New Scales for the Child Rearing Practices Q-sort: Replicated Findings in Seven Samples with Preschool-age Children.

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> "…because CRPR item intercorrelations vary appreciably as a function of the sample being studied, and because the CRPR was specifically developed to minimize the kind of redundancy that factor analysis defines as communal variance, no generalized or widely applicable factor scales for the CRPR can be offered here" (Block, 1965, p. 20).

Introduction

It is a major strength of the Child Rearing Practices Q-sort (Block, 1965) that it assesses a very wide range of parenting practices, and does so using a forced distribution that encourages parents to provide a thoughtful priorising of their parenting practices. One can see the importance of a particular practice as it competes against many other beliefs and behaviors that are also important to parents.

Unfortunately, these strengths work against scale development – there are simply too few conceptually redundant items. There are many examples in the research literature (e.g., Roberts & Strayer, 1987) of CRP-Q scales that were valid in their originating sample, but which failed to replicate in new samples. Block herself apparently abandoned the attempt to develop scales, resorting, in her later publications, to a strategy of analysing results on an item-by-item basis (e.g., Block, Block, & Gjerde, 1986).

I have myself used this strategy (Roberts, 1999). It can be daunting in its complexity, and is open to the empirical problem of false positives due to the large number of comparisons that can be made. It requires the discipline to ask focussed questions, and a lively awareness that not every statistically significant finding should be trusted. Nevertheless, it is a strategy worth pursuing. It allows one to explore the richness of Child Rearing Practices Q-sort data, which is far from exhausted by the

scales presented in this paper.

I developed these scales because I think that many researchers are reluctant to use an instrument that has no scales that are widely accepted as reliable and valid. I hope the scales presented here will meet this need, and will provide an useful starting point in analysing your own Child Rearing Practices Q-sort data.

Although some Q-sorts used for this paper were contributed by lone parents, most were contributed by mothers and fathers in two-parent families. All families had a preschool age child. Because all Q-sorts were analysed together, sample by sample, the scales described below are valid for both fathers and mothers, and can be used to examine gender differences in parenting.

Criteria for replication The chief criterion for replication was unidimensionality, as confirmed by a Principal Components Analysis of the items comprising the scale. In order to be interpretable, scales need to be conceptually unidimensional. If scales have several dimensions, it is impossible to know what moderate scores mean. Are they due to moderate scores on all dimensions? Or are some dimensions high and others, low? Conceptual unidimensionality requires that scales be empirically unidimensional. All the scales presented in this paper meet the criterion of unidimensionality: their items fall on a single principle component, and all factor loadings are positive.

For each of the scales below, I began with a set of six to eight items that were closely related conceptually. I then eliminated items that defined second or third factors, searching for a set of items that formed a single factor in all seven samples.

Consistent with the nature of the instrument, the scales that survived were

only three or four items in length. Two scales (Conflict and Open Communication) replicated in all seven samples. Five other scales replicated fully in either five or six samples. For these scales, it was necessary to eliminate a scale item in some samples (noted in the tables, below) in order to achieve unidimensionality. The reality of sampling error guarantees that even when scales are valid for a population, they will not be valid in all samples drawn from that population.

Calculating scale scores. When scales are unidimensional, low values for Cronbach α indicate low positive inter-item correlations and low multiple correlations between each item and the remaining items in the scale. (Negative correlations and correlations close to zero result in additional factors.) Because variance shared across items is modest when α is low (and variance unique to each item is correspondingly high), factor scores, which reflect only shared variance, should be used as scale scores. For this reason, and because Cronbach α is reduced when the number of items in a scale is small, I felt that even very low values for Cronbach α were acceptable if the scale was unidimensional.

High values for Cronbach α (the conventional rule of thumb is no lower than .70 and preferably at least .80) indicate at least moderately large inter-item correlations and multiple correlations. (It is worth noting that although high values of Cronbach α suggest that a scale is unidimensional, they do not demonstrate it. Factor analysis is essential to confirm unidimensionality.) Because shared variance is more substantial when Cronbach α is high, it is appropriate in these cases to

calculate scale scores by averaging items[2], after reflecting those that are negatively worded. This has the advantage of generating scores that can be interpreted in terms of the original scale on which items were rated. (Samples from Vancouver, Montreal, and Pennsylvania ranked Q-sort items from 1 to 7, from least to most characteristic; samples from Halifax and Toronto ranked items from 1 to 9.) I have provided averaged scale scores in the tables below in order to provide descriptive information on scale means across samples. However, given values for Cronbach α, scores for these scales should be derived from factor analyses of the items.

Relations with home observational data

Extensive data from home and preschool observations are available for Toronto 1, using coding taxonomies derived from Roberts & Strayer (1987). Given the nature of this information, the possible validity of four scales could be assessed: warmth, conflict, open communication, and discourages emotional expression.

For fathers, reported warmth was positively associated with observed physical affection (i.e., time spent hugging their children), $r(31) = .35$, $p < .05$, and with time spent talking with their children, $r(31) = .41$, $p < .05$. Lag analyses indicated that

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[2] Sometimes scale scores are calculated by summing items, but this is clearly the wrong thing to do. Summing items sums the variance in the items, and the more correlated the items are, the worst this problem becomes (see, for example, Moore & McCabe, 2002, p. 330). In contrast, averaging items averages the variance in the items, reducing the amount of error variance in the scores. (Of course, to the extent that error variance is unique to each item, factor scores eliminate it completely.)

warmer fathers were less like likely to ignore their children when their children spoke to them, $r(31) = -.38$, $p < .05$. Notably, fathers' warmth was associated with lower levels of physical aggression in preschool – with number of children with whom physical conflict occurred, $r(31) = -.53$, $p < .01$, with frequency of conflict, $r(31) = -.59$, $p < .001$, and with total time spent in conflict, $r(31) = -.58$, $p < .001$.

Father-reported conflict was associated with lower rates of observed physical affection, both father-initiated, $r(31) = -.36$, $p < .05$ and child initiated, $r(31) = -.46$, $p < .01$.

In contrast to fathers, mother-reported conflict was associated with more frequent observed conflict with children, $r(31) = .36$, $p < .05$, and with higher levels of observed child distress, $r(31) = .43$, $p < .05$. Reported warmth, in contrast, was associated with lower levels of observed child distress, $r(31) = -.34$, $p < .05$. Finally, mothers who endorsed open communication were observed to spend more time talking with their children, $r(31) = .47$, $p < .01$. As with fathers, no consistent associations emerged for Discourages Emotional Expression.

Overall, then, observational data suggest that at least some of these new scales may be related in interesting ways to parent and child behaviors. I hope they will prove interesting and useful in your own research.

Completely replicated scales

Conflict with child

5. I often feel angry with my child.

34. I am easy going and relaxed with my child.

69. There is a good deal of conflict between my child and me.

Reflected (negative) items indicated by *italics*.

Sample	N	Cronbach α	mean	SD	Notes
Vancouver	60	.63	2.8	1.1	
Pennsylvania	216	.67	2.6	1.2	
Montreal	49	.67	2.8	1.1	
Toronto 1	64	.45	3.5	1.5	
Toronto 2	56	.54	2.4	1.0	
Toronto 3	54	.51	3.4	1.6	
Halifax	70	.72	2.9	1.4	
	569	.62	2.8	1.3	weighted averages

Note: For Vancouver, Pennsylvania, and Montréal, scale scores can range from 1 to 7. For Toronto and Halifax, scores can range from 1 to 9.

Open communication

1. I respect my child's opinions and encourage him/her to express them.

31. I do not allow my child to get angry with me.

53. I encourage my child to talk about his/her troubles.

70. I do not allow my child to question my decisions.

Reflected (negative) items indicated by *italics*.

Sample	N	Cronbach α	mean	SD	Notes
Vancouver	60	.75	5.7	.9	
Pennsylvania	216	.49	5.6	.8	
Montreal	49	.53	5.8	.8	
Toronto 1	64	.46	7.5	.8	
Toronto 2	56	.51	7.5	.8	
Toronto 3	54	.66	6.5	1.6	
Halifax	70	.63	7.4	1.1	
	569	.55	6.3	1.0	weighted averages

Note: For Vancouver, Pennsylvania, and Montréal, scale scores can range from 1 to 7. For Toronto and Halifax, scores can range from 1 to 9.

Partially replicated scales

Warmth

18. I express affection by hugging, kissing, and holding my child.

40. I joke and play with my child.

42. My child and I have warm, intimate times together.

Sample	N	Cronbach α	mean	SD	Notes
Vancouver	60	.70	6.4	.7	
Pennsylvania	216	.64	6.6	.6	
Montreal	49	.67	6.4	.8	
Toronto 1	64	.62	8.0	1.1	
Toronto 2	55	.36	8.5	.6	
Toronto 3	54	.71	7.0	1.6	
Halifax	70	.54	8.4	.7	item 40 omitted
	568	.61	7.2	.8	weighted averages

Note: For Vancouver, Pennsylvania, and Montréal, scale scores can range from 1 to 7. For Toronto and Halifax, scores can range from 1 to 9.

Protective, Worries

8. I watch closely what my child eats and when s/he eats.

28. I worry about the bad and sad things that can happen to a child as s/he grows up.

68. I worry about the health of my child.

Sample	N	Cronbach α	mean	SD	Notes
Vancouver	58	.51	4.5	1.2	
Pennsylvania	216	.43	4.5	1.1	
Montreal	49	.35	4.8	1.3	item 68 omitted
Toronto 1	64	.64	5.6	1.7	
Toronto 2	56	.62	5.1	1.5	
Toronto 3	54	.49	5.7	1.6	
Halifax	70	.37	5.7	1.3	
	567	.47	5.0	1.3	weighted averages

Note: For Vancouver, Pennsylvania, and Montréal, scale scores can range from 1 to 7. For Toronto and Halifax, scores can range from 1 to 9.

Anxiety Induction

29. I teach my child that in one way or another punishment will find him/her when s/he is bad.

47. I expect my child to be grateful and appreciate all the advantages s/he has.

65. I believe my child should be aware of how much I sacrifice for him/her.

83. I control my child by warning him/her about the bad things that can happen to him/her.

Sample	N	Cronbach α	mean	SD	Notes
Vancouver	58	.51	2.8	.9	
Pennsylvania	216	.40	3.1	.9	
Montreal	49	.48	3.1	.9	
Toronto 1	64	.35	3.6	1.1	
Toronto 2	55	.41	3.1	1.1	
Toronto 3	53	.47	4.5	1.4	
Halifax	70	.38	4.0	1.3	item 65 omitted
	565	.42	3.4	1.1	weighted averages

Note: For Vancouver, Pennsylvania, and Montréal, scale scores can range from 1 to 7. For Toronto and Halifax, scores can range from 1 to 9.

Independence, autonomy

26. I let my child make many decisions for him/herself.
44. I think one has to let a child take many chances as s/he grows up and tries new things.
45. I encourage my child to be curious, to explore and question things.
75. I encourage my child to be independent of me.

Sample	N	Cronbach α	mean	SD	Notes
Vancouver	60	.48	5.3	1.0	item 45 omitted
Pennsylvania	216	.46	5.4	.9	
Montreal	49	.69	5.7	1.0	
Toronto 1	64	.61	6.7	1.4	item 44 omitted
Toronto 2	56	.62	7.0	1.1	
Toronto 3	53	.59	6.0	1.5	
Halifax	70	.52	6.7	1.1	
	568	.53	5.9	1.1	weighted averages

Note: For Vancouver, Pennsylvania, and Montréal, scale scores can range from 1 to 7. For Toronto and Halifax, scores can range from 1 to 9.

Discourages Emotional Expression

11. I feel a child should be given comfort and understanding when s/he is scared or upset.

55. I teach my child to keep control of his/her feelings at all times.

82. I think children must learn early not to cry.

Note: Reflected (negative) items indicated by *italics*.

Sample	N	Cronbach α	mean	SD	Notes
Vancouver	60	.44	1.6	.6	
Pennsylvania	216	.51	1.8	.7	
Montreal	49	.58	1.8	.8	
Toronto 1	64	.48	2.5	1.3	item 11 omitted
Toronto 2	56	.07	2.1	.6	item 82 not present
Toronto 3	54	.77	3.3	1.8	
Halifax	69	.29	2.0	.8	
	568	.46	2.1	.9	weighted averages

Note: For Vancouver, Pennsylvania, and Montréal, scale scores can range from 1 to 7. For Toronto and Halifax, scores can range from 1 to 9.

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