

Marital and parent-child interactions in families with preschool children

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Abstract

Recent work in the transition-to-parenthood literature suggests that parents give their children priority over their spouse (Cowan & Cowan, 1988, 1990). This paper reports supporting evidence from observations of spouse and parent-child interactions during normal home activities from supper time to bed time ($N = 30$ families). As expected, both fathers and mothers were more engaged with their preschool child than with their spouse. In addition, responsiveness in spouse dyads (in contrast to parent-child dyads) appeared to be in disequilibrium in some families. This disequilibrium was also associated with troubled marriages (as defined by the presence of conflict or subsequent separation). Marital difficulties appeared to differentially affect father-child and mother-child interactions. Thus patterns in these observational data complement and extend self report data from earlier studies and suggest that observations of daily interactions may help in understanding variations in marital satisfaction and stability.

The literature on the transition to parenthood reports consistent (if small) mean declines in marital satisfaction during the first four years of parenthood (e.g., Anderson, Russell, & Schumm, 1983; Belsky & Rovine, 1990; Cowan & Cowan, 1990; Engfer, 1988; Wallace & Gottlieb, 1990). Changes in marital satisfaction are accompanied by, and partly reflect, changes in patterns of employment and schooling, the reallocation of household tasks, and the new demands of child care (Cowan & Cowan, 1988).

On the basis of such changes, Cowan and Cowan (1988, 1990) argue that new parents put their marriages 'on the back burner' in order to concentrate on the demands of parenting. In this paper I present supporting evidence from a study that focused on relations between family interactions and children's competence in preschool (Roberts, 1986; Roberts & Strayer, 1987; Roberts, 1987; Roberts, 1989), evidence of a sort seldom reported in the transition to parenthood literature: observations of spouse and parent-child interactions during normal activities in the home. Patterns of observed responsiveness, contingency, and engagement complement the data on changes in household tasks and child care described by Cowan and Cowan (1990), and suggest that changes observed in families with infants and toddlers may persist into the preschool years. In addition, findings are presented that link responsiveness and emotional support to marital strain, and which indicate that father-child and mother-child interactions are differentially affected by troubled relationships between spouses. Thus observations of ordinary interactions may help account for important variations in marital satisfaction and stability, an issue raised by Belsky and Rovine (1990).

Methods

Subjects

Thirty-five two-parent families volunteered in response to letters distributed through day care centers and preschools in the Vancouver metropolitan area. The 30 families who completed the study were occupationally diverse: Duncan S.E.I. scores ranged from 11 to 92, with a mean of 59. Education ranged from 9 to 21 years (means = 14.5 and 15.8 for wives and husbands respectively). Children were on average 4.3 years old, mothers, 32, and fathers, 34. Siblings were present in 21 families.

Procedures

Each family was seen four times. Questionnaires were dropped off on the first visit and retrieved on the second, when demographic data were collected. Home observations were done on the third visit, while child measures described elsewhere (Roberts, 1986; Roberts & Strayer, 1987) were administered during the fourth.

Instruments

Home observations. The observation session lasted approximately three hours, from supper until the child's bedtime. A focal-individual sampling strategy was used (Altmann, 1974), with 10-minute sessions alternating between the child and each parent. Actual sampling time averaged 128 minutes per family (range, 83 to 181 minutes), of which 60 minutes were parent focal samples (range, 39 to 116 minutes).

For each event, initiator, behavior, and target were recorded on a small computerized encoder. The target's reaction was coded in the next 3-element record, thus providing sequential data on social interactions. The behavior taxonomy included codes for social initiations (e.g., "nonverbal bid for attention", "speaks"), social responses (e.g., "hugs, holds", "ignores, no response"), commands ("directs", "implied directive") and compliance (e.g., "complies, agrees", "refuses", "partial compliance"). Codes for agonistic exchanges (e.g., "hits", "threat gesture") were adapted from Strayer and Strayer (1976). Codes were included for emotional distress (e.g., "cry voice, whines"; "cries"), responses to emotional distress (e.g., "inquires"; "distracts child"), and for activities (e.g., "watches TV", "reads", "solitary adult activity", "plays").

Because of the greater intrusiveness of two observers, reliability sessions were conducted separately from data sessions. Percent agreement and Kappa were calculated by comparing codes at each second in the two records, thus placing a premium on inter-rater timing as well as agreement. Across three sessions totaling 300 minutes of observation time (18,000 comparisons), agreements divided by agreements plus disagreements equaled 79%, $\kappa = .72$.

Both lag sequential and time budget variables were derived from the observation record, after similar codes were combined. (Combining codes, recommended by Bakeman & Gottman (1986), increases reliability and reduces Type I error.) Lag sequential variables assessed responsiveness and contingency in each dyad. Responsiveness was simply the conditional probability that a social response immediately followed a social initiation. These probabilities were converted to z scores for use in subsequent analyses, as Bakeman and Gottman (1986) advocate. (Their rule of thumb¹ was used to insure that enough events had been sampled in order for z scores to be stable.) Contingency was defined as the number of lag intervals over which conditional probabilities for social initiations and responses occurred at higher than chance levels for both members of the dyad (i.e., associated z scores were 1.65 or greater).

¹. $T * p * (1-p) > 9$, where T = total of all dyadic events and p = the conditional probability for the event of interest.

In addition, episodes of social interaction were identified using a 10-second break in the observation record as a delimiter. The length of these episodes was measured by duration in seconds and number of turns, while the combined length of all episodes was measured as a proportion of total time observed (see Altmann, 1974). (Time budget variables also assessed the proportion of time spent alone by each family member, as well as the proportion of time spent in dyadic social interactions.) For some analyses, measures of episode length were aggregated using factor scores from principal components analyses. As shown in Table 1, two factors emerged for each dyad, one representing long individual episodes and the other representing greater total engagement. Across dyads, these factors accounted for 83% to 92% of the variance in the original measures.

Table 1. Factor analyses of interactive episodes for father-child, mother-child, and spouse interactions.

Variables	Rotated Loadings	
	Factor 1: Long Episodes	Factor 2: Frequent Episodes
FATHER-CHILD INTERACTIONS		
Proportion of total time	.53	.82
Episodes per hour	– ^a	.98
Mean turns per episode	.89	–
Mean duration (seconds)	.99	–
Median duration (seconds)	.94	–
Duration at 1 S.D. (seconds) ^b	.91	–
<i>Cumulative proportion of data variance:</i>	.66	.92
MOTHER-CHILD INTERACTIONS		
Proportion of total time	.54	.84
Episodes per hour	–	.97
Mean turns per episode	.84	–
Mean duration (seconds)	.99	–
Median duration (seconds)	.83	–
Duration at 1 S.D. (seconds) ^b	.94	–
<i>Cumulative proportion of data variance:</i>	.61	.88

Variables	Rotated Loadings	
	Factor 1: Long Episodes	Factor 2: Frequent Episodes
SPOUSE INTERACTIONS		
Proportion of total time	.32	.94
Episodes per hour	–	.97
Mean turns per episode	.77	–
Mean duration (seconds)	.97	–
Median duration (seconds)	.79	–
Duration at 1 <i>S.D.</i> (seconds) ^b	.89	–
<i>Cumulative proportion of data variance:</i>	.54	.83

Notes.

a. Factor loadings less than .25 are not tabled.

b. Used as an index of long interactions.

Parent self report. Each parent completed Tietjen's (1985a, 1985b) Social Networks Inventory, an instrument that provides information on the three dimensions (structure, location in time and space, and activities) thought fundamental for informal social networks (Cochran & Brassard, 1979). Relations with friends and kin have been reported earlier (Roberts, 1989). This paper focuses on ratings of each spouse (by the other) on frequency of emotional support, household help, and help with child care (four point scales, with 1 = at least once a week, to 4 = never). These were analyzed as indicators of perceived support from marital partner.

Each parent also completed the Long Form of the Horowitz Life Events Inventory (Horowitz, Schaefer, Hiroto, Wilner, & Levin, 1977). Following Rutter (1981), events were originally grouped into nine a priori categories based on content, plus a tenth residual category (Roberts, 1989).

The categories of interest here are ones that reflect feelings of dissatisfaction or unhappiness and marital strain: Loneliness (2 items: "feelings of intense loneliness"; "feelings of being uninvolved, distant, or very shy"), Emotional Distress (e.g., "feelings of being overwhelmed by difficult life situations"; "feeling sad for more than three days"; 11 items), and Marital Troubles (e.g., "arguments with your spouse?", "spouse unfaithful?"; 7 items). Following Rutter (1981), events for these categories were summed (without weighting) over the prior year (three intervals: "within the last month", "within the last six months", "within the last year"), on the grounds that the

impact of recent events should be more apparent. No internal consistencies were calculated because there is no reason to expect different life events to co-occur.

Results

Partner-parent priorities

Contingency and time budgets. Descriptive observational data suggested that parents neglected their partners to concentrate on their children. For example, both mothers and fathers were more contingent with their children than with their spouses. In contrast to a mean of 5.9 contingent lags in spouse dyads, father-child and mother-child dyads averaged 8.2 and 8.0, respectively (Wilcoxon $ps < .05$ and $.10$).

Greater contingency in parent-child interactions was paralleled by parent-child social episodes that were longer than episodes involving spouses, by an average of 25% to 30%. This held for mean and median length of time and for an index of long interactions (episode length one *S.D.* above the mean). For five of eight comparisons, matched *t* values ranged from 2.43, $p < .025$ (mean length, Father-child vs. spouse) to 3.73, $p < .001$ (mean length, mother-child vs. spouse). (Episode length as measured by turns did not differ for parent-child vs. spouse dyads, while father-child vs. spouse median length was marginal. The omnibus null hypothesis that all comparisons are nonsignificant was rejected by binomial tests, $p < .0001$.)

Consistent with this pattern, wives (but not husbands) spent more time interacting with their child (as a proportion of total time observed) than in interacting with their spouse (see Figure 1; matched $t(29) = 3.28$, $p < .005$). Both parents spent much more time in solitary activities than in interactions with one another (matched

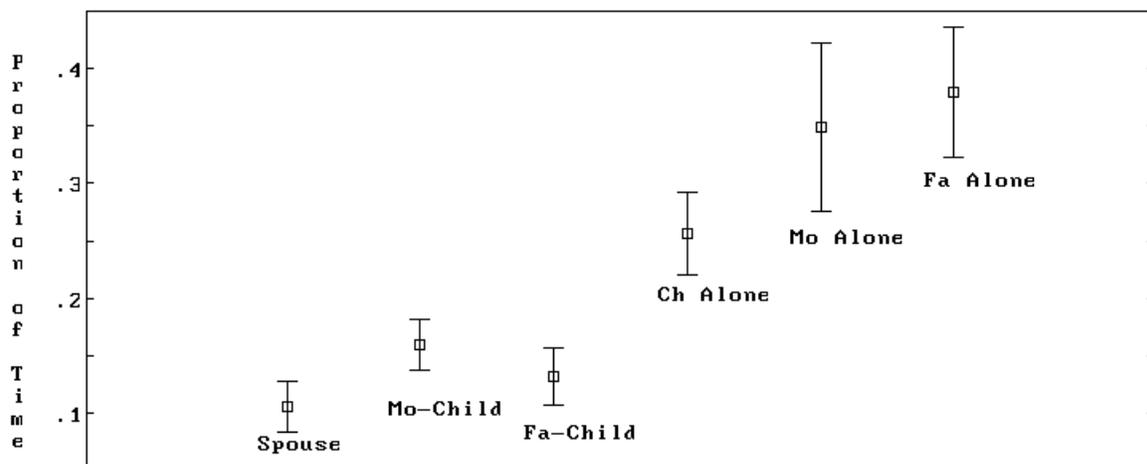


Figure 1 Family dyads: Means and 95% confidence intervals for time spent alone and in positive social interactions (as a proportion of total time observed).

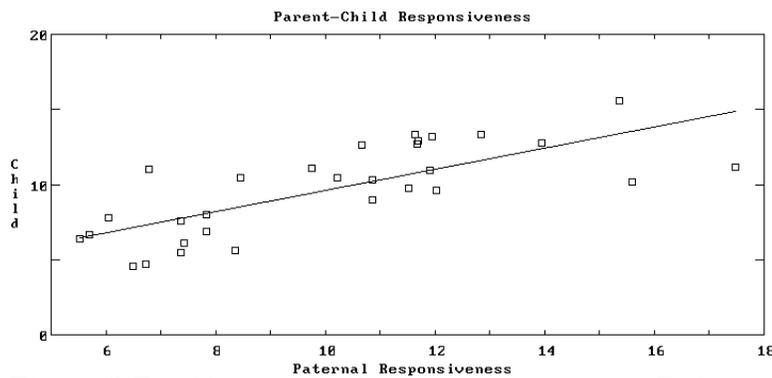


Figure 2 Equilibria in dyadic responsiveness (a): Father-child responsiveness, $r = .74, p < .001$.

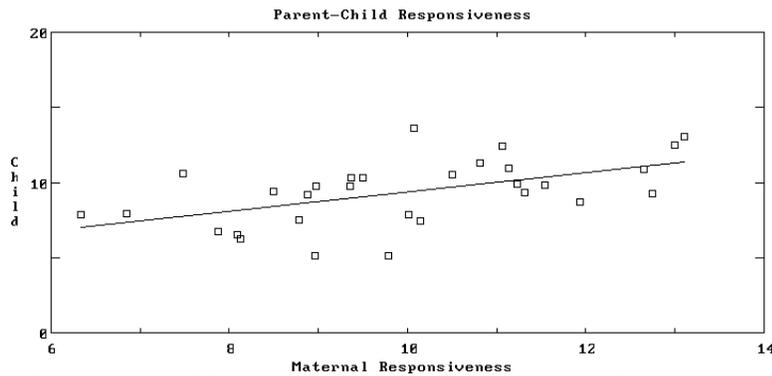


Figure 3 Equilibria in dyadic responsiveness (b): Mother-child responsiveness, $r = .53, p < .01$.

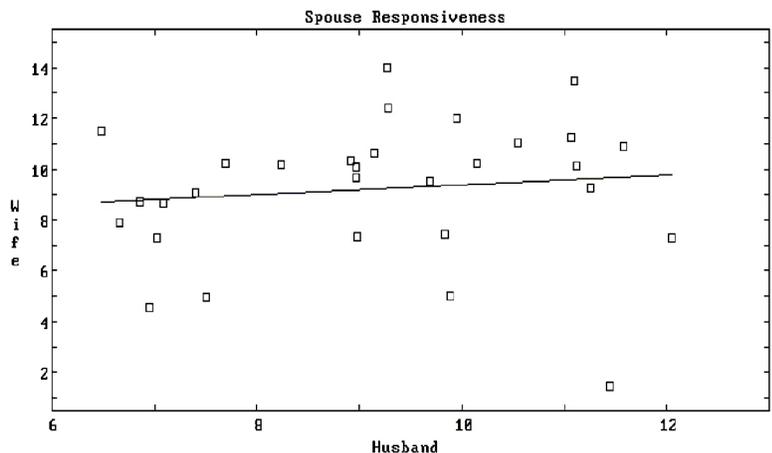


Figure 4 Responsiveness between spouses, $r = .12, ns$. For spouse vs. mother-child correlations, $t(27) = 3.94, p < .001$; for spouse vs. father-child correlations, $t(27) = 3.34, p < .003$.

$t(29) = 6.39$ and 9.03 , both p s $< .0001$).

Synchrony. In addition to these mean differences, parent-child dyads appear to be characterized by a greater degree of equilibrium or synchrony than spouse dyads. In contrast to a near-zero correlation between husbands' and wives' responsiveness, responsiveness in father-child and mother-child dyads was strongly correlated – significantly more so than responsiveness in spouse dyads (see Figures 2, 3, and 4). Thus it appears that communication in a number of spouse dyads may be disrupted, or at least interrupted.

If it is true that children receive a higher priority than spouses, then this disequilibrium should be associated with greater observed child involvement on the part of the less responsive spouse. This was the case. Overall, there were three significant ($p < .05$) correlations between an index of disequilibrium (the difference between husband's and wife's observed responsiveness) and ten measures of parent-child involvement. Binomial tests

rejected the omnibus null hypothesis (all r s = 0), $p < .02$.

A regression analysis to the index of disequilibrium indicated that these measures were independently related to responsiveness. Wives who were less responsive than their husbands gave more commands to their children ($\beta = .47$) and had longer interactions with them, as indicated by scores on a factor combining measures of episode length (Factor 1 in Table 1; $\beta = .38$). Husbands who were less responsive than their wives were more responsive to their children ($\beta = -.28$). These three variables accounted for 42% of the disequilibrium variance; $F(3,26) = 6.37, p < .005$.

Disequilibrium was apparent in another way as well. For the 17 families in which social initiations were ignored frequently enough for 'fails to respond' to be reliably measured, husbands were more likely to ignore their spouses than wives were, matched $t(16) = 2.20, p < .05$. Thus, taken together, there appear to be substantial variation across families in responding to and ignoring one's spouse.

Troubled marriages

Self reports. For both parents, marital troubles ranged from 0 to 12, with a mean of 3.2. Reports from husbands and wives were consistent ($r = .65, p < .001$), although the nature of the items on the stress inventory did not always require this.

As one would expect, reports of marital troubles were associated with reports of emotional distress and, for husbands, with increased feelings of loneliness (see Table 2).

Table 2.

Marital Troubles: Correlations With Reported Feelings and Observed Interactions ($N = 30$).

Variables	Reported Marital Troubles	
	Father	Mother
<i>Self report</i>		
Fa Emotional Distress	.51**	ns
Fa Loneliness	.48**	ns
Mo Emotional Distress	.23	.34+
Mo Loneliness	ns	ns

(table continues)

Variables	Reported Marital Troubles	
	Father	Mother
<i>Home observation</i>		
Father ignores child ^a	-.34	-.38+
Child ignores father ^a	-.58** ^b	-.52* ^c
Fa-Child total time	.32+ ^d	.59*** ^e
Mother Alone	.62*** ^f	.51** ^g

Notes: + $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$. Seven of 52 correlations were significant at .05; binomial tests rejected the omnibus null hypothesis (all $r_s = 0$), $p < .02$. Correlations less than .20 (absolute) are not tabled.

^a $N = 23$.

^b For Child ignores mother, $r = -.01$, $t(21) = 2.19^*$

^c For Child ignores mother, $r = .06$, $t(21) = 2.13^*$

^d For Mo-Child total time, $r = -.29$, $t(27) = 2.48^*$

^e For Mo-Child total time, $r = -.11$, $t(27) = 3.15^{**}$

^f For Father Alone, $r = .24$, $t(27) = 1.88+$

^g For Father Alone, $r = -.07$, $t(27) = 2.77^{**}$

As suggested by theories of compensation (Engfer, 1988), fathers who reported more troubles were observed to be more involved with their children, as shown in Table 2. Fathers spent more time with their children, and children were less likely to ignore their fathers.

However, mothers did not follow this pattern. As the notes to Table 2 indicate, correlations for mothers and fathers differed for 4 of 5 significant home observation measures, while the fifth difference was significant at $p < .10$. Thus it appears that a troubled marital relationship differentially affects father-child and mother-child interactions.

Strained marriages. Seven couples were classified as having strained or difficult relationships. Three couples were so identified during home observations, because of conflict and irritation during spouse interactions. At follow up two years later, three other couples had separated and a fourth was on the verge of doing so. As expected, membership in this troubled group correlated significantly with reports of marital troubles ($r_s = .52$ and $.47$ for wives and husbands respectively, both $ps < .01$).

These marriages were distinguished from more harmonious relationships on 5 of 12 measures of spouse interaction. (Binomial tests rejected the omnibus null hypothesis, $p < .0003$.) As shown in Figure 5, a regression analysis indicated that the most important of these variables were wives' reports that their husbands less

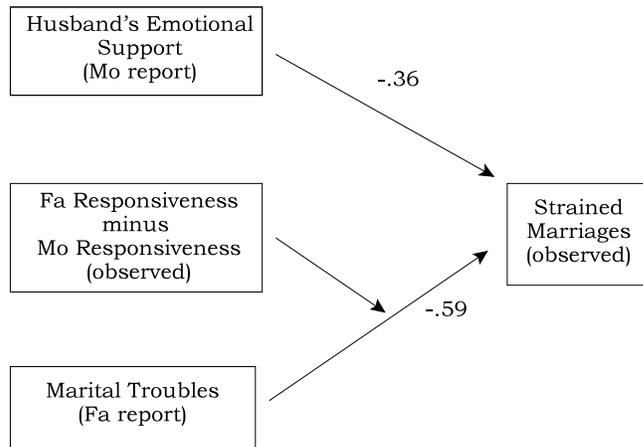


Figure 5. Regression analysis for strained ($N = 7$) vs. more harmonious ($N = 23$) marriages (coded 1 and 0, respectively). See text for an explanation of the interaction.

husbands are less responsive than their wives, the index of discrepancy is negative and makes membership in the separation/discord group more likely; however, when husbands are *more* responsive than their wives, the index is positive, and its effect is to make separation/discord *less* likely. These dual effects, which are unimportant when reported troubles are few, rapidly become prepotent as troubles increase. Thus husbands' emotional support and *relative* responsiveness appear to be critical in the resolution of marital difficulties.

In a discriminant analysis, these variables (fathers' emotional support and the interaction between relative responsiveness and reported marital difficulties) correctly classified 22 of 23 harmonious couples and 6 of 7 troubled couples, for an overall success rate of 93% (90% jackknifed), approximate $F(2,27) = 12.99, p < .001$.

Discussion

This paper has presented data from observations of family interactions in a natural setting, findings that support and extend the contention that during the early years of childhood, spouses give their marital role a lower priority than their role as parents. Spouses in the current sample were less contingent with one another than with their children, and their interactions were briefer. They also spent much more time in solitary activities than in interactions with their spouse. More importantly, perhaps, social responsiveness between spouses appeared to be disrupted in some families, to a much greater extent than responsiveness in parent-child dyads.

frequently provided emotional support, the discrepancy between husbands' and wives' observed responsiveness (described earlier), and husbands' reports of marital troubles, $R^2 = .49, F(2,27) = 12.99, p < .001$.

Discrepancy in responsiveness and reports of marital troubles interacted, potentiating one another. Examination of the regression equation indicated that when

Responsiveness between spouses may be important in several ways. Belsky and Rovine (1990) have argued that mean differences in marital satisfaction mask important variation across couples. Just as communication patterns during conflict are important for marital satisfaction (Gottman, 1990), responsiveness and ignoring in natural, day-to-day interactions may also be important for understanding change and variation in marital satisfaction. It seems plausible to suppose that spouses whose partners are less responsive on a daily basis will be less satisfied with their marriage.

In the current study, both emotional and social responsiveness were linked to troubled marriages, as defined by observed conflict or subsequent separation. It is a commonplace that difficulties bring some couples closer together but drive others apart. Current findings illustrate a dyadic mechanism (relative responsiveness during every day interactions) that produces just such an effect.

Current findings also suggest that the impact of troubled marital relationships on parent-child interactions may vary for mothers and fathers. While fathers in more troubled relationships were more involved with their children, this was not true for mothers. Theories of compensation have not addressed spouse differences, nor is it clear what implications greater engagement and responsiveness have for father-child and spouse relationships. No doubt the ways in which families adjust to marital strain vary, and spouses may well adopt different parenting strategies in response to marital strain. This study has documented differential parental responses, and thus makes a modest contribution to identifying coping strategies in the family.

There are several weaknesses in the current study. First, the sample was composed of volunteers and is not representative of the population of families with preschool children. However, the direction of bias towards higher levels of education and income is conservative: to the extent that SES is associated with greater warmth and more resources, restricted range would be expected to attenuate the statistical relations reported here. A second difficulty is the sample size, which was constrained by the expense of collecting observational data in natural settings. This bias, too, is conservative: lack of power means that only relatively large effects can be detected. However, such effects are usually the most interesting. In addition, observational data have high ecological validity; and thus findings from moderate sample sizes are often of interest for this reason alone.

The most critical shortcoming of the present study is its reliance on coeval measures, which means that causal relations remain unclear. In particular, longitudinal data are needed to clarify the etiology of asymmetries in dyadic responsiveness, their relation to parenting, and their role in how couples cope with marital difficulties.

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