Psychometric Characteristics of the Impact Message Inventory-Octant Version (IMI-C): An Update

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The Impact Message Inventory (IMI, Kiesler, Anchin, Perkins, et al., 1985; IMI-C, Kiesler & Schmidt, 1993) is a central interpersonal circumplex measure used by contemporary interpersonal researchers (Kiesler, 1996). The inventory was designed to assess the distinctively different covert reactions to the full range of interpersonal behaviors found around the 1982 Interpersonal Circle (Kiesler, 1983). The IMI's items uniquely measure the distinctive direct feelings, action tendencies, and perceived evoking messages that are evoked in interactants by each of the categories of interpersonal behavior found around the 1982 circumplex. It assesses one person's pattern of interpersonal behavior (IMI "target") by measuring the subjective, covert engagements that person distinctively evokes in interactants (IMI "respondents"). The items are scored transactionally in that the respondent's self-reported impacts or engagements are scored to characterize the target person's distinctive pattern of interpersonal behavior. Because the IMI is both a self-report and transactional inventory, it is the first of its kind in the area of psychological measurement and unique among interpersonal circumplex inventories. Kiesler's (1996) book devoted a chapter to the clinical and research applications of the IMI. Kiesler (2001 October) offered a comprehensive annotated bibliography of empirical studies that used the IMI.

Two previous publications offered summaries of available psychometric data on the Impact Message Inventory. Kiesler (1987) provided a research manual for the original 90-item (15 scale) Impact Message Inventory (Kiesler, Anchin, Perkins, et al., 1985). Schmidt, Kiesler and Wagner (1999) published structural and psychometric analyses for the 56-item circumplex octant version (IMI-C; Kiesler & Schmidt, 1993) – all 56 items extracted from the original 90-item pool. Because of its demonstrated superior circumplex and psychometric properties, researchers have been urged to use exclusively the 56-item IMI-C octant version.

The purpose of the present paper is to update the Schmidt, Kiesler, & Wagner (1999) publication by offering summaries that include more recent IMI-C normative findings. Tables 1 to 5 provide these more recent findings while including, where possible, the earlier data provided in Schmidt, Kiesler, & Wagner (1999).

Throughout this paper the octant scales are named as follows: D (dominant), HD (hostile-dominant), H (hostile), HS (hostile-submissive), S (submissive), FS (friendly-submissive), F (friendly), and FD (friendly-dominant). Any IMI-C sample includes both "targets" (persons rated) and "respondents" (persons doing the ratings by filling out the

IMI-C). Within the Tables, in all instances in which both persons are listed, the IMI-C target is listed first, followed by the respondent (e.g., Patient / Physician – IMI-C filled out on the patient by his/her physician).

Table 1 presents Cronbach alpha (internal consistency reliability) coefficients calculated on 16 different samples embedded within ten different IMI-C studies. As Table 1 shows, the median alpha coefficients obtained for each of the octant scales range from .69 to .85, indicating strong to excellent reliabilities for the IMI-C scales. Of the 128 individual coefficients presented for the 16 samples, 75.8% are above .70, and only 8.6% are below .60. Using as a criterion alpha values below .60, four octants (HD, H, FS, and F) have no or only one alpha below .60; two octants (HS, S) have only two alphas below .60; while the remaining octants (D, FD) have three alphas below .60. The median alphas obtained for the octants reflect the same trend: HD, H, and F above .80; D, HS, S, FS in the mid 70s; and FD = .69. In sum, the two IMI-C octants anchoring the affiliation axis of the interpersonal circumplex (H, F) together with HD and FS show the highest internal consistencies; the two octants anchoring the control axis (D, S) show the next highest values (together with HS, FS), with the FD octant showing the least internal consistency.

Table 1. Cronbach Alpha (Internal Consistency) Reliability Coefficients Obtained for *the 56-item IMI-C* in the Individual Investigations Cited Below (male and female targets combined, male and female respondents combined). [In this and subsequent tables, any alpha values that are bolded are of less than .60.]

Study	**D**	**HD**	**H**	**HS**	**S**	**FS**	**F**	**FD**
1. Hafkenscheid (2003)	.69	.75	.71	.73	.65	.79	.77	.75
2. Hafkenscheid (2004, Sept.)	.84	.76	.82	.82	.75	.84	.79	.73
3. Kiesler, Schmidt et al. (1990)	.86	.88	.79	.64	.67	.79	.89	.62
4. Schmidt (1989)	.82	.86	.88	.88	.84	.78	.91	.79
5. Auerbach, Kiesler et al. (1994)	.93	.80	.86	**.48**	.78	**.41**	.72	**.29**
6. Kiesler, Schmidt et al. (1991)	.74	.78	.68	.68	.65	.73	.80	.60
7. Wagner, Kiesler et al. (1995)	.72	.75	.72	.74	.66	.70	.82	**.58**
8. Schmidt, Kiesler et al. (1990)	**.58**	.86	.87	.78	.82	.77	.81	.64
9. Wagner, Riley et al. (1999)	.62	.81	.84	.88	.75	.76	.83	.66
10. Auerbach, Boll et al. (1995)	**.59**	.77	.79	.82	**.51**	.76	.89	.68

11. Pegg, Auerbach et al. (2004)	.85	.69	.80	.81	.78	.74	.88	.80
12. Pegg, Auerbach et al. (2004)	.89	.74	.76	.64	.80	.78	.88	.75
13. Pegg, Auerbach et al. (2004)	.86	.94	.94	.92	.86	.78	.82	.83
14. Pegg, Auerbach et al. (2004)	.88	.87	.90	.75	.84	.75	.88	.86
15. Pegg, Auerbach et al. (2004)	**.44**	.84	.61	**.53**	.65	.66	.71	**.41**
16. Pegg, Auerbach et al. (2004)	.74	.96	.96	.90	**.54**	.66	.90	.75
Median	**.78**	**.81**	**.81**	**.77**	**.75**	**.76**	**.85**	**.69**

N		Target / Respondent
1.	356	Psychiatric Outpatient / Therapist
2.	55	Psychiatric Inpatient / Psychiatric Nurse
3.	130	Liked & Disliked Acquaintance / Undergraduate
4.	128	Videotaped DSM-III Personality Disorder / Undergraduate
5.	109	FBI-actor “terrorist” / Airline Personnel “hostage”
6.	158	Close Friend / Undergraduate
7.	143	Close Friend / Undergraduate
8.	91	Role-played Therapy Client / Undergraduate
9.	193	Psychiatric Outpatient / Intake Clinician
10.	157	Orthognathic Surgery Outpatient / Attending Physician, Counselor
11.	28	Acute TBI Patient / Information Intervention Provider (1-2 wks post adm)
12.	28	Acute TBI Patient / Information Intervention Provider (4-5 wks post adm)
13.	28	Acute TBI Patient / Rehabilitation Therapist (1-2 wks post admission)
14.	28	Acute TBI Patient / Rehabilitation Therapist (4-5 wks post admission)
15.	28	Information Intervention Provider / Acute TBI Patient (1-2 wks post adm)
16.	28	Information Intervention Provider / Acute TBI patient (4-5 wks post adm)

More recent IMI-C studies in medical settings (Kiesler & Auerbach, 2003) have found it necessary, for practical reasons of physician time and motivation, to use a briefer 28-item version of the IMI-C. Also other non-medical studies that require repeated administrations of the IMI-C to multiple respondents have similarly found a briefer version useful especially in initial investigations addressing more general control and affiliation axis hypotheses. The 28-item IMI-C brief version uses only the four octant scales that anchor the control and affiliation axes of the interpersonal circumplex: D, S, F, H. Each of these brief version scales consists of the same seven items found in the full 56-item octant version – yielding 4 x7 = 28 total items. The internal consistency reliabilities of these four octant scales when administered by themselves are expected to be mostly equivalent to those found in Table 1.

Table 2 provides Cronbach alpha values obtained for 14 separate samples within four separate studies that used the 28-item Brief Version. As Table 2 shows the obtained values are, in some cases, noticeably lower than those found for the same octants in Table 1. Although the median alphas reported for the four octant scales are respectable (.61 to .87), they basically misrepresent the bimodal values actually present. As can readily be seen, the alphas for the first six samples (all from Cook, 2004) are consistently high and equivalent to the highest of those reported in Table 1. In contrast, the alphas from the remaining samples (7-14) are substantially lower.

Table 2. Cronbach Alpha (Internal Consistency) Reliability Coefficients Obtained for the *28-item Brief Version of the IMI-C* in the Individual Investigations Cited Below (male and female targets combined, male and female respondents combined).

Study	*Target/Respondent*	*D*	*H*	*S*	*F*
1. Cook (2004)	Father/Mother	.84	.92	**.54**	.95
2. Cook (2004)	Mother/Father	.85	.92	.64	.94
3. Cook (2004)	Adolescent Patient/Mother	.84	.90	**.58**	.92
4. Cook (2004)	Adolescent Patient/Father	.84	.87	.72	.92
5. Cook (2004)	Mother/Adolescent Patient	.84	.88	**.58**	.88
6. Cook (2004)	Father/Adolescent Patient	.81	.90	.66	.95
7. Auerbach et al. (2002)	Diabetic Pt/Physician	**.51**	.68	.77	.84
8. Auerbach et al. (2002)	Physician/Diabetic Pt	**.14**	**.52**	**.36**	.84
9. Auerbach et al. (2004)	Surgeon/FM-at Admis	.77	.82	**.40**	.88
10. Auerbach et al. (2004)	Surgeon/FM-at Disch	.62	.75	.67	.80
11. Auerbach et al. (2004)	Nurse/FM-at Admis	**.46**	.71	.68	.84
12. Auerbach et al. (2004)	Nurse/FM-at Disch	.66	.61	**.20**	.87.
13. Orr (2004)	Chemotherapy Pt/Oncologist	.77	**.47**	.76	.81
14. Orr (2004)	Oncologist/Chemotherapy Pt	**.22**	**.24**	**.35**	.78
	Median:	*.72*	*.79*	*.61*	*.87*

	N	Target / Respondent
1.	38	Father / Mother
2.	29	Mother / Father
3.	42	Adolescent Patient / Mother
4.	29	Adolescent Patient / Father
5.	36	Mother / Adolescent Patient
6.	32	Father / Adolescent Patient
7.	54	Patient with Diabetes / Physician
8.	54	Physician / Patient with Diabetes
9.	[34]	Critical Care Surgeon / Family Member - at Admission
10.	[34]	Critical Care Surgeon / Family Member - at Discharge
11.	[34]	Critical Care Bed Nurse / Family Member - at Admission
12.	[34]	Critical Care Bed Nurse / Family Member - at Discharge
13.	28	Chemotherapy Patient / Oncologist
14.	28	Oncologist / Chemotherapy Patient

The six separate analyses reported by Cook (2004) are from samples of respondents within the same family: mothers, fathers, and adolescent patients. In this instance, respondents had a considerable amount of time interacting with each other which, in turn, made their IMI-C reports more confident and stable, their alphas strong to excellent. The remaining studies in Table 2 all took place within medical settings, with patients (or family members of patients), physicians, and nurses as IMI respondents. All eight samples include target interactions that are short-term and new – that is, physician-patient (nurse-family member) interactions that are new (not acquainted with each other previously), relatively brief, and highly constrained by the structured physician (and nurse) task and role in the specific context. What the coefficients in Table 2 indicate is that these "powerful" medical situations influence most strongly patient perceptions of the physician (e.g. samples 8, 14), and affect to a lesser degree both family member perceptions of nurses (e.g. samples 11, 12) and physician perception of patients (e.g., samples 7, 13). What typically is responsible for the low alphas in these studies is an extreme restriction of range for particular IMI items, substantially reducing the number of items used for the calculation. Least affected by the situational constraint seems to be octant scales that anchor the affiliation axis (F, H); most affected the scales that anchor the control axis (D, and especially S).

Table 3 presents the Cronbach alpha internal consistency coefficients for male versus female targets and respondents in previous studies. All of these studies used the 28-item IMI-C version with the result that gender comparisons are available for only the four octants that anchor the control and affiliation axes of the interpersonal circumplex. What Table 3 shows most clearly is that gender *may indeed* affect to a substantial degree the resulting IMI-C internal consistency reliatiblities. Of the 8 samples listed, only one (sample 2) shows minimal differences between the males vs. female alphas obtained. The differences in alpha values that are obtained are in most instances

substantially lower values for male subjects (either as targets or respondents). However, in all of these cases, the respective Ns for male are substantially smaller than for females, which in itself could explain the lower values. The one clear case where female alphas were lower is sample 4 in which female patients filled out IMIs on physicians. In sum, what Table 3 suggests is that gender of IMI-C targets, respondents, and target-respondent pairs *may* systematically affect the level of internal consistency reliability obtained for IMI-C octant scores. Unfortunately, none of these studies had equivalent numbers of male vs. female physicians to permit precise analyses of targets and respondents as well as target-respondent gender combinations. Future studies are needed that address the gender issue more systematically by building in comparable Ns of IMI-C targets, respondents, and their interactive mix.

Table 3. Cronbach alpha internal consistency Coefficients for 28-item IMI-C Octant Version for male, female, and male+female respondents

1. Auerbach et al. (2002) Diabetic Pt / Physician

		D	*H*	*S*	*F*
[n= 22]	*m*	**-.10**	**.39**	**.29**	.78
[n= 32]	*f*	.64	.77	.80	.88
[n= 54]	*m+f*	**.51**	.68	.77	.84

2. Auerbach et al. (2002) Physician / Diabetic Pt

		D	*H*	*S*	*F*
[n= 22]	*m*	**.20**	**-.13**	**.35**	.74
[n= 32]	*f*	**.19**	**.59**	**.39**	.89
[n= 54]	*m+f*	**.14**	**.52**	**.36**	.84

3. Orr (2004) Patient / Physician

		D	*H*	*S*	*F*
[n= 27]	*m*	.69	**.22**	.85	.84
[n= 64]	*f*	.80	**.52**	.72	.80
[n= 91]	*m+f*	.77	**.47**	.76	.82

4. Orr (2004) Physician / Patient

		D	*H*	*S*	*F*
[n= 27]	*m*	**.38**	**-.34**	**.54**	.82
[n= 64]	*f*	**.16**	**.32**	**.21**	.77
[n= 91]	*m+f*	**.22**	**.24**	**.35**	.78

5. Auerbach et al. (2004) Physician / FR - Admission

		D	*H*	*S*	*F*
[n= 11]	*m*	**.58**	.77	**-.35**	.92
[n= 21]	*f*	.85	.77	**.17**	.85
[n= 41]	*m+f*	.77	.82	**.40**	.88

6. Auerbach et al. (2004) Physician / FR - Discharge

		D	*H*	*S*	*F*
[n= 11]	*m*	.75	.62	**.28**	.86
[n= 21]	*f*	**.54**	.62	.74	.78
[n= 41]	*m+f*	.62	.75	.67	.80

7. Auerbach et al. (2004) Nurse / FR - Admission

		D	*H*	*S*	*F*
[n= 11]	*m*	**-.00**	**.00**	.71	.79
[n= 21]	*f*	.68	.86	**.12**	.90
[n= 41]	*m+f*	**.46**	.71	.68	.84

8. Auerbach et al. (2004) Nurse / FR - Discharge

		D	*H*	*S*	*F*
[n= 11]	*m*	**.49**	**-.25**	**-.00**	.71
[n= 21]	*f*	.76	.65	**.13**	.92
[n= 41]	*m+f*	.66	.61	**.20**	.87

Table 4 presents means and standard deviations of IMI-C octant scales reported in 14 samples. In the Table all mean and SD values reported have been reduced to 4-point item scale equivalents – that is, the sums of 7-items divided by seven. This consistent scaling permits easy translation of the means and SDs in light of the 4-point item scale descriptors: 1 = not at all (descriptive of my reaction), 2 = somewhat, 3 = moderately, 4 = very much (descriptive of my reaction). The normative data in Table 4 come entirely from studies of the physician-patient interaction in which physicians and patients serve alternately as IMI-C targets and respondents. The data, thus, may have little generalizability to various IMI-C studies of psychotherapy or other relationships.

Table 4. Normative Data Obtained for the *56-item* and 28-*item Versions of the IMI-C* in the Individual Investigations Cited Below – male and female targets combined, male and female respondents combined (M = mean, SD = standard deviation). [Mean values that are bolded are those at or above 2.00.]

Study	*Target*		*D*	*HD*	*H*	*HS*	*S*	*FS*	*F*	*FD*
01.	Patient	*Mean*	1.22	1.16	1.47	1.44	1.64	**1.98**	**2.15**	1.73
		SD	.39	.24	.49	.46	.48	.45	.64	.51
02.	Patient	*Mean*	1.36	1.43	1.72	1.72	1.90	**1.95**	**2.18**	1.89
		SD	.48	.68	.82	.73	.62	.47	.56	.60
03.	Researcher	*Mean*	1.40	1.07	1.19	1.26	1.52	**2.48**	**3.16**	**2.34**
		SD	.38	.20	.34	.34	.45	.57	.53	.43
04.	Patient	*Mean*	1.25	1.17	1.38	1.34	1.76	**2.15**	**2.26**	1.87
		SD	.49	.28	.42	.31	.52	.49	.60	.48
05.	Patient	*Mean*	1.47	1.32	1.59	**2.08**	1.83	**2.08**	**2.39**	**2.12**
		SD	.57	.45	.58	.47	.54	.47	.58	.65
06.	Researcher	*Mean*	1.38	1.27	1.31	1.32	1.67	**2.48**	**3.18**	**2.78**
		SD	.46	.66	.69	.62	.45	.56	.77	.62
07.	Patient	*Mean*	1.42		1.41		**2.04**		**2.40**	
		SD	.31		.36		.43		.51	
08.	Physician	*Mean*	1.31		1.16		1.81		**3.18**	
		SD	.26		.27		.36		.61	
09.	Patient	*Mean*	1.62		1.28		**2.00**		**3.04**	
		SD	.51		.27		.51		.58	
10.	Physician	*Mean*	1.41		1.10		1.82		**3.43**	
		SD	.31		.19		.42		.59	
11.	Physician	*Mean*	**1.95**		1.41		1.33		1.84	
		SD	.60		.54		.36		.73	

12.	Physician	*Mean* *SD*	1.90 .59		1.45 .51		1.28 .36		1.82 .63	
13.	Nurse	*Mean* *SD*	1.56 .33		1.12 .27		1.42 .34		**2.75** .87	
14.	Nurse	*Mean* *SD*	1.78 .49		1.12 .23		1.58 .33		**2.97** .78	

Table 4 shows first that in studies using the 56-item octant version of IMI-C (samples 1-6), the peak octant is F, followed next by FS (one exception), then next by FD (one exception). These data all come from the Pegg et al. (2004) study in which Traumatic Brain Injury patients rated and were rated by a medical professional who administered a videotaped information intervention over three separate sessions. The interactants consistently impacted each other as friendly and friendly-submissive, and in some cases also as friendly-dominant. The IMI-C means are all at 2.00 and above (only one above 3.00), indicating that the interactants experienced F and FD impacts that were "somewhat" to "moderately" characteristic of their reactions. Second, the remaining eight samples reported in Table 4 used the 28-item four-octant brief IMI-C and were all conducted in medical settings. In all samples but two, the IMI-C peak octant (for physician, nurse, or patient) was F; the means were consistently closer to 3.00 ("moderately" characteristic of the respondents' reactions). For the two exceptions (samples 11, 12) F was second highest following D; in both samples in which D was peak, the IMI-C target was the physician. In sum, the IMI-C octant means presented in Table 4 indicate that patients and medical personnel typically experience each other as "somewhat" to "moderately" friendly and friendly-submissive. In other instances patients appropriately perceived their physicians as "somewhat" dominant, consistent with their appropriate role. In virtually all samples in Table 4 means from the hostile side of the interpersonal circumplex (HD, H, HS) reflected "not at all" to "somewhat" characteristic reactions to each other.

Finally, we have begun to collect normative data on the three "complementarity" index scores that are calculated to characterize psychotherapist-patient, physician-patient, and other relationships in which the researcher has each participant fill out an IMI-C on the other. The indexes are calculated from each pair's control, affiliation, and combined-axis IMI-C scores using Wagner's formulas found in Kiesler, Schmidt and Wagner (2004 July) in the Appendix. Although the entire distribution of these scores in any particular study can be used by researchers in various multiple regression analyses (e.g., path analysis, structural equation modeling), other analyses may highlight dichotomous groups of relationship pairs high vs. low in interpersonal complementarity. The three samples included in Table 5 below, all from studies conducated within medical settings, provide preliminary normative data for the CON, AFF, and CON+AFF complementarity indexes. Based on these three samples, future medical setting researchers could select median sample splits using c. 1.30 on control, c. 1.4 to 2.6 on affiliation, and c. 2.6 to 3.9 on the combined-axes. Of course, until more extensive

normative data becomes available, the safest procedure for constructing high versus low complementarity groups is to split one's own sample using the median values for that sample.

Table 5. Normative Data on IMI Complementarity Scores
(N = number of dyads, M = mean, SD = standard deviation, min = minimum obtained score, max = maximum score)

Study: Auerbach, Clore, Kiesler, et al. (2002)

Diabetic Patient / Physician	**N**	**M**	**SD**	**min**	**max**
Complementarity on: CON	48	1.23	0.76	0.00	3.00
Complementarity on: AFF	49	1.38	0.80	0.14	3.71
Complementarity on: CON + AFF	48	2.61	1.03	0.43	5.14

Study: Pegg et al. (2004)

*TBI P*atient / Intervention-Admission	**N**	**M**	**SD**	**min**	**max**
Complementarity on: CON	28	1.34	1.12	0.03	5.44
Complementarity on: AFF	28	2.53	1.80	0.00	5.81
Complementarity on: CON + AFF	28	3.86	2.33	0.20	9.76

Study: Pegg et al. (2004)

TBI Patient / Intervention-Discharge	**N**	**M**	**SD**	**min**	**max**
Complementarity on: CON	28	1.62	1.00	0.08	3.44
Complementarity on: AFF	28	2.61	1.46	0.77	6.23
Complementarity on: CON + AFF	28	4.24	1.82	1.09	8.41

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Appendix

CALCULATING AXIS SCORES AND DYADIC COMPLEMENTARITY SCORES USING THE EIGHT SCALES OF THE IMI:C OCTANT VERSION

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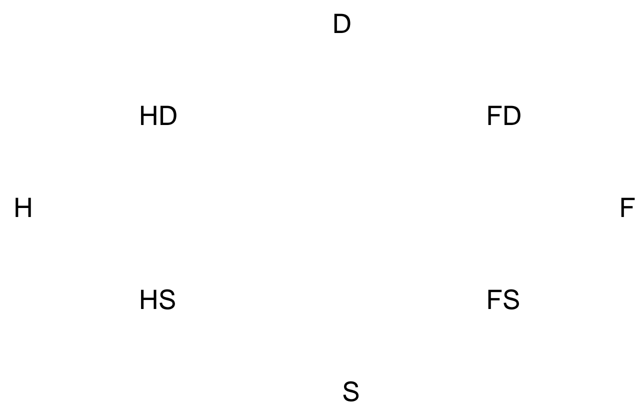

I. OCTANT SCORES

D = Dominant
HD = Hostile Dominant
H = Hostile
HS = Hostile Submissive

S = Submissive
FS = Friendly Submissive
F = Friendly
FD = Friendly Dominant

II. CALCULATING AXIS SCORES

CONTROL = D - S + .707 (HD + FD) - .707 (HS + FS)

AFFILIATION = F - H + .707 (FD + FS) - .707 (HD + HS)

III. Formulas for Calculating Complementarity Between Dyadic Interactants' Interpersonal Behavior (C.C. Wagner, 2001)

An analysis of the degree of complementarity present between two interactants' sets of IMI scores (between their IMI profiles) is extremely important for tests of interpersonal theory and for general analysis of patterns present between a pair of interactants' interpersonal behavior.

We have found to be especially useful analyses of complementarity that use each of the interactant's Axis scores (Control, Affiliation) as well as their combined Axis scores (Control + Affiliation). The formulas below use Absolute scores ("ABS"). Subscripts "$_1$" and "$_2$" refer to the IMI scores from each of the two interactants. Subscripts "$_c$" and "$_a$" refer to "control" and "affiliation."

$\mathbf{ABS_c}$ = ABS (CON_1 + CON_2)
= ABS [(DOM_1 - SUB_1) + (DOM_2 - SUB_2)]

$\mathbf{ABS_a}$ = ABS (AFF_1 - AFF_2)
= ABS [(FRI_1 - HOS_1) - (FRI_2 - HOS_2)]

These absolute scores are then inserted into the formulas below to obtain the three complementarity scores : "reciprocity" complementarity on the Control axis, "correspondence" complementarity on the Affiliation axis, and "total" complementarity for all the interpersonal behavior categorized on the full interpersonal circle (control and affiliation).

$\mathbf{COMP_c}$ = ABS_c
= ABS (CON_1 + CON_2)

$\mathbf{COMP_a}$ = ABS_a
= ABS (AFF_1 - AFF_2)

$\mathbf{COMP_{tot}}$ = ABS_c + ABS_a
= ABS (CON_1 + CON_2) + ABS (AFF_1 - AFF_2)

In each case, the score obtained characterizes **"deviation from complementarity"**: that is, the higher the score, the less the complementarity present among the pair of interactants; the lower the score, the more the complementarity present among the pair of interactants. For example, the possible obtainable range of total complementarity scores is "0" (perfect complementarity) to "12" (maximum non-complementarity).

Comparison of the two separate axis complementarity scores ($COMP_c$ and $COMP_a$) – "reciprocity" in control, "correspondence" in affiliation – helps the investigator determine which of the circle axes is contributing more to the level of total complementarity ($COMP_{tot}$) obtained. In some cases, complementarity may be found primarily for only one of the axes, but not for the other axis or for total complementarity. Some previous complementarity studies (e.g. in psychotherapy) have shown that it is crucial to examine the axes separately to tease out the (e.g. client-therapist) patterns that are present.