additional scores are routinely calculated from each subject's Scoring Sheet. Number of Items Checked

(NIC) is calculated by simply counting the number of the total 96 items that have check marks on a particular Scoring Sheet; that is, NIC records the number of items checked by a particular respondent. $NIC = \text{the sum of checks for columns one through six}$; or $NIC = n1 + n2$ (number of checked items weighted "1" + number of checked items weighted "2"). Since LaForge (1977), NIC has been interpreted as a measure of a subject's or rater's "response acquiescence": the tendency to endorse or check an item regardless of its behavioral content.

AIN : The Average Intensity of the total items checked on the Scoring Sheet is recorded as the **AIN** score. Since half of the 96 items are weighted "1," the other half weighted "2," the possible range of AIN is between 1.00 and 2.00. For example, if in describing himself a respondent checked only mild-moderate items (regardless of scale designation), the resulting AIN score would be 1.00. $AIN = n1 + 2n2 / n1 + n2$; $AIN = n1 + 2n2 / NIC$. Since LaForge (1977), AIN has been interpreted as a measure of a subject's or rater's "social desirability" response set: the tendency to endorse items describing an extreme, socially unacceptable level of interpersonal behavior. However, AIN is also conceptualized as a direct measure of the extremeness of the target person's overall interpersonal actions. As such, AIN can be used (a) as an indicant of the degree of psychopathology present in a particular protocol and (b) as another measure of the degree of complementarity present between two interactants (the more the complementarity in a dyad, the higher the correspondence or correlation present between the AIN scores obtained by each in a particular transaction).

Octants : The 16 Scale scores can be combined (one Scale with its adjacent Scale on either side, as represented on the circumference of the 1982 Circle) to form **Octant** scores. The result is two sets of eight Octant scores. Since Leary (1957), the traditional set of octants that has been used in interpersonal studies are the following eight combinations: PA, BC, DE, FG, HI, JK, LM, NO. Kiesler (1983) noted that an equally plausible set of non-traditional octants need also to be studied: namely AB, CD, EF, GH, IJ, KL, MN, OP.

Quadrants : The 16 Scale scores also can be summed to obtain separate scores for each of the four circle **quadrants**: hostile-dominant (HD), hostile-submissive (HS), friendly-submissive (FS), and friendly-dominant (FD). As Orford (1986) documents, previous researchers have used imprecise formulas in combining Scales to quadrants, resulting from arbitrary judgment regarding assignment of the four Scales (A, E, I, M) that anchor the circles axes. He notes that most research "has followed Leary in dividing the circle cleanly into four quadrants, assigning sector A to friendly-dominance, E to hostile-dominance, and so forth ... it is clearly inconsistent to label the quadrants of the circle as hostile-dominant, hostile-submissive, friendly-submissive, and friendly-dominant, and then to include sector A (dominant) with friendly-dominant rather than hostile-dominant, E (hostile) with hostile-dominant rather than hostile-submissive, and so on" (pp. 369, 372). The imprecise quadrant formulas are as follows: $HD = B + C + D + E$; $HS = F + G + H + I$; $FS = J + K + L + M$; $FD = N + O + P + A$. Orford recommended that future research follow the Rausch, Dittman and Taylor (1959) and Kiesler (1983) convention of dividing behavior coded at the four axis Scales equally between adjacent quadrants. This convention leads to the following **Quadrant** Score formulas: $HD = 1/2 A + B + C + D + 1/2 E$; $HS = 1/2 E + F + G + H + 1/2 I$; $FS = 1/2 I + J + K + L + 1/2 M$; $FD = 1/2 M + N + O + P + 1/2 A$.

Goldston (1989) changed traditional quadrant scoring to reflect the predicted trigonometric components among scale scores detailed in Figure 1. According to Goldston's derivation, quadrant score formulas that precisely reflect circle trigonometry are as follows: $HD = .707 A + .924 B + C + .924 D + .707 E$; $HS = .707 E + .924 F + G + .924 H + .707 I$; $FS = .707 I + .924 J + K + .924 L + .707 M$; $FD = .707 M + .924 N + O + .024 P + .707 A$. We recommend that future investigators use these more precise formulas.

Hemispheres : The 16 Scale scores can be summed to obtain separate scores for the four possible hemispheres of the circle: dominant, submissive, friendly, and hostile. Recent evidence (Henry, Schacht and Strupp, 1986; Kiesler and Goldston, 1988; Kiesler and Watkins, 1989; Orford, 1986) suggests that it is important to analyze hemisphere scores, especially friendly and hostile, when testing for complementarity in therapy transactions -- more precisely, to tease out of complementary interactions the separate contributions of the control and affiliation axes (Weinstock-Savoy, 1986). The appropriate **Hemisphere** score formulas, expressed in terms of their precise trigonometric counterparts, are as follows: $DOM = .383 N + .707 O + .924 P + A + .924 B + .707 C + .383 D$; $SUB = .383 F + .707 G + .924 H + I + .924 J + .707 K + .383 L$; $FRI = .383 J + .707 K + .924 L + M + .924 N + .707 O + .383 P$; $HOS = .383 B + .707 C + .924 D + E + .924 F + .707 G + .383 H$.

Axes : The 16 Scale scores can further be summed to provide scores representing a target person's overall vector on each of the axes of the circle: control (vertical axis) and affiliation (horizontal axis). Since LaForge (1977) and Leary (1957), the scores have been obtained from trigonometric weightings of the Scale scores from a given protocol using the following Axis score formulas: CONTROL = A - I + .924 (B + P - H - J) + .707 (C + O - G - K) + .383 (D + N - F - L); AFFILIA = M - E + .924 (N + L - D - F) + .707 (O + K - C - G) + .383 (P + J - B - H).

Vectors : The 16 Scale scores can be combined to obtain a vector-sum score. Scores are computed for each subject on the two principal components (axes) that define that subject's interpersonal behavior space. These scores for the two axes are combined using the theorem of Pythagoras to arrive at the magnitude of the vector sum; the direction is determined by the arctangent of the affiliation to control score ratio, with the signs of each component preserved. The result is the angle of deviation of the sum score from the control (dominant) axis -- equivalent to the point of intersect that occurs when perpendicular lines are drawn from the score-points on the control and affiliation axes. As LaForge (1977, p. 7) points out, a subject's interpersonal behavior pattern may be summarized as one point on the circumplex in terms of its distance and direction from the center. To examine for group differences in mean vector-sum scores (Alden & Phillips, 1990), investigators can follow the procedure outlined by Watson & Williams (1956) and Mardia (1972).

Ipsatized Scores : Finally, any investigator has the option of using all of the above scores (with the exception of NIC and AIN) as derived from the raw Scale scores or from ipsatized Scale scores (Berzins, 1977; Block, 1957; Cattell, 1944; Paddock, Potts, Kiesler and Nowicki, 1986). The conceptual distinction is between "ipsative" and "normative" measurement. In the former, "the set of scores ... are weighted or ordered relative to that individual's own personal mean;" in the latter, "each score for an individual is evaluated relative to the mean score of a group of individuals" (Block, 1957, p. 50). Cattell (1944) suggested that ipsative measurement, treated normatively, provides results different from those derived by direct normative measurement (p. 296). Block (1957), in an important methodological paper, demonstrated that nomothetic and ipsative scaling of personality attributes are not interchangeable and that each involves a somewhat different kind of appraisal. He concluded that ipsative ratings, normatively treated, "offer the possibility of providing more stable interrelationships among variables than has usually been the case" (p. 53).

To ipsatize sector scores, one simply normalizes a given subject's sixteen scores around that subject's overall mean score (mean of all 16 Scales or mean of all inventory items), resulting in 16 positive and negative z-scores. Although infrequently used in interpersonal studies, ipsative scores seem the conceptual choice for many tests of interpersonal propositions, especially those addressing interpersonal complementarity (Kiesler, 1987). That is, for many interpersonal predictions it seems crucial to determine the strongest component (profile peak) within the interpersonal "force field" emitted by a particular person, regardless of the normative level (compared to other persons) of that strongest component or peak -- an ipsative determination. If, for example, friendly-dominance is the predominant pattern of an individual's interpersonal behavior, it is likely that friendly-dominance will be prepotent in elicitation of reactions from others even if the individual's level of intensity is only moderate in comparison to levels found in some normative sample. In other instances, especially determination of psychopathology, a normative comparison (using unconverted raw scores) of the strength or intensity of an individual's "force field" seems both indicated and crucial; likewise, in dyadic transactions an investigator might seek to evaluate the transactional outcome of a given mix of relative strengths or intensities of friendly-dominance present for the interactants. In sum, while normative scores, based on raw Scale scores, clearly have a place in empirical analyses, it seems important that researchers give much greater attention to possibilities of ipsative scoring (based on ipsatized Scale scores) of interpersonal data.

Summary . Obviously a large number of possible scores can be obtained from any single inventory protocol. On the one hand, univariate analysis of all possible scores in any particular study inflates considerably the Type I error because of repeated sampling and interrelated scores. For this reason, LaForge (1977, p. 21) recommended that "wherever possible, statistical hypotheses should be expressed in terms of a single dependent variable" such as CONTROL, AFFILIA, AIN:TOT, or one of the Scales. Another rationale for LaForge's recommendation is that different hypotheses are targeted more precisely to different scores on the molar-molecular continuum.

On the other hand, researchers have rarely examined carefully the strengths or weaknesses of

various possible inventory scores, nor have we accumulated any tradition of standard analyses or cumulative normative data. These omissions often make it an arbitrary choice as to which one or few inventory scores should serve as key dependent variables in a particular study. At this point in time, it seems most sensible for interpersonal researchers to combine both strategies within and across studies: a priori specification of a few scores for testing of specific hypotheses; wide-band, especially multivariate, analyses of many of the scores for descriptive and/or exploratory purposes. It would be an unfortunate outcome if, by solidifying score conventions prematurely, we build a corpus of findings on what turns out to be swampy terrain.

RELIABILITY OF CLOIT-R AND CLOPT-R SCORES

Internal Consistency Reliability

Five studies (Kiesler, Goldston, Paddock and Van Denburg, 1986; Kiesler, Heffner, Larus and Radecki-Bush, 1989; Kiesler, Paddock, Goldston and Schmidt, 1988; Kiesler, Schmidt and Larus, 1988, 1989) report Cronbach alpha coefficients for the 16 scales of the CLOIT versions.

Kiesler, Goldston, Paddock and Van Denburg (1986) used the 1984 CLOIT: Transactant Form for a study in which 325 undergraduates rated the interpersonal behavior of same gender acquaintances. For the 16 CLOIT scales they report alpha coefficients ranging from .43 to .81 (median of .63), with only two of the coefficients below .50. They also report alphas for quadrants (HD = .89, HS = .71, FS = .88, FD = .69) and for hemispheres (DOM = .81, SUB = .81, FRI = .87, HOS = .86).

Kiesler, Heffner, Larus and Radecki-Bush (1989) had clinical interviewers in a mental health setting use the 1984 CLOIT: Transactant Form to rate the intake interview behavior of 117 male and female outpatients. Internal consistency coefficients for the sample ranged from .24 to .68 (median of .50, with eight coefficients below .50).

Kiesler, Paddock, Goldston and Schmidt (1988) used the 1984 CLOIT: Transactant Form in a study in which 425 undergraduates rated the interpersonal behavior of same gender close friends who, in turn, rated the behavior of the 425 undergraduates. Internal consistency coefficients were calculated on the combined undergraduates and close friends samples (N = 850). Resulting alphas obtained for the 16 scales ranged from .39 to .65 (median of .51), with eight coefficients below .50. Alpha coefficients for the traditional octants ranged from .49 to .73 (median of .62).

Kiesler, Schmidt and Larus (1988) used the 1987 CLOIT-R: Self-Report Form in a study in which 167 undergraduates characterized their own typical interpersonal behaviors with others. They found alpha coefficients for the 16 scales ranging from .44 to .64 (median of .55), with only one coefficient below .50.

Kiesler, Schmidt and Larus (1989) had 196 undergraduates characterize their typical interpersonal behavior at two time points (n = 126 at retest) using the 1987 CLOIT-R: Self-Report Form. Internal consistency coefficients calculated for the octant scores were as follows: at time one, rs ranged from .63 to .74 (median of .72) for traditional octants, while ranging from .67 to .73 (median of .70) for nontraditional octants; at time two, rs ranged from .53 to .80 (median of .72) for traditional octants, while ranging from .65 to .75 (median of .73) for nontraditional octants. Traditional octants are PA, BC, DE, FG, HI, JK, LM, NO; nontraditional octants are AB, CD, EF, GH, IJ, KL, MN, OP.

Interrater Agreement

Indexes of interrater reliability are obtained from studies in which more than one observer view live or videotaped samples of interpersonal behavior taken from interview sessions or other dyadic interactions.

After viewing each sample, observers independently rate the behavior of the designated target person (patient, therapist, interviewer, etc.) using the CLOPT versions of the inventory. Intraclass reliability coefficients are then calculated across the n observers for each of the 16 CLOPT scales.

Three studies (Kiesler, Van Denburg, Sikes-Nova, Larus and Goldston, 1990; Van Denburg, 1988; Weinstock-Savoy, 1986) have reported intraclass coefficients for the CLOPT scales.

Kiesler, Van Denburg, Sikes-Nova, Larus and Goldston (1990) had 22 graduate students sequentially observe four 9-minute videotapes of cases of DSM-III personality disorders. After viewing each case, observers independently rated the behavior of the patient using the 1984 CLOPT: Client Form. Ebel intraclass coefficients were calculated for their ratings, albeit on a very small sample ($N = 4$ tapes). The estimated average reliabilities for all pairs of the 22 raters (r_{11}) ranged from $-.024$ to $.899$, with a median r_{11} of $.238$. Any pair among the 22 graduate raters, then, yielded very unreliable CLOPT ratings. In contrast, the reliabilities of the scale score averages obtained from all 22 judges (r_{kk}) ranged from $.000$ to $.995$, with a median r_{kk} of $.873$. Eleven of the 16 scales obtained r_{kk} coefficients above $.800$, while only four were less than $.488$ (these four were for scales used very infrequently to characterize the patient cases with a resulting minimal variance for the scores). In sum, the average graduate student CLOPT scale ratings for the four patients were highly reliable for all but five (COL, HOS, TRU, WAR, FRI) of the 16 scales.

In Van Denburg's (1988) study, two interviewers were trained to portray two different styles of interpersonal behavior: friendly-dominant and hostile-submissive. The interviewers then conducted high and low stress interviews with experimental subjects. As an experimental check on the validity of the interviewers' style portrayals, three observers viewed a sample of 20 videotaped interview samples and independently filled out 1984 CLOIT: Observer Forms on the interviewers' behavior. To assess the interjudge reliability of the CLOIT ratings completed on the interviewers, Cronbach alphas were calculated for each of the 16 scale scores from the 3 observers. Five scales (DOM, MIS, UNA, SUB, ASS) were bypassed in the analyses because of zero variance as a result of too few items being endorsed by the raters on these scales. For the remaining 11 scales, standardized item alphas ranged from $.33$ to $.97$, with a median coefficient of $.68$. Five coefficients were $.74$ or higher, while only four (COM, INH, DEF, TRU) were below $.50$.

Weinstock-Savoy (1986) had 26 subjects rate patients' behavior using 1984 CLOPT: Client Forms after viewing four videotapes of role-played clinical interviews. A regression analysis computed on the CLOPT octant scores revealed a moderate to high level of agreement between observers: the mean r^2 across the octants was $.69$ (ranged from $.56$ to $.83$). She also correlated individual rater scores for a given octant with the mean octant scores given by all raters who saw a particular tape, across all four tapes. This resulted in high correlations between individual observer and mean scores (a) for octants (r_s ranged from $.70$ to $.90$, with a mean of $.82$), (b) for quadrants (HD = $.74$, HS = $.89$, FS = $.89$, FD = $.72$), and for axis scores (CONTROL = $.85$, AFFILIA = $.88$).

In a separate study, Weinstock-Savoy (1986) had pairs of raters fill out 1984 CLOPT: Client Forms on 39 outpatients after viewing videotaped segments of an early therapy session. Modified intraclass coefficients revealed moderate levels of reliability for the CLOPT axis scores ($.62$ for both axes), but the quadrant scores were variable (coefficients ranged from $.15$ to $.73$) and the CLOPT octant scores were even more variable (coefficients ranged from $.00$ to $.72$, with a median of $.37$). Since an equivalent pattern of coefficients was obtained for Wiggins's (1981) Interpersonal Adjective Scales octants, which have considerable evidence of high reliability, these lower and more variable reliability values likely reflect the judge-by-target-person interactive effects that are maximized when only two judges are used for interpersonal ratings (see also Kiesler, 1987).

Interobserver Agreement for CLOPT Profiles

Another estimate of interobserver agreement is possible when groups of observers rate the same target person from live or videotaped interactional samples. These estimates characterize the stability or generalizability of the mean profile of 16 CLOPT scale scores obtained for a particular ratee by (a) constituting split-half samples of the observer group, (b) calculating Pearson correlations between the two sets of 16 mean

scores, and (c) then correcting the obtained r value by Spearman-Brown formula to arrive at a coefficient representative of the entire group of observers.

Three studies (Heffner, 1988; Kiesler, Van Denburg, Sikes-Nova, Larus and Goldston, 1990; Weinstock-Savoy, 1986) have reported these profile stability indexes.

In Heffner's (1988) study, a male interviewee was trained to portray a submissive hemisphere pattern of interpersonal behavior, using behavioral descriptors from the mild-moderate range, with emphasis on the Inhibited, Submissive, and Trusting scales, from the Acts Version of the 1982 Interpersonal Circle (Kiesler, 1985). After viewing the videotaped simulated interview, each of four groups of subjects ($n = 24$ in each group) rated the submissive interviewee using the 1987 CLOIT-R Transactant version. The means of the 16 scales, calculated for each of the four groups, constituted four separate CLOIT-R profiles. Each of the 16-scale profiles was then correlated with each of the other three group profiles, with the resulting six r s ranging from .97 to .98. These values represent strong evidence for the profile reliability of the 16 CLOIT-R scales.

Kiesler, Van Denburg, Sikes-Nova, Larus and Goldston (1990) had 22 graduate student clinical trainees sequentially view videotapes of 4 cases of DSM-III personality disorder. Also 8 separate groups of undergraduates ($N = 30$ each) viewed the same 4 cases plus 4 additional personality disorder patients. After viewing a particular case, all observers rated the patient's behavior using the 1984 CLOPT: Client Form. Since MANOVA analyses had revealed no significant sex effects on the CLOPT ratings for graduate observers and only minimal effects for the undergraduates, one easily calculated split-half estimate resulted from intercorrelating the mean profile of 16 scores obtained for male observers with the mean profile obtained for females. For both graduate and undergraduate observers, split-half samples were constituted by dividing each group by gender (approximately a 50-50 ratio in all cases). The CLOPT profiles obtained for each patient were highly reliable. The 12 corrected r values are all above .925 with only two exceptions: antisocial (for graduates) at .847, schizoid (for undergraduates) at .763. Hence, using gender as one of the many possible splits of observer groups into halves yields very high reliabilities of the 8 patients' CLOPT profiles.

A second split-half estimate of interobserver agreement was obtained by intercorrelating the mean profiles of the graduate and undergraduate observers for each of the four cases rated by both groups. The mean profile of the sixteen CLOPT scores obtained for 22 graduate observers for each of the four vignettes was correlated with the mean profile obtained for the 30 undergraduate observers. The resulting Pearson r s were .640 ($p < .005$) for compulsive, .906 ($P < .0001$) for schizotypal, .973 ($p < .0001$) for narcissistic, and .945 ($p < .0001$) for antisocial. These figures represent impressive evidence of generalizability of CLOPT ratings for personality disorders between clinically naive undergraduates and clinically-trained graduate observers.

Weinstock-Savoy (1986) had 26 subjects rate patients' behavior using the 1984 CLOPT: Client Form after viewing four videotapes of role-played clinical interviews. She intercorrelated the octant profiles obtained by all observers who rated a given tape; she obtained mean r s for the 4 tapes of .74, .97, .67 and .60.

Summary

Most of the reliability studies reported above were conducted using the earlier 1984 CLOIT and CLOPT versions of the inventory; only a few more recent studies have been conducted for the 1987 CLOIT-R and CLOPT-R revisions. However, since the item content of the 1984 and 1987 versions has substantial overlap, reliabilities obtained for either version should be mostly comparable.

The findings reveal the following conclusions. (1) Studies yield internal consistency coefficients approximating .55 for sixteenths, .65 - .70 for octants, .70 - .90 for quadrants, and .80 - .90 for both hemisphere and axis scores. (2) Interrater agreement findings reveal clearly that the level of reliability obtained is a function of the number of judges used for a particular study. Ratings from only two judges can vary across the entire coefficient range depending on scales, sixteenths or octants, and contexts; ratings from twenty plus judges reveal very high levels of interjudge agreement. Although an exact satisfactory cutoff number has not been determined to date, data suggest that 5 or 6 judges ordinarily are necessary to establish high intersubjective agreement (by canceling out the

idiosyncratic variance that can result from judges' own interpersonal styles). (3) With a sufficiently large number of judges for observer or transactant ratings, the CLOIT-R and CLOPT-R profiles (for sixteenths or octants) that emerge for individuals or for groups show very high levels of interjudge agreement.

The upshot is that CLOIT-R and CLOPT-R inventories, in their various versions, obtain adequate levels of reliability when scored for octants, quadrants, hemispheres, or axes. When scored for sixteenths, the resulting reliabilities are much more variable and more often less than satisfactory. Routine applications of the inventories, then, should restrict themselves to the octant scores.

EMPIRICAL FINDINGS

Concurrent Validity

Available evidence for concurrent validity comes from Weinstock-Savoy's (1986) two studies in which both the 1984 CLOPT: Client Form and Wiggins's (1981) IAS were used to rate the same data sets. For her first study, correlations between patient CLOPT and IAS scores revealed moderate to high levels of correlations for the octants (r s ranged from .46 to .80, all significant at $p < .05$ or better); quadrant r s ranged from .62 to .81; while axis scores were highly correlated (r s were .86 and .88). Her second study of 39 outpatients in psychotherapy also revealed moderate to high correlations between the two measures; r s for octants ranged from .18 to .86 (median of .55); quadrants ranged from .33 to .79; r s for axes were .54 and .88. Also, for this second study which used only pairs of judges for ratings, only two octants (BC and JK) were not significantly correlated across the two measures. Weinstock-Savoy concludes that "the IAS and CLOPT displayed a high but not complete degree of overlap. While the IAS had better circumplex structure and was quicker to administer, the CLOPT appeared somewhat more sensitive to therapist hostility and was more often successful in predicting outcome" (1986, p. 136).

Kiesler, Schmidt and Larus (1989) administered the CLOIT-R Self-Report and the Interpersonal Adjective Scales (IAS; Wiggins, 1979) to a sample of 326 undergraduates (86 males, 223 females). Intercorrelations were calculated between the CLOIT-R traditional octants and both Wiggins' IAS and IAS-R octants. For the total sample octant intercorrelations ranged from .00 to .54 for IAS (PA = .38, BC = .29, DE = .31, FG = .54, HI = .49, JK = .00, LM = .35, NO = .20) and from .00 to .57 for IAS-R (PA = .45, BC = .24, DE = .32, FG = .47, HI = .57, JK = .00, LM = .31, NO = .20). These values suggest that there is minimal to only moderate relationship between the octant scales of the two measures.

Predictive Validity

Evidence for predictive validity comes from several studies (Kiesler and Goldston, 1988; Kiesler and Watkins, 1988; Kiesler, Van Denburg, Sikes, Larus and Goldston, 1988; Van Denburg, 1988; Weinstock-Savoy, 1986).

Kiesler and Goldston (1988) found that 1984 CLOPT: Client Form and 1984 CLOPT: Therapist Form ratings by groups of undergraduate observers (n s ranged from 9 to 15 in the six groups) significantly differentiated the interpersonal behavior of three prominent therapists (Rogers, Perls, Ellis) who interviewed the same patient (Gloria), and also significantly differentiated Gloria's behavior with each of the therapists. Findings for the three therapists showed that on the control dimension Rogers was more unassured with Gloria than were both Perls and Ellis, and more submissive than Ellis; Perls and Ellis were equally dominant, and both were more dominant, competitive, and mistrusting than Rogers. On the affiliation dimension, the CLOPT findings showed that Perls and Ellis could not be differentiated in terms of hostility but that both were more hostile than Rogers, while Perls was also colder than Rogers. In sum, Rogers was characterized as friendly-submissive, Ellis as dominant-neutral, and Perls as hostile-dominant.

Findings for Gloria revealed that on the control dimension Gloria was more competitive and mistrusting with Perls than with both Rogers and Ellis, more dominant with Perls than with Rogers, and equivalently submissive with Rogers and Ellis. On the affiliation dimension, Gloria was less warm and friendly (and remarkably more cold, hostile, and detached) with Perls than with both Rogers and Ellis. In sum, Gloria was friendly - submissive with both Rogers and Ellis but hostile-dominant with Perls.

Analyses of the fit of CLOPT profiles between Gloria and each therapist showed that Gloria's actual behavior with all three therapists departed from the perfect complementary predictions. Axes analyses showed that Gloria's behavior on the control dimension was complementary (reciprocal) only to Ellis (Ellis, dominant; Gloria, submissive) but markedly nonreciprocal to both Rogers (Rogers, submissive; Gloria, submissive) and to Perls (Perls, dominant; Gloria, dominant). On the affiliation dimension, Gloria's behavior was, in contrast, complementary (correspondent) to both Rogers (Rogers, friendly; Gloria, friendly) and to Perls (Perls, hostile; Gloria, hostile) but was not correspondent to Ellis (Ellis, neutral; Gloria, friendly).

Findings for the 16 CLOPT scales clarified more specifically the obtained departures from complementarity. In all, 6 scales showed noncomplementary fit for Gloria with both Rogers and Ellis; 9 with Perls -- 21 violations out of the total 48 scale comparisons for the three therapists. Of the 21 violations, 11 scales were located on the hostile half of the 1982 Interpersonal Circle, 4 were neutral (i.e. fall exactly at either pole of the dominant-submissive axis), and only 6 were located on the friendly half. In sum, most of the fit to complementarity occurred on the friendly half of the circle; most of the violations occurred on the hostile half, among scales loading more heavily on either pole of the control axis than on the hostile pole of the affiliation axis.

Kiesler and Watkins (1989) examined, on a sample of 36 outpatient psychotherapy dyads, the relationship between the working alliance and patient-therapist complementarity during early therapy sessions. Patients and therapists independently recorded their perceptions of the alliance on Working Alliance Inventories (WAIs; Horvath, 1981; Horvath and Greenberg, 1986); interpersonal complementarity was derived from patients and therapists' ratings of each other's interpersonal behavior on the 1984 CLOIT: Transactant Form. Both sets of measures were obtained at the end of the third therapy session.

Results showed that when a patient-therapist complementarity score was calculated from CLOIT scales within the hostile hemisphere of the 1982 Interpersonal Circle, a significant relationship emerged between complementarity and patients' perceptions of the working alliance. The closer the dyadic fit to perfect complementarity, the stronger was the therapeutic alliance perceived by the patient. The same relationship was found for therapists' perceptions of the working alliance and a complementarity score obtained from both the hostile and friendly Circle hemispheres. The authors conclude that these findings indicate that in the psychotherapy context the valence of interpersonal behaviors from the hostile versus friendly hemispheres is not equivalent. How patient and therapist match on the hostile half of the Circle seems important for development of a positive working alliance. How they match on the friendly half seems relatively irrelevant, at least during early therapy sessions.

Results also revealed that the extremeness of the patient's hostile-side behavior was significantly related to both patients' and therapists' perceptions of the working alliance. The more extreme a patient's behavior within the hostile half of the Circle, the less positive is the working alliance perceived by that patient. A similar pattern emerged for therapists' WAI scores, except that therapists' perceptions of the alliance were related to extremeness of patient behavior on both halves of the Circle. The authors conclude that both patients and therapists perceive a stronger helping alliance when the patient's hostile-side interpersonal behavior is less extreme. In contrast, extremeness of the therapist's interpersonal behavior is essentially unrelated to either the patient's or the therapist's perceptions of the working alliance.

Kiesler, Van Denburg, Sikes, Larus and Goldston (1990) set out to provide empirical interpersonal descriptions for seven of eleven DSM-III personality disorder patients as a test of the a priori classifications of these diagnostic categories on the 1982 Interpersonal Circle that were offered by Kiesler (1986). A sample of eight videotaped patient interviews was obtained from two psychiatric training tape series which had been produced to exemplify DSM-III Axis I and Axis II disorders. The eight vignettes represented seven personality disorders: histrionic (two cases), passive-aggressive, schizoid, schizotypal, compulsive, antisocial, and narcissistic. Independent checks on the training tape diagnoses were obtained from a panel of 10 professional trainees who viewed the eight vignettes and independently recorded DSM-III diagnoses. Interpersonal characterizations of the

interview behavior of the eight patients were obtained from 1984 CLOPT: Client Form ratings by 240 undergraduates (30 per each vignette) and 22 graduate psychology students (who sequentially rated 4 of the 8 tapes).

A moderately conservative test of Kiesler's (1986) predictions was obtained by ascertaining whether the predicted peak scale(s) actually occurred among the top-five highest ranked scales for each of the 8 patients, as rated by the undergraduates and graduates. Results showed that predictions were clearly confirmed for two cases (narcissistic, schizoid) and mostly confirmed for two others (compulsive, schizotypal). In contrast, for one disorder (antisocial) predictions were clearly not confirmed; for the remaining 3 cases (passive-aggressive, histrionic A, histrionic B) confirmations were partial (one peak scale confirmed, the other not). Inspection of the top-five ranked CLOPT scales for each case showed that, rather than one or two predicted peak scales, combinations of larger numbers of Circle segments seem necessary both to define a particular disorder and to differentiate disorders. Inspection also revealed that core interpersonal behaviors for a particular disorder often were located in more than one Circle quadrant. For example, the schizotypal patient's pattern centered in the hostile-submissive quadrant (detached, unassured, inhibited), but contained components also from the hostile-dominant (cold, mistrusting) quadrant.

Multivariate analyses of variance of the 16 CLOPT scales revealed significant differentiations of the interpersonal behavior of the eight cases. Observer sex had minimal effects on the CLOPT ratings. Sex made a difference only for the undergraduate observers, for only the Trusting and Warm scales. Women rated the patients' behavior as more trusting and warm than did the men. On the other hand, level of observer clinical training significantly affected the CLOPT ratings in a very consistent pattern. In all cases where significant differences existed, regardless of scale location on the 1982 Circle undergraduates rated more intense or extreme levels of the patients' interpersonal behaviors than did graduates.

The panel of clinicians achieved good agreement that seven of the eight cases (all except histrionic A) had a principal diagnosis on Axis II. Also, the panel confirmed, with high interjudge agreement, the training series' diagnoses for four of the eight cases (compulsive, schizotypal, narcissistic, antisocial). The CLOPT profiles for these four cases likely provide valid interpersonal characterizations of these disorders, although the profiles need to be replicated on samples larger than $N=1$.

The authors conclude that systematic interpersonal ratings can provide statistically reliable discriminations of the interpersonal behavior of patients assigned a principal diagnosis of personality disorder; that prototypic interpersonal profiles for the various personality disorders seem to be more complex and subtle than previous a priori translations, which focused on octant patterns, suggest; that quite brief (5 to 9 minutes long) videotaped patient vignettes seem to provide reliable and valid ratings of patients' interpersonal behavior; that observer sex had inconsequential effects on the interpersonal ratings of the study; and that level of clinical training contributed important effects to the intensity or extremeness of interpersonal ratings of patient behavior, although simultaneously yielding highly generalizable profiles or patterns.

Van Denburg (1988) sought empirical support for a core interpersonal assumption which he labeled the "principle of transactional escalation", according to which an individual's typical interpersonal behavior will become rigid and extreme under stressful interpersonal conditions. A sample of 30 undergraduates was selected, all of whom received peak scores in the friendly-submissive quadrant of the 1982 Circle as determined by 1984 CLOIT: Transactant forms filled out on each subject by 3 acquaintances. Half ($N=15$) of the subjects were randomly placed in a low-stress structured interview; half ($N=15$) were placed in a high-stress condition. In the first half of the interview, which was identical for both groups, the interviewer assumed a complementary (friendly-dominant) posture, and asked questions designed to elicit low-intimacy responses (Taylor and Altman, 1966). In the second half of the interview for the low-stress group, the interviewer maintained the identical conditions; for the high-stress group, the interviewer's style changed to the anticomplementary position (hostile-submissive), and the questions asked of the interviewee had a significantly higher intimacy ratings. A group of 10 female raters viewed 10-minute samples of the first and second halves of each interview in such a manner that each sample was rated by 5 judges using the CLOPT forms.

Results provided strong support for the hypothesis that subjects' interpersonal behavior, under the stressful condition, indeed became more extreme. Analyses of subjects' friendly-submissive behaviors (SUB, DEF, TRU, WAR, FRI) showed significant increases in the SUB, DEF, and TRU scales in the second half of the interview

for high-stress subjects only. A second hypothesis stated that subjects' interpersonal behavior would also become more rigid in the high-stress condition--i.e. not only should the FS quadrant scores increase, but the other three quadrant scores (FD, HD, HS) should also decrease. Results showed the predicted pattern for the high-stress subjects' HD quadrant score only; it was not found for the HD quadrant score, and the opposite pattern (escalation) was found for the HS quadrant score.

Van Denburg concluded that his study was the first to provide empirical support for the interpersonal principle of transactional escalation. Results demonstrated that an individual's typical interpersonal behavior became more extreme during a stressful interview situation; partial support was found for the prediction that the subject's behavior would also become more rigid under stress. A third hypothesis, that a subject's self-reportable level of anxiety would increase during the stressful interview condition was not supported.

Weinstock-Savoy's (1986) first study of psychotherapy patients' behavior showed that both the CLOPT and the IAS octants significantly differentiated four role-played therapy interactions designed to represent the quadrants of the Interpersonal Circle. Her second (clinical outcome) study demonstrated that high patient-therapist complementarity, as measured by both CLOPT and IAS, during initial sessions was positively associated with successful patient outcome. Outcome was assessed by post-treatment evaluations by the patient, therapist, and independent raters as well as by change in target problem behaviors. Her finding, however, was related primarily to complementarity that occurred on the friendly-hostile axis.

Other Studies. Other validity studies which used one or another versions of the CLOIT-R or CLOPT-R inventories include Campbell and Brown (1990), Carson and Shapiro (1985), Chewning (1990), Golden (1988), Goldston (1989), Gonick (1987), Heffner (1988, 1992), Kiesler, Goldston, Paddock and Van Denburg (1986), Kiesler, Heffner, Larus and Radecki-Bush (1989), Kiesler, Paddock, Goldston and Schmidt (1989), Kiesler, Schmidt and Larus (1988, 1989), Kivlighan and Mullison (1986), Mahalik, Hill and Thompson (1990), Pollock (1990), Schmidt (1989), Thompson, Hill and Mahalik (1989), Whiffen, Dudley & Sasseville (1990), Wilkie (1987), and Wilkie and Conway (1988).

REFERENCES

Alden, L.E., & Phillips, N. (1990). An interpersonal analysis of social anxiety and depression. Cognitive Therapy and Research, 14, 499-513.

Berzins, J.I. (1977). Therapist-patient matching. In A.S. Gurman & A.M. Razin (Eds.), Effective psychotherapy: A handbook of research (pp. 222-251). Elmsford, NY: Pergamon.

Block, J. (1957). A comparison between ipsative and normative ratings of personality. Journal of Abnormal and Social Psychology, 54, 50-54.

Buss, D.M., & Craik, K.H. (1983). The act frequency approach to personality. Psychological Review, 90, 105-126.

Campbell, S.R., & Brown, R.A. (1990, August). The relationship of interpersonal complementarity to marital satisfaction and security. Paper presented to the annual meeting of the American Psychological Association, Boston, MA.

Carson, R.C., & Shapiro, J.H. (1985). Mood, gender-typing, and interpersonal orientation: On "masculine" imperturbability. Unpublished manuscript, Duke University, Durham, NC.

Cattell, R.B. (1944). Psychological measurement: ipsative, normative, and interactive. Psychological Review, 51, 292-303.

Chewning, M.F. (1990). A comparison of adolescent male sex offenders with juvenile delinquents and nonreferred adolescents. Unpublished doctoral dissertation, Virginia Commonwealth University, Richmond, VA.

- Golden, B.R. (1988). Mechanisms of change in a model of short-term dynamic psychotherapy. Unpublished doctoral dissertation, Virginia Commonwealth University, Richmond, VA.
- Goldston, C.S. (1989). The Checklist of Psychotherapy Transactions as a self-report measure of covert and overt interpersonal complementarity. Unpublished doctoral dissertation, Virginia Commonwealth University, Richmond, VA.
- Gonick, J. (1987). The effects of interpersonal complementarity and clinician characteristics on clinical judgments of diagnostic severity and prognosis. Unpublished doctoral dissertation, Virginia Commonwealth University, Richmond, VA.
- Heffner, K.P. (1988). The effects of help-seeker role labels on subjects' recognition memory and perceptions of interpersonal behaviors. Unpublished master's thesis, Virginia Commonwealth University, Richmond, VA.
- Heffner, K.P. (1992). Alcohol-related expectancies and self-perceived interpersonal behaviors during interactions with same-sexed peers when drinking. Unpublished doctoral dissertation, Virginia Commonwealth University, Richmond, VA.
- Henry, W.P., Schacht, T.E., & Strupp, H.H. (1986). Structural Analysis of Social Behavior: Application to a study of interpersonal process in differential psychotherapeutic outcome. Journal of Consulting and Clinical Psychology, *54*, 27-31.
- Horvath, A.D. (1982). An exploratory study of the working alliance: Its measurement and relationship to outcome. Unpublished doctoral dissertation, University of British Columbia, Burnaby, British Columbia.
- Horvath, A.D., & Greenberg, L.S. (1986). The development of the working alliance inventory. In L. Greenberg & W. Pinsof (Eds.), The psychotherapeutic process: A research handbook (pp. 3-24). Elmsford, NY: Pergamon.
- Kiesler, D.J. (1983). The 1982 Interpersonal Circle: A taxonomy for complementarity in human transactions. Psychological Review, *90*, 185-214.
- Kiesler, D.J. (1984). Check List of Psychotherapy Transactions (CLOPT) and Check List of Interpersonal transactions (CLOIT). Richmond: VA Commonwealth University.
- Kiesler, D.J. (1985). The 1982 Interpersonal Circle: Acts Version. Richmond, VA: Virginia Commonwealth University.
- Kiesler, D.J. (1986). The 1982 Interpersonal Circle: An analysis of DSM-III personality disorders. In T. Millon & G.L. Klerman (Eds.), Contemporary directions in psychopathology: Towards the DSM-IV (pp. 57-597). New York: Guilford.
- Kiesler, D.J. (1987a). Research manual for the Impact Message Inventory. Palo Alto, CA: Consulting Psychologists Press.
- Kiesler, D.J. (1987b). Check List of Psychotherapy Transactions-Revised (CLOPT-R) and Check List of Interpersonal Transactions-Revised (CLOIT-R). Richmond, VA: Virginia Commonwealth University.
- Kiesler, D.J., Anchin, J.C., Perkins, M.J., Chirico, B.M., Kyle, E.M., & Federman, E.J. (1985). The Impact Message Inventory: Form IIA. Palo Alto, CA: Consulting Psychologists Press.
- Kiesler, D.J., & Goldston, C.S. (1988). Client-therapist complementarity: An analysis of the Gloria films. Journal of Counseling Psychology, *35*, 127-133.
- Kiesler, D.J., Goldston, C.S., Paddock, J.M., & Van Denburg, T.F. (1986). An initial validation of the

Check List of Interpersonal Transactions. Unpublished study, Department of Psychology, Virginia Commonwealth University, Richmond, VA.

Kiesler, D.J., Heffner, K.P., Larus, J.P., & Radecki-Bush, C. (1989). Interpersonal interview behavior of a sample of psychiatric outpatients. Unpublished study, Department of Psychology, Virginia Commonwealth University, Richmond, VA.

Kiesler, D.J., Paddock, J.M., Goldston, C.S., & Schmidt, J.A. (1989). Interpersonal complementarity among close friends. Unpublished study, Department of Psychology, Virginia Commonwealth University, Richmond, VA.

Kiesler, D.J., Schmidt, J.A., & Larus, J.P. (1988). Internal consistency and test-retest reliability of the self-report version of the Check List of Interpersonal Transactions (CLOIT). Unpublished study, Department of Psychology, Virginia Commonwealth University, Richmond, VA.

Kiesler, D.J., Schmidt, J.A., & Larus, J.P. (1989). The Interpersonal Adjective Scales (IAS) and the Check List of Interpersonal Transactions (CLOIT): Convergent validity evidence. Unpublished study, Department of Psychology, Virginia Commonwealth University, Richmond, VA.

Kiesler, D.J., Van Denburg, T.F., Sikes-Nova, V.E., Larus, J.P., & Goldston, C.S. (1990). Interpersonal behavior profiles of eight cases of DSM-III personality disorder. *Journal of Clinical Psychology*, *46*, 440-453.

Kiesler, D.J., & Watkins, L.M. (1989). Interpersonal complementarity and the therapeutic alliance: A study of relationship in psychotherapy. *Psychotherapy*, *26*, 183-194.

Kivlighan, D.M. Jr., & Mullison, D. (1987). Participants' perception of therapeutic factors in group counseling: The role of interpersonal style and stage of group development. Unpublished manuscript, Counseling Center, University of Maryland, College Park, MD.

LaForge, R. (1977). Using the ICL: 1976. Unpublished monograph, Mill Valley, CA.

LaForge, R., & Suczek, R.F. (1955). The interpersonal dimensions of personality: III. An interpersonal check list. *Journal of Personality*, *24*, 94-112.

Leary, T. (1957). Interpersonal diagnosis of personality. New York: Ronald.

Lorr, M., & McNair, D.M. (1965). Expansion of the interpersonal behavior circle. *Journal of Personality and Social Psychology*, *2*, 823-830.

Lorr, M., & McNair, D.M. (1967). The Interpersonal Behavior Inventory, Form 4. Washington, DC: Catholic University of America.

Mahalik, J. R., Hill, C. E., & Thompson, B. J. (1990). Predicting rater bias: Variables affecting ratings on Kiesler's interpersonal circle. Unpublished manuscript, Department of Psychology, University of Maryland, College Park, MD.

Mardia, K.U. (1972). Statistics of directional data. New York: Academic Press.

Orford, J. (1986). The rules of interpersonal complementarity: Does hostility beget hostility and dominance, submission? *Psychological Review*, *93*, 365-377.

Paddock, J.R., Potts, M.A., Kiesler, D.J., & Nowicki, S.P. Jr. (1986). Ipsative scoring of interpersonal circle measures. Paper read at the annual Southeastern Psychological Association meeting, Kissimmee, FL.

Pollock, T.E. (1990). Parallel process: An empirical investigation. Unpublished doctoral dissertation,

Virginia Consortium for Professional Psychology, William and Mary University, Williamsburg, VA.

Raush, H.L., Dittman, A.T., & Taylor, T.J. (1959). The interpersonal behavior of children in residential treatment. Journal of Abnormal and Social Psychology, *58*, 9-27.

Schmidt, J.A. (1989). Interpersonal ratings of channel incongruence of normal versus personality disordered individuals. Unpublished master's thesis, Virginia Commonwealth University, Richmond, VA.

Thompson, B.J., Hill, C.E., & Mahalik, J.R. (1989). A test of interpersonal theory of psychotherapy: Multiple case comparisons. Unpublished manuscript, Department of Psychology, University of Maryland, College Park, MD.

Van Denburg, T.F. (1988). Transactional escalation in rigidity and intensity of interpersonal behavior under stress. Unpublished doctoral dissertation, Virginia Commonwealth University, Richmond, VA.

Watson, G.S., & Williams, E.J. (1956). On the construction of significance tests on the circle and the sphere. Biometrika, *43*, 344-352.

Weinstock-Savoy, D.E. (1986). The relationship of therapist and patient interpersonal styles to outcome in brief dynamic psychotherapy. Unpublished doctoral dissertation. Boston University, Boston, MA.

Whiffen, V.E., Dudley, D., & Sasseville, T. (1990). Interpersonal relations and vulnerability to depression. Unpublished manuscript, University of Ottawa, Ontario, Canada.

Wiggins, J.S. (1979). A psychological taxonomy of trait-descriptive terms: The interpersonal domain. Journal of Personality and Social Psychology, *37*, 395-412.

Wiggins, J.S. (1981). Revised Interpersonal Adjective Scales. Vancouver, Canada: University of British Columbia.

Wiggins, J.S. (1982). Circumplex models of interpersonal behavior in clinical psychology. In P.C. Kendall & J.N. Butcher (Eds.), Handbook of research methods in clinical psychology (pp. 183-221). New York: Wiley.

Wilkie, C.F. (1987). Interpersonal complementarity in dyadic interaction. Unpublished master's thesis, University of Saskatchewan, Saskatoon, Canada.

Wilkie, C.F., & Conway, J.B. (1988, June). Does the theory of interpersonal complementarity adequately describe nonclinical dyads? Paper presented at the Canadian Psychological Association convention, Montreal, Canada.