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# What Gets Dad Involved? A Longitudinal Study of Change in Parental Child Caregiving Involvement

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Predictors of change in fathers' and mothers' perceptions of child caregiving involvement were examined. Middle-class 2-parent families (131 mothers and 98 fathers) with a target school-age child participated. Fathers and mothers completed annual questionnaires for 3 consecutive years. Latent growth curve modeling suggested that fathers were likely to increase their relative contribution to child caregiving over the course of 3 years when they had a greater proportion of male children in the family and when life events—particularly changes in employment and financial status—were experienced by the family. Although mothers were responsible for more of the caregiving, their relative level of involvement tended to decrease when there were no young children in the family. Two-parent families may adapt to varying family contexts and life circumstances by shifting caregiving roles and responsibilities over the course of years.

In recent years, considerable attention has been focused on the involvement of fathers with their children (Marsiglio, Amato, Day, & Lamb, 2000). Although numerous studies have identified cross-sectional correlates of paternal involvement in caregiving (e.g., Bonney, Kelley, & Levant, 1999), few have focused on the factors related to change in father involvement over time. Family relationships are not static; they are influenced by numerous contextual factors that change with the passage of time. In this study, a model of change in the perceived child-care involvement of fathers and mothers in two-parent families was tested with latent growth curve modeling. We define *involvement* as the proportion of total child care performed by each parent. The goal was to investigate factors that promote (or discourage) paternal and maternal caregiving involvement.

Despite dramatic changes in ideology regarding the role of mothers in the workplace since the 1970s, there has not been a complementary shift in the American cultural tendency to view child-care primarily as a mother's job (Coltrane, 1996; Kimmel, 1996). Employed fathers vary considerably in their degree of involvement with caregiving (Coltrane, 1996).

In their model of "responsible fathering," Doherty, Kouneski, and Erickson (1998)—drawing on Levine and Pitt's (1995) work—viewed *direct engagement* in child rearing as the principal domain in which residential fathers could exhibit responsibility (the others being establishing legal paternity and the nonresidential father's presence vs. absence and payment of child support). Other experts have argued that the content of fathers' interactions with children, not merely the quantity (amount of time), plays a key role in determining children's outcomes (Hawkins & Palkovitz, 1999; Pleck, 1997). In light of these models, the present study focused on positive fathering practices and, particularly, direct "engagement" with children.

Research on the division of child care between mothers and fathers in two-parent families has often emphasized contextual factors that facilitate or hinder father involvement (cf. Marsiglio et al., 2000). Belsky (1984) proposed a model of the determinants of parenting quality and involvement that included child characteristics, parent characteristics, and other contextual factors (e.g., stressful life events experienced by immediate family members). Subsequent models have also emphasized the bidirectional nature of the father's relationship with family members and have suggested that the behaviors and characteristics of each family member, as well as contextual factors, affect the father's participation in child rearing (Doherty et al., 1998; Parke, 1996). The majority of father involvement studies testing these models have been cross-sectional in nature, providing a static view of influences on fathering. Because families change over time, in this study we investigated factors that may shape changes in fathers' roles in child caregiving.

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Father involvement is not necessarily inversely related to the amount of mother involvement. In two-parent families, mothers often share a substantial portion of their caregiving responsibilities with relatives, babysitters, child-care workers, and others. Gendered ideologies about males and females in caregiving roles (Bonney et al., 1999; Coltrane, 1996; Sargent, 2001) can limit fathers' availability and willingness to participate in caregiving, even when mothers reduce their own time with children. In many families, other individuals (e.g., grandmothers) may be recruited to assume child caregiving responsibilities previously carried out by mothers. Thus, factors that influence fathers to increase or decrease their parenting involvement may differ from the factors that influence changes in mothers' involvement. Data from the present study were used to distinguish between predictors of changes in fathers' versus mothers' perceptions of caregiving involvement over time.

## Child Characteristics

Many conceptual models of child development and family relations have stressed the role of the child in shaping and constructing his or her own environment, including family relationships (e.g., Bell & Harper, 1977; Doherty et al., 1998; Siegal, 1987). Previous studies of father involvement have often focused on the role of children's characteristics as determinants of positive engagement with their fathers.

### *Child Gender*

Some cross-sectional research suggests that child gender influences the degree of father involvement in caregiving. A consistent cross-sectional finding is that fathers in two-parent families are more likely to be involved in the care of boys than of girls (Aldous, Mulligan, & Bjarnason, 1998; Crouter & Crowley, 1990; Larson, Richards, Moneta, & Holmbeck, 1996). In contrast, there is little evidence that mothers are differentially involved in caring for sons versus daughters (Lytton & Romney, 1991; Siegal, 1987). Reciprocal role theory proposes that although fathers and mothers both contribute to the development of gender roles in children, fathers make a greater distinction between sons and daughters than do mothers (e.g., Siegal, 1987). Specifically, fathers are thought to seek out boys in order to socialize them into traditional instrumental roles, for instance, by teaching them skills and encouraging their independence and autonomy. Because of the father's particular investment in socializing boys, interactions with daughters may be less frequent. Of course, the present study is based on the premise that paternal involvement results from a process with inputs from many different sources. Therefore, gender differences in father involvement may also reflect the attitudes and behavior of children and mothers. For example, sons may initiate more interactions with their fathers than daughters do, and maternal beliefs about the appropriate role of each parent in gender socialization might shape fathers' involvement with sons and daughters in particular directions.

The research studies mentioned above all point to a cross-sectional linkage between children's gender and father involvement. However, child gender might also be an important factor underlying *changes* in father child-care involvement over time. For example, a large-sample diary study found that between the ages of 3 and 12 years, children spend less and less time with their fathers in play and companionship activities. However, fathers spend *more* time with older boys in these types of activities (Yeung, Sandberg, Davis-Kean, & Hofferth, 2001). In contrast, on the basis of available cross-sectional data, there does not appear to be a basis for expecting an interaction between child gender and age in predicting changes in maternal caregiving involvement.

### *Child Age*

Several studies suggest that fathers in two-parent families are less involved with very young children (i.e., infants or early preschoolers) than with school-age children or adolescents (Bailey, 1994; Brayfield, 1995; DeLuccie, 1996). For instance, the time-diary study mentioned above found that whereas older children spend less time with their fathers, the level of involvement with fathers relative to mothers increases with child age (Yeung et al., 2001). Fathers may feel more comfortable with older children who do not require as many gendered caregiving activities, such as diapering and bathing, as compared with younger children (Deutsch, Lussier, & Servis, 1993). When fathers do interact with young children, they tend to engage in more playful social interactions than in practical caretaking tasks (e.g., Bailey, 1994; Yeung et al., 2001). On the basis of these findings and observations, there may be a positive upward slope of fathers' proportion of perceived caregiving involvement over time among fathers who are initially assessed when there are younger children in the family, in comparison with the relative plateau that may characterize the slope of fathers' proportional involvement when there are exclusively older resident children. In contrast, mothers' involvement relative to fathers' might decrease more rapidly once all of the children reach school age, because many mothers stay at home part time or full time with young children (Becker & Moen, 1999; Singer, Fuller, Keiley, & Wolf, 1998; Spain & Bianchi, 1996).

## Father, Mother, and Coparental Factors

Individual characteristics of fathers, such as their socioeconomic status and parenting attitudes and skills, and of mothers, such as their age and their beliefs, are likely to have a substantial impact on father involvement (Allen & Hawkins, 1999; Doherty et al., 1998; Pleck, 1997). Coparenting arrangements and division of responsibilities may also affect fathers' availability for child care and level of cooperation with their wives. Decisions about who engages in paid employment (i.e., dual- vs. single-earner family status), as well as mothers' *amount* of time spent in paid employment, represent coparental decisions with significant implications for the division of child care between fathers

and mothers in two-parent families (e.g., Belsky, 1984; Doherty et al., 1998; Pleck, 1997).

Parents in two-earner families have three jobs to accomplish: the mother's and father's responsibilities at work, as well as the care of children and household. Compared with single-earner families, in which one parent can devote full-time effort to child care and housekeeping, two-earner families often arrange a more balanced division of these domestic tasks between the two parents. Although many two-earner families use day care or babysitters, cross-sectional studies suggest that fathers are also more involved in caregiving in these families than in single-earner families (Bonney et al., 1999; Brayfield, 1995; Deutsch et al., 1993). In addition to acting as a predictor of father involvement, maternal employment status is also associated with other family and child characteristics that correlate with paternal caregiving. For instance, as noted above, mothers of young children are more likely to scale back their work commitments, by working fewer hours outside of the home (Becker & Moen, 1999; Spain & Bianchi, 1996). One goal of the present study was to examine whether mothers' work hours outside the home would be predictive of mothers' and fathers' perceptions of involvement in child care even after controlling for related family and child variables.

Although fathers' time in paid employment has been found to be a less consistent predictor of father involvement than mothers' time in paid employment, analyses of data from the Great Depression demonstrate the negative effects of fathers' job loss and economic problems on the father–child relationship (e.g., Elder, Van Nguyen, & Caspi, 1985). Similar effects may occur for mothers; one study found that transitions into employment for married mothers resulted in increased difficulty managing caregiving responsibilities (Ali & Avison, 1997). Thus, *changes* in employment status may have implications for both fathers' and mothers' involvement in child caregiving.

## Larger Contextual Factors

In the models of influences on father involvement cited above, contextual factors such as family size and the occurrence of life events also shape fathers' level of involvement. Family size may play an important role in influencing fathers' and mothers' caregiving involvement, considering that each additional child in a family requires additional resources in terms of care and supervision. In a study of 405 Dutch two-parent families with preschool and school-age children, having a greater number of children was associated with more self-reported maternal child-care time and less child-care involvement of fathers and nonparental providers (Van Dijk & Siegers, 1996). Several other studies (see Pleck, 1997, for a review) also have found fathers to be less involved in larger families, although findings vary across samples. It is unclear whether this trend reflects an arrangement in which fathers in larger families spend additional hours in paid employment. Because family size is likely to correlate with other common predictors of father (and mother) involvement, such as hours in paid employment, a goal of this study was to evaluate whether family size uniquely predicts initial levels or changes over time in child-care involvement.

Life events can precipitate changes in fathers' and mothers' involvement in child caregiving. For instance, the death of a relative, the birth of a sibling, serious health problems within the family, changing jobs, or an increase or decrease in the family's financial status may permit or require adjustments in child-care arrangements. Negative events place strains on the family system and are associated with more parenting stress and aversive parenting behaviors (e.g., Oestberg & Hagekull, 2000). It has been hypothesized that stressful life events can cause parents to become more self-absorbed, distracted, and withdrawn from their children (Grolnick, Weiss, McKenzie, & Wrightman, 1996; Perry-Jenkins, Repetti, & Crouter, 2000). Life events clearly have the potential to change mothers' and fathers' parenting involvement in either desired or undesired ways and are an important component of the larger context in which families function.

Longitudinal designs are preferable for studying the effects of life events on parent involvement because they permit a direct test of change in involvement following a life event. In this study we tested the child, father, mother, coparental, and larger contextual factors discussed above as predictors of change in the proportion of child care provided by fathers and mothers over the course of 3 years using latent growth curve modeling (LGM; Duncan, Duncan, Strycker, Li, & Alpert, 1999; Meredith & Tisak, 1990). With LGM, multiple lag data with more than two time points are used to provide a single estimate of individual change (i.e., a slope) that, like other within-subject designs, removes variance due to unique response styles of individual subjects. LGM entails simultaneous estimation of paths predicting both the initial status of the dependent variable (i.e., the intercept) and the change over time in this variable (i.e., the slope). Paths to be estimated are specified a priori.

## Method

### *Participants*

Participants included cohabiting fathers and mothers of fourth-grade target children. As part of a larger study, the target children, their teachers, and their fathers and mothers were asked to participate in an assessment once per year for 3 years (when the target children were in the fourth, fifth, and sixth grades). Out of the original sample of 248 families, we selected two-parent households in which there was no divorce or separation, or birth of a new baby, during the course of the study. The initial subsample consisted of 119 fathers and 155 mothers who completed the Year 1 measures, representing 156 households. For fathers, there was a loss of 12 cases (10%) to attrition at Year 2, and 9 additional cases (8.5%) at Year 3. For mothers, 13 cases (8.4%) were lost to attrition at Year 2, and 11 more cases (7.8%) were lost at Year 3. The final sample consisted of 98 fathers and 131 mothers, representing 132 households with complete data.

Participants were primarily middle and upper-middle class and European American. Among the 98 fathers who identified their ethnicity, 85.4% were European American, 1% African American, 6.8% Asian/Pacific Islander, 1.0% Native American, and 5.8% "other." Percentages were nearly identical for mothers. Parents

Table 1
*Descriptive Statistics for the Hypothesized Latent Growth Model Variables*

| Variable | *M* | *SD* | Range | Skewness | Kurtosis |
|---|---|---|---|---|---|
| Percentage of male children | .50 | .33 | 0–1.00 | 0.04 | −0.85 |
| Age of youngest child, Y1 | 7.11 | 3.06 | 0–9 | −0.50 | −0.41 |
| Total number of children | 2.33 | 0.93 | 1–6 | 0.81 | 1.23 |
| Mother work hours, Y1[a] | 30.29 | 13.17 | 2–60 | 0.28 | −1.46 |
| Life events, Y2 and Y3 | 3.83 | 2.26 | 0–11.50 | 0.99 | 0.72 |
| Father involvement, Y1 | .31 | .07 | .16–.45 | −0.08 | −0.61 |
| Father involvement, Y2 | .32 | .07 | .14–.58 | 0.31 | 0.99 |
| Father involvement, Y3 | .33 | .09 | .14–.62 | 0.73 | 1.12 |
| Mother involvement, Y1 | .58 | .07 | .40–.71 | −0.44 | −0.49 |
| Mother involvement, Y2 | .57 | .08 | .37–.71 | −0.26 | −0.73 |
| Mother involvement, Y3 | .56 | .08 | .32–.71 | −0.29 | −0.43 |

*Note.* For father involvement variables, $n = 98$. For all other variables except mother work hours, $n = 131$. For father and mother involvement variables, higher scores reflect a greater proportion of involvement. Y = Year.
[a] Based on data from 83 employed mothers.

reported annual family income using a scale that ranged from 1 (*under $10,000 per year*) to 11 (*over $100,000 per year*). Sixty percent of fathers reported a family income of over $100,000 per year; 34% reported an income between $40,001 and $100,000; and 6% reported an income at or below $40,000. The majority of fathers (86%) and mothers (74%) reported having graduated from college.

To compensate participants for their effort, each year individual parents received an honorarium that ranged from $5.00 to $20.00.

Families were recruited with letters sent home to the parents of all fourth-grade children attending three elementary schools (two public schools and one parochial school) in a large metropolitan area. Introductory letters were mailed to 677 families over the course of 3 years, and 248 households returned signed consent forms (a 37% participation rate).

## Measures

### Child Caregiving Involvement

*Father involvement.* Fathers' perceived child caregiving involvement was assessed by a scale developed for use in this study (see Appendix). This 10-item scale assesses the father's perceptions of his own, his wife's, and others' responsibility for specific child-care activities. The items included in this scale address several shortcomings of previous measures of "father involvement" identified in the literature (Hawkins & Palkovitz, 1999). For instance, many scales do not assess indirect father involvement (such as attending school meetings and planning activities); three items on indirect involvement were included in the present scale. In addition, many previous scales have focused on a single father–child dyad, whereas all children in the family were the subjects of our rating scale. Items to assess social–emotional functions, such as direct social interaction and play; custodial caregiving functions, such as preparing for bed and school; and instructive functions, such as reading, helping with school work, and teaching the child about the world, were also included. Following the tradition of father involvement measures that focus on positive parenting practices rather than simply time together in any activities, our measure assesses specific parent–child interactions that have been identified in the developmental literature as beneficial to children (see Pleck, 1997).

Each item is rated on a 5-point response scale, ranging from 1 (*none or very little responsibility [less than 10%]*) to 5 (*almost complete or complete responsibility [90%–100%]*). For each item, parents rated separately (a) their own responsibility, (b) their spouse's responsibility, and (c) other child-care providers' responsibility (e.g., a relative, housekeeper, or nanny) on this response scale. A proportion score was calculated to provide a measure of father's self-reported responsibility for child-care tasks relative to his perceptions of the other providers' responsibilities. The proportion scores were created using the following formula: (father's own caregiving score) / (sum of father's ratings of his own, his wife's, and other providers' caregiving responsibility scores).[1] As shown in Table 1, on average, fathers reported that they assumed 31%–33% of the responsibility for the child-care activities assessed in this scale. Cronbach's alphas were computed for fathers' reports of child caregiving involvement for themselves (range: .84 to .90), their wives (range: .82 to .92), and others (range: .77 to .80) at Years 1, 2, and 3.

*Mother involvement.* Mothers completed ratings on the same scale with proportion scores computed in the same manner. On average, mothers reported that they were responsible for 56%–58% of the child-care activities assessed in this scale (see Table 1). A high level of internal consistency was observed for mothers' ratings of their own (Cronbach's alpha range: .79 to .84), their husbands' (range: .81 to .84), and others' caregiving involvement (range: .82 to .83).

Agreement between parents on mother's and father's caregiving responsibility was strong, with mother–father intraclass correlations ranging from .63 to .70 for Years 1 to 3. This level of agreement suggests that parents' perceptions of responsibility coincided with one another to a large extent.

The parents' reports suggest that the fathers' proportion of caregiving was just slightly more than half the size (about 50%–60%) of mothers' proportion of child caregiving. This proportion

[1] Alternatively, it would have been possible to just sum a parent's ratings on the 10 items and interpret that sum score as the parent's perception of his or her share of responsibility. However, the parents did not all use our response scale in the same way. Some parents, for example, would assign a high score of 5 (indicating 90%–100% of the responsibility) to more than one adult in the household for the same activity (e.g., staying home with a sick child). The ratio score helped to cancel out individual differences in the way that the response scale was used and move parents' scores toward a common metric.

is similar to, or slightly higher than (for fathers' proportion of child care), other reports in the literature; estimates vary depending on how involvement in child care is measured (Pleck, 1997; Yeung et al., 2001).

### *Child and Family Characteristics*

Characteristics of children residing in the home (percentage of male children, age of the youngest child, and the total number of children), according to parent reports, are presented in Table 1.

Mothers provided a numeric response (range: 0−70 hr) to the question "If employed, approximately how many hours per week do you work?" If mothers indicated that they were not employed, their employment hours were coded as 0. Forty-nine mothers reported that they were not currently employed in Year 1.

### *Life Events*

To assess life events experienced by family members, fathers and mothers completed the Life Experiences Survey (LES; Sarason, Johnson, & Siegel, 1978). The LES is a 51-item checklist assessing areas such as the death or illness of family or friends, an outstanding personal achievement, changes in job status, personal health problems, a major change in financial status (for better or worse), and changes in household composition. The numbers of life event items endorsed by fathers and mothers, respectively, were averaged to create composite life events scores for Year 2 and Year 3. Then, these two yearly composite scores were averaged, creating a single summary score for fathers' and mothers' reports of life events at Years 2 and 3. This composite variable approach, rather than the use of a life events latent variable, was necessary owing to sample size and power considerations associated with LGM. Because there was no reason to expect items to correlate with one another (i.e., developing an illness is not presumed to be a measure of the same "construct" as building a new home), internal consistency was not evaluated for this measure. The correlation between fathers' and mothers' scores, averaged across Years 2 and 3, was .39 ($p < .001$, $n = 98$), signifying modest agreement among the two respondents regarding life events in the family. Of course, perfect agreement on this measure would not be expected, because many of the items describe individual experiences (e.g., changes in employment status, personal health problems). On average, 3.83 life events per year were reported by fathers and mothers (see Table 1).

## Results

### *Model Specification*

Latent growth models are special instances of structural equation models that incorporate both mean and covariance structures. Using the computer program EQS (Bentler & Wu, 1995), two latent factors are established with fixed loadings from repeated measures of a single variable. One latent factor estimates the degree of change over time (the slope factor), and the other estimates the initial status/intercept of the growth curve (the intercept factor). Change over time is estimated by fixing the path coefficients to the slope factor according to the hypothesized shape of the growth curve. In the present application, factor path coefficients for a linear curve over three time points were set at 0, 1, and 2, representing an equivalent change over time between Years 1, 2, and 3, and the path coefficients for the intercept were set at 1 for each assessment year (Duncan et al., 1999).

Prior to analyzing data, we tested the assumption that all variables were normally distributed. Variables were standardized, and the *z*-score distributions were plotted. One case had a *z* score of 4.55 for the life events scale, and examination of the raw score frequencies suggested that this case was an outlier, so it was dropped from the final sample. There were no other outliers. The kurtosis and skewness coefficient for each measured variable was divided by its standard error, and in each case, the resulting quotient was below an absolute value of 5, suggesting a distribution with an approximately normal shape (see Table 1). Diagnostic statistics supported the assumption of a multivariate normal distribution. Maximum likelihood estimation was used in all subsequent analyses.

Separate LGM models were estimated for fathers' and mothers' perceptions of their own child-care involvement. Table 1 presents the means, variances, ranges, and values of skewness and kurtosis for all variables in the father and mother models. Table 2 presents the correlation matrix for all variables in the father and mother models.

The initial structural model was based on the theory and research discussed above. The predictors of initial status for perceived caregiving involvement (intercept) for both the

Table 2
*Intercorrelation Matrix for the Hypothesized Latent Growth Model Variables*

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| 1. Percentage of male children | — | .01 | .06 | −.04 | −.06 | −.13 | .00 | .04 |
| 2. Age of youngest child, Y1 | −.01 | — | −.35** | −.01 | .07 | .15 | .18 | .07 |
| 3. Total number of children | .08 | −.40** | — | −.08 | −.05 | −.01 | −.04 | −.05 |
| 4. Mother work hours, Y1 | .08 | .05 | −.11 | — | .16 | .30** | .31** | .29** |
| 5. Life events, Y2 and Y3 | .08 | .20* | −.14 | .14 | — | .27** | .22** | .36** |
| 6. Parent involvement, Y1 | −.12 | .02 | .01 | −.48** | −.09 | — | .74** | .65** |
| 7. Parent involvement, Y2 | .00 | −.11 | .01 | −.47** | −.01 | .82** | — | .72** |
| 8. Parent involvement, Y3 | −.05 | −.12 | −.02 | −.36** | −.06 | .71** | .75** | — |

*Note.* Correlations above the diagonal are for the father model ($n = 98$); correlations below the diagonal are for the mother model ($n = 131$). Variables 6–8 (parent involvement) reflect father involvement proportion scores for the father model and mother involvement proportion scores for the mother model. Y = Year.
* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

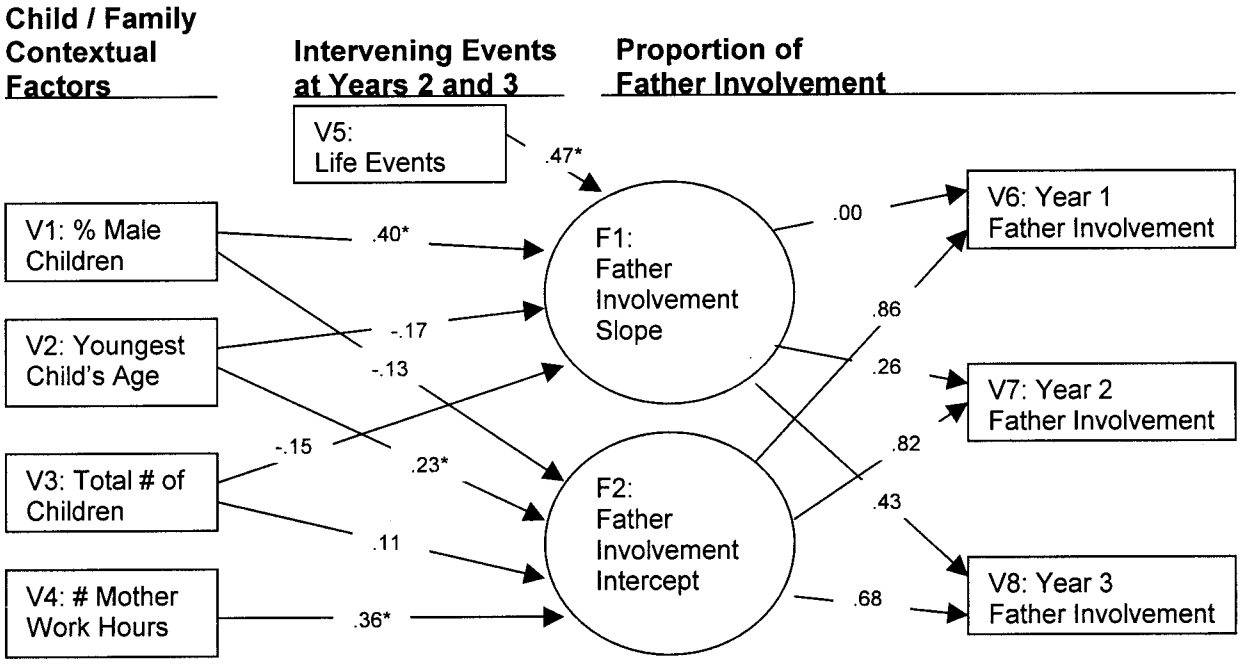


*Figure 1.* Estimated latent growth model for fathers' child-caregiving involvement: $\chi^2(14, N = 98) = 10.72$, $p = .71$; CFI = 1.00. F = factor; V = measured variable; V4 represents mothers' reported hours spent in paid employment at Year 1. *$p < .05$.

father and mother LGM models were as follows: percentage of male children, total number of children in the family, mothers' hours in paid employment, and age of the youngest child in the family.[2] The predictors of change in perceived caregiving involvement (slope) were the same as the predictors of initial status, with the addition of intervening family life events, and excluding mothers' work hours at Year 1. Although, ideally, change in mothers' work hours over time would also have been modeled as a latent growth factor predicting the slope of child-care involvement, power limitations and model-fitting considerations precluded this addition (given a relatively small sample). However, the effect of change in work hours is examined in the descriptive follow-up analyses. Because there did not appear to be any reason to expect baseline mother work hours to influence *change* over time in child-care involvement beyond the initial status of mothers' and fathers' involvement, and because the life events scale (predicting the slope) contained several items pertaining to changes in spouses' work status and family financial status, baseline mother work hours were restricted to have an effect only on the intercept factor.[3]

### *Model-Fitting Procedures*

Figures 1 and 2 present the estimated latent growth models for fathers and mothers, respectively. In addition to the predicted paths, all variances of measured variables and factors were allowed to vary freely. Additional paths not shown in the models (for the sake of clarity) include the matrix of constants (V999) predicting all measured variables and factors in the model (this matrix is required for the estimation of growth curves). Additionally, the number of children in the family, the percentage of male children, mothers' work hours, and the age of the youngest child were allowed to intercorrelate, given the likelihood that these predictor variables would be interrelated. Finally, the intercept and slope factors were allowed to intercorrelate, given the possibility that initial level of involvement was related to change over time (Duncan et al., 1999).

Model-fitting parameters for both the father model (Figure 1) and the mother model (Figure 2) were indicative of good fit. For the father model, $\chi^2(14, N = 98) = 10.72$, $p = .71$; comparative fit index (CFI) = 1.00. For the mother model, $\chi^2(14, N = 131) = 23.57$, $p = .051$; CFI = .97. The linear slope shape fit the data well for both models, and so other slope shapes (e.g., quadratic) were not evaluated. Because the structural paths for the LGM were specified a

[2] Although the percentage of male children was not hypothesized to impact mothers' caregiving involvement, it was retained as a predictor in the mother model in order to directly parallel the father model.

[3] To test the assumption that mothers' employment hours should not also predict the slope of child-care involvement, we ran a Lagrange multiplier test wherein the structural path to the slope was freed. For both the father and mother models, freeing this parameter resulted in no improvement in model fit, as indicated by a null reduction of the model chi-square statistic. Thus, this assumption was supported by the data.

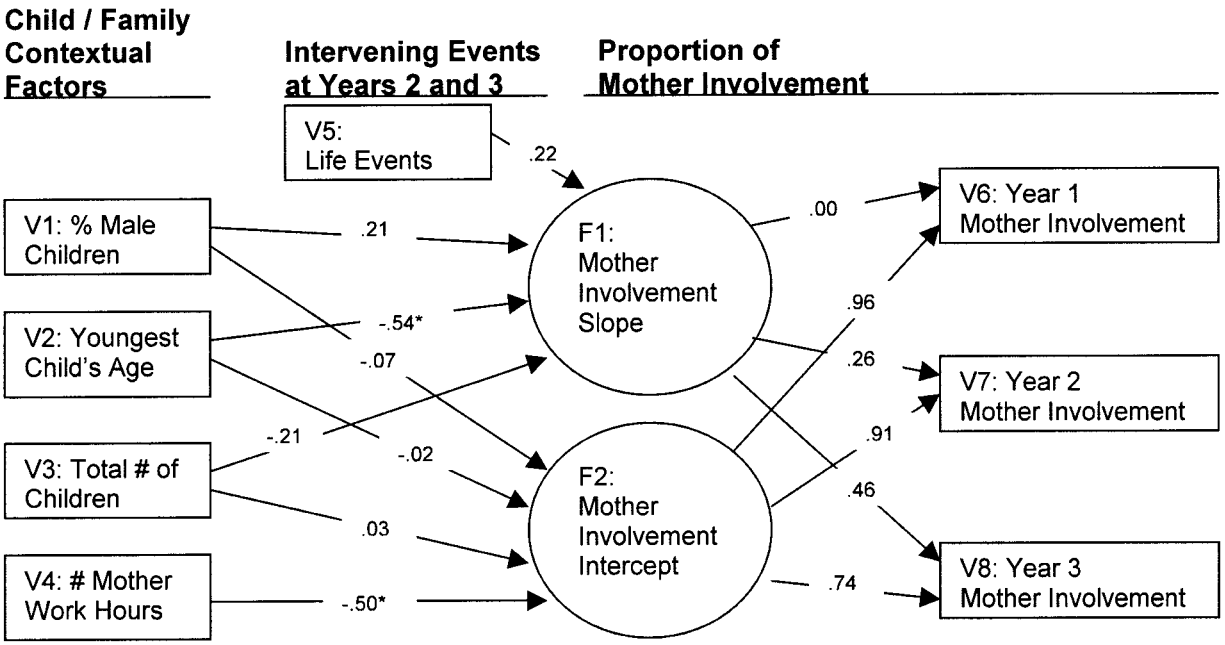


*Figure 2.* Estimated latent growth model for mothers' child-caregiving involvement: $\chi^2(14, N = 131) = 23.57$, $p = .051$; CFI = .97. F = factor; V = measured variable; V4 represents mothers' reported hours spent in paid employment at Year 1. *$p < .05$.

priori, no model modifications using the Lagrange multiplier or Wald tests were attempted.

### *Fathers' Model*

For the fathers' model, there were two significant structural paths predicting the slope of father involvement and two significant paths predicting the intercept (see Figure 1). The slope of father involvement was predicted by the percentage of male children in the family, v1, f1; $\beta = .40$, $t(96) = 2.21$, and by the number of life events that were experienced during Years 2 and 3, v5, f1; $\beta = .47$, $t(96) = 2.74$. A higher percentage of male children in the family and a greater number of life events reported by mothers and fathers were each associated with an *increase* in the proportion of child care performed by fathers over time. The intercept of father involvement was predicted by mothers' hours spent in paid employment at Year 1, v4, f2; $\beta = .36$, $t(96) = 3.47$ and by the age of the youngest child in the family, v2, f2; $\beta = .23$, $t(96) = 2.01$. When mothers spent a greater number of hours in paid employment at Year 1, fathers tended to initially report a higher proportion of involvement in child caregiving than did fathers whose wives worked fewer hours at Year 1. In addition, the older the youngest child in the family was at the beginning of the study, the more involved fathers were likely to be at Year 1. However, the age of the youngest child in the family did not significantly predict change in father involvement over time.

Although the predictor variables were allowed to intercorrelate with each other (not depicted in Figure 1), only one estimated correlation was statistically significant: The age of the youngest child was negatively correlated with the number of children in the family ($r = -.35$, $p < .05$). The slope and intercept factors were also not significantly correlated with each other.

Follow-up descriptive analyses were conducted to illustrate the statistically significant relations between the predictor variables and father involvement. These analyses do not represent additional tests of the main hypotheses, and therefore significance tests were not performed. Rather, these follow-up analyses were intended to provide concrete illustrations of significant findings from the primary analysis (i.e., the LGM model).

*Percentage of male children.* To illustrate the significant path for percentage of male children predicting increased father involvement proportion scores, fathers were divided into two groups: those who increased their caregiving proportion score by at least .03 between Year 1 and Year 3 (increasers) and those who did not (nonincreasers). When we considered only the 41 fathers whose children were all of the same sex, 41% of fathers with sons were increasers (i.e., became more involved with caregiving over time), whereas only 16% of fathers with daughters were increasers.

*Age of youngest child.* To illustrate the significant path from age of youngest child to the intercept of father involvement in the LGM, we subdivided families into those whose youngest child was older than 6 and those whose youngest child was 6 or younger. The Year 1 father involvement score for fathers who initially had a child aged 6 years

or younger ($M = .30$) was slightly lower than the score for fathers with exclusively older children at Year 1 ($M = .32$).

*Mother's employment hours.* The significant path from mother employment hours to the intercept of father involvement is illustrated by dividing the participating families into three groups: those in which mothers were nonemployed ($n = 8$), working 1–19 hr per week ($n = 12$), and working 20 or more hours per week ($n = 51$; only couples with both father and mother data were included in this analysis). As shown in Table 3, fathers' involvement proportion scores were higher when their wives were engaged in employment outside the home.

*Life events.* We explored the path from life events to the slope of father involvement by tabulating the most frequent life events experienced by fathers who increased their caregiving proportion score by at least .03 (increasers) between Years 1 and 2 ($n = 24$; 25%) or between Years 2 and 3 ($n = 26$; 27%). The most common event reported by increasers at Year 2 was a change in fathers' own work situations involving "different work responsibility, major change in working conditions, working hours, etc." (reported by 50% of increasers). This life event was also reported frequently by increasers at Year 3 (reported by 31% of increasers). In addition, the most common event reported by the *wives* of increaser fathers was also a change in their own work situation, responsibility, and/or hours (reported by 33% of the wives of increasers at Year 2 and by 38% at Year 3). We investigated this finding further by examining mothers and fathers who reported a change of 5 or more hours in their time in paid employment over the course of the study and found that 39% of fathers who decreased their work hours between Years 2 and 3 were caregiving increasers, as compared with 26% of fathers who did not decrease their work hours. Changes in mothers' work hours were not associated with the likelihood that their husbands would be increasers.

The second most common life event reported by increasers and their wives was a major change in the financial status of the family; 54% of increaser fathers or their wives reported this life event at Year 2, and 39% reported this event at Year 3. The other most frequent life events reported by increaser fathers or their wives were a major change in the number of arguments with one's spouse (Year 2: 38%; Year 3: 27%); a major change in the closeness of family members (Year 2: 38%; Year 3: 38%); and borrowing more than $10,000 (Year 2: 25%; Year 3: 42%).

### *Mothers' Model*

For the mothers' model, one structural path to the slope of mother involvement emerged as significant, as did one path to the intercept (see Figure 2). There was an inverse relationship between the age of the youngest child in the family and the slope of mother involvement (v2, f1; $\beta = -.54$, $t = -3.98$). The older the youngest child in the family was at Year 1, the more mothers *decreased* the proportion of caregiving they performed over the course of 3 years. However, the age of the youngest child in the family was not significantly associated with mothers' caregiving involvement at Year 1. There was also an inverse relationship between mothers' hours spent in paid employment and the intercept of mother involvement (v4, f2; $\beta = -.50$, $t = -6.43$). Mothers who spent a greater number of hours in paid employment at Year 1 tended to report a lower proportion of involvement in caregiving than did mothers who worked fewer hours.

Additionally, the age of the youngest child was negatively correlated with the number of children in the family ($r = -.40$, $p < .05$; not depicted in Figure 2). However, the slope and intercept factors were not significantly correlated with each other.

Follow-up descriptive analyses were conducted to illustrate the statistically significant paths in the mother LGM.

*Age of youngest child.* To illustrate the significant path from the age of the youngest child to the slope of mother involvement, mothers were divided into two groups: those who decreased their caregiving proportion score by at least .03 between Years 1 and 3 (decreasers; $n = 47$) and those who did not (nondecreasers; $n = 85$). Of the mothers who began the study with all of their children above the age of 5 years, 40% were decreasers, whereas only 25% of those with a child at or below age 5 were decreasers.

*Mother's employment hours.* Comparing the three maternal employment status groups described in Table 3, we found a significant difference in mother involvement proportion scores. Mothers reported the lowest involvement scores when they worked 20 or more hours per week.

## Discussion

The present results suggest that family context and the changing life circumstances of middle-class two-parent

Table 3
*Father- and Mother-Involvement Mean Proportion Scores at Year 1 According to Mothers' Employment Status*

| Variable | Families with nonemployed mothers ($n = 8$) | Families in which mothers worked 1–19 hr/week ($n = 12$) | Families in which mothers worked 20 or more hr/week ($n = 51$) |
|---|---|---|---|
| Father involvement, Y1 | .295 | .323 | .327 |
| Mother involvement, Y1 | .612 | .598 | .541 |

*Note.* Only couples with both father and mother data were included in this analysis. For mothers, $F(2, 68) = 6.12$, $p < .01$. For fathers, $F(2, 68) = 0.99$, *ns*. Y1 = Year 1.

families are not only associated with levels of father and mother involvement in child caregiving at any one time but also are associated with *changes* in each parent's share of involvement over the course of 3 years. On average, mothers reported responsibility for about 57% of the child-care activities that we assessed, as compared with about 32% reported by fathers. However, no matter how involved fathers had been at the start of the study, they were likely to increase their proportion of caregiving at least moderately over the course of 3 years if the children in the family were primarily boys, or if they or their wives experienced a relatively high number of life events, such as changes in employment and financial status. Conversely, the only significant predictor of change in mothers' proportion of child-care involvement was the age of the youngest child in the family. When families began the study with all of their children above the age of 5 years, mothers shifted more of their proportion of caregiving to others than did mothers who began the study with younger children in the home. In short, perceived caregiving roles and responsibilities were not static in the participating families but rather varied according to a number of child and parent characteristics, as well as unexpected circumstances that occurred over time.

Models of father involvement emphasize characteristics of children, mothers, fathers, coparental arrangements, and larger contextual factors as the primary determinants of father's engagement in child rearing (e.g., Belsky, 1984; Doherty et al., 1998). Evidence emerged in this study suggesting that aspects of each of these domains were associated with either initial status or change over time in parental involvement. The characteristics of individual family members (i.e., children's gender and age and mother's employment hours), coparental arrangements (i.e., single- vs. dual-earner family status), and contextual factors (i.e., life events) each played a role in predicting fathers', and in some cases, mothers', involvement with their children.

### *Father Involvement With Sons*

On average, paternal involvement (relative to maternal involvement) increased over 3 years. However, having a higher proportion of sons in the family appeared to accelerate that increase, even after controlling for the effects of other family contextual factors that were expected to influence changes in father involvement. Unlike previous cross-sectional studies that have found that fathers spend more time with sons than with daughters at a single time point (e.g., Aldous et al., 1998; Crouter & Crowley, 1990), the present findings suggest that there may also be a dynamic developmental process influencing patterns of father–son and father–daughter involvement over time. A similar pattern has been noted in a recent time-diary study (e.g., Yeung et al., 2001). In a study of adolescent–parent dyads, time spent in joint activities increased over the course of a year in same-gender dyads but not in opposite-gender dyads (Crouter, Manke, & McHale, 1995). The emergence or consolidation of shared gender-typed interests between fathers and sons may help to explain this pattern of findings. Father–son engagement in sports activities, specifically, has been viewed as an arena for the socialization of traditionally male values and behaviors in boys (Kimmel, 1990; Messner, 1992). The time-diary study cited earlier found that on weekends, the amount of time fathers spent coaching or teaching a child sports was 3–5 times that spent by mothers (Yeung et al., 2001). The increase of fathers' perceived proportion of involvement with boys over the course of 3 years in this study may reflect emerging shared father–son involvement in gendered activities, some of which may represent an opportunity for the socialization of sons by their fathers. In addition, fathers may be better equipped than mothers in a purely physical sense for engaging in some physical or rough interaction with growing boys.

In virtually all recent models, paternal involvement is understood to be the result of a dynamic process of negotiation, with significant input from children as well as mothers. For example, maternal beliefs about parenting can lead some women to act as gatekeepers who discourage collaborative arrangements and limit fathers' participation in child care (Allen & Hawkins, 1999). In one study, mothers' beliefs about innate gender differences in the ability to nurture correlated with the observed intensity of fathers' interaction with their infants. The husbands of women who believed that mothers are instinctively better caretakers were less attentive and less stimulating in face-to-face interactions with their infant (Beitel & Parke, 1998). As children move from infancy to adolescence, mothers' beliefs about the expected or natural role of mothers and fathers in the socialization of boys and girls could lead them to differentially encourage (or possibly even discourage) their husbands' involvement with sons and daughters. An increased proportion of father involvement in families with sons could also result from children's expressions of their own preferences. According to a constructivist view of development and "gender construction" theories (Messner, 1992), children are not merely recipients of the socialization efforts of their parents and society but also shape their own development through interactions with the environment. Thus, girls' and boys' own behavior is likely to influence the level and kind of involvement of their fathers (e.g., Doherty et al., 1998; Siegal, 1987). It is possible that boys recruit fathers for participation in gendered activities such as sports and physical play as they grow older. The basis for this apparent preference for interactions with fathers has not been clearly established, but it may represent a method, similar to sports (Messner, 1992), for boys to experience interpersonal intimacy that is permissible within the male gender "script." Interactions initiated by sons could also be related to shared interests and activities with fathers, or a sense of familiarity and comfort with other males (particularly in situations viewed as male gendered—e.g., sports, telling dirty jokes [Fine, 1992], adult supervision of "private" activities such as dressing). Input from daughters and mothers probably also contributed to the finding that although fathers' average involvement increased over time, fathers' proportion of child rearing was relatively lower when there were more daughters in the family. Identification of the factors that influence changes in father–son and

father–daughter involvement over time would be very informative.

### *Impact of Life Events on Father Involvement*

In the estimated LGM, a greater number of life events following the Year 1 assessment was associated with perceptions of increased child caregiving involvement on the part of fathers relative to mothers. The occurrence of life events has been postulated to be associated with changes in fathers' and mothers' involvement with their children (e.g., Grolnick et al., 1996), but little research evidence has accrued concerning this relationship. Both positive and negative life events have the potential to change child-care arrangements in the family. A life event that was commonly reported by families in which fathers increased their proportion of involvement was a change in the work status of one or both parents. In particular, fathers who reduced their time in paid employment were likely to become more involved in child care. Although it stands to reason that reduced hours at work could result in greater father availability and, hence, the possibility of an increased share of caregiving, the direction of causality is unclear. Mothers are much more likely to place limits on hours at work to spend more time with family, especially when there are young children at home (Becker & Moen, 1999). Did some of these fathers choose to trade off work commitments to increase their share of child-care responsibilities at a time when their wives were increasing their involvement at work? From this perspective, father involvement can be viewed as a family resource that is activated in times of need. Alternatively, for some fathers, an unplanned reduction in work hours might have resulted in increased time at home with the children. There are undoubtedly multiple and complex mechanisms linking different life events with changes in parents' relative caregiving involvement. Although parents may decide to make changes in their lives to spend more (or less) time with the family, unanticipated events may equally impact patterns of caregiving within the family in a manner that is neither planned nor desired by the parents. Future research that clarifies the relation between parental motivation to change their caregiving involvement and the occurrence of specific life events would be useful.

### *Maternal Work Hours and Parental Caregiving Involvement*

An important family contextual factor influencing both fathers' and mothers' initial levels of perceived child-care involvement at Year 1 was the number of hours that mothers spent in paid employment. Although mothers were responsible for the largest share of caregiving regardless of the number of hours they spent at work, the more hours mothers worked, the lower was their self-reported proportion of caregiving involvement and the greater was their husband's self-reported proportion of involvement, even after controlling for other family and child contextual factors. This finding is consistent with cross-sectional studies of children and adolescents that have found maternal work hours to be a correlate of father and mother involvement (e.g., Bonney et al., 1999; Brayfield, 1995). In traditional families that view child care primarily as a mother's job, fathers still may be obliged to fulfill a practical need for caregiving involvement when their wives are employed outside the home. As noted above, families with two working parents must actually balance three jobs: the two paid jobs as well as the full-time job of child rearing. Although a parent who is not employed outside the home may be able to take primary responsibility for this latter job, finite amounts of time and energy may necessitate a more equal division of labor in two-earner families. On the other hand, many fathers prefer to be involved with their children (Deutsch et al., 1993). Some researchers have found that progressive gender-role attitudes may influence the division of labor in some families in which mothers work a significant portion of the day and fathers spend an above-average amount of time as caretakers (Bonney et al., 1999). Such attitudes might act as a third variable explaining the association between mothers' hours in paid employment and fathers' perceptions of their own involvement in child care.

### *Child Age and Fathers' and Mothers' Caregiving Involvement*

Fathers are often reluctant to engage in gendered tasks like changing diapers or feeding young children (Deutsch et al., 1993), which could explain the greater proportion of father involvement in families with primarily older children at Year 1. On the basis of this cross-sectional finding, there is evidently some point in the development of a family at which fathers become more involved as their children grow. Therefore, the lack of an association between the age of the youngest child in the family and *change* in fathers' perceptions of caregiving involvement over time is surprising. Perhaps certain characteristics of the present sample are responsible for this finding. Each family included at least one school-age child; it is possible that there is not a dramatic point of increase in paternal caregiving in this type of sample, as compared with a sample of families with primarily younger children or infants (cf. Bailey, 1994). In line with this reasoning, other researchers have found that the level of father involvement relative to mother involvement increases as children age, with the biggest increase in father involvement occurring in the transition from preschool to school age (Yeung et al., 2001). We also found that mothers tended to become relatively less involved with caregiving over 3 years when only school-age children (above the age of 5 years) resided in their families at Year 1, compared with families with an infant or a preschooler.

### *Limitations*

Certain characteristics of the present study may have contributed to the pattern of results that we obtained. First, the sample was composed of middle-class families with two cohabiting parents, which limits generalizability to other types of families. For example, many of the fathers in this sample were in professional occupations that often provide

the kind of flexibility in work hours that facilitates caregiving involvement. Also, because the sample was primarily Caucasian, it is unclear whether similar processes transpire in two-parent families from other ethnic backgrounds. Sampling bias could also have contributed to a nonrepresentative sample. Second, ours was a relatively small sample for the purposes of structural modeling, which reduced power to detect significant paths and limited the size and complexity of the hypothesized model. A larger sample would have permitted modeling *change* in mothers' work hours over time and modeling life events as a latent variable rather than as a composite measured variable. Third, a common problem with longitudinal data modeled with structural equation modeling, and one that we encountered in the present study, is subject attrition over time (Duncan et al., 1999); the use of listwise deletion reduced our usable sample size modestly. In the descriptive analyses that were used to illustrate significant paths in the latent growth models, some cell sizes were quite small (e.g., there were 8 nonemployed mothers), again limiting generalizability. The use of a measure of parental *perceptions* of the family's division of child care is an additional limitation of the study; a time-diary measurement approach might have yielded a more precise measure of caregiving involvement. Nonetheless, there was evidence of strong interrater agreement, which is suggestive of concurrent validity.

Researchers have suggested that parent involvement may be a multidimensional construct, with each component of involvement having a unique set of determinants (e.g., Hawkins et al., 2002). Because the parent involvement scale used in this study was global in nature, it is possible that unique determinants of specific components of father involvement, such as play, indirect involvement, and so forth, were masked by our methodologic approach. The brevity of the scale (10 items) precluded formation of psychometrically sound subscales that might reflect more specific components of involvement.

A multitude of additional factors have been proposed as predictors of father involvement and should be investigated in future studies of changes over time (cf. Beitel & Parke, 1998; Doherty et al., 1998; Hawkins & Palkovitz, 1999; Pleck, 1997). The particular indicators of the dimensions predicting father involvement were chosen for this study on the basis of either consistent previous findings in the cross-sectional research literature (e.g., maternal hours in paid employment) or the likelihood that they play an important role in changes in child-care involvement over time (i.e., life events). Clearly, some domains of the current models in the research literature (e.g., Doherty et al., 1998) are far more complex than the indicator variables that were used in this study. Our results should be viewed as preliminary and in need of replication with larger and more diverse samples.

### *Implications for Application and Public Policy*

A primary aim of the present study was to understand how individual and contextual factors contribute to unfolding family processes over time. The development of children and their families cannot be understood with a single snapshot of their circumstances or behavior (Deutsch et al., 1993; Menaghan, 1994). Models of development are enhanced by repeated assessments of the same individuals over time. A strength of the present study was the longitudinal nature of the data, which lent itself to analysis with LGM. Several factors were identified through this approach that were related to changes in fathers' and mothers' relative contributions to child caregiving over 3 years. One implication of these findings is that under some circumstances, modern fathers are able and willing to become more involved with their children, a potentially positive development in light of research demonstrating the importance of the father–child relationship for children's adjustment (see Pleck, 1997). Practitioners working with families may benefit from considering the family and contextual factors that can limit fathers' availability for increased caregiving involvement, as well as those factors that may motivate fathers to take a more active role in their children's lives.

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## Appendix

## Child Caregiving Involvement Scale

1. Playing or talking or reading with child(ren)
2. Getting child(ren) ready for bed, school or other activities
3. Reviewing/helping with child(ren)'s school work
4. Teaching a child skills and things about the world (outside of school)
5. Getting up during the night with a child
6. Staying home with a sick child
7. Making child-care arrangements
8. Chauffeuring children
9. Out-of-home child-related activities or functions (with or without children; e.g., doctor visits, PTA, drop-offs, scheduling, making reservations)
10. Coordinating and planning child or family activities (e.g., planning pick-ups, drop-offs, scheduling, making reservations)

*Note.* Each item is rated on a 5-point response scale: 1 (*none or very little responsibility [less than 10%]*), 2 (*some responsibility [10%–40%]*), 3 (*about half of the responsibility [40%–60%]*), 4 (*much responsibility [60%–90%]*), and 5 (*almost complete or complete responsibility [90%–100%]*).

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