

**Interaction Ratings Scale**  
Grade 1/Year 2  
Fast Track Project Technical Report  
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SAS Scoring Program

**Citation**

*Instrument*

Crnic, K. and Greenberg, M. (1990). *Minor parenting stresses with young children*. Child Development, 61, 1628-1637.

*Report*

Rains, C. (2002). *Interaction Ratings Scale* (Fast Track Project Technical Report). Available from the Fast Track Project website: <http://www.fasttrackproject.org>

McMahon, R., Lengua, L., Hyoshin, K., and Jones, K. (1997). *Interaction Ratings Scale* (Fast Track Project Technical Report). Seattle, Washington: University of Washington.

**Data Sources**

*Raw:* O2C

*Scored:* IRS2

**I. Scale Description**

In this adapted version of the Interaction ratings Scale (Crnic and Greenberg, 1990), the child observer completes a total of 16 global ratings of the mother and child with respect to gratification, sensitivity, and involvement. The Fast Track Project uses this measure as part of the Parent-Child Interaction Task during the summer interview. The IRS is completed after each of 4 tasks that the parent and child complete together: Child's Game, Parent's Game, Lego Task, and Clean-Up.

**II. Report Sample**

These exploratory analyses were conducted with the first cohort on the control sample (n=155) and on the normative sample (n=387, 463 with overlap) from the second year of administration of this study, excluding the treatment subjects. 32 students were missing the entire measure. Of these, 8 (4 each from Durham and Washington) were from the control sample and 25 were from the normative sample (3 from Durham, 7 from Nashville, 3 from Pennsylvania, and 12 from Washington). Several of the students missing the entire measure were from the overlap group.

### III. Scaling

Each item is rated on a global 5-point system, with 1 representing a low or negative value and 5 representing a high or positive value; a score of 3 was considered average. For each of the 4 tasks, parents and children are rated on several qualities. For the Child's Game, there are 5 items: mother's gratification, child's gratification, mother's sensitivity, mother's involvement, and child's involvement. For the Parent's Game, there are 4 items: mother's and child's gratification and mother's and child's involvement. For the Lego Task, there are 5 items: mother's gratification, child's gratification, mother's sensitivity, mother's involvement, and child's involvement. Finally, for the Clean-Up task, the mother's and child's involvement is rated.

Next, two subscales are created: mother's warmth to the child and the child's warmth to the mother. The first subscale is created by calculating the mean of six items, all relating to the mother: gratification, sensitivity, and involvement during the Child's Game and gratification for the Parent's Game and gratification and sensitivity during the Lego Task (items O2C1, O2C3, O2C4, O2C6, O2C10, and O2C12). The second subscale is created by calculating the mean of four items, all relating to the child: gratification and involvement during the Child's Game and gratification for both the Parent's Game and the Lego Task (O2C2, O2C5, O2C7, and O2C11).

Cronbach's alphas were calculated for each of the subscales.

	Normative Sample	Control Sample
Parental Warmth (IRS2WAR)	.88	.90
Child Warmth (IRS2CWA)	.78	.80

Both of these reliability coefficients indicate an acceptable level of reliability for these subscales.

### IV. Differences between Groups

A series of t-tests indicated significant differences between the samples for one subscale, child's warmth toward the parent, with families in the normative group scoring higher than families in the control group. One item not included in a scale, item O2C9 (Parent Game Involvement--Child), also showed a significant difference between the samples, with the normative sample scoring higher than the control sample.

Interaction Ratings Scale--Scales

Variable	Normative Sample		Control Sample		DF	t Value	Pr >  t
	Mean	Std Dev	Mean	Std Dev			
Child Warmth (IRS2CWA)	3.76	0.80	3.59	0.84	429	-2.04	.0424
Parental Warmth (IRS2WAR)	3.86	0.74	3.76	0.83	429	-1.32	.1867

Interaction Ratings Scale--Items

Variable	Normative Sample		Control Sample		DF	t Value	Pr >  t
	Mean	Std Dev	Mean	Std Dev			
Parent Game Involvement-Mother (O2C8)	3.98	1.10	3.82	1.26	429	-1.39	0.1666
Parent Game Involvement-Child (O2C9)	4.04	1.02	3.80	1.25	429	-2.07	0.0392
Lego Task-Mother (O2C13)	4.27	1.02	4.21	1.07	429	-0.57	0.5683
Lego Task-Child (O2C14)	4.17	0.99	4.02	1.06	429	-1.44	0.1507
Clean-Up Involvement-Mother (O2C15)	3.75	1.06	3.65	1.15	422	-0.84	0.4018
Clean-Up Involvement-Child (O2C16)	3.71	1.07	3.56	1.16	422	-1.40	0.1610

**V. Recommendations for Use**

Analysts should note that the distributions for both subscales were fairly normal for both the normative and control samples. Analysts who use this measure should feel confident that the items in this measure are fairly reliable, as are both of the subscales.

**VI. Item and Scale Means and SD's**

IRS Items Control Sample Year 2

Variable	Label	N	Mean	Std Dev	Minimum	Maximum
O2C1	CHILD GAME GRAT (M)	147	3.585	0.957	1.000	5.000
O2C2	CHILD GAME GRAT (C)	147	3.864	0.948	1.000	5.000
O2C3	CHILD GAME SENS (M)	147	3.707	1.022	1.000	5.000
O2C4	CHILD GAME INVL (M)	147	3.932	1.145	1.000	5.000
O2C5	CHILD GAME INVL (C)	147	3.918	1.162	1.000	5.000
O2C6	PARENT GAME GRAT (M)	147	3.565	1.060	1.000	5.000
O2C7	PARENT GAME GRAT (C)	147	3.680	1.092	1.000	5.000
O2C8	PARENT GAME INVL (M)	147	3.816	1.261	1.000	5.000
O2C9	PARENT GAME INVL (C)	147	3.803	1.253	1.000	5.000
O2C10	LEGO TASK GRAT (M)	147	3.272	1.004	1.000	5.000
O2C11	LEGO TASK GRAT (C)	147	3.565	1.027	1.000	5.000
O2C12	LEGO TASK SENS (M)	147	3.503	1.049	1.000	5.000
O2C13	LEGO TASK INVL (M)	147	4.211	1.074	1.000	5.000
O2C14	LEGO TASK INVL (C)	147	4.020	1.063	1.000	5.000
O2C15	CLEAN-UP INVL (M)	144	3.653	1.149	1.000	5.000
O2C16	CLEAN-UP INVL (C)	144	3.556	1.157	1.000	5.000

IRS Items Normative Sample Year 2

Variable	Label	N	Mean	Std Dev	Minimum	Maximum
O2C1	CHILD GAME GRAT (M)	362	3.630	0.939	1.000	5.000
O2C2	CHILD GAME GRAT (C)	362	3.920	0.903	1.000	5.000
O2C3	CHILD GAME SENS (M)	362	3.876	0.972	1.000	5.000
O2C4	CHILD GAME INVL (M)	362	3.776	1.194	1.000	5.000
O2C5	CHILD GAME INVL (C)	362	3.749	1.177	1.000	5.000
O2C6	PARENT GAME GRAT (M)	361	3.801	0.983	1.000	5.000
O2C7	PARENT GAME GRAT (C)	361	3.928	0.873	1.000	5.000
O2C8	PARENT GAME INVL (M)	362	3.928	1.139	1.000	5.000
O2C9	PARENT GAME INVL (C)	362	3.964	1.079	1.000	5.000
O2C10	LEGO TASK GRAT (M)	362	3.511	0.977	1.000	5.000
O2C11	LEGO TASK GRAT (C)	362	3.771	0.902	1.000	5.000
O2C12	LEGO TASK SENS (M)	362	3.773	0.995	1.000	5.000
O2C13	LEGO TASK INVL (M)	362	4.251	1.040	1.000	5.000
O2C14	LEGO TASK INVL (C)	362	4.124	1.020	1.000	5.000
O2C15	CLEAN-UP INVL (M)	356	3.722	1.092	1.000	5.000
O2C16	CLEAN-UP INVL (C)	356	3.669	1.112	1.000	5.000

IRS Individual Subscales Control Sample Year 2

Variable	Label	N	Mean	Std Dev	Minimum	Maximum
IRS2WAR	Y1 Parental Warmth	147	3.594	0.844	1.167	5.000
IRS2CWA	Y1 Child Warmth to Mother	147	3.757	0.834	1.000	5.000

IRS Individual Subscales Normative Sample Year 2

Variable	Label	N	Mean	Std Dev	Minimum	Maximum
IRS2WAR	Y1 Parental Warmth	362	3.727	0.807	1.167	5.000
IRS2CWA	Y1 Child Warmth to Mother	362	3.841	0.752	1.500	5.000

**VII. Item and Scale Correlations**

IRS Items Year 2 Full Report Sample

Pearson Correlation Coefficients Prob >  r  under H0: Rho=0 Number of Observations									
	O2C1	O2C2	O2C3	O2C4	O2C5	O2C6	O2C7	O2C8	O2C9
<b>O2C1 CHILD GAME GRAT (M)</b>	1.000 0.000 431	0.737 0.000 431	0.690 0.000 431	0.704 0.000 431	0.670 0.000 431	0.649 0.000 430	0.501 0.000 430	0.473 0.000 431	0.429 0.000 431
<b>O2C2 CHILD GAME GRAT (C)</b>	0.737 0.000 431	1.000 0.000 431	0.526 0.000 431	0.568 0.000 431	0.626 0.000 431	0.498 0.000 430	0.532 0.000 430	0.321 0.000 431	0.367 0.000 431
<b>O2C3 CHILD GAME SENS (M)</b>	0.690 0.000 431	0.526 0.000 431	1.000 0.000 431	0.648 0.000 431	0.567 0.000 431	0.566 0.000 430	0.455 0.000 430	0.467 0.000 431	0.443 0.000 431
<b>O2C4 CHILD GAME INVL (M)</b>	0.704 0.000 431	0.568 0.000 431	0.648 0.000 431	1.000 0.000 431	0.889 0.000 431	0.524 0.000 430	0.395 0.000 430	0.468 0.000 431	0.438 0.000 431
<b>O2C5 CHILD GAME INVL (C)</b>	0.670 0.000 431	0.626 0.000 431	0.567 0.000 431	0.889 0.000 431	1.000 0.000 431	0.479 0.000 430	0.395 0.000 430	0.407 0.000 431	0.456 0.000 431
<b>O2C6 PARENT GAME GRAT (M)</b>	0.649 0.000 430	0.498 0.000 430	0.566 0.000 430	0.524 0.000 430	0.479 0.000 430	1.000 0.000 430	0.764 0.000 430	0.683 0.000 430	0.635 0.000 430
<b>O2C7 PARENT GAME GRAT (C)</b>	0.501 0.000 430	0.532 0.000 430	0.455 0.000 430	0.395 0.000 430	0.395 0.000 430	0.764 0.000 430	1.000 0.000 430	0.625 0.000 430	0.651 0.000 430
<b>O2C8 PARENT GAME INVL (M)</b>	0.473 0.000 431	0.321 0.000 431	0.467 0.000 431	0.468 0.000 431	0.407 0.000 431	0.683 0.000 430	0.625 0.000 430	1.000 0.000 431	0.887 0.000 431
<b>O2C9 PARENT GAME INVL (C)</b>	0.429 0.000 431	0.367 0.000 431	0.443 0.000 431	0.438 0.000 431	0.456 0.000 431	0.635 0.000 430	0.651 0.000 430	0.887 0.000 431	1.000 0.000 431
<b>O2C10 LEGO TASK GRAT (M)</b>	0.541 0.000 431	0.405 0.000 431	0.549 0.000 431	0.440 0.000 431	0.371 0.000 431	0.645 0.000 430	0.503 0.000 430	0.489 0.000 431	0.448 0.000 431
<b>O2C11 LEGO TASK GRAT (C)</b>	0.382 0.000 431	0.451 0.000 431	0.451 0.000 431	0.341 0.000 431	0.343 0.000 431	0.497 0.000 430	0.526 0.000 430	0.354 0.000 431	0.379 0.000 431
<b>O2C12 LEGO TASK SENS (M)</b>	0.437 0.000 431	0.300 0.000 431	0.643 0.000 431	0.378 0.000 431	0.298 0.000 431	0.500 0.000 430	0.434 0.000 430	0.463 0.000 431	0.419 0.000 431
<b>O2C13 LEGO TASK INVL (M)</b>	0.438 0.000 431	0.299 0.000 431	0.409 0.000 431	0.437 0.000 431	0.337 0.000 431	0.523 0.000 430	0.401 0.000 430	0.503 0.000 431	0.417 0.000 431
<b>O2C14 LEGO TASK INVL (C)</b>	0.381 0.000 431	0.332 0.000 431	0.378 0.000 431	0.415 0.000 431	0.401 0.000 431	0.442 0.000 430	0.403 0.000 430	0.433 0.000 431	0.418 0.000 431
<b>O2C15 CLEAN-UP INVL (M)</b>	0.410 0.000 424	0.338 0.000 424	0.416 0.000 424	0.409 0.000 424	0.351 0.000 424	0.435 0.000 423	0.356 0.000 423	0.483 0.000 424	0.452 0.000 424
<b>O2C16 CLEAN-UP INVL (C)</b>	0.378 0.000 424	0.340 0.000 424	0.399 0.000 424	0.344 0.000 424	0.369 0.000 424	0.407 0.000 423	0.367 0.000 423	0.460 0.000 424	0.508 0.000 424

Pearson Correlation Coefficients Prob >  r  under H0: Rho=0 Number of Observations							
	O2C10	O2C11	O2C12	O2C13	O2C14	O2C15	O2C16
<b>O2C1</b> CHILD GAME GRAT (M)	0.541 0.000 431	0.382 0.000 431	0.437 0.000 431	0.438 0.000 431	0.381 0.000 431	0.410 0.000 424	0.378 0.000 424
<b>O2C2</b> CHILD GAME GRAT (C)	0.405 0.000 431	0.451 0.000 431	0.300 0.000 431	0.299 0.000 431	0.332 0.000 431	0.338 0.000 424	0.340 0.000 424
<b>O2C3</b> CHILD GAME SENS (M)	0.549 0.000 431	0.451 0.000 431	0.643 0.000 431	0.409 0.000 431	0.378 0.000 431	0.416 0.000 424	0.399 0.000 424
<b>O2C4</b> CHILD GAME INVL (M)	0.440 0.000 431	0.341 0.000 431	0.378 0.000 431	0.437 0.000 431	0.415 0.000 431	0.409 0.000 424	0.344 0.000 424
<b>O2C5</b> CHILD GAME INVL (C)	0.371 0.000 431	0.343 0.000 431	0.298 0.000 431	0.337 0.000 431	0.401 0.000 431	0.351 0.000 424	0.369 0.000 424
<b>O2C6</b> PARENT GAME GRAT (M)	0.645 0.000 430	0.497 0.000 430	0.500 0.000 430	0.523 0.000 430	0.442 0.000 430	0.435 0.000 423	0.407 0.000 423
<b>O2C7</b> PARENT GAME GRAT (C)	0.503 0.000 430	0.526 0.000 430	0.434 0.000 430	0.401 0.000 430	0.403 0.000 430	0.356 0.000 423	0.367 0.000 423
<b>O2C8</b> PARENT GAME INVL (M)	0.489 0.000 431	0.354 0.000 431	0.463 0.000 431	0.503 0.000 431	0.433 0.000 431	0.483 0.000 424	0.460 0.000 424
<b>O2C9</b> PARENT GAME INVL (C)	0.448 0.000 431	0.379 0.000 431	0.419 0.000 431	0.417 0.000 431	0.418 0.000 431	0.452 0.000 424	0.508 0.000 424
<b>O2C10</b> LEGO TASK GRAT (M)	1.000 0.000 431	0.730 0.000 431	0.672 0.000 431	0.636 0.000 431	0.579 0.000 431	0.515 0.000 424	0.479 0.000 424
<b>O2C11</b> LEGO TASK GRAT (C)	0.730 0.000 431	1.000 0.000 431	0.572 0.000 431	0.390 0.000 431	0.497 0.000 431	0.408 0.000 424	0.434 0.000 424
<b>O2C12</b> LEGO TASK SENS (M)	0.672 0.000 431	0.572 0.000 431	1.000 0.000 431	0.528 0.000 431	0.518 0.000 431	0.481 0.000 424	0.455 0.000 424
<b>O2C13</b> LEGO TASK INVL (M)	0.636 0.000 431	0.390 0.000 431	0.528 0.000 431	1.000 0.000 431	0.796 0.000 431	0.528 0.000 424	0.455 0.000 424
<b>O2C14</b> LEGO TASK INVL (C)	0.579 0.000 431	0.497 0.000 431	0.518 0.000 431	0.796 0.000 431	1.000 0.000 431	0.453 0.000 424	0.532 0.000 424
<b>O2C15</b> CLEAN-UP INVL (M)	0.515 0.000 424	0.408 0.000 424	0.481 0.000 424	0.528 0.000 424	0.453 0.000 424	1.000 0.000 424	0.776 0.000 424
<b>O2C16</b> CLEAN-UP INVL (C)	0.479 0.000 424	0.434 0.000 424	0.455 0.000 424	0.455 0.000 424	0.532 0.000 424	0.776 0.000 424	1.000 0.000 424

IRS Subscales Report Sample Year 2

<b>Pearson Correlation Coefficients, N = 431</b> <b>Prob &gt;  r  under H0: Rho=0</b>		
	<b>IRS2WAR</b>	<b>IRS2CWA</b>
<b>IRS2WAR</b> <b>Y1 Parental Warmth</b>	1.000	0.828 0.000
<b>IRS2CWA</b> <b>Y1 Child Warmth to Mother</b>	0.828 0.000	1.000

```

*****
*
* PROGRAM:      IRS.SAS
*
* PROGRAMMER:   Unknown (original not commented)
*
* PURPOSE:      Create a SAS dataset containing derived
*               variables of the PCIT Interaction Rating Scale
*
* MODIFIED:     11/27/01 Patrick Malone to run off aggregated
*               datasets.
*****;

**Fill out information in next section for data processed **
**in this run.                **;

    %let source=Observer;
    %let src=o;
    %let inst=c;
    %let longname=PCITinteractionratingsscale;
    %let scoredname=IRS;

**Enter high-level path (e.g., 1:\datasets) **;

    %let path=1:\datasets\observer\pcitinteractionratingsscale\u;

**Enter year of data collection **;

    %let yr=2;

**Enter variable which must be present to retain record (typically
interviewer id) **;

    %let screen=screen;

**Specify Lib for input datasets **;

    Libname SASIN "1:\datasets\observer\pcitinteractionratingsscale\U";
    libname addendum "1:\datasets\observer\coderimpressionsinventoryadd\U";

**Specify Lib for output datasets **;

    Libname SASOUT "d:\work\interaction rating scales\year 2";

***** DO NOT MODIFY BELOW THIS LINE *****;

data SASOUT.&scoredname.&yr.;
  set SASIN.&src.&yr.&inst;

  if &screen = '' then &screen = rater;
  if &screen = '' then &screen = intid;
  if &screen = '' then &screen = o&yr.cint;

  if &screen ne '';

  IF (o&yr.c1 =0) THEN o&yr.c1 =.;
  IF (o&yr.c2 =0) THEN o&yr.c2 =.;
  IF (o&yr.c3 =0) THEN o&yr.c3 =.;
  IF (o&yr.c4 =0) THEN o&yr.c4 =.;

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IF (o&yr.c5 =0) THEN o&yr.c5 =.;
IF (o&yr.c6 =0) THEN o&yr.c6 =.;
IF (o&yr.c7 =0) THEN o&yr.c7 =.;
IF (o&yr.c8 =0) THEN o&yr.c8 =.;
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IF (o&yr.c9 =9) THEN o&yr.c9 =.;
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IF (o&yr.c12 =9) THEN o&yr.c12 =.;
IF (o&yr.c13 =9) THEN o&yr.c13 =.;
IF (o&yr.c14 =9) THEN o&yr.c14 =.;
IF (o&yr.c15 =9) THEN o&yr.c15 =.;
IF (o&yr.c16 =9) THEN o&yr.c16 =.;

IF n(o&yr.c1, o&yr.c3, o&yr.c4, o&yr.c6, o&yr.c10, o&yr.c12) ge 3
then irs&yr.war=mean(o&yr.c1, o&yr.c3, o&yr.c4, o&yr.c6, o&yr.c10, o&yr.c12);

IF n(o&yr.c2, o&yr.c5, o&yr.c7, o&yr.c11) ge 2
then irs&yr.cwa=mean(o&yr.c2, o&yr.c5, o&yr.c7, o&yr.c11);

LABEL irs&yr.war="Y1 Parental Warmth"
      irs&yr.cwa=" Y1 Child Warmth to Mother";
KEEP TCID SITE COHORT irs&yr.war irs&yr.cwa o&yr.c1-o&yr.c16;
RUN;
```